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EXPERIENCING ABSURDITY OF ORGANIZATIONAL LIFE:
A DIVE IN A KAFKAESQUE UNIVERSE

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Tese apresentada à Escola de Administração de Empresas de São Paulo da Fundação Getúlio Vargas, como requisito parcial para obtenção do título de Doutor em Administração de Empresas.

Área de Conhecimento: Estudos
organizacionais

Orientador: Prof. Dr. Rafael Alcadipani da
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DEDICATÓRIA

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Memória de vida

*Me recuso a viver num mundo sem sentido.
Estes anseios/ensaios são incursões conceptuais em busca do
sentido. Pois isso é próprio da natureza do sentido: ele não
existe nas coisas, tem que ser buscado, numa busca que é sua
própria fundação. Só buscar o sentido faz, realmente, sentido.
Tirando isso, não tem sentido.*

(LEMINSKI, Paulo. 1997)

ABSTRACT

Dysfunctional bureaucracy is a major challenge for developing countries like Brazil today. There are innumerable problems, among which the lack of effectiveness, inefficiency, and absurd contexts that lead to stress, suffering and burn-out are highlighted. Although such organizations have received attention from the area of Administration and Organizational Studies, the studies related to coping with absurd contexts are very incipient. More rare are the empirical studies that analyse the daily life of people who face such situations. In order to address such gaps, this research is based on an empirical study carried out in a 15-month period (October 2015 to December 2016) of data collection through 50 interviews, conversations and daily observation of managers of research, development and innovation (R&D&I) projects in the largest company in the electric sector in Brazil. Secondary data and documents were also collected. The goal of this research is to develop theory about the absurd in bureaucratic organizations. This research contributes to the development of academic knowledge in two aspects: first, from the theoretical point of view, when dealing with absurdity in a bureaucratic organizational context, a subject not much discussed; second, from a practical point of view, to deepen the knowledge about the daily life of managers, and to bring elements that allow to rethink several of the daily challenges of these managers. Data was analyzed through an iterative thematic analysis. Through this I identified that the organizational context is complex and involves: (1) Bureaucracy; (2) Multiples cultures; (3) Leadership changes and the lack of sensegiver; (4) R&D&I colliding with organizational routine; (5) Personality in the processes; (6) Informality and non-registration of activities; (7) Politics. The data theory presents that the absurd is understood from the notions of: (a) Environment of contradictions; (b) Fear and guilt; and (c) Loneliness. The consequences of the absurd experience in the context studied involve: (i) Emotional work; (ii). Turnover; (iii) Non-implementation of projects; (iv) Metamorphosis of the sense of innovation; (v) Loss of sense of innovation; and (vi) Inaction. In answering the proposed research question, the contributions of this thesis are: (i) the elaboration of a working definition for absurdity; (ii) contribution to the practice of innovation management in the Brazilian electric sector, based on the reflection of its innovation dynamics. The theory generated is under construction and reflects the interpretation of a particular researcher. The effort of this research is expected to stimulate researchers in the continuity of research into the absurd in bureaucratic organizations.

Keywords: Sensemaking; Absurdity; Bureaucracy; Electrical sector.

RESUMO

Burocracias disfuncionais são um grande desafio para países em desenvolvimento como o Brasil hoje. Existem inúmeros problemas, entre os quais se destacam a falta de eficácia, a ineficiência e os contextos absurdos que levam ao estresse, ao sofrimento e ao burn-out. Embora essas organizações tenham recebido atenção da área de Administração e Estudos Organizacionais, os estudos relacionados a lidar com contextos absurdos são muito incipientes. Mais raros ainda são os estudos empíricos que analisam a vida diária das pessoas que enfrentam tais situações. Para abordar essas lacunas, esta pesquisa se baseia em um estudo empírico realizado em um período de 15 meses (outubro de 2015 a dezembro de 2016) de coleta de dados através de 50 entrevistas, conversas e observação diária de gerentes de projetos de pesquisa, desenvolvimento e inovação (P&D&I) na maior empresa do setor elétrico no Brasil. Os dados e documentos secundários também foram coletados. O objetivo desta pesquisa é desenvolver a teoria sobre o absurdo em organizações burocráticas. Esta pesquisa contribui para o desenvolvimento do conhecimento acadêmico em dois aspectos: primeiro, do ponto de vista teórico, ao lidar com o absurdo em um contexto organizacional burocrático, assunto não muito discutido; segundo, do ponto de vista prático, ao aprofundar o conhecimento sobre a vida cotidiana dos gerentes e trazer elementos que permitam repensar vários dos desafios diários desses gerentes. Os dados foram analisados através de uma análise temática iterativa. Através disto, identifiquei que o contexto organizacional é complexo e envolve: (1) Burocracia; (2) Culturas múltiplas; (3) Mudanças de liderança e falta de sensegiver; (4) P&D&I colidindo com rotina organizacional; (5) Personalidade nos processos; (6) Informalidade e não registro de atividades; (7) Política. A teoria dos dados apresenta que o absurdo é compreendido a partir das noções de: (a) Ambiente de contradições; (b) Medo e culpa; e (c) Solidão. As consequências da experiência do absurdo no contexto estudado envolvem: (i) Trabalho emocional; (ii). Turnover; (iii) Não-implementação dos projetos; (iv) Metamorfose do sentido de inovação; (v) Perda do sentido de inovação; e (vi) Inação. Ao responder a questão de pesquisa proposta, as contribuições desta tese são: (i) elaboração de uma definição para absurdo; (ii) contribuição para a prática da gestão da inovação no setor elétrico brasileiro, com base no reflexo de sua dinâmica de inovação. A teoria gerada nos dados está em construção e reflete a interpretação de uma pesquisadora em particular. Espera-se que o esforço dessa pesquisa estimule pesquisadores na continuidade da investigação acerca do absurdo em organizações burocráticas.

Palavras-Chave: Sensemaking; Absurdo; Burocracia; Setor elétrico.

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CHAPTER 1

INTRODUCTION

CHAPTER 1: Introduction

1.1 Introduction

Imagine that you are just hired by an organization, and you now complete the necessary documents to officialise the hiring. You then discover that there has been a misunderstanding and so you seek to correct this error, but you end up in a huge organization, knocking from door to door, from department to department, with the accumulation of requirements, memos, processes and documents. You find yourself stuck running in circles, with the impression that, when finally reaching the good service or person, in fact you are wrong so that everything gets no sense at all. This description is inspired from the novel *The Castle* written by the Czech writer Franz Kafka.

Our research emerges out from a case study conducted on R & D & I projects in the Brazilian electric sector, where project managers described their experiences “senseless” and “absurd”. In particular, they reported their doing many activities in a bureaucratic context, activities that they knew will have no consequence or effect on the organization. Relying on existentialist philosophy and Kafka’s work, we define absurd as a conflict between human tendency to search for meaning and the inability of man to find it. In this perspective, the absurd derives from a gap between the relationship of man with the world, leading to a sense of disorientation and despair.

Organizational scholars have already conducted studies inspired by Kafka's work (Bennett, 1991; Clegg, Pina e Cunha, Munro, Rego, & Sousa, 2016; Hodson, Martin, Lopez, & Roscigno, 2012; Hodson, Roscigno, Martin, & Lopez, 2013; Jorgensen, 2012; McCabe, 2013; Munro & Huber, 2012; and Warner, 2007) to investigate bureaucratic organizations. While this research brings to light the Kafkaesque aspects of modern bureaucratic functioning, they remains rather silent on the organizational members’ experience and sensemaking in these context. Clegg and *al.* (2016) have however underlined how people may feel powerless and experience meaninglessness when working in Kafkaesque bureaucracies. This echoes Vohnsen (2017)’s ethnographic study in the Danish labor market system which showed that employees were in a dual relationship with their jobs: on the one hand, they were convinced that they were making improvements to the welfare system, but on the other hand they found the results of their actions absurd.

This study aims to add to these studies and deepen our understanding of the experience of individuals of what they call “absurd” or “meaningless” situations in a bureaucratic organization. It focus on the following research question: **How do managers make sense of absurdity in bureaucracy?**

We conducted an in-depth case study research in a Brazilian large state-owned company of the electric sector. The case study investigates the individual experiences of organizational members involved in Research, Development and Innovation (R & D & I) projects. While the law Nº. 9.991 / 2000 (2000) encouraged the development of innovations in this sector, investments were in fact mainly targeted to meet the normative device rather than to generate new products and services, revealing that innovation was not included in the competitive strategy of companies in the sector (Quandt, Junior & Procopiuck, 2008). In the company – that we will call later on Electric, since 2001, more than 200 million reais were invested in approximately 160 R & D projects, but only few products were transferred in the value chain, and almost no product arrived in the market.

Complementing Clegg and *al.* (2016) works, our study deepens our understanding of the managers’ experience and sensemaking of the absurd in Kafkaesque bureaucracies. In particular, it outlines that while managers make sense of the contradictions embedded in the organizational and institutional contexts, and of the absurd these contradictions carry, they still feel guilty of not being able to perform their job well, and lonely as their superiors did not help or support them at all.

For the project development, we will use a theoretical basis composed by contributions from Organizational Studies area, regarding sensemaking and absurdity themes. And, in order to answer these questions and the proposed objectives, the theoretical and practical assumptions underlying the study will be clarified in the following chapter.

1.2 Why innovation in the Brazilian electricity sector?

In the 20th century, innovation began to be seen as a political instrument for solving socioeconomic problems. From that moment on, innovation began to be studied as an organizational process, taking as its cornerstone the theorizations of the economist Joseph Schumpeter (1942). Thus, from Schumpeter, innovation came to be understood not only as a new product or a process of acceleration in industry, but as the set of new evolutionary functions that, by introducing new products and methods of production, new markets and sources of inputs, thus forming a new economic organization (Fagerberg, 2005; Schumpeter, 1942). Innovation was, therefore, the justification elaborated by Schumpeter for the understanding of the capitalism incessant transformations (Fontenelle, 2012).

For the economist, the dynamic agent responsible for creating and destroying capitalism values (creative destruction process) would be the entrepreneur. Similar to the figure of the Nietzschean superman, the schumpeterian entrepreneur or entrepreneur declares himself by courage and risk, not fearing failure (Drosdek, 2009; Nietzsche, 1998), thus being the first victim of the Schumpeterian entrepreneur the Schumpeterian entrepreneur himself. The economist's appreciation did not go beyond these considerations, and did not produce an established theory for the innovating organizations, as far as the organizational strategies and processes are concerned. The non-appreciation of these aspects by the economist, rather than a limitation of his approach, reveals the complexity of innovation analysis.

In the 1960s¹, when studies focused on innovation were consolidating as a field of study, new centers and research departments were created for innovation transdisciplinary studies (Fagerberg, 2005).

In the following decades, schumpeterian and neo-schumpeterian authors as Carlota Perez, Nathan Rosenberg, Giovanni Dosi, Sidney Winter, Christopher Freeman and Richard Nelson contributed in the construction of different perspectives of analysis of innovative phenomena. Thus, despite the literature on innovation in the 1960s and 1970s producing important categories for the study of innovation, the models developed in this period have maintained a linear and deterministic view of analysis (Andrade, 2005).

¹ An important milestone in this period was the establishment of the Science Policy Research Unit (SPRU) at the Sussex University in 1965. Studies carried out at the Center revealed particularities of the innovative phenomena, drawing attention to the need for lenses, approaches and insights from other areas and disciplines.

From the 1980s, due to globalization acceleration, the formation and structuring of networks began to gain importance in the field (Freeman, 1988), with studies addressing concepts such as clusters, innovative milieu, and Innovation Systems (Cassiolato & Lastres, 2000). Also in the 1980s, the contributions of the Minnesota Innovation Research Program (MIRP), a program that involved the work of more than 30 researchers for 17 years, should be highlighted. MIRP researchers made important contributions to the field by developing models of multidimensional organizational analysis.

With the studies evolution in the late 90's, researchers have returned to study paradoxical aspects arising from innovations. This period, marked by risk theories, instability and contingency (Andrade, 2005; Beck, 1992), has brought a focus to studies on innovation, regarding the indeterminacy of innovative processes. Issues related to organizational change, such as the corporate dilemma between radically innovating or resisting innovation, were and are the focus of research by authors such as Eisenhardt, Brown, Van de Ven, March, and Clayton Christensen. Thus, the innovative processes indeterminacy brought a qualitative dimension that the Schumpeterian model could not address.

The theoretical body developed since the 1960s shows the complexity and multidisciplinary of innovation. Although we are currently working with the same concept of innovation, *“the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organisational method in business practices, workplace organisation or external relations”* (OECD/Eurostat, 2005), we are in a socio-historical scenario different from the one analysed by Schumpeter. This scenario is the fruit of the third technological revolution that transformed the work of knowledge as the main productive force (Fontenelle, 2012).

In addition, the theorizations about innovation during the twentieth century were developed from abstractions based on nouns, losing the notion of innovation as a verb (Godin & Lucier, 2014). As pointed out by (Czarniawska, 2008, p.15):

The use of language in social sciences seems to go in the opposite direction, however. Actions and processes are labelled with nouns, and in time become treated as objects with distinct albeit variable properties. Sometimes they need to be remade into double gerunds in order to emphasize their processual character.

This was the keynote of the discourse focused on innovation from Schumpeter, theorizing innovation as a noun. As emphasized by Bell (2006), although the existence of studies on innovation, there is still a lack of conceptual bases, causing myopic analyzes that do not address social, cultural and political aspects of innovation in Administration. According to Bell (2006), the incompleteness of these theories leads to distorted visions, preventing discontinuities in innovation processes, especially in times of crisis, where organizational changes are assumed. In this sense, the research intends to dialogue with authors who emphasize cultural and social aspects of innovation, with particular interest in the social construction of innovative processes (Bouwen & Fry, 1991; Coopey, Keegan & Emler, 1997; Steyaert, Bouwen & Van Looy, 1996).

In this sense, it is suggested that studies on innovation seek inspiration from other perspectives that provide new visions of the phenomenon. So, based on the meaning construction approach, we intend to contribute to the discussion on innovation, and to think about innovation in a different way. We intend to outline some arguments, based on the sensemaking notion for the organizational phenomena understanding in innovation area of the Brazilian electric sector, in order to contribute to researches developed on innovative processes, as well as sector public policies. We understand that the sensemaking approach can bring new insights and can contribute to the observation and theorization of innovation phenomenon. Thus, the sensemaking approach may lead to the emergence of contradictory interpretations and discontinuities in sensemaking processes geared toward innovation, a perspective that is lacking in the literature.

The theoretical review on innovation shows that innovation literature hardly explores the social construction universe of innovation (Bell, 2006; Saquetto & Carneiro, 2011; Yen-Tsang, Dutra-de-Lima & Martins, 2012). We intend to approach this gap from the perspective of sensemaking, understanding that the dispositions and spaces by which innovations develop are socio-political and cultural constructions, especially when we focus on the agency of the actors that make up these scenarios.

This research is certainly not unprecedented in this sense, since researchers have already made that connection. Drazin et al. (1999), for example, when discussing creativity in long-term teams in organizations, brings a discussion of creativity at different levels of analysis. Creativity, a key point for innovative processes, would also arise from processes of

sensemaking. Despite the theoretical contribution of the text, especially when elaborating a theoretical framework and analysis, the research did not address social aspects, such as the relation between team membership and team size. Another interesting work in this group of authors is the research made by Griffith (1999), that, while sizing the technology from the initial perception of users and implementers, shows that characteristics of the technology to be developed exert impacts on processes of sensemaking. However, the study could be expanded, encompassing the action and initial perception of managers involved in the process.

Dougherty, Borrelli, Munir and Sullivan (2000) make a great contribution by studying different processes of sensemaking in complex organizations. This is an empirical study of reference in the area, since it required 2 years of intense field research, in which it was possible to observe the structuring of sensemaking systems. The authors argue for the importance of sensemaking for innovation by finding that less innovative companies lacked a collective sensemaking (sensemaking systems), unlike the more innovative ones. Although different systems of sensemaking were identified, the figure of the innovation manager did not play a leading role in the study. In addition to this study, we can mention the contributions of Jay (2013) who, after two years of ethnographic research, observed that the innovative capacity of hybrid organizations depends on sensemaking processes. Jay (2013) concluded that paradoxical results stem from the clash between sensemaking processes, since they are constrained by institutional logics, yet the study also did not focus on the manager figure and what his agency feels like or what he feels during these collisions of logics and how it contributes to paradoxical outcomes.

Greenwood et al. (2011), when studying different institutional logics in organizations and how organizations build meaning from this complexity, develop an interesting theoretical framework for other researches. In spite of its importance, the study also did not cover at a micro - individual level the manager figure and how he behaves in front of different institutional logics.

Notwithstanding the important contributions to the field briefly cited, the area is fertile for new research approaches and levels of analysis that address the figure of the innovation manager, how this figure feels in innovative processes, what they mean by innovation and what are the continuities and discontinuities of sensemaking processes. And it is from this gap that we intend to contribute to the literatures of sensemaking and innovation management.

The innovation theme resonates with my research history. I study innovation in organizations since 2007. During these 10 years, I participated in research groups involving themes like intellectual property rights, innovation management, R & D, and scientific practices, resulting in academic, business and governmental publications on the studied subjects. In addition, I acted as a consultant in the area for five years (five), which allowed me a brief notion about its particularities in the business context. During my academic career, although I discussed the subject of innovation in undergraduate, specialization and master (e.g: Ipiranga & Matos, 2014; Matos & Ipiranga, 2017), only in the period of my Ph.D. my interest in the social dimension of innovation management arised. In this sense, this research is based on sensemaking approach, in the context of electrical sector R & D & I projects.

During my field visitations in 2015, I conducted interviews and had contact with entrepreneurs, organizations focused on innovation management, as well as employees in the areas of innovation, operations, marketing and human resources, in Fortaleza and São Paulo. During this period, I changed my perception about innovation management in São Paulo city after visiting large companies and multinationals. I established partnerships and possibilities for work and research. One of these partnerships resulted in my access to the field in October 2015. The partnership was made between a company focused on innovation management consultancy based in São Paulo (Centrec), a consultancy company in innovation management also in São Paulo (Tech-in), two innovation management consulting companies in Fortaleza (Fusion and InoSystem), and a brazilian electric sector company with its main headquarters in Recife (Electric). Thus, the sector was defined for this research.

Regarding the electricity sector, Brazil is the third largest producer of hydroelectric power in the world, responsible for the accumulation of 24% of the planet's water (IEA, 2015), with an estimated production of 590 TWh per year, in 2014. The Country has a gross capacity of more than 370 TWh (year 2014), corresponding to approximately 64% of all electricity generated in the country (Anuário Estatístico de Energia Elétrica, 2015, p. 07).

Despite being one of the largest hydroelectric power producers, Brazil is the 10th largest consumer of energy in the world and the largest consumer in South America (IEA, 2015). Based on the data available in the Electric Energy Yearbook (2015), we can observe that, in the five-year period 2010-2014, the population increased by an average of 0.9% per year, while per capita consumption grew by an average of 2, 5% per annum over the same period. In order to

sustain this growth, we estimate the need for investments in excess of R\$ 380 billion in the electric power generation sector until 2022, in order to meet this future demand, as well as to ensure the system. According to the Empresa de Pesquisa Energética (EPE) (2010), this investment is fundamental to guarantee a growth of 5.1% per year of the Brazilian economy until 2020. For this, the country will need to add 6,300 MW to its installed capacity per year, corresponding to 3,333 average MW of annual energy. In this sense, the study on innovations development in the national electric sector is strategic, even more in the current moment.

The sector current moment is a crisis, due to two major factors: (i) the implementation of Provisional Measure 579 in 2012, which brought with it a contraction and financial losses for the sector, and; (ii) the Country experiences one of the biggest institutional crises. The national and the sector crisis, combined with the embedded bureaucratic structure characteristic of the companies from this sector, constitute a peculiar context to be studied. Given this scenario, we understand that conducting research in the national electricity sector, basic infrastructure sector, fundamental for economic and industrial development, and social well-being, is relevant. Therefore, developing a research that is contextualized in the largest electric power generation company in the country, in the particular moment that the sector passes, besides being a great opportunity, also brings a great responsibility, given Brazil reality.

In this sense, we understand science as a broad social system that must have several functions, among them, the dissemination of knowledge (Macias-Chapula, 1998). Although it is a humble effort to build knowledge, we hope that this research contributes to its academic sphere, but also contribute to the researched company and / or industry, benefiting society as possible.

1.3 Research questions and objectives

In order to direct the reflections developed in the proposed research, the main objective is **to analyse how do managers make sense of absurdity in bureaucracy?**

As specific objectives:

- To analyse existent definitions and meanings of absurd;
- Develop theories about absurdity in bureaucratic organizations, based on the data collected;
- To analyse which consequences absurdity in bureaucracy causes.

1.4 Research strategy

The case study was conducted over a fifteen-month period in the company. Out of 123 R & D & I projects already executed, and 38 in progress, the first author interviewed managers involved in R&D&I projects between 2005 to 2015. The temporal choice of projects is justified since, due to the great rationing of energy occurred in 2001, new rules and adjustments were formulated by the Brazilian Federal Government in 2004.

The 50 interviews reported here had an average 60 to 90 minutes and were recorded for later transcription. The company gave formal authorization for conducting the research and for interviews. In addition, all interviewees gave informed consent during the interviews. The interview script addressed the following themes: (i) perception about innovation; (ii) perception about R & D & I of the company; (iii) narratives about personal experiences in R & D & I projects; (iv) construction of R & D & I by the respondent. As secondary sources, we took notes in a field journal for personal reflections, reactions and emotions (Spradley, 1980; Van Maanen, 2011).

The interviews were the unit of analysis, eliciting in-depth information about the personal experiences of the interviewees in R & D & I projects, as well as on the particularities of the organizational and sector contexts. Taking advantage of the opportunities of entering the field, we also had informal conversations with other employees of the companies involved in

the project. Throughout the field research process, we took note of the interactions between employees, between employees and the organizational environment, and organizational layout, decor and architectural aspects. These informal conversations enabled us to access information we could hardly get from semi-structured interviews. All conversations and observations of the environment were recorded in the field diary.

We coded the interviews relying on an abductive approach and a thematic analysis (Braun & Clarke, 2006; Spencer et al., 2003; Srivastava & Hopwood, 2009) was used to analyse data. Units of meanings were first categorized according to their similarities and differences. Reflecting on these categories and on Kafkaesque themes that emerge from the literature, we were able to define precisely, illustrate and complement these themes with additional insights coming from our research field.

1.5 Thesis contributions

We intend to contribute substantively and theoretically. First, the development and discussion of absurdity. Then we intend to contribute in theoretical terms, by articulating theoretical interfaces between sensemaking and absurdity literatures. Finally, we seek to contribute to the practice of innovation management in the Brazilian electric sector, based on the reflection of its innovation dynamics. We understand that the focus of this project can contribute to the guiding and improvement of public policies in the electricity sector that seek to promote innovation (productivity, cost reduction, improvement of quality of service offered, accessibility to energy, and international exchange of electric energy). In addition, the Brazilian electricity sector is transversal to different productive segments, so the analysis and in-depth study of innovation policies in this sector can impact other productive sectors as well as the sectors that are regulated by similar policies, such as oil and gas, and Information and communication technologies (ICTs).

1.6 Thesis Structure

In order to clarify the reasons and decisions about the production and data analysis, the objectives will be developed from the articulation of the chapters as follows:

Chapter 1 introduces the general problem underlying this thesis, the reasons and personal motivations for the research development, the thesis' research question, its overall objectives and contributions, the theoretical lens summary and the methodology used in its empirical research.

Chapter 2 presents the basic conceptual framework for the research development. Introduces a theoretical review on sensemaking, identifying the research gaps on sensemaking literature. The chapter 2 is also devoted to absurdity conceptual development.

Chapter 3 In this chapter, I return to the methodological course followed by me, in addition to presenting the methodological aspects and postures that justified and supported this research. In section 1, we introduce a general presentation of the methodology followed for the exploratory study. In Section 2, we sought to justify the methodological premises that led the research, with the aim of maintaining its theoretical and methodological coherence. Also, the section 2, is intended for qualitative study through semi-structured interviews with project managers. In this section we present the contributions of the Thematic Analysis for data analysis.

Chapter 4 presents the findings of the research. I identified that the organizational context is complex and involves: (1) Bureaucracy; (2) Multiples cultures; (3) Leadership changes and the lack of sensegiver; (4) R&D&I colliding with organizational routine; (5) Personality in the processes; (6) Informality and non-registration of activities; (7) Politics. I identified also that the absurdity involves: (a) contradictions environment; (b) fear and guilt; (c) Loneliness.

Chapter 5 presents the discussion of the themes. In this chapter, I explain and discuss the findings in the light of absurdity and sensemaking theory. Then I provide an answer to my research question **“How do managers make sense of absurdity in bureaucracy?”**.

Chapter 6 summarizes the conclusions. In this chapter, I present the main contributions

of this study and their implications for theory and practice. I also present the limitations and possibilities of future research.

CHAPTER 2
FROM SENSEMAKING TO ABSURDITY

CHAPTER 2: From sensemaking to absurdity

2.1 Introduction

The previous chapter introduced the general problem underlying this thesis, the reasons and personal motivations for the research development, the thesis' research question, its overall objectives and contributions, the theoretical lens summary and the methodology used in its empirical research. The purpose of this chapter is to present the basic conceptual framework for the research development.

The first section works on sensemaking' notion. I introduce the definitions on the subject in Management area. A theoretical review was carried out with the identification of the research gaps. It was observed that the context is a key element in the theoretical framework on sensemaking. In the area of organizational studies, studies on extreme contexts and the context of crisis were privileged, over rather studies on bureaucratic contexts that cause confusion and absurd contexts. In this sense, the next section is devoted to absurdity.

2.2 Literature Review: sensemaking

The matter of this section is sensemaking. A dense term that, despite the considerable breadth of studies, still seems to be a firm and slippery concept, entangled and obscure in the literature of organizational studies. The reading made here presents only one possible interpretation among other possible ones, trying to face the concept and its definition, without the pretension to comprehend it in its entirety. To do so, we decided to address themes about sensemaking based on affinity, and so the text was divided into some sections without incurring cartesian anxieties, but rather seeking to work with the mosaic idea.

A mosaic is made by an organization of pieces on a surface, composing a specific format, in order to fill some kind of plan or shape. The base can be varied (cement, ceramics, glass), as well as the pieces - fragments of paper, stones, marble, granite, glass, plastics, among other materials. In this sense, in order to understand which materials and pieces we have in hand, and which bases were used to construct the images on sensemaking in the Management literature, the theme's trajectory in the Area will be presented first. After, we present our own mosaic about what we build on sensemaking. To do so, we decided to begin assembling it by the fundamental unit that gives experience to other pieces: the concept.

Throughout readings on the subject, it is perceived that in the studied literature there is a general consensus of what sensemaking is, but this concept does not come attached to a single definition. The search for a definition of the concept aims to improve the observer's understanding of the phenomenon, through an equivalence, as close as possible, between the term to be defined (*definiendum*), and the concepts that define (*definiens*). The non-correspondence between *definiendum* and *definiens* can have formal consequences in the definition, but it is not intended here to develop an argumentative fallacy that a definition will capture the concept in its entirety, but rather it is intended to choose terms whose understanding of the *definiendum* is more accessible (Tiburi, 2003). In this sense, from the outline of concept's definition, we briefly present the theme construction in Organizational Studies area, presenting also possibilities of research, with the use of different bases and materials.

2.2.1 Sensemaking: definition and sketch

Although the idea of creating senses to past experiences has already been studied previously, the term sensemaking was first used in the 1960s and gaining notoriety since the 1970s in three fields of knowledge: information systems (IS) (Dervin, 1983; 1992), human-computer interaction (HCI) (Card, Newell & Moran, 1983), and organizational studies (OS) (Weick, 1969; 1979; 1988; 1993; Weick et al., 2005). For the present project, we will address the third aspect of studies on sensemaking, referring to the analysis of organizational phenomena.

Sensemaking is a notion built in psychology and brought to the Administration by Karl E. Weick in 1969 in his work *The Social Psychology of Organizing*, seen as a central organizing activity. Most of Weick's research was done in public sector organizations, with few studies in commercial organizations (Weick, 1993; Weick & Roberts, 1993), analyzing complex situations in which the author sought to understand how human beings make sense from seemingly contradictory information.

After Weick's work in 1969, many studies on sensemaking have emerged in Management area. I divided these studies in three relevant periods: (i) 1969 – 1999: the emergence and first outlines of studies on sensemaking in the Management field; (ii) 2000 – 2009: a theme's consolidation in the area; (iii) 2010 – 2017: a more intense rhythm in the publication dynamics, reflecting the relevance and importance of the theme.

The first section has opened entry to Karl Weick's seminal text *Enacted sensemaking in crisis situations*, appearing as part of the *JMS Special Issue on Industrial Crisis Management: Learning from Organizational Failures* (Weick, 1988). We can also cite the work of Starbuck & Milliken (1988) *Executives perceptual filters: What they notice and how they make sense*, in this period.

Maitlis and Christianson (2014) point out that, around that decade, research on organizational behavior and strategic management was influenced by the cognitive turn (Walsh, 1995), giving a focus on the studies of the time when addressing cognitive aspects underlying sensemaking, such as Weick (1988), Louis (1980), Daft and Weick (1984), Starbuck and Milliken (1988) studies. As shown by Allard-Poesi (2005, p.170), since the 1980s, numerous theoretical, methodological and empirical studies were developed “*addressing collective sensemaking and representations in decision-making processes*” (Beyer, 1981), actions and performance (Huff, 1990), change and learning (Poole et al., 1989).

Still in the first section, the 1990s correspond to a deep research in various aspects about sensemaking. One of the main advances is the book by Karl Weick (1995) *Sensemaking in Organizations* that offers a theoretical framework the study of organizational phenomena. In addition, in the 1990s (8.6% of articles surveyed), a concentration of studies on strategy was identified, articulating the perspective of sensemaking. There is a tendency of studies analyzing crises and forms of management (Weick, 1990, 1993), language (Boyce, 1995; Hill &

Levenhagen 1995), strategic transformations and organizational results (Gephart, 1993; Gioia & Chittipeddi, 1991; Gioia & Thomas, 1996; Gioia, Thomas, Clark & Chittipeddi, 1994; Thomas, Clark & Gioia, 1993). The most cited author in this decade is Denis Gioia, a professor at the Pennsylvania State University (Department of Management and Organization), and articles were most published in the *Journal of Management*, *Strategic Management Journal*, and *Administrative Science Quarterly*.

The 2000-2009 decade indicates that the topic has gained relevance and space in the management area. The growth of publications observed in the 2000s also reflects new perspectives on the subject. As pointed out by Maitlis and Christianson (2014), a chain of research turned in this period to social processes of intersubjective and collective creation of meanings, articulating themes such as narratives and metaphors and discursive practices (Balogun & Johnson, 2004; Brown et al., 2008; Brown, 2000, 2004; Brown & Humphreys, 2003; Currie & Brown, 2003; Rouleau, 2005). Aspects such as identity and organizational learning were also the focus of studies in this period, addressing aspects of strategic changes, organizational identity conflicts, entrepreneurship, among other topics (Christianson, Farkas, Sutcliffe & Weick, 2009; Corley & Gioia, 2004; Haas, 2006; Hoffman & Ocasio, 2001; Kayes, 2004; Martins, 2005; Ravasi & Schulz, 2006; Wainwright & Turner, 2004). So, there is evidence to affirm that the sensemaking theme has been gaining notoriety recently in the area of Management since 2000.

Notwithstanding the temporal division, sensemaking is understood as a social construction process in which individuals seek for plausible meanings that rationalize what people are doing in confusing / ambiguous / contradictory events, situations, or issues. Thus, events and interruptions occurring in organizations come to have meaning, to have existence, and individuals seek to answer questions such as “*what does this event mean?*”, “*What is the story here*”, and “*Now, what should I do?*” (Brown, Colville & Pye, 2015; Maitlis & Sonenshein, 2010; Weick, 1995; Weick et al., 2005).

The basic idea is a reality with interruptions in constant fulfilment, in which individuals seek to create order and meaning to what happens (Weick, 1993), “*people organize to make sense of equivocal inputs and enact this sense back into the world to make the world more orderly*” (Weick, Sutcliffe & Obstfeld, 2005, p. 410). This process of constructing

understandings, through creation, interpretation and discovery (Weick, 1995), gives meaning to life and identity in collectivity and is then enacted into organizational life.

Such shared understandings are constituted through temporary connections between people, contexts, and artefacts (nonhuman actors), in a process whereby, through observation, interpretation and understanding, they label, categorize, and create plausible histories, retrospectively of unknown events, unexpected or confused, in order to 'rationalize what people are doing' (Weick, 2005).

The distinction between sensemaking and interpretation must be emphasized. Sensemaking does not only involve interpretation and production of meaning, but “*the active authoring of the situations in which reflexive actors are embedded and are attempting to comprehend*” (Brown, Colville, & Pye, 2015, p. 267). In this sense, sensemaking refers to the processes by which “*people generate what they interpret*” (Weick, 1995, p. 13). As pointed out by Maitlis and Christianson (2014, p. 58) “*sensemaking goes beyond interpretation and involves the active authoring of events and frameworks for understanding, as people play a role in constructing the very situations they attempt to comprehend*”. In this sense, the creation of meanings can then be understood as a subjective activity performed in micro interactions between members of an organization (Allard-Poesi, 2005).

Thus, sensemaking's researchers study organizations as an activity that happens and is performed in a sensory way (Hatch, 1999), seeking to understand what is constructed, how, and why this process of construction occurs and with what effects. In this sense, the concept of sensemaking derives from its own nature, that is, the process of generating meaning - to make sense, something not yet known, unexpected or confused (Maitlis & Christianson, 2014), as pointed out by Weick (1995, p. 4) “*the concept of sensemaking is well named because, literally, it means the making of sense*”.

The management area includes references to sensemaking as ‘theory’ (Holt & Cornelissen, 2013; Jensen, Kjaergaard & Svejvig, 2009; Stein, 2004) as ‘paradigm’ (Drazin et al., 1999), as ‘lenses’ (Gioia & Chittipeddi, 1991; Sonenshein, 2009; Stensaker & Falkenberg, 2007), ‘perspective’ (Allard-Poesi, 2005; Brown, Colville & Pye, 2015; Hsieh, Rai & Xin Xu, 2011; Schultz & Hernes, 2013; Weick, 1995), and studies that use the frame of reference

proposed by Weick (1995), referring to the seven properties of sensemaking (Helms, Mills, Weatherbee & Colwell, 2006; Mikkelsen, 2013).

Regarding what has been exposed so far, Maitlis and Christianson (2014) present a compilation of sensemaking definitions. The selection, far from exhausting the definition of the term, serves as arrows, as flags on the theoretical roads, often crossed and asymptotic. The inventory of definitions, adjusted and complemented for the present study (Table 01), is taken as an effort for a critical definition of sensemaking, by revealing non-identical ontological and temporal elements that do not respond to the identity's grammar. In the following paragraphs, we detail both aspects.

The collection of definitions (Table 1) presents ontological differences among authors. Louis (1980), Starbuck and Milliken (1988) and Hill and Levenhagen (1995), for example, address sensemaking as a cognitive, personal, person-centered process, and analyzed through interpretation, from frameworks, schemes, and models mental health. In contrast, other definitions depart from sensemaking as a social process between individuals (Balogun & Johnson, 2004; Gioia & Chittipeddi, 1991; Maitlis, 2005; Weick & Sutcliffe, 2006; Whittle & Mueller, 2012), *“that occurs between people, as meaning is negotiated, contested, and mutually co-constructed”* (Maitlis & Christianson, 2014, p.66). Different ontological assumptions have implications for the development of theories, since it opens up to the researcher multi-ontological possibilities. The barrier related to the researcher's ontological positioning was also pointed out by Weick (1995, p.35), when he states that:

People who study sensemaking oscillate ontologically because that is what helps them understand the actions of people in everyday life who could care less about ontology. (...) If people have multiple identities and deal with multiple realities, why should we expect them to be ontological purists? To do so is to limit their capability for sensemaking.

The ontological oscillation pointed out by Weick (1995) can have conceptual implications. Authors such as Daft and Weick (1984), Meyer (1982), Milliken (1990), Weick, Sutcliffe and Obstfeld (2005), Weick (1993; 2005; 2012) share the view that sensemaking is retrospective, i.e., triggered by events and triggers that generate complexity and ambiguity in organizations, leading to the interaction of several actors who, through action and interpretation, seek to create plausible images of the *“What's the story?”* (Weick, Sutcliffe & Obstfeld, 2005). On the other hand, there are proponents of a prospective sensemaking, i.e., a sensemaking by

design for future situations and strategies (Balogun & Johnson, 2004; Gioia & Chittipeddi, 1991; Osland & Bird, 2000; Starbuck & Milliken, 1988).

Table 1 *Sensemaking definitions*

Author (s)	Sensemaking definitions
Allard-Poesi (2005)	"Sensemaking may be defined as an ongoing accomplishment through which people create their situations and actions and attempt to make them rationally accountable to themselves and others (Weick, 1993a/2001: 11)" (p.171)
Balogun and Johnson (2004)	"Sensemaking is a conversational and narrative process through which people create and maintain an intersubjective world (Brown, 2000; Gephart, 1993, 1997, Watson & Bargiela-Chiappini, 1998)". (p. 524)
Balogun and Johnson (2005)	"Sensemaking is primarily a conversational and narrative process (Brown, 2000; Gephart, 1993, 1997) involving a variety of communication genre (Watson & Bargiela-Chiappini, 1998), both spoken and written, and formal and informal. However, more specifically, sensemaking involves 'conversational and social practices' (Gephart, 1993: 1469). Change comes about through shifts in conversations and language (Barrett et al., 1995; Brown & Humphreys, 2003; Ford & Ford, 1995; Heracleous & Barrett, 2001)". (p. 1576)
Cornelissen (2012)	"Sensemaking refers to processes of meaning construction whereby people interpret events and issues within and outside of their organizations that are somehow surprising, complex, or confusing to them". (p. 118)
Cunliffe and Coupland (2012)	"A representational, cognitive, information-processing, or communicative process..." (p.66).
Gephart (1993)	"Sensemaking has been defined as the discursive process of constructing and interpreting the social world". (p. 1485)
Gephart, Topal, and Zhang (2010)	"Sensemaking is an ongoing process that creates an intersubjective sense of shared meaning through conversation and non-verbal behavior in face to face settings where people seek to produce, negotiate, and sustain a shared sense of meaning." (pp. 284 – 285)
Gioia and Chittipeddi (1991)	"Sensemaking has to do with meaning construction and reconstruction by the involved parties as they attempted to develop a meaningful framework for understanding the nature of the intended strategic chance" (p. 442)
Gioia, Thomas, Clark and Chittipeddi (1994)	"Sensemaking, however, involves not only "pure" cognitive interpretation processes, but interpretation in conjunction with action." (p.365)
Griffith (1999)	"There is a cycle of individual-level sensemaking to mutual/social sensemaking to understanding, followed by actions, and then a new cycle beginning with individual-level sensemaking". (p.473)
Hill and Levenhagen (1995)	"To cope with these uncertainties, the entrepreneur must develop a 'vision' or mental model of how the environment works (sensemaking) and then be able to communicate to others and gain their support (sensegiving)." (p. 1057)

Holt and Cornelissen (2013)	“Sensemaking delineates the process by which organizational situations are framed, narrated or categorized through the words or bodily gestures of agents-in-contexts, and how these structure subsequent perceptions” (p. 525)
Klein et al. (2006)	“Sensemaking is a motivated, continuous effort to understand connections (which can be among people, places, and events) in order to anticipate their trajectories and act effectively.” (p. 71)
Louis (1980)	“[S]ense making can be viewed as a recurring cycle comprised of a sequence of events occurring over time. The cycle begins as individuals form unconscious and conscious anticipations and assumptions, which serve as predictions about future events. Subsequently, individuals experience events that may be discrepant from predictions. Discrepant events, or surprises, trigger a need for explanation, or post-diction, and, correspondingly, for a process through which interpretations of discrepancies are developed. Interpretation, or meaning, is attributed to surprises. Based on the attributed meanings, any necessary behavioral responses to the immediate situation are selected. Also based on attributed meanings, understandings of actors, actions, and settings are updated and predictions about future experiences in the setting are revised. The updated anticipations and revised assumptions are analogous to alterations in cognitive scripts.” (p. 241)
Maitlis (2005)	“As Weick argued, ‘The basic idea of sensemaking is that reality is an ongoing accomplishment that emerges from efforts to create order and make retrospective sense of what occurs’ (1993: 635). Thus, sensemaking is a process of social construction (Berger & Luckmann, 1967) in which individuals attempt to interpret and explain sets of cues from their environments. ...sensemaking allows people to deal with uncertainty and ambiguity by creating rational accounts of the world that enable action. Sensemaking thus both precedes decision making and follows it: sensemaking provides the ‘clear questions and clear answers’ (Weick, 1993: 636) that feed decision making, and decision making often stimulates the surprises and confusion that create occasions for sensemaking. Organizational sensemaking is a fundamentally social process: organization members interpret their environment in and through interactions with others, constructing accounts that allow them to comprehend the world and act collectively (Isabella, 1990; Sackmann, 1991; Sandelands & Stablein, 1987; Starbuck & Milliken, 1988; Weick & Roberts, 1993).” (p. 21)
Osland and Bird (2000)	"Sensemaking involves placing stimuli into a framework that enables people 'to comprehend, understand, explain, attribute, extrapolate, and predict'."(p.71)
Rouleau (2005)	“Sensemaking has to do with the way managers understand, interpret, and create sense for themselves based on the information surrounding the strategic change. Sensegiving is concerned with their attempts to influence the outcome, to communicate their thoughts about the change to others, and to gain their support. Although these processes appear to be conceptually different, the boundaries of each are permeated by the other. As discourse and action, sensemaking and sensegiving are less distinct domains (Hopkinson, 2001) than two sides of the same coin—one implies the other and cannot exist without it.” (p. 1415)
Sonenshein (2010)	“For Weick (1995), sensemaking involves individuals engaging in retrospective and prospective thinking in order to construct an interpretation of reality. ‘Sensegiving’ is a related process by which individuals attempt to influence the sensemaking of others (Gioia & Chittipeddi, 1991; Maitlis & Lawrence, 2007). Both sensemaking and sensegiving are closely related to narratives. In fact, many scholars have treated sensemaking/sensegiving as interchangeable with constructing narratives (Currie & Brown, 2003; Dunford & Jones, 2000; Gabriel, 2004).” (p. 479)

Starbuck and Milliken (1988)	"Sensemaking has many distinct aspects—comprehending, understanding, explaining, attributing, extrapolating, and predicting, at least. For example, understanding seems to precede explaining and to require less input; predicting may occur without either understanding or explaining; attributing is a form of explanation that assigns causes.[...] What is common to these processes is that they involve placing stimuli into frameworks (or schemata) that make sense of the stimuli (Goleman, 1985)." (p. 51)
Taylor and Van Every (2000)	"[S]ensemaking is a way station on the road to a consensually constructed, coordinated system of action." (p. 275)
Thomas, Clark and Gioia (1993)	"Involves the reciprocal interaction of information seeking, meaning ascription, and action (cf. Gioia & Chittipeddi, 1991; Weick, 1979)." (p.240).
Weick (1993)	"The basic idea of sensemaking is that reality is an ongoing accomplishment that emerges from efforts to create order and make retrospective sense of what occurs. (...) Sensemaking emphasizes that people try to make things rationally accountable to themselves and others" (p.07).
Weick (1995)	"Sensemaking is understood as a process that is (1) grounded in identity construction, (2) retrospective, (3) enactive of sensible environments, (4) social, (5) ongoing, (6) focused on and by extracted cues, (7) driven by plausibility rather than accuracy." (p. 17)
Weick and Sutcliffe (2005)	"Sensemaking involves the ongoing retrospective development of plausible images that rationalize what people are doing. Viewed as a significant process of organizing, sensemaking unfolds as a sequence in which people concerned with identity in the social context of others actors engage ongoing circumstances from which they extract cues and make plausible sense retrospectively, while enacting more or less order into those ongoing circumstances" (p. 409).
Weick (2008)	"The ongoing retrospective development of plausible images that rationalize what people are doing" (p. 1403).
Whittle and Mueller (2012)	"Process through which people interpret themselves and the world around them through the production of meaning" (p.114).

Source: Adapted from Maitlis and Christianson (2014).

In relation to their periodicity, Louis (1980), Cornelissen (2012) and Maitlis (2005) argue that sensemaking is episodic, in turn occurring in organizations when members are confronted with events and issues that cause surprise and confusion. While the perspective that sensemaking is a continuous discursive process of interpretation and construction of the social world is pointed out by authors like Balogun and Johnson (2004) and Gephart (1993). On the basis of this discussion, Weick (2008, p.1403) presents an intriguing concept in defending sensemaking as *"the ongoing retrospective development of plausible images that rationalize what people are doing"*, arguing that sensemaking is episodic² in dealing with the development

² The episodes that trigger the process of sensemaking are originated from the discrepancy between expectation and reality. This gap has degrees, and may be more ordinary, in which there is still rational control over the situation (Weick & Sutcliffe, 2007), or cosmology episodes when there is a rupture of order and reason (Weick, 1985, p.51).

of “plausible images” to rationalize what people are doing, but at the same time, this development is continuous, ongoing. Apparently for Weick (2012), sensemaking would be a continuous process composed of distinct episodes, resembling a continuous mathematical function formed by discrete events.

As pointed out by Wiebe (2010), although there was a growth of studies on the relationship between time and strategic change (Chia, 1999; Tsoukas & Chia, 2002), there is a predominance of two theories of organizational change in Organizational Studies, continuous or episodic (Weick & Quinn, 1999). Wiebe (2010) sheds light on this debate by revealing that managers construct different conceptions of time (five conceptions of “organizational change worlds”). For the author, the temporal construction of change can vary drastically between levels and functions in organizations, since managers use time in different ways. In addition, it points out that different temporal constructions can have implications for researches in organizations, since different temporal perspectives can generate conflicts of “presents”, that can be related to themes like resistance and emotions.

Beyond the observed points, another aspect to be raised is that the intersubjective production of meanings can reveal multiple genres of discourse in the organizational environment, and the research must seek to understand verbal, nonverbal, institutionalized or subjective genres of discourse (Balogun & Johnson, 2005; Gephart, Topal & Zhang, 2010).

Despite the fragmentation of sensemaking's definitions in the field of Organizational Studies, the vision used for this outline is consistent with researchers who understand sensemaking as a collective organizational process related to identity construction, related to action, and aimed at reducing confusion or equivocality. In this understanding, we intend to approach the theme in its critical and intersubjective motion, starting from the idea that sensemaking is the very starting point that allows its conceptualization. Thus, in the continuity of the mosaic text, topics related to the literature on sensemaking in Organizational Studies will be approached, reflecting on breathing spaces in terms of theory and research in the area.

According to Maitlis and Christianson (2014), there are two main groups of analysis on sensemaking in the management literature: a chain of research focused on the social processes in which sensemaking is performed, and a second chain directed towards the role of sensemaking in Organizational activities. These analysis groups are linked to research

constructs, with a more specific discussion. The theoretical revision is taken as an effort to visualize the field.

How is sensemaking accomplished?

The survey shows that sensemaking begins by 'triggers', situations and / or events that denote a discrepancy between expectancy and reality (Meyer, 1982), thus triggering organizational sensemaking. Evidence in the literature indicates that this gap may be due to environmental changes or organizational crises (Gephart, 1984; Milliken, 1990; Weick, 1988). This violation of expectations can vary in degrees of magnitude, and can be circumvented (Weick & Sutcliffe, 2007), or figure as *cosmology episodes* (Weick, 1993), in which there are impacts on identities, whether individual, social, and / or organizational. In addition, there is research indicating the triggering of sensemaking processes in pre-crisis situations, where there is an accumulation of clues (Lapierre & Moro, 2002; Weick, 1993), as well as studies addressing sensemaking processes due to non-occurrence of expected events.

Sensemaking can also be triggered in situations where identities, individual or organizational, are threatened. When, for example, an individual or a group of individuals suffers injury and begins to question their own self, or when an individual is confronted with a new identity (Pratt et al., 2006). Maitlis (2009) exemplifies this issue by showing how the process of sensemaking is initiated when musicians are prevented from playing. Relatedly, Brown and Starkey (2000) contribute to the debate by pointing out defense mechanisms when individual and organizational identities are confronted.

The second group of research related to how sensemaking is performed refers to the collective creation of meanings in organizations. As diverse actors form organizations, each actor has a different perspective of the world, which can cause different visions of the same phenomenon (Berger & Luckmann, 1967). In this sense the process of collective meanings's construction is marked by contestations and negotiations.

Sensemaking can be guided by leaders who, through narrative and metaphorical resources, direct these sensemaking processes (Corley & Gioia, 2004; Gioia & Chittipeddi, 1991; Gioia et al, 1994; Mantere et al., 2012; Ravasi & Schultz, 2006). The focus on the leader stems from its strategic importance in changing scenarios, since it guides the organization along

the path to be followed. Despite the emphasis on leader's figure as the driver of sensemaking processes, studies show that the sensemaking of managerial roles occurs in organizations in collective and group processes, through socio-cognitive dynamics between members of the group that interact (Allard-Poesi, 1998). And it is through these collective processes of construction and contestation of descriptive scripts about the environment and about the organization that the managerial roles are constructed. In addition, Allard-Poesi (2015) shows that the will for power by managers and directors contributes to contradictory versions of managerial roles and conflicts among organizational members.

Still in the body of studies related to how sensemaking processes occur, the role of action is highlighted. As pointed out by Weick (1988), action is part of sensemaking, and actions taken in the organizational environment create ingredients for sensemaking processes. Studies focused on the role of action in sensemaking are divided into three streams: (i) crises and unexpected events; (ii) temporary organizations, and; (iii) markets and institutions.

The first group of authors studies how early actions can direct crises (Weick, 1988). In tightly coupled systems, the results of actions can be more easily predicted, but in the case of loosely coupled systems (Orton & Weick, 1990), it is more difficult to predict the actions's results, which can bring more uncertainty, requiring flexibility and improvisation. The second group of researchers focuses on structuring roles in temporary organizations. In these environments of great ambiguity, uncertainty and volatility (Weick et al., 2005), role-management has a fundamental role for controlling, directing organizational sensemaking, avoiding group panic and disintegration, and subsequent sensemaking's collapse (Weick, 1993). Finally, the third group has studies aimed at structuring markets, fields and institutions, from a more macro perspective, such as how the sensemaking of stakeholders is articulated.

How does sensemaking help in carrying out organizational processes?

The second large research group focuses on how sensemaking helps in the realization of organizational processes and is composed for the present study by three prominent research groups: (i) strategic change; (ii) learning, and; (iii) innovation and creativity.

The relationship between strategic change and sensemaking is presented by studies as recursive, since the managerial agency influences the organizational sensemaking of the

members, thus promoting the required change (Corley & Gioia, 2004; Denis et al., 1996; Gioia & Chittipeddi, 1991). Studies have addressed the role of managers in driving organizational change, the influence of power on strategic changes, and the failure to drive change when there are entrenched organizational structures, practices, and culture (Mantere et al., 2012).

The sensemaking approach has also been used in some research on organizational learning. In environments where the ambiguity is high, where the actions's prediction performed is difficult, and its consequences cannot be predicted in advance, the study of sensemaking processes is important for the success of organizational functions. We can cite Ravasi and Turati's (2005) work on learning for entrepreneurship, organizational learning in ambiguous, political and knowledge-intensive contexts (Haas, 2006), and organizational learning in rare events such as the case of Christianson, Farkas, Sutcliffe and Weick (2009), noting that the latent potential for recombination of responses doesn't become conscious in the routines until there is some interruption that calls attention to the process.

Regarding the studies articulating sensemaking, creativity and innovation³, the research by Drazin et al. (1999), when addressing creativity in long-term teams in organizations, bringing a discussion of creativity at different levels of analysis. Creativity, a key point for innovative processes, would also arise from processes of sensemaking. Notwithstanding the theoretical contribution of the text, especially when elaborating a theoretical framework and analysis, the research didn't address social aspects, such as the relationship between team membership and team size.

Another interesting work in this group of authors is the research by Griffith (1999), which, when sizing technology from the initial perception of users and implementers, shows that characteristics of the technology to be developed exert impacts on processes of sensemaking. Dougherty, Borrelli, Munir, and Sullivan (2000) make a great contribution to studying different processes of sensemaking in complex organizations. This is an empirical study of reference in the area, since it required 2 years of intense field research, in which it was possible for researchers to observe structuring of sensemaking systems. The authors argue for the importance of sensemaking for innovation by finding that less innovative companies lacked

³ Maitlis and Christianson (2014) emphasize the connection between sensemaking and innovation, since sensemaking seeks to create order from chaos, whereas innovation is just the opposite, in the sense of breaking the order and generating temporary chaos.

a collective sensemaking (sensemaking's systems), unlike the more innovative ones. Although different systems of sensemaking were identified, the figure of the innovation manager didn't play a leading role in the study.

In addition to this study, we can mention the contributions of Jay (2013), a 2-years ethnographic research on hybrid organizations (organizations doing two different strategies at the same time). Jay (2013) noticed the paradoxical outcomes in hybrid organizations results from the clash between sensemaking processes, once the organization focus in innovation but, at the same time, is constrained by non-inovative institutional logics. Still in relation to organizations dealing with different logics, Greenwood et al. (2011), when studying different institutional logics in organizations and how organizations build meaning from this complexity, developed an interesting theoretical framework for other researches. In spite of its importance, the study didn't cover at a micro - individual level the manager and how this actor behaves in front of different institutional logics.

Notwithstanding the important contributions to the field briefly cited, the Organizational Studies area is fertile for new empirical research involving sensemaking and other themes.

In the previous section, we presented the theoretical revision on sensemaking, and we can observe that there is a theoretical gap. Regarding this theoretical gap, while sensemaking literature has focused on “extreme” (see Weick, 1988; 1990; 1993) as opposed to ordinary, habitual contexts, much less is known about “absurd” situations. The need of working sensemaking in absurdity arose from the field research, when the interviews were leading to the conformation of a peculiar situation where absurd experiences occurred.

2.3 From bureaucracy to the absurd: the contributions of Kafka to organizational analysis

We searched in OS literature, articulating the concepts of sensemaking and absurdity, and the results allow us to affirm that there is room for research on absurd in OS area, where the research proposed here is located. Moreover, when we looked for publications articulating

the concepts of sensemaking and absurd, we didn't obtain representative results, indicating a gap in sensemaking literature. In this sense, we do not aim here to prescribe a theory about sensemaking and absurdity, but rather to address the particularities and importance of absurdity for our sensemaking's understanding.

So, in order to better conduct the research with the concept of absurdity, we begin by introducing some conceptual traces about absurdity. To illustrate, we outline of what comes to be nonsense and absurdity, using examples from literature. Next, we articulate the notions of bureaucracy in Weber and Kafka, and we close the chapter with a conceptual dive into absurdity.

2.3.1 El sueño de la razón produce monstruos: considerations about absurdity in the literature

Literary language is evocative and lies in the field of unsubdued, which endows an ability to reach the unreachable and reach the unattainable. Literature doesn't have a specific functionality, and its importance is not tied to a criteria of utility, since it has life independent of the author, the reader and the reality which it came from⁴. Through the art of the word, literature can make us sensitive to what is not said, and to what escapes what is felt, so there is a possibility for “*literature to deliver an insight into a state of the absence of meaning*” (Rybinska, 2016, p. 68). For this reason, the relationship between absurd and literature deserves to be considered here, since it has particularities.

The question of an absence of meaning has been worked in literature since ancient Greece, but was established in the nineteenth century in nonsense literature. Nonsense literary is a specific genre recognized in the English literature from 19th century, with two main exponents: Edward Lear (1812-1888), author of *Limericks*, and Charles Lutwidge Dodgson

⁴ Although we have the position that an open work is polysemic, with the possibility of a plurality of readings, we will not understand that any reading is valid. In this sense, the positioning of this text maintains a certain fidelity to the structuralist tradition, escaping from the deconstructionist (Jacques Derrida), pragmatic (Richard Rorty) positions, and from the German Romantic precepts of the author's intention constitution (Friedrich Schleiermacher and Wilhelm Dilthey). However, we will not enter into the hermeneutic debate on interpretative limitations between *intentio auctoris*, *intentio lectoris* (Martin Heidegger), and *intentio operis* (Umberto Eco).

(1832-1898), using *Lewis Carroll* as pseudonym (*Alice's Adventures in Wonderland* – 1865, and *Through the Looking-Glass* - 1871), but its origin dates back to oral folk traditions, and writers who used parody and satire on religion and politics. Victorian nonsense influenced modern 20th century literature, affecting important artistic movements such as Dadaism and Surrealism, as well as philosophers such as Sartre and Deleuze, who elaborated reflections on language.

At a time when children's books had a more doctrinal character, Lewis Carroll brings a new logic of reading: a logic of the illogical. So, in the nonsense there is no room for Cartesian reality, but rather imagination and absurdity. The order, the proportions and laws are reversed, giving room to the logic of reverse, the grotesque, as an ordinary reality to the contrary. The grotesque is elaborated as a distortion of reality, a break from the logic that readers are used to, and beings are metamorphosed, like Alice and Gregor Samsa, causing fascination and repulse in the reader and in other characters in the plot (Thomaz, 2013). Thus, the nonsense world is built from deconstruction and disobedience, linking the fantastic with the real. In Carroll, for example, a link between the fantastic and the real world is worked out in dreams. The dream of reason, order and reality, giving rise to a reverse universe.



Figure 1 - Francisco de Goya: "*El sueño de la razón produce monstruos*" (Agua fuerte, 1799).

The dream idea was also used previously by Goya, when the phrase “*El sueño⁵ de la razón produce monstruos⁶*” (The Sleep of Reason Produces Monsters), served as title for an engraving by the artist of 1799 (Tiburi, 2003). Goya works with a visual metaphor on reason in the late eighteenth century, the age of Enlightenment, or the Philosophy of Lights. In this period, with the power of reason mobilization, dreams were once again thought, after dream experiences were tamed and demonized in old Christianity, and, in a more recent Cristianity, related to the messianic and apocalyptic traditions, involving conscience, guilt, and penance (Shulman & Stroumsa, 1999). The work depicts a sleeping man leaning on a table, with owls fluttering in his head. The birds can represent dreams, but they can also represent the reason, once owl “*is a symbol of rational knowledge, but in the Western tradition, it also relates to night, darkness and even death, and in this case, to the sleep. It demonstrates the ambiguity of reason*” (translation) (Tiburi, 2003, p.178).

Regarding to the ambiguity of rationality in the *nonsense* atmosphere, according to Tigges (1998), there are four characteristics that constitute the nonsense's literature essence. This is the reason for this item, to raise the characteristics of *nonsense* literature for later use as categories for data analysis.

The first characteristic would be the *balance between sense and non-sense* (Tigges, 1998, p. 51). Thus, in the literature, *nonsense* would derive from a tension maintained between different possibilities of meaning's attribution or meanings's juxtaposition in several layers of communication, which aim precisely to dribble the meaning creation, thus avoiding the settlement of meaning.

The second characteristic would be the *non-expressiveness of the author's personal feelings*, once his only condition of emotion is the isolation, resulting from the non-communication of language (Tigges, 1998, p.54). This isolation can be seen in characters from nonsense literature, such as Alice's trajectory in *Wonderland*, facing people, beings and strange situations, or as Joseph K. in *The Process*, who has to face and discover alone the reasons for his prosecution.

⁵ The Spanish word *sueño* can be translated as sleep or dream (Tiburi, 2003).

⁶ *El sueño de la razón produce monstruos* is an engraving (21,5cm x 15cm, etching, aquatint, drypoint and burin), by the spanish artist Francisco Goya, from 1799. The engraving is the number 43 one in the series of 80 engravings *Los Caprichos*, which are located in the Prado Museum, in Madrid.

As third, we can cite that nonsense literature has its *own arbitrary rules and laws* that can change at any time. Known laws and regulations, including the laws of nature, can be abandoned at any time. And, finally, the last characteristic pointed out by Tigges (1998, p.43) *is that nonsense reality is predominantly verbal in nature*, created by language. There is a specific way of working the language, since nonsense creates a language game in and of itself, as can be seen in *The Mad Tea Party*, chapter from *Wonderland*. These are the main features of the nonsense genre in the literature.

We can observe this interesting difference between Carroll and Kafka, as far as the oneiric component is concerned. At the end of *Wonderland*, Alice wakes up from the nonsense dream she was having and back to reality, so while in the Alices reason fell asleep, giving space to the production of nonsense (*El sueño de la razón produce monstruos*), in Kafka, there is a reversal of dream metaphor.

In Kafka, the stories begin just as the protagonists wake up “*Somebody must have slandered Joseph K., for without having done anything wrong he was arrested one fine morning*” (*The Trial*, 1914/1925), or as in the excerpt “*One morning, when Gregor Samsa woke from troubled dreams, he found himself transformed in his bed into a horrible vermin*” (*The Metamorphosis*, 2007). In this sense, the oniric, for Kafka, allows the writer to work with an ontology of possibility, a “*literary alliance*” between book and reader, between dream and quotidian (Guattari, 2003). The boundary between the reality of the waking and the dream world is blurred in Kafka, and we do not know in which side the protagonist is. In addition, his work makes us wonder where we are too, putting us into an insomniac dream.

These characteristics are not limited to the *nonsense* genre but are present in many forms of literature, such as the tenuous distinction between *nonsense* and absurdity. Tigges (1998) makes a parallel between the concepts of *nonsense* and absurd, since characteristics of nonsense literature, such as language games and character isolation, are sometimes mixed in texts that work with the *absurd*⁷. According to Tigges (1998), “*absurdity is the key word of nonsense writers*” (p. 126), and comments that “*in nonsense, language creates reality, and, in the absurd, language represents a meaningless reality*” (p. 128). Thus, for Tigges (1998), nonsense plays with sense / nonsense within the language itself (more hermetic texts), whereas in the absurd

⁷ *Absurdus* is derived from the Latin *surdus*, which is translated literally as “deaf”.

there is a referent anchored in a reality (texts more open to the reader's reflexivity). In this sense, Kafka's literature approaches the absurdity genre, since it seeks to work *nonsense* in an everyday reality. As pointed out by Zumhagen-Yekplé (2012, p. 75):

Kafka's philosophically demanding meta-parable depicts an exchange between a set of interlocutors who vocalize (in a manner reminiscent of the conversations of the Philosophical Investigations) conflicting viewpoints about figurative language and its bearing – or failure to bear – on the realities of everyday life.

Notwithstanding this differentiation presented by Tigges (1998), taking into account that the nonsense style has been used and reused for more than a hundred years, and also that there are proximities between nonsense and absurd, we understand here that the absurd writers are in the tradition of nonsense literature. For this reason, for the present work, we understand Kafka's work as belonging to nonsense literature, although it can also be seen as a chronicler of the absurd. Kafka was one of the main important in the genre of absurdity in literature, but we can also quote authors representing the genre of “Theater of the Absurd”.

“Theater of the Absurd” was a definition given by the Hungarian journalist Martin Esslin (1918-2000) in 1961 to a group of playwrights who expressed the absurdity of existence in his works, such as the Romanian writer based in France, Eugène Ionesco (1909-1949), the Irishman Arthur Beckett (1906-1989), the Russian Arthur Adamov (1908-1970), the Englishman Harold Pinter (1930-2008), the Spaniard Fernando Arrabal (1932), the Frenchman Jean Genet (1910 -1986) and the American Edward Albee (1928) (Theatre of the Absurd, undated). In this genre, as in philosophy of the absurd, the authors express the absurdity of existence. *“The purpose of the theatre of the absurd is to show the absurd would suggest that the metaphysical experience is inherently connected to experiencing the absurdity of life”* (Rybinska, 2016, p. 74).

Notwithstanding the contributions of the Theatre of the Absurd and nonsense/absurd literatures, for the present work, we will work on the absurd notions of the existentialist movement, using Kafka's work as a metaphor for the absurd in bureaucratic organizations.

2.3.2 Bureaucracies: from Weber to Kafka

Kafka's work was used for analyzing bureaucratic organizations, and compared with Weber's description of bureaucracy (Jorgensen, 2012; Warner, 2007). Jorgensen (2012) explores the closeness between the Weberian ideal type of bureaucracy and the bureaucracy reported by Kafka. Relying on *The Castle* and *The Trial*, the author argues that both authors analyze the same phenomenon under different positions and methods, so that Kafka and Weber complement each other in the analysis of bureaucratic organizations. Munro & Huber (2012) also offer an important contribution to the debate, arguing that Kafka's work can be used as a counter-mythology to the Weberian ideal-type. The Weberian predicted rationality can in fact be confused and labyrinthine, errors may be at the heart of the laws themselves, and organizational communication may be confused.

Prior works in organization studies have also relied on Kafka's works to describe bureaucratic environment further. For instance, Hodson, Martin, Lopez and Roscigno (2012) analyse ethnographic studies on bureaucracy and highlight four bureaucratic attributes that were not included in Weber's classical model. i. Divergent goals – “*the tension between various interests*” (Hodson et al., 2012, p. 263); ii. Patrimonialism – “*a tool of elites to ensure loyalty by subordinates*” (p. 263); iii. Unwritten rules – “*the separation of the formal structure*” (p. 264); and; iv. Chaos – that may come from contradictory agendas of organizational actors, from “*interactions between internal organizational processes [which] can lead to undesired and unintended outcomes*” (p. 264), and from “*the arbitrary use of bureaucracies by powerful actors*” (p. 265). According to the authors, these characteristics are more compatible with the organizational logic described by Kafka than with the Weberian one.

Investigating bureaucracies in the private sector, Hodson et al. (2013), added three other characteristics derived from Kafka: iii. Contested goals – “*battlefields of competing logics and rationales*” (p. 1255); iv. Abuse of power – (abuses of legitimate power), and; v. Fear “*for those who live under abusive (and often unpredictable) power*” (p. 1256).

Deepening Kafka's insight on power, McCabe (2013) explores the problem of distance between people in organizations, “*as a way of not seeing those below us in the hierarchy* (p.58)”. The author suggests that talking about distance in organizations can promote more

empathy with ‘others’. Kafka's work can then be a rich source of inspiration to shed new lights on power in organizations (Bennett, 1991; Clegg et al., 2016).

Through the narration of the main character’s experience, Kafka’s novels also outline participants’ feelings and difficulties to make sense of bureaucracies. In an inductive study, Clegg et al. (2016) identified three major affordances of Kafkaesque bureaucracy: inactiveness, helplessness and meaninglessness. For the authors, the Kafkaesque organization “*can actually be seen as actively training people to feel impotent in the face of their masterly incapacity to provide satisfaction*” (p. 166). Significant restrictions to action and lack of organizational support produce paralysing effects and promote inactiveness. Helplessness is defined as: i. The conscious effort to alter one's feelings, and ii. Emotional reactions, such as anger (p.168). Meaninglessness is derived from a sense-breaking (the perception that the organization was actively blocking its attempts at comprehension), and built-in complexity, that makes “*the system incredible and difficult to understand*” (p.165).

With this exception of Clegg and al. (2016) then, studies inspired by Kafka’s works do not address participants’ experience of Kafkaesque bureaucracies and the meaninglessness or absurdity that they have to go through.

2.3.3 Making sense of the absurd

The concept of absurdity was addressed in the history of philosophy in Ancient Greece, and further developed in the nineteenth century as a result of the reflections of the Danish philosopher Søren Kierkegaard (2017). In the twentieth century, the great landmark of modern absurdity was the work of the Czech writer Franz Kafka (1924, 1925, 2000, 2007). After Kierkegaard and Kafka, the notion of absurdity of existence has been converted into the basic nucleus of important philosophical and artistic expressions. As pointed out by Goodwin (1971), different currents of thought worked with the question of the absurd. The author mentions three main currents: existentialism, “theatre of the absurd” and dialectical thinking. Important authors are Kierkegaard (1849), Kafka (1924, 1925, 2000, 2007), Nietzsche (2001[1882]), Camus

(1942), Sartre (1943), and Beckett & Knowlson (1985[1961]). For the present work, we will comment on the authors from the existentialist movement, especially the work of Franz Kafka.

Existentialist writers were influenced by the climate of despair stemming from the interwar period through which Europe passed in the first half of the twentieth century. They rejected the metaphysical and theological hypotheses and began to work with the notion of Man's ontological failure. For existentialist philosophy, the idea of absurdity stems from the conflict between human tendency to search for meaning and the inability to find it. The irrationality of the world is absurd when compared to human rationality. The absurd then derives from the relation man to the world, occurring from the inadequacy of the actor (man), on his stage (world). To illustrate this point, the writer Albert Camus used the myth of Sisyphus as a figure of the absurd that men face. Camus explores the condition of absurdity, by showing that man seeks ceaselessly to build sense of his experiences, but that ends up crushed by death, evil, pain, the strangeness of existence. For this reason, works that involve useless efforts are called "Sisyphean Work." Man's search for meaning of life is a Sisyphean work because it is a useless effort.

Kafka's writing leads us to a deep dive into a labyrinth of meanings, arising from an organizational polyphony (sometimes *aphonia*). His dystopias succeed in expressing the irrationality resulting from the excess of bureaucratic rationality, thus being a counterweight to the organizational rationality idea. Kafka's characters go through the dark side of bureaucracies, and how the immense bureaucratic structure controls and defines people's social relations, justice, religion, art, and even education. In the book *The Castle* (2009[1924]), the protagonist K. goes through a long trajectory in the bureaucratic procedures of the Castle itself, trying to clarify an apparent misunderstanding (Sousa, 2013). In *The Trial* (1914/1925), the protagonist discovers that he is responding to a prosecution without charge and without apparent guilty legal fact. The plot goes through a process through various bureaucratic instances. The reality expressed by Kafka portrays the anguishing individuals' experiences facing incongruities, abuses, oddities and perversities of everyday situations in bureaucratic organizational environments. The reading of the Kafkian texts brings us an emotional component (referring to the absurd literature), due to the distressing situations through which its characters experience.

As pointed out by Clegg et al (2016, p. 157), "*Kafka spoke from within this cage, telling dark and enigmatic stories of the ironic futility of bureaucratic life*". In this sense, Kafka

worked the dark side of classic Weberian concepts, such as power, authority, specialization, hierarchy, control, decision-making power and rationality (Clegg et al, 2016). We will list some categories of the Kafkaesque atmosphere, underlining the **experience of the individual** in a bureaucratic context rather than on the characteristics of the context. As seen before, working with terms such as absurdity involves working with notions difficult to conceptualize, as they do not have denotative correspondences, since its domains of significance go beyond positivistic representations of the world. We here follow Goodwin (1971, p. 842) in that “*social scientists risk losing their sensitivity to the absurdity of things as they become more and more expert at constructing explanations*”. We then do not attempt to develop an exhaustive linguistic or philosophical analysis here, but to shed lights on the organizational member’s experience of the absurd in bureaucracies.

Inaccessibility

One of the Kafka's highlights is the experience of inaccessibility. *The Trial* (1914/1925), *The Castle* (2009[1924]), and *The Penal Colony* (1919/2011) reflect the endless and circular trajectories of the characters in the tentacular entanglement of bureaucratic structures. In *The Trial* (1914/1925), Joseph K. is arrested one morning, and, from that moment on, is responding to a lawsuit. The plot is therefore with K. seeking to know why he is being prosecuted. In a semi-open regime, the character, for ten chapters until his death, tries to understand what is happening, and no one can explain to him why he is being prosecuted. The book thus portrays K.'s anguish in his Herculean course, for being sued for something that does not know what it is, and a second anguish for trying to prove that he did nothing, that he is innocent. The inconclusion of chapter 08 leaves the reading even more distressing, since the explanation found is based on the absurdity of the situation.

The issue of inaccessibility is also the subject of the play *In the penal colony*, when a foreign explorer visits a sophisticated torture apparatus, and is faced with a torture session of a person about to be executed, but who had no chance to defend himself from a court case, and, furthermore, that he did not even know that his sentence was a death sentence. The instrument presented in the work was much more than an instrument of rapid annihilation, but rather an ingenious and time-consuming instrument of torture, which prolongs the suffering of death by 12 hours.

Incongruous events

Kafka's plots feature strange facts and incongruent events that defy the laws and logic of everyday life. To do so, the author uses the literary technique of introducing elements without coherence into a predictable logical framework, generating loss of previous reference points - an absurdity. We can quote in *The Trial* (1914/1925) the example of Joseph K. who was arrested, but also did not know the reason of his lawsuit, and so could not defend himself. "Someone must have been telling lies about Josef K., he knew he had done nothing wrong but, one morning, he was arrested." (Kafka, 1925, p.2). Although Joseph K. was arrested, he was free to go to work. The interrogations of his process were scheduled for Sundays, so that he fulfils his weekly workday, thus reflecting the illogicality of the process to which he responds.

Emotional component

Kafka's characters live experiences of anguish, impotence, and solitude. In *Metamorphosis* (1915), Gregor Samsa experiences the anguish of the human condition, by becoming a disgusting insect. But *Metamorphosis* not only tells the story of a man who has turned into an insect, but narrates the feelings of exclusion and loneliness we face today, even in familiar environments. In *The Castle*, Kafka works on man's sense of helplessness facing impersonal bureaucratic structures, and, in *The Trial*, Joseph K. has an existential anguish facing the unknown: responding to a lawsuit, even without formal charge and without legal fact.

Isolation and loneliness

Isolation is an element in Kafka's works. Here we bring the concepts of isolation as an individual without other people to act with it, to help, and, loneliness, because the protagonists feel lonely, abandoned and lost. Gregor Samsa, in *Metamorphosis* (1915), undergoes the process and consequences of his transformation alone into his own bedroom. His family did not support him, on the contrary. His family and his boss represented hostile environments to the protagonist. In *The Trial* (1914/1925), Joseph K. is also isolated by facing the bureaucratic entanglements of his process alone. In the play, the protagonist seeks to understand why he was being accused, traversing, until his death, an incessant trajectory searching for justice in an

overwhelming state apparatus. The people connected with Justice represent an immense and unattainable bureaucratic collective that crushes the protagonist.

To what extent inaccessibility, incongruous events, emotions and loneliness do characterize organizational member's experience of the absurd as they work in a modern bureaucracies? How do they make sense of it? In the next section we briefly describe the research field and the methods used in this research.

2.4 Conclusion

The lack of studies of social and historical contexts for sensemaking is one of the gaps in the sensemaking literature (Weber & Glynn, 2006). For Weick (1995, pp. 91-100), sensemaking tends to occur in unusual events, characterized by ambiguity and uncertainty, such as crisis situations, organizational changes and environmental bumps. Weick (1995) assumes that these events cause disruptions in sensemaking, causing new processes of sensemaking to create meaningful understanding of events. In this sense, sensemaking is a process triggered by events *“through which individuals work to understand novel, unexpected, or confusing events”* (Maitlis & Christianson, 2014, p.58).

Context plays a fundamental role in sensemaking studies, and in the literature of Organizational Studies, theoretical and empirical studies have been exploring sensemaking in a variety of organizational contexts, between actors at different levels of the organization, like environmental jolts (Gephart, 1984; 1993; 2007; Meyer, 1982; Milliken, 1990); organizational crises (Brown & Jones, 2000; Lapierre & Moro, 2002; Weick, 1988, 1993; Wicks, 2001); crises in progress (Christianson et al., 2009; Weick, 1988); threats to organizational and individual identities (Dutton & Dukerich, 1991; Elsbach & Kramer, 1996; Hoffman & Ocasio, 2001; Pratt et al., 2006; Petriglieri, 2011; Ravasi & Schulz 2006; Wainwright & Turner, 2004); planned organizational change initiatives (Balogun & Johnson, 2004; Gioia & Chittipeddi, 1991); organizational decentralization (Luscher & Lewis, 2008; Vaara, 2003; Yu, Engleman & Van de Ven, 2005), among others.

Despite the number of studies addressing sensemaking in a variety of situations, the studies have a strong social and linguistic orientation (Chia, 2000; Maitlis, 2005), feeling a lack of a deepening in the context itself. The neglected, or at least lack of explicit account, of the role of social and historical contexts in sensemaking is one of the persistent criticisms of Weick's work (Weber & Glynn, 2006). In this sense, we understand that the study of contexts in which sensemaking is problematic, or when it suffers discontinuities can help us to understand the dynamics of sensemaking itself.

For conducting this research, the following gaps were identified:

- i. *A theoretical gap:* sensemaking is triggered by events (external or internal) that leads to confusion, ambiguity and/or equivocality (Weick, 1995). In this sense, the context is a key element for sensemaking theoretical framework and deserves more studies. While sensemaking literature has focused on “extreme” (see Weick, 1993; 1990; 1988) as opposed to ordinary, habitual contexts, much less is known about “absurd” contexts.
- ii. *A theoretical gap:* Organizational scholars have already conducted studies inspired by Kafka's work (Bennett, 1991; Clegg, Pina e Cunha, Munro, Rego, & Sousa, 2016; Hodson, Martin, Lopez, & Roscigno, 2012; Hodson, Roscigno, Martin, & Lopez, 2013; Jorgensen, 2012; McCabe, 2013; Munro & Huber, 2012; and Warner, 2007) to investigate bureaucratic organizations. While this research brings to light the Kafkaesque aspects of modern bureaucratic functioning, they remains rather silent on the organizational members' experience and sensemaking in these context. This study aims to add to these studies and deepen our understanding of the experience of individuals of what they call “absurd” or “meaningless” situations in a bureaucratic organization.
- iii. *A contextual gap:* sensemaking has been mainly studied in Europe and US, and still with an overall lack of in-depth qualitative studies especially in the context of developing/emerging countries like Brazil aside.

CHAPTER 3
FIELD TRAJECTORY: PILOT STUDY, FIELD INSERTION AND
RESEARCH DESIGN

3.1 Introduction

In this section, I return to the methodological path followed by me, and I present the methodological aspects and postures that justified and supported the research. In this sense, in order to respond to the gaps identified in the literature review, I present the research design. In section 1, I first introduce a general presentation of the methodology followed by the pilot study, seeking the perception of innovation management specialists (innovation management consultants), and R & D & I managers on organizational practices, focused on innovation and effectiveness indicators. These interviews were important, once they contributed to a deeper reflection on the researched topic, besides provided a closer understanding of innovation management dynamics.

In section 2, I seek to justify the methodological premises that conducted the research, in order to maintain its theoretical and methodological coherence. I start from the sensemaking approach, in order to understand an intersubjective research experience among those involved. So, this section is intended for qualitative study through semi-structured interviews with R & D & I project managers and R & D & I managers.

Next, I present the contributions of the Thematic Analysis, and how this methodology helped me to analyse “another history of innovation”, by allowing the understanding of the observed phenomenon, based on the participants' perception of the study. I also present the description and justification of the participants' choice and how the data were collected and analysed. Also in this section 2, I also transcribe the main results of the studies carried out, allowing the elaboration of research topics that will be articulated in a conceptual model in the next chapter. Finally, I make some observations about the research limitations.

Section 1. Pilot Study

3.2 Pilot Study: introduction

At the end of my first year in doctorate (October 2014), I began the search for companies to carry out the thesis research. The initial idea was to do this research with ethnographic inspiration in a large innovative company. Due to the difficulties in finding a field for the research, during the months of March, April, and May of 2015, I focused on technical readings and project improvements, given that until that moment I only had a draft of ideas outlined in a pre-project. In another hand, I continued with the access attempts to conduct the research.

In June 2015, in a meeting with my supervisor, he suggested me to change the research strategy, in order to do a set of interviews, rather than an ethnographic research. At first, the idea seemed difficult to realize, since I was fixed on the ethnography image, but later I saw that it was an appropriated and time adequate strategy. Thus, in June 2015, we arranged interviews with 05 (five) innovation managers.

In order to gain successful access to interview these managers, I started to attend, during the months of June to August of this same year, the Innovation Forum in my University - EAESP / FGV, in São Paulo city. In addition, the access to the first interviewees was made by both professional and private contacts. Finally, by the end of August, I had been able to conduct the first 08 (eight) interviews with R & D & I managers of national and multinational companies.

3.2.1 Pilot study objectives

After writing the theoretical review on sensemaking, the realization of this pilot study was important to observe the first themes that emerged about innovative dynamics, based on the perception of R & D & I managers and innovation consultants. The idea was to compare

the perceptions of managers responsible for R & D & I in companies, with the external look of innovation consultants. Thus, after conducting this first set of interviews, the research instrument was reviewed, as well as the articulation of empirical evidence with the sensemaking approach. Thus, in order to explore some of these problems and gaps, I asked the following research question: **how can sensemaking approach contribute to the understanding of the innovation managers' performance in Brazilian business organizations?**

3.3 Research strategy and respondents

Regarding to the research strategy, a semi-structured interview script was initially carried out, containing some guidelines regarding the manager 's routine and the company' s innovation processes. This protocol was used in the first two interviews. These two interviews, unstructured and exploratory, were employed to prepare a semi-structured script to be used as a guide for the subsequent interviews. Following this script, another 06 (six) managers were interviewed. A photographical registration of the visited companies was also possible.

<p style="text-align: center;"><i>R&D&I managers</i></p> <p style="text-align: center;">(1) Observe the dynamics of a R & D & I area. (2) Analyse the daily routine of a R & D & I manager.</p> <p style="text-align: center;"><i>Innovation management consultants</i></p> <p style="text-align: center;">(1) Observe innovation management dynamics. (2) Identify the difficulties faced by companies in managing innovation.</p>

Figure 2 - First stage of the research objectives.

As I said before, to reach the objectives listed above, we chose to do semi-structured interviews, guided by a script composed of themes and guiding questions. During this set of interviews, we were able to record them for later transcription and analysis. Table 2 presents

the details of the interviews conducted between June and August 2015, which happened in the cities of Fortaleza and São Paulo.

Table 2 *Details about the exploratory study interviews.*

Intervi ewee	Productive sector	Company size	Function	Duration	Location
1	Consumer goods	Transnational	Director of Human Resources and Innovation	2h10 min	Company headquarters – São Paulo
2	Innovation Management Consulting	Big (national)	Innovation management consultant	1h25 min	Restaurant- São Paulo
3	Innovation Management Consulting	Medium (national)	Local innovation director	2h20 min	Café - Fortaleza
4	Industrial installations	Medium (national)	Director of Human Resources	1h45 min	Company headquarters - Fortaleza
5	Environmental engineering	Medium (regional)	Vice Director	1h15 min	Company headquarters - Fortaleza
6	Environmental engineering	Medium (regional)	Innovation management consultant	1h40 min	Company headquarters - Fortaleza
7	Biotechnology	Small (national)	General Director	2h	Restaurant – São Paulo
8	Innovation Management Consulting	Small (national)	Director	1h30 min	Restaurant – São Paulo

Source: Author.

Thus, 2 (two) representatives of small companies, 4 (four) of medium-sized companies and 2 (two) of large companies were interviewed.

3.4 Covered topics

The interviews were transcribed for later thematic analysis. So, after these transcriptions, I reread the material and listened again to such interviews to start coding. I began by outlining general ideas about the material. These ideas gave me a direction to where my analysis was headed. After this initial contact with the data, I used the Atlas / ti software, version 7.0, to begin the coding phase. Preliminarily, the results got about 135 codes after two reviews of the material.

After this first codification, I reread the material in the search for an answer to the research question initially posed. Some codes were discarded and others regrouped, generating 55 identified codes. Then, these codes were regrouped into main codes, indicating both innovation processes, as well as activities of sensemaking, lived and narrated by the managers in their daily work. The main themes are briefly explained below.

Innovation management and the figure of the innovation manager

One point that caught my attention was the perception that I was starting from a vision of innovation already built in my mind. This mental conception, after the first data analysis, did not make sense with what the data were showing. *“Instead of just finding that something did not work because of a lack of an innovative vision, for example, I started to question why there is this lack of innovative vision and what leads to it, so the answers that I expected became more and more distant”* (Interviewee 3 – Pilot study - July 06, 2015). One example was my difficulty in finding the figure of the “innovation manager”. For me, who spent part of my youth in the Northeast of Brazil, the city of São Paulo would have in its companies large and structured sectors focused on innovation, with specific positions of “innovation managers”. I mention this because in Fortaleza, where I was living since 2009, and where I was working as a consultant in intellectual property rights, the area of innovation management was mostly leaded by the President or General Director (owner) of the companies (perhaps a paternalistic management), as can be seen in the following extracts:

It's like this, I do not consider myself an innovative person, but I think the director is an innovative one. He, I think, is quite innovative. Maybe someday I'll also be very

innovative. But, I think that what happened to me is this desire to be innovative (Interviewee 5 – Pilot study).

So, when I arrived, we did not have one, but now we have the largest representation of innovation that is called Nivaldo. He, in addition of being a teacher, is a very innovative leadership reference. So he is a person that is a way ahead of his time. And as he is the greatest representation of leadership and innovation, he gives a tug (Interviewee 4 – Pilot study).

In my perception, I would find a similar reality in São Paulo. That was my first strangeness, realizing that the movement was the opposite sometimes. Innovation was leaded by specific people, who were in charge of innovation in the company, and / or by hiring specialized consultants to work within the companies, along with some employees of the Human Resources area. Thus, after this set of interviews, I understood that the business and the academic movement, in relation to innovation management behaves as the movement towards total quality management, which occurred in 1990. After these interviews, I observed that some companies, especially the medium and large ones, allocate few people in a team to work in specialized consultancies with other companies that lead innovation.

Lack of records of innovation efforts

A relevant theme that has emerged is the difficulty for companies to measure what is managed. The difficulty arises from the lack of record of the daily activities directed to innovation, and the lack of registration systems that hinders the innovation management.

In the last periods, we followed up on the good practices that were made. And a video was made, so we had prizes for those people and such, but this is not systematic (Interviewee 6 – Pilot study).

And we came across with more than 150 necessary standards, so that this product could be commercialized. So we had to stop the product development, go back to its initial specification , build all the necessary procedures and rituals; because in the future, when this product will need to be registered, to have a compulsory certification, they will demand its historical records, risk management and other issues that, which if they were not done at the beginning, could not be done backwards.

(...)

Then, we concluded from that moment that the problem was a little more serious than we had previously imagined. That was not simply as everyone imagined: sending to INMETRO or to accredited laboratories to make tests. It is not. It's not just that. You need to provide documentation, which need to focus in the record, which is not only about the test, by that is part of the validation, and that you have built according to these standards (Interviewee 7 – Pilot study).

Lack of records hampers the process of an idea construction, once the efforts are not measured, accounted for, or tracked. A lot of time has been devoted for building an idea, but its paths are not recorded. The lack of registration, thus, precludes a retrospective view of the taken steps, losing the idea in the air. Thus, in addition to the loose of efforts, the team has to start from scratch again, which brings more expenses.

Physical environment

The physical environment aimed at innovation in the visited companies seemed curious. Although I had already worked as a consultant in innovation, the visitation in these companies, from different sectors, highlighted points of convergence between their environments. The use of yellow or light ivory colours in specific pieces of the furniture, environments with high ceilings, and rooms and doors with glasses in a light greenish colour (which seemed to give fluidity to the ambience), were some of the architectural aspects I have perceived in common.

The researcher during the pilot study

The first visit to the field gave me some tips on how to conduct the research and important points to be observed in other companies. One point that I noticed in this first set of interviews was an active and not very flexible position on my part regarding to gender issues. In this first questionnaire, I inserted a question related to gender (which was soon removed because it was not part of my research scope). When I asked what would be an innovative man, two of the respondents stated that they were creative, curious, leaders, accepting challenges and enterprising people; but when the question was “*For you, what would be an innovative woman?*”, the answers changed their tone. One of the respondents, after answering about the male gender, laughed a lot when I asked that question and replied that an innovative woman would be “*a woman who put herself in the front*” (now, was the woman behind? I thought to

myself), and we continued. After that question, he turned to another man who was also in the room and began to respond only to him. Another respondent, in turn, when I asked what he thought was an innovative woman, replied that he thought that I was beautiful and called me to have dinner with him. Although the interview was interesting technically, I felt discouraged for the following two days, as I began to question my research.

Another point that deserved attention in this period was the change of my posture in the field, and the change of my research instrument, once my subject became more focused in business strategy area than in organizational studies. Thus, a time of conversations with my supervisor was necessary, and a period going deep in the readings on the subject, in order to direct my research to the organizational studies area. After this pilot study, I changed my research question to **“How do managers create meanings of innovation in R & D & I projects?”** In addition to this change in my research question, the questions in the semi-structured interview instrument were also modified.

3.5 Conclusion

The realization of this pilot study and the writing about sensemaking provided me the basis for a better project delineation. In addition, it also made possible the perception of questions that, although not were in the scope of the research, caught my attention. Thus, after conducting the pilot study and discussing its results, we made a research instrument remodelling, in the sense of bringing it closer to the organizational studies area, since the instrument was more focused on the area of strategy. Thus, the instrument was revised before its launch into the field.

Section 2. Qualitative study

3.6 Theoretical-methodological approach

The conduction of a systematic research has a close relationship with the researcher's perspective on the phenomena / events studied, since its presuppositions of reality and how knowledge is constructed will guide the research process (Merriam, 1998). Thus, the theoretical conception, chosen for conducting the research, reflects the researcher's view of knowledge and beliefs (Gavard-Perret et al., 2008), what we call here ontological positioning, and / or ontological problematic.

Ontology (from the Greek *ontos* “being”, and *logoi* “science of being”), is the part of metaphysics that addresses the questions of nature and reality. In this sense, the ontological positioning in a research is based on the questions of "who knows?", and the nature of what can be known. In qualitative nature studies, it is based on the assumption that a social reality would not exist in a concrete, purely objective way, but would rather be a human product, which would also involve the researcher in the investigated phenomenon.

The demarcation of the ontological research focus often impinges on a trap of dichotomous aphorisms, e.g. subjectivism versus objectivism, and for a long time, the quantitative research was associated with a positivist and / or a functionalist perspective, and the qualitative research was associated to interpretative and postmodern paradigms. It occurs that this conceptual split does not take into account that organizations are complex and ambiguous, thus hindering important contributions to organizational studies area, since it does not foster new ways of thinking and researching.

In this sense, Cunliffe (2010), in reviewing the typology of qualitative research proposed by Morgan and Smircich (1980), presents a contemporary perspective of research and theorization in administration by showing that the objectivism-subjectivism distinction is limited to the complexity of the reality. For Cunliffe (2010), in addition to subjectivist and objectivist paradigms, the problem of intersubjective knowledge must be considered. For the mentioned author, the intersubjectivist problematic is constructed as cognitive - sharing of

common understandings, interactional and theorized as processes of individual and collective sensemaking. From this perspective, “*we coexist and co present with other people rather than with a social phenomena, and our identities and shared understandings of our social world are shaped between us (intentionally and otherwise) in our everyday interactions and experienced differently (relationality)*” (Cunliffe, 2010, p. 658).

	Objectivism	Subjectivism	Intersubjectivism
Ontology	A real concrete social reality existing independently from us. Humans as socialized into that reality.	Realities socially constructed in the interactions, discursive practices, language use, and conversations of people. Humans as actors and interpreters, shaping and being shaped by understandings of ‘realities’.	Shared, unique and contested understandings of social ‘realities’ created between people in and across moments of time and space. Humans embedded in relationships with others at many levels
Epistemology	Search for structures, laws, systems, rules, behavioral patterns, categories, processes, roles, generalized identities, and relationships between elements	Knowledge and knowing occurring in mundane and indexical activities of people	Knowing in-situ from within the moment of interaction and conversation. Meanings and understanding created fleeting between people

Figure3 -Three knowledge problematics.

Source: Adapted from Cunliffe (2015) apud Cavalcanti (2016, p. 46).

Thus, at the present study, we follow an intersubjective ontological perspective for which the process of constructing meanings, besides being a social product realized together, is collective, and its context is the fruit of human actions and interpretations. This definition underscores the centrality of social constructionism (Berger & Luckmann, 1967). In this sense, ontological and epistemological assumptions are mixed here, since we understand that knowledge is the result of a social construction reality.

By epistemological positioning, we refer to the researcher's assumptions about how social reality can be known (Greco, 1999). In this sense, posits yourself epistemologically presupposes the researcher's understanding of how knowledge is produced and justified; for this reason, it is a reflexive activity, since each positioning requires specific research methods and validity criteria.

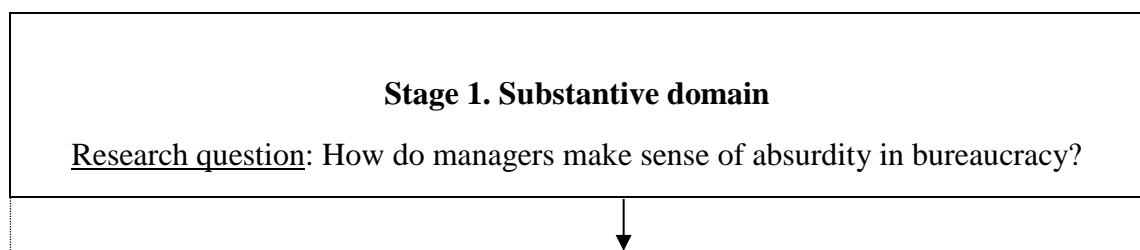
In this sense, the use of the sensemaking approach presents coherence between the adopted ontological perspective (intersubjectivism), the research approach (constructionism), and the thematic analysis. So, the sensemaking approach, based on the theoretical perspective of social constructionism, allows us to observe subjective experiences of managers in R & D & I projects (Burrell& Morgan, 2005[1979]), as well as how innovation is socially produced.

As a constructionist positioning aims to explore how meaning is created among the research participants (Cunliffe, 2003), we understand that, at the time of the research, we are constructing with our interviewees our knowledge about innovation; for this reason, we work with set of follow-up interviews. We understand that the interview is a space of co-production, in which researcher and respondents, in a dialogical process, construct and discuss research questions, data collection, as well as the interpretation of the interviews themselves.

It should be emphasized that, according to the ontological and epistemological perspectives adopted, the quality and rigor of the research are not linked to positivist or post-positivist criteria such as generalization, validation and objectivity, but rather the search for dialogical principles of authenticity, plausibility , criticality, reflexivity and cunning (Lincoln et al., 2011; Pozzebon, Rodriguez, & Petrini, 2014; Tracy, 2010), which demonstrate the researcher's intense involvement with the field, as well as the researcher's reflective critical capabilities.

3.7 Research strategy and design

The representation of the research design allows the observation of the choices made in this thesis context.



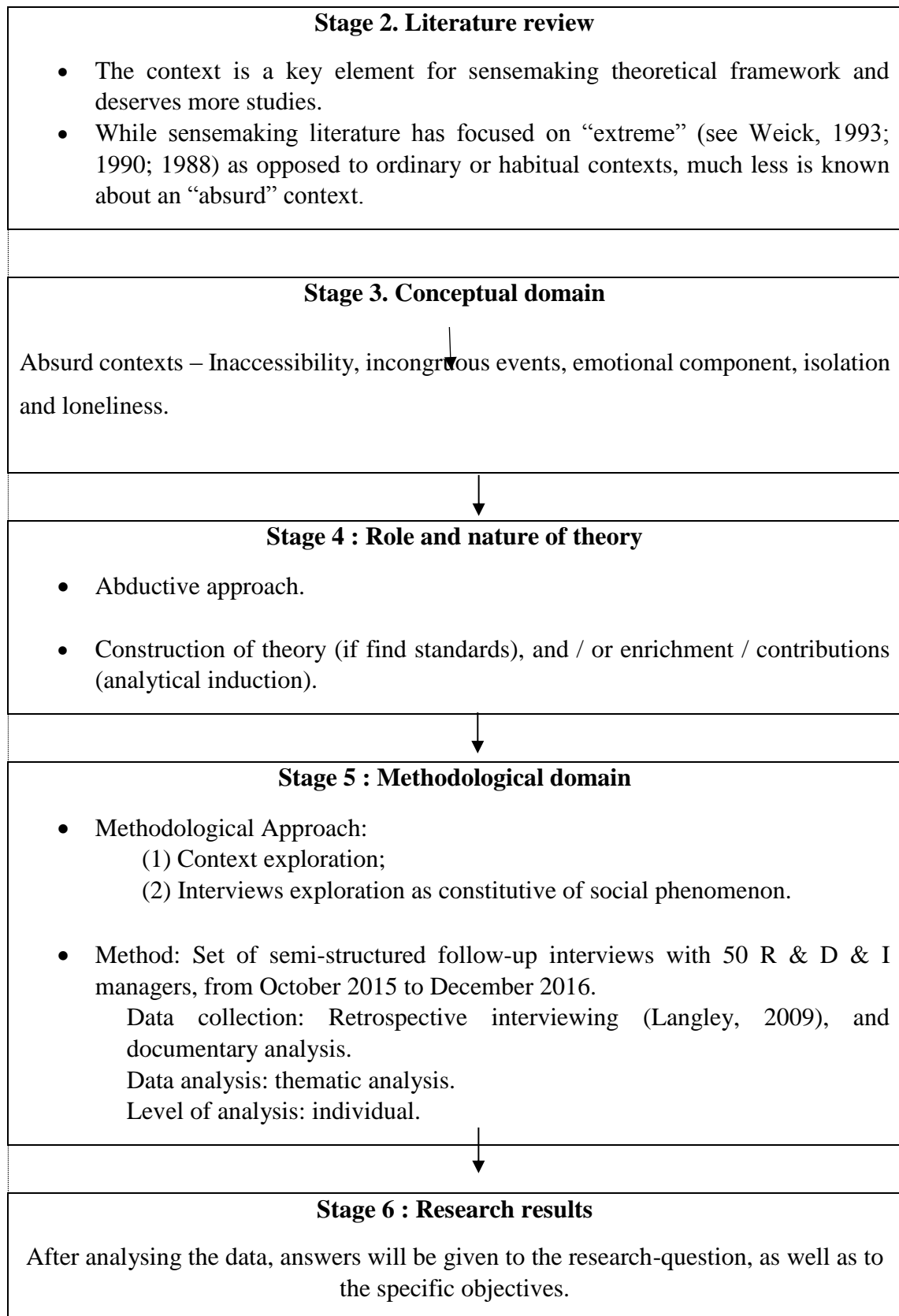


Figure 4 - Research design.

Source: Adapted from Pozzebon (2003), and Thietart et al (2014).

3.8 Research participants and research *corpus* construction

We raised 123 R & D & I projects already executed, and 38 in progress, so we sought to interview managers whose projects comprise the period from 2005 to 2015 (a universe of 81 projects). The temporal choice of these projects is justified since, due to the great rationing of energy occurred in 2001, new guidelines and adjustments were made by Brazilian's Federal Government in 2004. The trajectories reported and constructed during the interviews had, on average, 60 to 90 minutes and were recorded for later transcription. The company gave me formal authorization for conducting the research and for the interviews. In addition, all interviewees gave me informed consent in their interviews. The interview script items were addressed in the following question blocks (APPENDIX B): (i) perception about innovation; (ii) perception about R & D & I of the company; (iii) narratives about personal experiences in R & D & I projects; (iv) construction of R & D & I by the respondents. In APPENDIX C, we can see an example of an interview.

The set of interviews was a primary source of research, and as secondary sources, we used notes in field journals for personal reflections, reactions and emotions (Spradley, 1980), and we also used public and institutional documents. The documentary research accompanies the entire progress of the project, being fundamental for comparison. In addition, we also used the documentary research on public data from research institutes such as IPEA, PINTEC and INPI, around the following topics: innovation, intellectual property rights, and technological transfer.

Table 3 Research *corpus* compilation.

Cycles	Period in months	Quantity	Documental analysis
Pilot study	June to August 2015	8	No
Cycle 01	October 2015 to January 2016	25	Yes
Cycle 02	September 2016	9	Yes
Cycle 03	November to December 2016	16	Yes

Total	58
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Source: Author.

Cycle 01(October 2015 to January 2016)

For the first cycle, an InoSystems task force with Electric was required to get the projects physical documents. The GPD did not know where the physical reports were, as the managers got their project in their own areas, and in addition, many managers had already been retired; so the search for such physical files became more difficult for these reasons. In November 2015, Electric and InoSystems companies obtained the documents “*There were folders and more folders with the projects concentrated in the Annex*” (Interviewee 8/35-36). They kept all physical files on Electric, occupying a whole room. “*Nor they did know that they had all of this documentation*” (Interviewee 9/52). With the presence of the physical files, the projects were selected, based on the following criteria: (i) greater emphasis on the company; (ii) projects that were finalized and that were suggested by GPD's own employees, and (iii) projects whose contacts were successful. The interviews were then scheduled and conducted for Cycle 01.

The interviews were the unit of analysis, eliciting in-depth information about the personal experiences of the interviewees in R & D & I projects, as well as on the particularities of the company's organizational and sector contexts. Taking advantage of the opportunities of entering the field, I was able to have informal conversations with other employees of the companies involved in the project.

The *corpus* constitution related to Cycle 01 was carried out in the period between October 2015 to January 2016, when I was able to visit the researched company and talk with the project players. In addition, visits were made to InoSystems in Fortaleza, and meetings by Skype for speeches alignment, information sharing and analysis. Cycle 01 participants were R & D & I project managers and managers responsible for the R & D & I management area.

Cycle 02 (September 2016)

Due to an internal strike in the company and the halting of the project for 180 days, Cycle 02 had to be postponed to September 2016. The project was still paralyzed, due to lack of money; therefore, from Cycle 02, I was able to change my identity in the field as a doctoral researcher, so I could continue with my investigation. For this cycle, I was again presented, now as a PhD researcher from FGV, until the end of my fieldwork.

The pre-analysis of the interviews from Cycle 01 served as a guide for conducting the interviews of Cycle 02, since the codes that emerged during the first cycle guided the research instrument for Cycle 02.

To get the interviewees for this new cycle, I contacted the GPD who gave me the contact of 5 (five) managers. They personally called the managers to schedule our meetings and I felt like a snowball, rolling between the interviewees, as from one interview I was directly going to the next one, indicated by the previous interviewee.

I made 9 (nine) interviews in September 2016, and I paused this cycle due to a trip to São Paulo to present my qualification project. Once I stayed in São Paulo until the end of October, it was only in November 2016 that I could get contact again with the field. During this meantime, I maintained contact with GPD managers and the HR representative until my return.

Up to this stage, 563 codes and 656 excerpts were selected from the interviews.

Cycle 03 (November to December 2016)

After the presentation of my qualification project, I was able to return to the field in early November for another cycle of interviews. After my qualification exam, the research question was reformulated again, once the previous interviews directed me to absurd bureaucratic obstacles, so the new research question was: *“How do managers make sense of absurdity in bureaucracy?”*

As my contacts with the GPD and the company's HR representative were maintained, before returning to the field, I already scheduled the next interviews. In addition to the previous agenda, the interviewees indicated other people, so I felt myself like a snowball again, rolling between the interviewees.

In this cycle, I was able to have even more access to data, as well as to events on innovation and knowledge management within the company. I was already well-known in the field, so the interviews came more naturally. This cycle ended in December, because in this month I was scheduled to go to France for my doctorate's internship period.

Throughout the field research process, I also took notes of the interactions between employees, between employees and the organizational environment, and also observed some architectural aspects. These informal conversations enabled me to access information I could hardly get from semi-structured interviews. All conversations and observations of the environment were recorded in the field diary.

The recording in field diaries was one of the most important points for the analysis, because I was referred to the moment they were written, keeping relevant information. During conversations and observations recording, sometimes I could not make notes at that time, because I felt that the moment would not allow or that the informant could feel strange, since some of these conversations happened in the hall of the company, in corridors and restaurants. There were times, when I was sitting down writing my morning diary that officers pulled a chair and started to talk about a subject. Then another employee appeared, and another, and another. Sometimes I felt in a confessional, because I received a lot of criticism about Aneel, about the company's institutional problems, even about specific people; but, at the same time, I was happy to be seen as a channel for this kind of interaction. In those hours, if I took a paper to write it down, I felt that I was going to lose the confidence of that moment, so I developed in my mind miraculous ways of memorizing information. There were times when I said that I would go to the bathroom and, in fact, I sent an audio to myself telling what was said. At other times, I noticed that some employees got bothered by my presence.

This meeting happened with a baseball stick on a table and the manager of the company was walking and arguing around the room with the stick. When I started writing notes on the computer, I realized that they were a little annoyed, even though I had already communicated that I needed to do field diaries. The presence of a

researcher registering field notes bothered them. The project coordinator (my immediate boss) passed behind me and came to look at what was written until that moment. So I read it and into the whole room, and we both laughed. After that point, he calmed down a little, and I also started to make notes in his notebook to disguise his behaving (which were later transcribed here) (Field Notes - 02/03/2016).

As suggested by Spradley (1980, p. 69-72), condensed reports, expanded reports of interview impressions, field work protocols, and notes on analysis and interpretations were made immediately after field contact.

3.9 Data Analysis

This study is based on an abductive analysis and aims to understand absurd contexts under sensemaking theoretical-methodological approach. In order to explore the question and the objectives of the research, we sought from the interviews to examine absurdity in Brazil, and how managers directly involved in R & D & I projects make sense in this kind of context. To achieve the proposed objectives, we will use Thematic Analysis guidelines and techniques (Spencer et al., 2003).

Although I have previously initiated readings on sensemaking, since the research clipping is the use of sensemaking perspective in absurd contexts, the nature of the thematic analysis allows us to contribute to a deepening into the phenomenon analysis. Due to the nature of a direct approach to the field, and the narrowing of the researcher with the social context studied without a priori theorizing, the methodology allows researchers to make sense of the events and experiences described by the interviewees. For this reason, we justify the thematic analysis choice for a discussion about sensemaking, once the methodology presuppositions are coherent with the ontological and epistemological assumptions by which we start this project.

Thus, we consider the thematic analysis as a method in its own essence for identifying, analysing, and reporting themes (patterns) within data. We understand this method as a flexible, inductive, iterative, systematic and reflective process of meaning construction. One of the

benefits of using thematic analysis is its flexibility in relation to how it is used, once is *compatible with both essentialist and constructionist paradigms* (Braun & Clarke, 2006, p. 5).

We consider thematic inductive in the sense of being data-driven, that is, that *“patterns, themes, and categories of analysis come from the data; they emerge out of the data rather than being imposed on them prior to data collection and analysis”* (Patton, 1980, p. 306). But patterns, themes or categories don't emerge on their own, but due to a high reflexive activity, depending on what the inquirer wants to know and how he/she interprets the data, *“according to subscribed theoretical frameworks, subjective perspectives, ontological and epistemological positions, and intuitive field understandings”* (Srivastava & Hopwood, 2009).

The thematic analysis is iterative because it is a repetitive process of multiple rounds of data revising, where each new immersion in the data can bring new connections, insights and concepts. However, the iteration does not occur mechanistically, but rather involves a reflective dive of the researcher, who, as suggested by Nicolini (2012), adopts the *“zooming in and zooming out”* approach during data analysis. Through this constant movement of interaction with the field, the analysis and the emergence of theory have an intrinsic relation, and, through data analysis, we modified the research question, the instrument for conducting the interviews, and even the form of interaction with the field.

This reflexive exercise also involves three categories of reflective questions, according to Patton (2002, p. 495): i) *self-reflexivity* (e.g., What do I know? How do I know what I know?); ii). *reflexivity about those studied* (e.g., How do those studied know what they know?), and; iii) *reflexivity about the audience* (e.g., How do those who receive my findings makes sense of what I give them?) (p. 495).

For a thematic analysis, we ask ourselves what would be a theme? How far is a theme and how much does it represent the data? There are no strict standards for an answer, and we understand that the researcher is the one that should evaluate as a theme something that brings an important thing from the data and that relates to the main issue. For example, something can be called a theme because it has been spoken by most participants, or just the opposite; something can become a theme for bringing something relevant, even if by a smaller number of participants, as pointed out by Javadi and Zarea (2016, p.35): *“A theme may be repeated a few times but involve a significant aspect in answering the research question”*. Something can

also be defined as a theme when there is a semantic frequency. The important point is that the researcher do this process in a clear way. According to Javadi and Zarea (2016, p.34) they understand that a theme “*is a kind of agreement that, in comparison to the main text from which the theme is extracted, is more concise, accurate, simpler and shorter*”.

In this sense, the stages of the thematic analysis must be rigorous, which involves an active and reflexive researcher position. By rigorous we mean careful passages transcription, topics checking as coherent, consistent and distinct from each other, and finally, the construction of an analysis, not just data description.

Srivastava and Hopwood (2009, p. 78) suggest an analytical framework based on following three guiding questions for thematic analysis:

Q1: What are the data telling me? (Explicitly engaging with theoretical, subjective, ontological, epistemological, and field understandings);

Q2: What do I want to know? (According to research objectives, questions, and theoretical points of interest);

Q3: What is the dialectical relationship between what the data are telling me and what I want to know? (Refining the focus and linking back to research questions).

For the authors, these questions help in identifying the investigator's gaps of understanding and how to proceed with the analysis. In Srivastava and Hopwood words (2009, p. 81), “*the framework set out a terrain in which, my role as researcher, the importance of the data, and the sense of ownership and personal purpose in my research were explicitly foregrounded.*”

In addition to this framework, thematic analysis stages proposed by Braun and Clarke (2006) can be cited. These steps involve the constant moving back and forward between the entire data set. The first step is (1) *Familiarizing yourself with your data*, which involves immersing in the data, active and repeated readings in the search for coding ideas, meanings, and patterns. This phase also involves verbal data transcription, which is a way of familiarization with your data.

The second step is (2) *Generating initial code*, which involves organizing the data

into groups, from what the data means. This phase can be mechanically done or with the help of a software. After the initial code generation phase, we begin the phase (3) *Searching for themes*. This phase starts after all data encoding. From the list of codes, the researcher must perform the codes grouping into potential themes. To support this phase, Braun and Clarke (2006) suggest the use of visual representations for codes combination.

The forth step is (4) *Reviewing themes*. This phase requires a thoughtful exercise on the themes and data that support them. At this stage, some themes may need sub-themes or can be divided into other themes, or also can be condensed together. The fifth step is (5) *Defining and naming themes*. This stage begins when the researcher has already been able to create a data thematic map, and aims to define and refine the themes that have arisen. This phase is done from an exercise of returning to the data, organizing the themes in a coherent way so they have internal consistency. The idea is that, at the end of this stage, the themes names will be defined, and these themes can be defined in some sentences (Braun & Clarke, 2006).

The final step is (6) *Producing the report*. It is the phase of the thematic analysis and its main goal is to write the history that your data tell. This phase aims to produce a data analytical narrative and not just a description, so the extracts should not only be cited, but used to illustrate your data story.

Due to the amount of data, I divided the corpus into folders according to the file nature (images, videos files, audio files, text files, website content) and, to help me organizing the data, I used Atlas/ ti 7.0 software, which allowed me to manage the codes, citations, analysis notes and primary documents, facilitating the establishment of connections between them (Bandeira-de-Mello, 2006). In this sense, to perform the thematic analysis, I followed the analytical frameworks proposed by Srivastava and Hopwood (2009), Braun and Clarke (2006), and Spencer et al. (2003).

For the research, I first performed a listening of all interviews to familiarize myself with the data. From the listening, I drew general ideas about how the field was appearing to me. After that first listening, I proceeded to transcribe the interviews (in Appendix C there is an example of an interview transcript). It was an arduous and tiring work, especially in the audios with more than one interviewee.

After the transcriptions, I performed a transcripts reading, with the preparation of each interview logs, annotations, and beginning of data visualization. This phase involved the use of two notebooks for data pre-analysis and my first observations. From that contact, I began to encode my data with Atlas ti. In this second phase, I reread all my data and freely coded everything I could (words, phrases, activities, actions, concepts, thoughts), which generated a lot of codes. At each coded interview new questions and new insights emerged, being noted for the later phase.

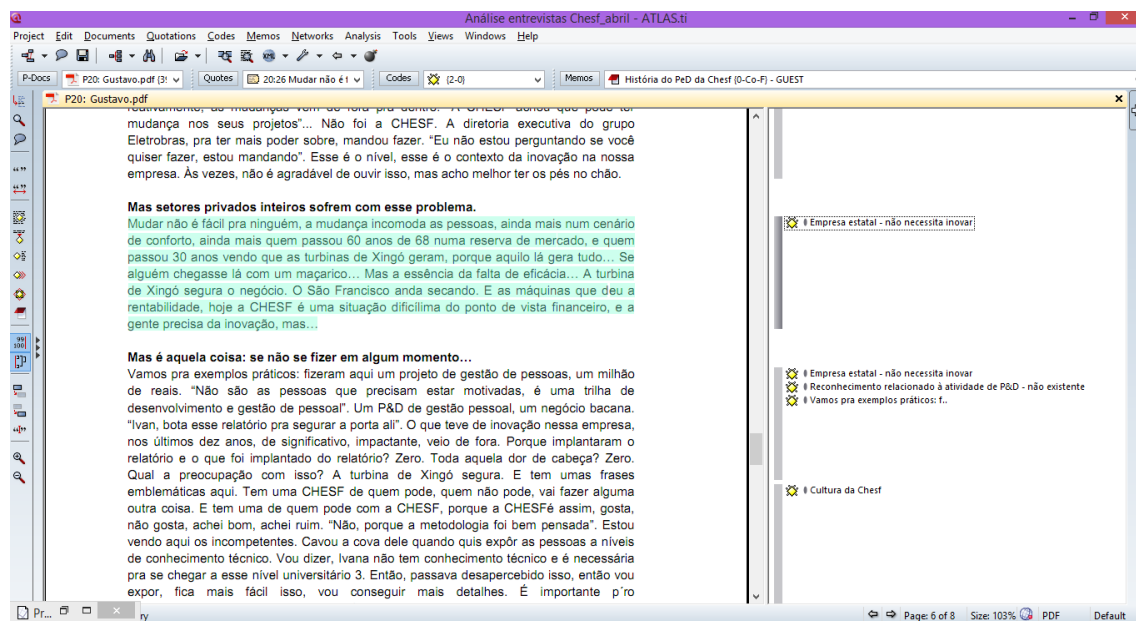


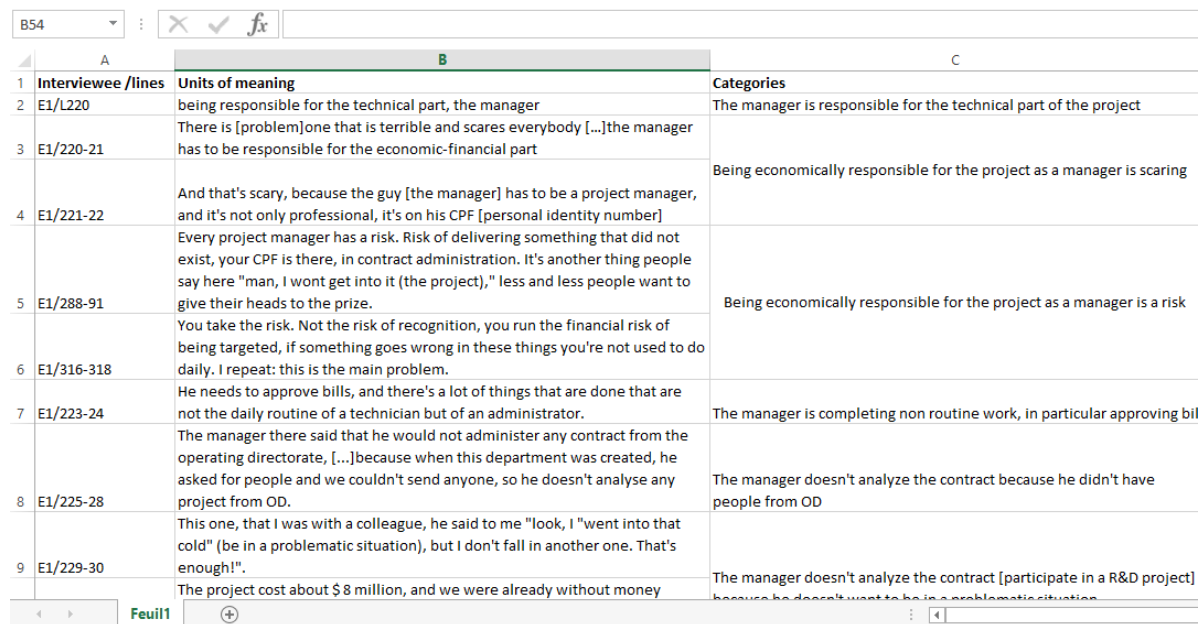
Figure 5 - Example Excerpt of How Text Data was Managed in Atlas/ti 7.0.

Source: Author's.

This pre-analysis led me to other paths that I hadn't anticipated. Thus, one of the main contributions of this phase was a redefinition of what I was studying, modifying my specific objectives. A priori, I sought to understand how was the innovation management in Electric company. After the first analysis, and especially when I started to write, I saw in re-reading my notes, field diaries and encodings, that the data was showing me how difficult bureaucratic situations that managers were facing. Already in the fourth round of readings, the data was narrowing for the project managers, so here I began to reread the revision on sensemaking.

At this time, the data analysis brought a change in my research question. Initially, I questioned “*how do the managers make sense of innovation and promulgate it?*” It occurs that

during the review progress, I realized that the data was directing me to another direction. The interviews were not showing the construction of meanings, but how the sense of innovation was lost in difficult bureaucratic situations. Respondents referred to these situations as nonsense or absurd, in that sense the question has been redefined to “**How do managers make sense of absurdity in bureaucracy?**”



A	B	C
1 Interviewee /lines	Units of meaning	Categories
2 E1/L220	being responsible for the technical part, the manager	The manager is responsible for the technical part of the project
3 E1/220-21	There is [problem]one that is terrible and scares everybody [...]the manager has to be responsible for the economic-financial part	
4 E1/221-22	And that's scary, because the guy [the manager] has to be a project manager, and it's not only professional, it's on his CPF [personal identity number]	Being economically responsible for the project as a manager is scaring
5 E1/288-91	Every project manager has a risk. Risk of delivering something that did not exist, your CPF is there, in contract administration. It's another thing people say here "man, I won't get into it (the project)," less and less people want to give their heads to the prize.	Being economically responsible for the project as a manager is a risk
6 E1/316-318	You take the risk. Not the risk of recognition, you run the financial risk of being targeted, if something goes wrong in these things you're not used to do daily. I repeat: this is the main problem.	
7 E1/223-24	He needs to approve bills, and there's a lot of things that are done that are not the daily routine of a technician but of an administrator.	The manager is completing non routine work, in particular approving bills
8 E1/225-28	The manager there said that he would not administer any contract from the operating directorate, [...]because when this department was created, he asked for people and we couldn't send anyone, so he doesn't analyse any project from OD.	The manager doesn't analyze the contract because he didn't have people from OD
9 E1/229-30	This one, that I was with a colleague, he said to me "look, I "went into that cold" (be in a problematic situation), but I don't fall in another one. That's enough!"	
	The project cost about \$8 million, and we were already without money	The manager doesn't analyze the contract [participate in a R&D project] because he doesn't want to be in a problematic situation

Figure 6 - Example Excerpt of How Text Data was Managed in Excel.

Source: Author's.

After this first data coding, I went back to the analysis and reread all the material over and over again, creating new codes, deleting others and grouping codes together. Also, I tried to visualize how some codes were connected with others. During this process, I used design thinking tools and mind maps to try to visualize the relationships between the large groups of codes that were emerging.

After viewing the codes in large groups, I went back to the data to see if these large groups made sense. The groups differentiated between themselves and that made sense internally I named the themes. I started then the process of choosing themes, and how they relate to each other. After naming the themes, I began to look for which story these themes were telling me.

In total, there were two entire notebooks with observations, 852 quotations, and 404 pages of citations to be used.

3.10 Research context

3.10.1 Brazilian electricity sector brief history

This item seeks to briefly present the Brazilian electric sector evolution, with emphasis on its institutional aspects, in order to understand the effects of Brazilian industrial policy on the institutional models of the electric sector. This first topic is important once presents the context study, and I treat here as context the organizational environment, from a historical cut. To describe this theme, I will first make a brief history and general presentation of the Brazilian electric sector, and, later, I will present the company surveyed context.

For presentation purposes, a division was made in three historical periods characterized by: (i) Private urbanization and monopoly (1879-1930); (ii) Industrialization and state intervention (1930-1989), and; (iii) Hybrid Model - Electric Sector New Model (1900-current). In APPENDIX A, there is a table with a more detailed time division of the Brazilian electric sector structure, containing the main historical landmarks.

The first period (approximately between 1879 and 1930) marks the beginning of the country's urbanization process and with it the beginning of public illumination in Brazil. This period, however short, marks the creation of *São Paulo Railway, Light and Power Company Client Lt - SP Railway* (1899), and *Rio de Janeiro Tramway, Light and Power*, from the same São Paulo Light financial group but with Canadian domain (1904). In 1912, there was the creation of Brazilian Traction, Light and Power Company Client Ltd, which unifies the current Light Group companies. In 1920, the national export model went into crisis, generating a state redefinition (and interventionist model). Thus, with pressure on state interventionism, the end of the 1920s was marked by a period of turbulence, with few private investments in this area.

The second period, of industrialization and state intervention (approximately between 1930 and 1989), was characterized by a strong state agency, especially in the year of 1939 with the creation, by President Vargas, of the CNAE (National Council of Waters and Energy); in 1962, with the creation of Eletrobrás, and; in 1979, when the sector experienced a great expansion with the nationalization of Light Serviços de Eletricidade S.A. The end of the 1980s marked the transition from a state model to a private commercial model, based on the National Privatization Plan (PND), then sanctioned by the President Fernando Collor de Mello, through Law nº 8.031/1990 (1990).

The third period, which begins in the 1990s and lasts until nowadays, can be divided into: (a) *Hybrid Model* (1990 - 2003), characterized by a chain verticalization and restructuring of the competitive model, and (b) *New Model of the Electric Sector* or *Pool Model* (2004 - current). In 1996, Aneel (National Electric Energy Agency) was created to regulate and supervise the generation, transmission, distribution and commercialization of electricity, and soon after, in 1998, it was created the Regulation of the MAE (Wholesale Market of Electric Energy), consolidating the distinction between generation, transmission, distribution and commercialization of electricity. This Hybrid period was also marked by the country's biggest energy crisis, in 2001, when rationing programs were instituted. Finally, in March 2004, the new model for the electricity sector was approved, with the enactment of Laws nº 10.847 (2004) and nº 10.848 (2004), which defined the rules for electric energy commercialization and created the EPE (Empresa de Pesquisa Energética), with the function of subsidizing the technical, economic and socio-environmental planning of electric power, oil and natural gas and its derivatives and renewable energy sources.

One of the main changes occurred in 2004 was the institutionalization of two environments for contracts conclusion for the purchase and sell of energy: the Regulated Contracting Environment (ACR), focused on electricity generators and distributors, and the Free Contracting Environment (ACL), in which generators, traders, importers, exporters and free consumers can participate. In this sense, distribution and transmission activities continued to be regulated, but the production of energy generators began to be traded on the free market.

3.10.2 Industry Structure

The Brazilian Electric System - SEB has a total installed capacity of 133.9 GW, and, in terms of total electricity generation, Brazil produced 590 TWh in 2014 (Anuário Estatístico de Energia Elétrica, 2015). In terms of hydroelectric power generation, the country has a gross theoretical capacity of more than 370 TWh (year 2014) corresponding to approximately 64%⁸ of all electricity generated in the country (Anuário Estatístico de Energia Elétrica 2015, p. 07).

Table 4 *Installed capacity of electric generation in Brazil (MW).*

	2010	2011	2012	2013	2014	Δ% (2014/2013)	Part. % (2014)	
Total	113.327	117.136	120.974	126.743	133.913	5,7	100	Total
Usinas Hidrelétricas	77.090	78.347	79.956	81.132	84.095	3,7	62,8	Hydropower Plants
Usinas Termelétricas	29.689	31.243	32.778	36.528	37.827	3,6	28,2	Thermoelectric Plants
PCH	3.428	3.896	4.101	4.620	4.790	3,7	3,6	SHP
CGH	185	216	236	266	308	15,8	0,2	CHG
Usinas Nucleares	2.007	2.007	2.007	1.990	1.990	0,0	1,5	Nuclear Power Plants
Usinas Eólicas	927	1.426	1.894	2.202	4.888	122,0	3,7	Wind Power Plants
Solar	1	1	2	5	15	200,0	0,0	Solar Power Plants

Source: National Electric Energy Agency (ANEEL) Controlled Power; National Energy Balance 2015; Elaboration: EPE.

The data available in this Yearbook reveal the predominance of hydroelectricity in the National Interconnected System (SIN), even in the face of the hydrological crisis that the country has been experiencing since 2012. In addition, one can infer that the great penetration of electricity in the five-year 2010-2014 period, since the population increased by an average of 0.9% per year, while per capita consumption grew by an average of 2.5% year in the same period. In order to sustain such growth, we estimate the need for investments in excess of R\$ 380 billion in the electric power generation sector until 2022, in order to meet this future demand and ensure the system.

⁸The 4.5% decrease in hydroelectric power in 2014 (production of approximately 64%) compared to the year 2013 (68.6%) was due to a drought that lasted until the beginning of 2015(Anuário Estatístico de Energia Elétrica, 2015).

3.10.3 Energy market division

As a result of the Brazilian Electricity Sector Restructuring Project (RE-SEB Project), which took place in the 1990s and that focused on the privatization of the sector, the Brazilian electric power market became a de-verticalized sector in its production chain, as the phases of (i) generation, (ii) transmission, (iii) distribution, and (iv) commercialization of electric power became independent businesses.

Due to the national geographical and climatic peculiarities, the Brazilian model of electricity generation is predominantly hydroelectric, as more than 75% of the national generation capacity comes from large and medium-sized hydroelectric plants and small hydroelectric power plants. The energy transmission model, which has the mission of bringing the generated electric energy to the load / distribution centers, is composed by a transmission line network that expands itself throughout Brazil.

The transmission network comprises the National Interconnected System (SIN), which covers power generation and transmission companies in almost all Brazil. Currently, the SIN carries 102.9 km of transmission lines, with voltages of 230 kV to 750 kV, which supply more than 98% of the energy required by the Country. Among the benefits of this energy integrating mesh there is the possibility of exchanging between regions, and there may be complementarity with thermoelectric plants. In addition to the immense "electric highway", there are several smaller systems not connected to the SIN and, called Isolated Systems, which are mainly concentrated in the Amazon region, north of the Country. These systems are "isolated" due to the Region geographic characteristics, such as dense forest, large and extensive rivers that hindered the construction of transmission lines - connection to the SIN.

The distribution system is composed mainly by large companies that act as a link between the electric power sector and society. In addition to these companies, rural electrification cooperatives (small size) transmit and distribute electricity exclusively to their members. The distribution market consists of 63 concessionaires, owned by state or private shareholders, responsible for serving more than 60 million consumer units. Considering the environment of free contracting, there is also the possibility of direct negotiation with the distributors substations, as industrial units that operate with higher voltages (from 2.3 kV to 88

kV). The figure below represents the possibilities of relationships between electric sector operators and their consumers.

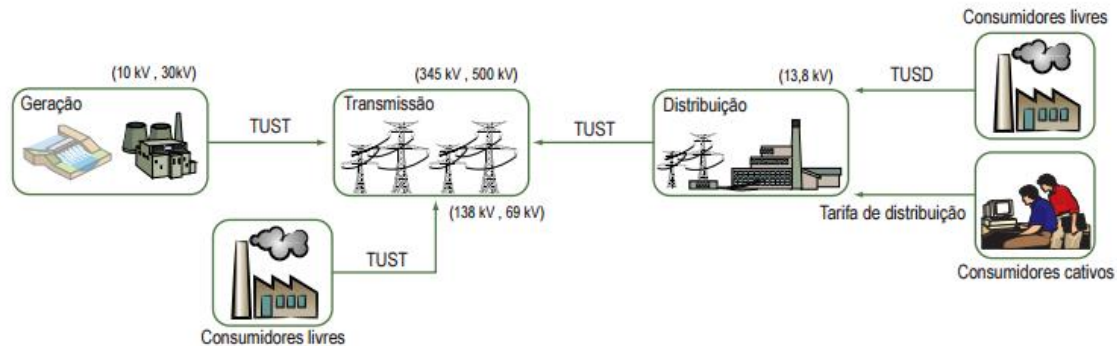


Figure 7 -Relationship between agents and distributors.

Source: ANEEL, 2015.

After the sector restructuring in 2004, two contracting environments were defined: (i) Regulated Contracting Environment (ACR), directed to electricity generators and distributors that can only contract their energy through public auctions (existing energy auctions and new energy auctions), and; (ii) Free Contracting Environment (ACL), in which generators, marketers, importers, exporters and free consumers may participate. In the ACL, bilateral contracts are freely negotiated.

3.10.4 The company Electric

Electric is a company that belongs to the Brazilian Electric System - Eletrobrás, and its main activity is electricity generation, transmission and commercialization, in a profitable and sustainable way. Currently, it represents the largest high voltage electricity generation and transmission network in the country.

With a capacity of 10 million and 703 thousand kW, it covers an area of more than 1 million km², which is equivalent to 15% of the national territory, is the agent with the highest

installed capacity (7.8% to the national total), counting on almost five thousand employees (ANEEL, 2015).

Electric is constituted by a Board of Directors and by an Executive Board, being supervised by a permanent Fiscal Council. The Directors Board is composed by a Chairman, in addition to 5 Board Members, all of them shareholders, elected by the Company's General Meeting. The board members term is one year and can be re-elected. Among the Directors, one is appointed by the Minister of Planning, Budget and Management, while the other is elected by direct vote as employee representative (Field Notes - 03/12/2016).

Legally, Electric is a publicly traded and mixed-capital corporation linked to the Brazilian Electric System - Eletrobrás, and its main activity is the generation, transmission and sell of electricity. It was instituted during the New State (Estado Novo), by President Getúlio Vargas, Decree-Law nº. 8.031, dated October 3, 1945. On that same day, Getúlio Vargas signed three decrees-laws: 1) Nº. 8.031 (1945), concerning the company organization; 2) Nº. 8.032 (1945), opening a special credit with the Ministry of Finance to subscribe to its common shares; and 3) Nº. 19.706 (1945), granting to Electric the concession, for 50-year period, of the hydraulic power of the São Francisco river utilization, in the stretch between Juazeiro (BA) and Piranhas (AL) (FUNDAJ, 2004).

From the organizational restructuring of the electric power sector in the 1960s, Electric became a subsidiary of the Eletrobras System (created in 1962), linking itself to the Ministry of Mines and Energy. Although it is the only company in the System that does not adopt the prefix Eletrobras, it is part of the Government's conglomerate of companies and its guidelines. Currently, the Company is governed by Law nº 6.404, dated December 15, 1976, and strictly follows the current legal provisions, as well as the acts of regulation of the National Electric Energy Agency - Aneel.

Electric operates in Brazil, in the São Francisco river basin exploration, serving the northeastern region, with the exception of Maranhão state. Through power plants and thermoelectric plants, Electric has the capacity to generate 10 million and 703 thousand kW, and covers an area of more than one million km², which is equivalent to 15% of the national territory.

With the opening process allowed by the New Model of the Brazilian Electricity Sector established in 2004 (Law N° 5.163 / 2004), Electric has energy sales contracts in all sub-markets covered by the National Interconnected System (SIN), which corresponds to 98% of the Brazilian market.

Regarding the research, development and innovation (R & D & I) efforts, the Government has instituted norms to regulate the granting and extension of public service concessions and permits. With this restructuring, which is based on competition and reduction of statal interference, the sector regulation started to be made by the marginal cost regime or second best. Among the regulations made, Law N°. 9.991, dated July 24, 2000, on the obligation of companies in the Brazilian electricity sector to invest a percentage of Net Operating Revenue in research, development and technological innovation (R, D & I).

In this sense, in order to effectively direct R & D efforts, Electric's research and development area has approximately 200 innovation projects, developed in twelve areas: Control; Supervision and Protection; Energy distribution; Energy Efficiency; Finance; Alternative Sources; Energy production; Strategic management; Regional and Social Insertion; Environment; Strategic Research; Telecommunications, and; Transmission - Lines and Substations.

3.11 Entering in the field

In order to preserve the identity of the people and institutions with whom I have had contact during the field experience, I will use fictitious names in the following accounts, except for the names of my tutor and other EAESP professors.

At the end of 2015, the Director (Bernardo) of one of the four innovation management consulting companies I talked to in 2015, contacted me in September via email. He commented that he needed a researcher at Electric. I told him that I could not go because I was living in São Paulo and I sent an email to an acquaintance in Recife who works with innovation, but he was already employed and could not accumulate this function. At the end of October, we kept in

touch and I went to Fortaleza, because we combined to know the new headquarters of his company. Bernardo asked me again if I would like to do the research, even me living in São Paulo. That same day we had lunch together, me, him and the company's director of operations, Sara, and I explained what my activities were at the time, and what I needed for my PhD research. In turn, they explained to me what they needed in the Electric's project, and that same day I got in touch with my supervisor to ask his opinion. On November 4th, I informed Bernardo and Sara and we set the partnership. Finally I had defined my field of research, and defined the sector.

In the same week (11/11/2015), I returned to Bernardo's company and he and Director Sara passed me information, documents and project files so that I could get information, via email and google drive. We discussed ideas about methodological possibilities and started analyzing the files. With these informations in hand, I began to understand the reality of Electric and how R & D activities were structured. I asked about the environment, the physical structure, how the managers were and how it was the contact with the Electric staff, and we talked about these points. Bernardo talked a bit about his perception on how the innovation was being treated there, but said he would rather wait for me to analyze the files, visit the company and then compare perceptions. We agreed that my first activity would be to contextualize the Brazilian electricity sector.

We continued to work through Skype, talking about the documents, academic papers that contextualized the Brazilian electricity sector, and especially about the project, which companies were involved and how the project worked. During November and December, I contributed to the monthly project reports, writing about the brazilian electrical sector contextualization, methodology definition and documents pre-analysis.

So, in January, we agreed to go to Recife to visit Electric and conduct interviews. At that time, during the exchange of e-mails to schedule the visit and conduct the interviews, I understood that there were four companies conducting the project, but the activities were concentrated in only one company - an innovation management consultancy based in São Paulo, denominated Centrec. Thus, all the contact established by me with Electric should be done with Centrec's signature. I was now a Centrec's researcher. This was my first "hat" in the research.

In January 2016, I went to Recife to meet the staff for the interviews. I met the communication officer (Clara) and InoSystems' engineer and physicist. They came on the 25th early morning, and from the airport we took a taxi to Electric. In the taxi, we were talking about the project and I was asking some questions. Arriving at the company, I felt their concern about the cab receipt. They had not checked if the cab had a receipt. I did not worry, because I thought we were going to split the value, but I understood that there was a need to be accountable. I realized that Clara was not happy to count all these notes (which is common in a project), but I understood the reason later. The project receives a cash return from Electric only 60 days after the expense, and they were denying many receipts, which left the two companies hired worried about it. *"Here is how it is: we pay it now and then we are reimbursed. You have no insurance"* (Field Notes –25/01/2016). I understood that this lack of definition and the lack of confidence in the expenses reimbursement were complicated points.

We arrived at the company. From the outside, I had no idea of the company breadth, but the entrance was very beautiful, with some regional artwork, a green lawn, and water fountains. We went to the concierge to get the ID and I told her that I was a researcher at Centrec. My badge soon came out, but I got only a temporary one, not one that gave me extended access to the company. There was some complication on the advisor's badge, but in less than ten minutes everything was settled down and we were able to get inside. We went to block C to go to the GPD and then to go to the "room". GPD is the area that takes care of R & D & I projects.

The physical constitution was interesting. It was a set of low buildings, in "coffin" style (without pilotis). The separation between the blocks was made by those lawns or corridors that connected the blocks. There were four equal blocks, with walkways that act as communicating vessels between the blocks, in all floors. When entering one building, we can see long corridors, with similar doors. One detail I found interesting is that there are parts of the corridors with decorative tiles. The tiles were yellow and this reminded me the architectural features of the companies I had previously visited in the exploratory study.

It was eight o'clock in the morning and the company was almost empty. The walk through the corridors, the sun on the lawn as we passed from one block to another brought a nostalgia state that was broken with coffee machines. After the third corridor, I had counted two of those machines. I found this curious and I commented about it with my colleagues. They continued to walk with me and they told me that these coffee machines were common there;

that there are plenty of coffee machines in the hallways. We past by four machines when we arrived at GPD. In addition to the caffeine refills, I also observed weighing scales at the end of some blocks.

We continue walking and we finally arrived at GPD. I noticed that my colleagues were not very comfortable, and criticized the environment on the way. From the airport to the GPD, there were veiled criticisms, such as *“Let's see if there are people at this time, right?”*. *“It's impressive. We only see people during snack time”*. *“Oh, Lorena, you're going to get it. Let's see if they will be nice with you”*. *“We have to calculate the schedule exactly because you know how they are with this, right?”* (Field Diary –25/01/2016). And those comments were making me impatient once I did not expect this scenario.

We finally arrived at GPD and I introduced myself to two employees. They were nice to me and asked more about my thesis proposal. At the end of the conversation, a third came up to me and said, *“Oh, you're the girl from São Paulo who's going to sort this out, right?”*. I introduced myself again as a researcher and stated that I was on the project to contribute and that I was available for what was needed. *“I was not there to solve, to give solutions, no. I have to keep in mind that what I'm doing is a research”* (Field Notes –25/01/2016). Although the question bothered me to put me in a position that I did not occupy, I answered it as a joke and did not receive it in a negative way.

The room is a place reserved for the project and it is in the Annex block. The room has two working islands and two tables for meetings. It also has a water cooler and a printer. The existence of a “place” for project participants was good and bad. Good because the InoSystems team would have a place to stay and work but bad due to GPD's control mechanisms over the team. I was told that GPD employees, even though they arrived later, knocked on the door of the room at 5:00 p.m. to see if anyone was working. As pointed out by Clara:

They don't believe that we work if we are not here in the 'room', so there was time that they come here just to check if we were working. That sucks, so we have to keep an eye on when people arrive and when they leave, even if it is not productive to stay here (Interviewee 8/68-71).

In another moment, Clara said that "*For them, the expense of people coming from Fortaleza must be justified, so, for them, it means we inside this room*" (Clara - Field Diary - 01/02/2016).

During the day, I asked about the project and how GPD's relationship with the project team was, as I noted an animosity mood. So Clara was telling me how the project was designed and structured, and how it took nearly four years to happen. At that moment I understood Bernardo's position, still in Fortaleza, when he stated that "*No one believed in this project anymore, no*" (Bernardo - Field Notes - 10/11/2015). I kept asking several questions, once I still did not feel myself in the project. So I took notes and designed the project for myself.

3.11.1 Project constitution

When asked about how the project was formulated and constituted, Clara told me a retrospective history of how it was constituted. Subsequently, I supplemented the historical narrative given by the advisor with the institutional documents of the companies involved.

The project is complex because it covers the entire Electric, and involves many companies for its achievement. The project design comes from 2012, when a GPD manager was talking to the owner of Fusion about the company's R & D & I situation. The communication was facilitated, as the two were personal friends, so they thought about structuring an R & D project to solve the R & D area. However, the project approval was required: approval of the Presidency and endorsement of the Electric five directorates.

Regarding to the project players, we have the following configuration:

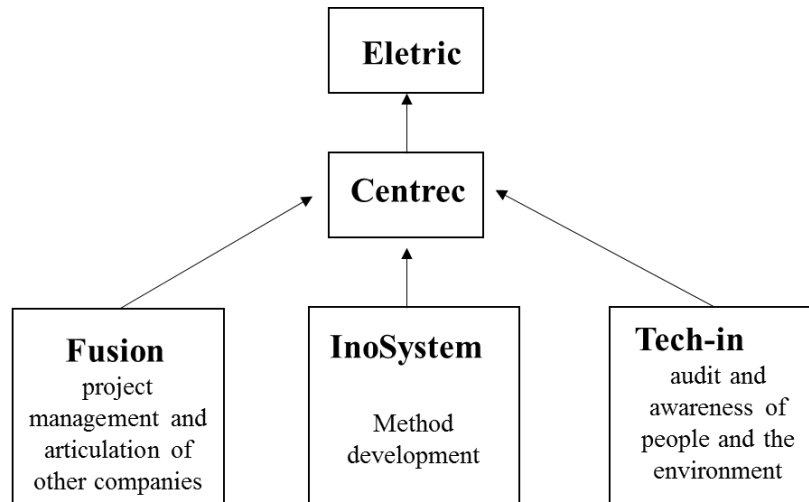


Figure 8 -Project structuration.

Source: Field research.

Fusion company, based in Fortaleza city, is responsible for managing the project, concentrating the worksheets, stages and the four modules of achievement. It also manages the input, output and project deliverables. InoSystems, the company with which I established a more direct relationship, was responsible for the method development and implementation and value generation continuum in the R&D&I projects development for Electric, constituted by a multicriteria analysis of the data collected in the project.

The company Tech-in was responsible for auditing the projects already carried out (for submission to Aneel in October 2015), as well as sensitizing people, managers and the environment to the need for a method for managing innovation in Electric. Finally, the company Centrec figures as company concentrator.

3.11.2 “Changing hats” in the field

During the research, I dealt with issues regarding my identity in the field, my language (visual, oral and written), and issues related to temporality.

Regarding my identity, I was first introduced to the staff as a “Centrec researcher”, and they told me that my contact with the field (personal, telephone, Skype or e-mail) should be made through this identification. I should not mention FGV, and should justify my research being part of the R & D project. In addition, for Fusion company I was “*the new girl*”. “- *I'm going to direct you to the InoSystems employee so I can answer that, once you're the new girl in the project.*”(E-mail –23/03/2016).

From October to December 2015, I was the PhD student from FGV who was participating in the project, not yet formalized. From January to July 2016, I became the “Centrec researcher,” and I noticed that on the field, the Electric employees and the respondents were a bit confused about my role in the project. From the end of July, with the project suspension (the period should be 120 days, but now the project is suspended indefinitely), I returned to be PhD student from FGV. This happened because, due to the project suspension. I contacted the GPD Manager to try to make still possible my access to the field. During this project suspension, I contacted the GPD manager in the end of June, and, in July, he allowed me to continue my field research but as a PhD student from FGV. At that moment, he asked me for a letter, containing the specifics of my activities in the field. So, in September 2016, when I returned to the field, I was presented under these conditions.

The *exchange of hats* to FGV PhD student in September 2016 facilitated my access to the interviews and my insertion in the field. Instead of staying in a small room in the annex, I got access to a table in the GPD itself for personal monitoring of daily activities. I realized that the staff were ok with me there, and they were very helpful in showing me where I could drink water, coffee, how to access the internet and other necessities. It was very productive this insertion week.

Regarding my language, I had to adjust the way I interacted with the field in many occasions. During consulting activities, I had to adjust my reports to a business format in which data and analysis were viewed easily. In addition, in the field research, as a FGV researcher, even though I explained my thesis, they asked me to make a presentation about what my proposal was really about.

On the temporal aspect, my first strangeness was with regard to consulting timing. In this activity, they want the analyses right now, and I felt that I had little space for reflection. In

the consultancy is worth more the timing to observe the phenomenon and already to bring some clues, and, mainly, possible solutions to what was happening. So at the beginning, I wanted to deliver academic reports, but I could not get time. I consider an academic report a document detailing my perceptions of what I saw, the course of data analysis, and what supported my perceptions. It occurs that when there was a project deadline, I had to prepare a report at the time. In addition, there was the charge that I would format my findings in the form of tables and *bullets*.

Okay, this is okay here. Okay, but do you have a presentation to show to them? Try to see a visual form that facilitates their understanding. It has to be easy, otherwise it creates confusion. You can do it in the format you want, I trust you (Bernardo - Field Notes, 03/02/2016).

Thus, I saw that there was a need to work ambidextrously: reports, temporality and deadlines to the consultancy, and reports, temporality and deadlines to the academic area. It was an interesting experience, but when the project was suspended due to the crisis, shortly after the fire at Electric, although my scholarship was suspended, it was kind of a relief, because I would have the opportunity to go on my own in the field. In the rhythm of research analysis, without bringing something ready and delineated, with time to reflect.

3.11.3 Bumps during field research

What it seemed to be a calm moment - the definition of my fieldwork, turned itself into a troubled time. In relation to my scholarship, I had to sign, for bureaucratic reasons, receipts referring to the received values. This happened because, as Electric did not release the resources to InoSystems, InoSystems itself had to pay me, which was very difficult for the company (as it had to deal with its own resources), and also for me.

Once I was in São Paulo, I was far away from what was happening. So, in April, after almost a month, Electric returned to contact with InoSystems to inform that the project would be suspended for 120 days, and therefore the payments will be suspended. This instability turned everything very complicated in this period, and I suffered with the uncertainty that I

would receive or not my scholarship. This whole situation was very tiring and these days of anxiety were very bad.

Still in April, there was a fire accident at Electric. On April 6, 2016, the fire consumed part of the building. Fortunately, there were no victims and the fire was quickly controlled, but with an estimated loss of R\$ 3 million. It seemed not real what was happening, and this gave me even more angst when reading the news, because I did not know if I could continue my research, once *“My research field was on fire and now?”* (Field Notes - 06/04/2016). Due to this situation, I contacted Bernardo and commented that, even without the scholarship, I needed to continue my research, and he kindly contacted the staff of Electric and obtained approval for my research continuation.

In addition, in July (07/12/2016), Electric officials decreed an indefinite strike. But only in July, I understood what was happening, and the reason why they did not release information to anyone on the project. We only knew that the project had been suspended due to the lack of resources, but I could not understand the reason for this lack of resources. The stoppage occurred in the country in early July with 17 companies of the Eletrobrás system, and the movement against the possible privatizations grew.

The retention of Electric's resources has meant that all R & D projects were suspended, as well as other extra activities such as employee graduation courses. *“- We're doing an MBA at FGV too, but now it's stopped, right? Without money, everything is stopped”* (Interviewee 27/112). The project shutdown was scheduled for 120 days, but this period has already been exceeded and no return was expected. In the field, at the beginning of September 2016, I was informed that Electric was in a “political trap” and that it will have to reactivate some R & D projects, because if it does not meet the annual R & D spending target, will have to pay a high fine.

By the end of the year, something will have to be done, do you know why? Because you cannot take this R & D budget and put it to "fill a hole". This cannot then either use, or pay a fine. And the fine would be very bad for Electric. It's too heavy. Something is going to happen, but you will have to wait for this whole change to happen (Interviewee 38/64-66).

In addition, I learned that some R & D projects have continued.

Ah, but some [projects] are "walking", right? There is one that is a damn problem because it is of the Minister's interest. There they go, they give money, but they did it wrong. You have no notion of the problem that this project is bringing (Interviewee 7/112-114).

It is important to highlight the national political situation at the time of the research. The changes that took place in the federal government caused changes in state enterprises and their foundations. At Electric, the Operation Director, nominated by PT (Partido dos Trabalhadores), handed over his position that was occupied before by the hydroelectric plant president. According to the Company, there is the expectation of further changes in the Electric's management.

In August 2016, the Electric board has changed. According to the Minister of Mines and Energy, Fernando Bezerra Filho, the new board should be more "tuned" with Eletrobrás. The Minister also stated in an interview (JC Negócios Blog) that the set of managers will be chosen according to the new Eletrobrás's management model. On Wednesday, July 27 2016, Wilson Bezerra Júnior, the new president of the Eletrobrás group, was indicated as the president of Directors Board of all subsidiaries. According to the Minister, changes in the Group's management stem from the verticalization of Eletrobrás's line of business, giving the Government greater control over the policies and strategies of the subsidiary companies. Also during this interview, the Minister criticized the model adopted by the PT Government in the mandates of Presidents Lula and Dilma, once each company ended up owning its particular strategies. Thus, the direction proposed by the interim government was that Eletrobrás would define the strategies of its subsidiaries. At that moment, I realized how a state enterprise is sensitive to the instabilities and bumps of the national macro-political sphere. Political movements directly affect the internal state policies, justifying the difficulty in conducting a qualitative research in a state enterprise.

At the beginning of September, during visits to Electric, I personally felt a climate of insecurity regarding the political changes. After President Dilma's impeachment, there was a change in Electric direction, and the decision of who will leader the company occurred while I was on the field. The day before the announcement, a lot of conversations occurred in the corridors, many people talked near the coffee machines and during their lunch time and whispers could be heard in the areas. The day just before the changes was so tense that it made me become anxious too. The GPD manager was nervous and came to talk to me:

Look, Lorena, you'd better not come on Friday. I'm saying this because we're going to have a meeting in the auditorium and you cannot interview anyone. I'm like this, do you know? I hope I'm here on Monday. I really want to continue this project with you. I'm very excited, but I do not know if I'll be here anymore. The guy who helped me to be here has already fallen. I'm really bad because of it, so tomorrow it will be crazy (Interviewee 16/147-51).

In the middle of September, I came back to São Paulo to prepare myself for my qualifying exam, and I agreed with Electric that I would return to the field in October (when the political situation of Electric would be more stabilized) for other interviews and follow-up GPD activities.

But in October, the situation in the organization was still tense, and during the months of October and November of 2016, I listened to and participated in many conversations about the country's situation and the fragility of the electric sector. For the companies of this sector, it was not a good period, once the risk of privatization and restructuring was imminent.

2017 did not improve the fragile situation of the sector. In August of this year, the Government announced a decision that surprised the market, the privatization of Eletrobrás, which constitutes a group of 233 companies in the Brazilian electricity sector. And in September, in response to a letter sent by the governors of the Northeast, the Minister of Mines and Energy confirmed that Electric would remain bound to Eletrobrás; in other words, it would be in danger of being privatized. Finally, on October 3rd, workers from all over Brazil participated in a political action against the privatization of the Company. The situation remains undefined until this moment.

3.12 Conclusions

As presented in the introduction, this chapter was divided into two sections. In the first section, I reported the pilot study carried out. This study was important, because after that I was able to refine the research instrument and it clarified the field for me. In section 2, I discussed the theoretical-methodological approach of the study, the strategy and research design. Then, I

briefly presented the thematic analysis. I also reported my involvement in the field, how I managed to conduct the interviews, and the difficulties experienced in the field.

CHAPTER 4

FINDINGS

CHAPTER 4 – Findings

4.1 Introduction

In this section, themes that emerged in the thematic analysis of this documentary research, field diaries and a set of interviews will be presented. The themes, sub-themes and relationships between them are also presented in the text, based on the analysis of the interviewees' statements. Considering that this is an abductive study, the next chapter will show the discussions between the themes covered by this research and the current literature of sensemaking.

4.2 Organizational context

This topic was chosen based on the interviewees' perceptions about the company, addressing the characteristics of the organized environment researched, such as bureaucracy, cultural diversity, management changes, organizational routines, process personality, cultural informality and political relations. The choice of describing the organization is due to the intention of locating the reader in the research's organizational context.

4.2.1 *“Time for bureaucracy, too late for innovation”*

Bureaucracy was pointed out as one of the main problems in conducting R & D projects and it was identified in three main areas of the Company: inside the own project manager's area, between some areas of the Company, and in the relationship between the Company and its regulatory agency, named ANEEL.

Spend time with control and not with project execution and purpose. The control here is very attractive, but it brings management problems. A balance is needed. (Interviewee 01).

Regarding the bureaucracy into the project's area, and between some areas of the company, after 2012, a specific area was created in the company to conduct contracts; in the sense that all company's projects started to be governed by the same regulations. This new area along with taxation area, are the most prominent ones in Electric, due to their control exercised inside the company. On the one hand, it seemed to be good, but on the other hand, it presented problems for the company's R & D management, as for example:

Here we have an agency that is an administrator of all contracts, but, how can I say, it is an organ that deals with contracts, just this, right? When a contract arrives in its hand, it will simply comply with the normative of contract execution, right? It doesn't have, I would tell you, the sensitivity and flexibility of trading, right? Public service, on the other hand, is funny. I can only do what is written. Often, I can lose a good deal, with a huge public profit advantage, because I don't have the ability to maneuver, I don't. I just have to do what the normative says. The normative is a cold, naked, and plastered thing, right? It has a purpose: no one can do it the way they want because we assume that people will act in bad faith. This is our principle, and laws are made that way (Interviewee 06).

I received today one e-mail about a possible project cancellation, because of the time it took to consider its hiring. Our company considered its cancelling, but the university said, "Wait, we have invested in this project." It turns out that this generates a bit of wear and tear as a person was betting on that. I speak, at a university, for two or three years. Then, imagine: there were people doing a master's degree course that were waiting for it there, in the expectation of a master's degree, that is, the person has finished it, but the project wasn't contracted. Then, you have to find other people to complete that work, to research again and such, so I think it impacts a lot (Interviewee 17).

5 years and I couldn't build the plant. Five years. Are you going to say "you did nothing?" I made the first bid, but no company was enabled. In the second bidding, only one company has been enabled. We signed a contract with it, all right. Then the company started doing the work and after two months the company asked me to leave the project. You have no idea. If hiring is hard, cancelling it is ten times more complicated in the public service. We talk about bidding, but when it comes its undoing, it's very complicated. You have no idea (Interviewee 29).

One problem is that the contracts' area doesn't differentiate the nature of projects aimed at innovation, which ends up disrupting the continuity of these projects. For example, for each item requested, there is an average delay of six months, and several reports were presented showing the difficulties in conducting R & D contracts.

Increasing rigor won't solve. It won't solve anything. There is the Brazil to show you this. I say even for myself. The bureaucratic procedures that are required are absurd. I myself have to demand from universities activities and actions, and I often turn researchers into bureaucrats. Research is a dynamic thing. Today you have a student, tomorrow you won't have him/her and you have to reset. Or there's a master's student that we want to move to a doctorate's scholarship, right? You cannot because you have to make an additive; you have to do a lot of things. It's such a bureaucracy that I tell you, I'm a professor too and I understand the both sides. It's not easy (Interviewee 06).

(...)

When you are doing your work; you face real difficulties, not fictitious ones. The group sells a very good image of R&D, right? It's difficulty! There is a legal requirement in the procedures, which is an absurd, right? There, to do anything, you face a delay. The universities only receive investments after they do their costing demonstration, that is, they first have to spend to receive. They treat universities as companies. How can you do a research like this? What kind of inspection body is this that hasn't the minor sensitivity? They are people who have passed in contest, they deserve the merit, but they are limited. I say only the halter is missing to them. And I tell you one thing, people who want, people in good faith who want to do something, they are hindered, they are discouraged from continuing their work (Interviewee 06).

Hiring negatively impacts a lot, because it is very time consuming. So it loses the meaning of the thing, and this thing is innovation (Interviewee 16).

So I tried to explain to him, and I entered as the interlocutor, between the professor and the administrator, in this matter of contracts, because he did not understand how a R & D contract worked and how it was, whether it was necessary or not. (...) Research is not like a project. In an engineering project, if you have a well-defined end-goal, you know you will get there (succeed). In the research, you do not have a proper end-goal: the goal is that, but it may be that in the course of the research you have to make paths, take shortcuts, seeing better ways of doing that. So, I had to shown him that the contract wasn't the same, as the project could have similar things, but it goes back and forth, and it depends on the results that are appearing (Interviewee 15).

Regarding the relationship between the company and ANEEL, the problems related to the agency's delays were pointed out. The delay for an initial approval of projects takes a long time (reports of cases with a 05 years' delay), and, added to the time for contracting projects (internal phase), usually ends up causing these projects to be out of date. The entire delay, which has already reached 12 years, entails a technological lag, a turnover of people and researchers of the project, and finally the loss of the project's sense.

The projects that I have participated, took years to be approved; then when you approve them, look at their scope and see that they are out of date, you cannot change the object, so you make a kind of gymnastics to change without ANEEL realizing it, trying to save the project, that's what I did. (...) It's to save it because the project waited three years [to be approved] and that research, which was valid for three years, is no longer within the scope that was there. Either you change, to try to save something, or do nothing, you will do a hocus pocus. For these reasons, I'm totally incredulous about new projects, first because the department does not support them anymore.

(...)

I was even starting another project with them and, to my surprise, this project was cancelled because the university wasn't interested in it anymore, and it was also a project that passed a lot of time to be approved: five years (Interviewee 02).

I do not think so: the R & D program is very idealistic, and there are times when it loses its synchronization with the reality of the everyday's life, that is, this lack of celerity sometimes kills bright projects. You have the time of an idea; you also have the time to develop it, as the world does not stop. It stays in motion. While one guy takes three years to do one thing, another already solved it, and then he is already selling it (Interviewee 13).

When a project finally starts, the student has already presented his dissertation, so he has stopped working into the project. Then, the professor has to find new students and has to rework with them, because "the train has passed"[time has passed] (Interviewee 03).

4.2.2 Multiples cultures

One of the points discussed in the interviews is the existence of different cultures inside the company. By culture, we use the concept of Schein (1992, p.9) that defines organizational cultures:

A pattern of shared basic assumptions that the group learned as it solved its problems of external adaptation and internal integration, that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems.

Electric is seen by the interviewees as a large company structure that has several differences in its departments, which favors the presence of diverse cultures, as pointed out by an interviewee when he said that “*Electric is such a big company that, when you change between departments, it seems that you have changed the company, as they assume totally different cultures*” (Interviewee 22).

Such cultural diversity was presented as a result of the following two main reasons: i) the structure of five large boards that have their own rules, customs and work fronts, and which communicate between each other with difficulty; and ii) the difference of generations between the employees, as pointed out by the interviewees below:

It seems to me the vast majority. Nowadays, we have people with more than 40, 50 years in the company, and there also are people who are there for 5 or 10 years: that's a huge distinction. (...) but with the old ones, sometimes a shock happens. To give you an idea, there are people who have no contact with a computer, who do not even want to have a computer, so you can imagine the degree of difficulty, in today's situation. In today's experience, we have a person looking at a printer throwing paper out and saying: "What's this?" There are still people like that, inside the company (Interviewee 12).

A cultural change would be necessary, because the spirit of the people who run the company is the same as 30 years ago, as they have been here for 30 years. I quoted our director's example, who is still our director nowadays. How does a guy like that, who is supposed to show a way of survival, say something like this, that the company does not need innovation? (Interviewee 13).

Due to such cultural differences in its boards, Electric was described as a cluster of different companies, resembling a feudal structure. In addition, the existence of various cultures within the same company was pointed out as one of the factors that hinder the progress of projects and business strategies, since it disturbs communication and procedural progress

between the areas, as reported by the interviewees:

(Electric) It is very hierarchical, with many boxes - what I mean with boxes is the fact that it's like each unit represents a specific business, and you cannot talk between the areas. (...) another thing is that nobody talks to nobody. We have five boards and all of them involve decisions made inside them. Sometimes I say it's like a feudal society: you have five fiefdoms, which are the boards, and it's hard for you to talk from one to another. You may have the same content being discussed between two or three areas, but they do not talk, and you are often unaware that there is a similar discussion going on there. You see that there is too much formality for one thing to flow from one board to the other. (Interviewee 27).

But at Electric, there are several companies inside here, and that makes it difficult, because there is no standard, the projects are different, each one has its own specificities. But you have to get a plan to achieve results; to experiment with exploration, to see where you have a gap and find something you may add. (Interviewee 12).

In addition of being described as a feudal system, Electric was also described as a family business, in which people from different boards and distinct political positions have to support each other in order to live together.

Electric has five boards. Each board is an independent company. They have to bear it, as if they were a family. There's a cousin you like very much and an aunt you do not like, but in the Christmas photo everyone appears together, as a rule people have to bear it, they have to put up with it. One is nominated by one political party; another is nominated by another political party. I do not like you: patience... This is the DNA of a public company (Interviewee 13).

4.2.3 Leadership changes and the lack of sensegiver

In the previous subtopic, we saw that the existence of different cultures among the boards of Electric makes difficult the organizational communication, the progress of the projects and also business strategies. In addition to such different cultures, one of the factors that have also been identified as hindering long-term business strategies is the constant change

of presidents. In the last six years, the company has changed its President five times, which represents almost one new president by year.

As it has mostly State control, Electric is sensitive to Brazilian's national policy changes. In this sense, the choice of its presidents is made by political indication, which makes the sustainability of its corporate policies sensible. The statements below say:

See, since I've been here, Electric has already changed its president five times and what did they want? Give results. I have no doubt about that, but how can a president with a management of one year and a half or two years at the most, do a job that provides sustainability? It's not possible because it is a political management. So you have to get out of this sponsorship, that political sphere. So this political criterion is a complicating. Who can do anything? Ah, when there is change, there is also a political management on top of the company, do you understand? It has to be technical. It has to be technical. (Interviewee 40).

In the last six years, we have had five presidents. A company that in six years has five presidents; none of them would be able to put together a strategic planning with a vision of at least five years to go. What is the chance that a company without planning has a vision of goals? What is important, critical for the company, if you do not have a way to lead it? If you do not have a leader to lead it? One comes, one goes away, another comes, another goes away. I can say that in less than a year, the current president will not stay there anymore. (Interviewee 13).

Regarding to innovation, the constant change of presidents of Electric was described as one of the majors' obstacles to the structuring of a technological innovation policy in the company, since there are discontinuities of policies and actions. *"No manager has made strategic planning for at least five years. It has no leadership and no long-term perspective."* (Interviewee 20). In addition to the change of presidents, the organizational structure of leadership in the company does not favor the establishment of a stronger innovation policy, as can be observed in the following section:

Our presidency works as a collegiate. So it is a collegiate of a president with a few more directors, and it's usually looking for a consensus solution, but that's not an ultimate thing. (Interviewee 30)

In addition to the change of presidents, the change of directors and direct management hinders the maintenance of innovation policies in the company, as there is no continuation of the processes, due to the changes of managers, as can be noticed in the passage below:

It [the project] can be discontinued, in front of a new line of management. This can happen. And this is very common here, the loss of power. Or, sometimes he is in a certain point, he [the manager] goes up in the hierarchy and leaves what is here [the projects included]. Then this can also generate a discontinuity; he [the manager] can go to another board. So there is all this, that if you have to make decisions based on that knowledge that was built, that memory, and you have to use a new approach, you need to ensure this, even by the continuity of the process, and in my opinion, there is not this continuity in all areas. (Interviewee 37).

Despite the difficulty of pursuing innovation policies and actions during the field work, the new presidency's support for the cause of innovation was reported, which gave a positive expectation to GPD, the area responsible for R & D & I projects in the company.

Today, we had the opportunity to change the presidency, and there was also a change of board, and we had a chance to talk to the president. And we feel a very big grip on the issue of innovation. Innovation was not part of, how can I say, of the structure of the company. In part, I say, is effective, because it was recognized, and because it has an entity and such. Today, the vision of the president and some directors has changed. Today, the president wants innovation to be part of the business planning. It was part of the business planning implicitly, but he wants to make explicit the innovation in the planning. (Interviewee 14).

Due to the adherence of the new management to the innovation cause, the R & D & I regulation was launched on January 26, 2015, representing a milestone in the company's R & D & I management. The launch of this normative and the position of the new presidency in favor of innovation brought a climate of positive expectation, not previously felt in the company. *"We had a change this year, and there is a very positive expectation on the board of directors, I bet. They are throwing a lot of chips over GPD, and until now we didn't have it."* (Interviewee 12)

4.2.4 Collision with organizational routine

Another element that emerged in the interviews is the question of organizational routine. By routine, we understand the sequence of usual procedures, practices and customs that are performed, aiming at the maintenance and functioning of an activity and / or an organization.

In the field, R & D & I projects were described as colliding with the organizational routine, in order to demand a space and a temporality different from those of the normal routine. I refer to *space* as a physical and organizational place for the development of R & D & I projects. And *time*, I understand the continuous period of time in which events occur, configuring the idea of past, present and future. The following statements explain the spatio-temporal relationship between routine and R & D & I projects:

Now, what I realize is that the house is so involved with the routine, the here and now, that the R & D & I projects get a little on the sidelines, not given their proper importance, because the company has the view that the R & D & I is not for now, is not so important:, the important thing is the routine. (Interviewee 11).

But the question I think is that there is a lot to change about us, GPD, a lot. I think the view has to be quite different. Separate a moment into the routine, and separate a moment to think about tomorrow. If we are hugged by routine, and tomorrow has embraced us, we will not throw away anything that can be improved. (Interviewee 07).

I do not know, people here are operational and maybe that's it. There is a lot of routine work to do, a lot, so who's going to pay attention to the R & D & I projects? (Interviewee 35).

As seen, the interviewees reported that the organizational routine is prioritized, to the detriment of R & D & I projects. R & D & I projects are seen as something for the future, for 'tomorrow', not fitting into the present, which belongs to the routine, thus demonstrating a non-belonging of the R & D & I program to the organizational routine.

It has also been described that there is an organizational resistance to the development of R & D projects, since these can cause changes in the organizational structure, shifts between spaces and activities that already organized. The excerpts below express this question:

You still need to organize your processes, in relation on how you move and manage your area. In this movement of tidying up, you will dispute between this tidiness and your routine, i.e., the results you need in the day-to-day. In this dispute, this management of innovation that everyone was defending usually disappears. Then, many times, I arrive in the areas, I take the employees, I take their hands to do and often, the manager himself, faced with the pressure of routine, privileges the day-to-day and ends up suppressing the process of innovation management. (Interviewee 28).

It existed, but suddenly people started to get into a routine, that is, it was "well on tape", but not on a day-to-day basis. We experienced it with several projects. (Interviewee 14).

The interview excerpts show that there is a good organizational visibility of the projects, so that the employees wear the shirt of innovation management, as long as they do not cause changes in their status quo. In the reorganization or organizational change movements, the routine usually wins the dispute, and the intended innovation in R & D projects is frequently forgotten.

4.2.5 Personality in the processes

An important point that emerged from the data was the issue of process personality. But what do I call personality in processes? *Personality* means when there is an intrinsic relationship between a process and a person, in the sense that the processes are not business ones, but really depend on a person to happen. *"Electric does not follow too much its flow chart, so it's very dependent on people."* (Interviewee 6).

Electric is a company that is located in the entire Northeast, but when you think about a content, it is common for us to think in a person, do you know? In relation to a work process... Electric has a system, but its management is old. The way it organizes itself is old. So it ends up that you need to locate people for a process. Oh, we talked about "it", we'll remember one person; we said "that", we'll remember another person. (Interviewee 27).

I thought it is important to talk about this topic, since it is directly related to the progress of the company's R & D projects. The relationship is that projects, as well as processes, become personal rather than business. *"Projects are basically created by people, not entrepreneurial"* (Interviewee 30). But what is the consequence of the projects being personal? The interviewees presented two negative consequences, regarding to the personality in the processes.

The first consequence described is the possibility of collision between similar projects. This is due to the fact that there is no control and business monitoring of the projects, so as the

projects are personal, similar ideas begin to be developed, without the research of ideas in the company itself, as can be observed in the following section:

The only person I talked to, really, was the GPD, do you got it? But I did not talk to other people about other projects. And in this personal projects thing, they had a project quite similar to ours, and ours was ready. This project is underway today. It's a project's fight. (Interviewee 30).

The second negative consequence is the lack of continuity of processes or projects when there is a change of area or absence of people. The following excerpts describe this concern by the interviewees:

At the moment I go on vacation, someone has to speak the same language I speak and treat what I treat, so if I bet, if I believe in follow-up, when I am away, someone has to follow up and transfer this knowledge. It has to be a transparent thing and the basis of the dialogue. If it does not, it will not have results, I miss this. (Interviewee 07).

Because sometimes it depends on the mind of a person, sometimes the knowledge lies in the head of a singer person. (Interviewee 16).

This is what I say: the projects are no longer from the enterprise, but they are personal. When that happens, I do everything for the project to work, to be implemented, to go and to fight. But the moment you got a PDV (voluntary resignation plan), you are fired, or you change jobs, this project begins to fall apart, to be destroyed, as it is a personal project. And one of the main problems here at Electrics that the projects are people. It's that thing: "It's your idea." No, the idea is mine, but the company has to buy the idea, it is no use investing in a project of R&D&I, to spend two years working on it, and in the end, at the time you are going to implement, they say "functional problems here, there, ", and you have to you implement it "half-mouth". You cannot do something by half. So I decided that I would not do R&D&I projects in Electric anymore.(Interviewee 13).

In this sense, due to the absence of the responsible person, and due to the lack of business attention to projects, processes and projects are stopped and lost, thus missing efforts for innovation.

4.2.6 Informality and non-registration of activities

One of the important points emerging from the data is the question of the culture of informality and the absence of recording of the activities in the company. This point is important, because when we work with the construction of a sense of innovation, the taken path is fundamental for the choice of actions in the future, that is, the retrospective path of a project can be important for making future decisions.

With respect to R & D contracts, employees' resistance to the R & D program was reported, since there is a demand for registration of activities, as can be seen below:

The problem with R & D & I is that it has to be structured, as it has to be, but it binds people. They prefer to say: "I'd better get involved in my own business, because that thing there is problematic..." This rule, which that tells that you have to put things on paper, "put it, you have to put it on paper, I'd rather do it in the informality, don't tell anyone what I did, don't tell GPD that I'm innovating", because if you say that they would say "cause you did not fill this form, did this and that", and it is natural, every place is like that. If there are rules, it's difficult. So, I think the big problem is that, by culture, people want to work without rules until the registration. Where I work, I need to keep track of people's attendance. "Why do you want the frequency?" Because I' will be charged for it. If I lectured, who attended? "Ah, about 500 people." And where are the people's names? So you didn't do the lecture. For example, each process has its structure. If people don't see it, they want it with freedom. This subject here, shows, in addition to the organization itself, that the thing was done effectively, people will know it was done. It is a company, not a bar, a bar where we are talking. (Interviewee 14).

Regarding to the registration of retrospective information on the company's R & D projects, it has been reported that the company treats R & D contracts as normal contracts, with no care in systematized filing and subsequent information sharing. Contract folders are kept by project managers randomly, and project information and contents were only searched due to an Aneel's audit.

No one knows about those old folders. There is a project there that no one ever found its folders as it has literally stayed there, in the back of the closet. It happens because people treat R & D as a normal contract. They do not understand that closing and final reports constitute history and not just the finalization of a process.

(...)

Because that documentation was in the contract manager's folder, in a dusty closet, and no one else ever looked at anything. Just because we are going to be audited by Aneel is that the GPD asked "but man, where are those projects?" This was done to confront Aneel. (Interviewee 45).

All information about project knowledge, how the negotiation was done, why some paths were experienced, or followed by A and not by B, is lost. (Interviewee 38).

Thus, project information becomes personal, since it only focuses on the figure of the project manager. It has also been reported that the sharing of information, when substitution or transfer of people occur in the project, is difficult, as can be observed in the following section:

So, in terms of transmitting knowledge to others, there was none, they never asked me for it, a presentation, of how should be, with my experiences, a case study, right? I didn't have that opportunity. The transmission of an experience only occurs when someone is working with you in a management area. And it's something interesting to deploy, I don't know how it works, the figure of the co-manager, something automatic. Then, I find it interesting, because, as it happens, sometimes, you need to leave the department, and the guy will not be interested in explaining to you all the projects. Like I did once, I even e-mailed the responsible person for information, but she told me she had nothing. I even met a professor and I was lucky, as she was on the last day of activity, before his vacations, and even went on vacation writing and sending e-mails, otherwise... Now, if I had a manager and an assistant manager, it would be interesting, because one can help each other, etc. (Interviewee 23).

The difficulty in obtaining information is due to the culture of informality in the company. We understand as a culture of informality the resistance of employees in relation to the formal registration of information. When it comes to innovation, the lack of registration of activities causes technological information to be lost, contributing to the waste of innovation efforts in the company.

The difficult thing is to change this culture of informality. (Interviewee 14).

I even think the issue of innovation is not difficult to change. What is hard to change is this thinking - I do not want to put the manager as an ugly duck - in general, structuring processes, which is more difficult. The culture of informality is so strong that when you try to give a format, people come back from the idea. (Interviewee 18).

My focus is on innovation. The scientific knowledge of research is not given that importance. Because we invested more than 160 million reais, 123 R & D projects, we discovered a lot of things that are scientific information. My focus is scientific information because information that does not circulate, which is not recorded, has no value. The focus of a research is how to make science takes the ownership of this scientific information, which was produced in a project and that didn't become an innovation. (Interviewee 45).

4.2.7 Politics

Finally, the last feature that was highlighted in the field interviews is the policy issue in the company. Electric has been reported as a political enterprise, and this means that actions are taken by political criteria, not by a logical scheme of rationality prediction. *"I saw that in the company there is a very big gap in the decision making process, because it is a political enterprise; so not all decisions are rational from the mathematical point of view"* (interviewee 18).

The impact of this on the management of innovation in the company is that decisions that favour innovations are not always taken because they depend on the political relationship between the actors. *"There is a barrier that innovation cannot get through. When innovation hits the political pillar, it does not pass and it is restricted by the heads that have more power within the company"* (Interviewee 33). In this sense, efforts for innovation may become hostage to political relations, as reported:

If the employee in the senior hierarchy doesn't think he needs it, no suggestions of a hierarchical employee below him will happen. So that's the big pillar. It is the pillar of resistance. Innovation won't be able to break this pillar because lower hierarchies won't be able to break higher hierarchies, unless higher hierarchies are arranged. (Interviewee 33).

As described, there is a hierarchical political relationship that must be faced in conducting R & D & I projects in the company. Thus, R & D & I projects that succeed in persuading superiors are more likely to succeed, while projects that fail to convince are more difficult to conduct. With the conviction of its immediate manager, described as "selling the fish", the manager can conduct the R & D & I project. Now, if he is unable to convince its

immediate manager about the innovation present in its project, the experience of managing R & D & I becomes arduous, as can be seen in the following sections:

It is open to anyone who knows how to “sell the fish”. That same project, depending on the person that presents it, can pass or not. (Interviewee 22).

And internally, it's this: if you propose R & D without the sponsorship of the superintendent or principal, you will grieve. If you, with that idea, cannot sell that its adherent to the company and that it will improve the internal processes, and that will have it, and also show it to the superintendent or director, you suffer. It was not my case, but I met some people who faced these situations. (Interviewee 19).

In addition, in order to the company's R & D & I program to be noticed, and thereby receive more organizational attention to its needs, we should raise the awareness of the program's directors.

I don't know how it was in the previous years, how was the management of the board in relation to that. We need to make the directors more aware, do you understand? Until this time, they asked the house to meet our needs regarding monitoring, and they seem to be involved and wanted to solve them.

(...)

So, as the staff is not thinking about the future, R & D projects can wait a little. Actually, we expect the directors have sensitivity to understand this, and this will go down to the house, because that's the way the staff will really want to do R & D here in the company, just like that, when the directors embrace the cause. (Interviewee 11).

Thus, in the context of R & D & I projects, a top - down movement (from the hierarchy to the employees) has more organizational strength than a bottom - up movement (from the employees to the hierarchy).

This other project was like a ping-pong game. Do you know ping-pong? Pa-pa-pa-pa, it was very good. I felt much better. Now for me, to have an idea... I'd better have no idea. If the idea comes ready, from above, that someone from above wants to do, I'll help. But to get an idea, it's very difficult for one thing to climb, from the bottom. If it comes down from the top (...), put it in our hand to make the ball run. Then the ball came to us in our hands "well rounded". Now running with a square ball is much more difficult. So if the ball comes from the bottom, it will not run. Now, a need that comes from top to bottom is much better. Bottom up is against the law of nature here. It's against the law of gravity (laughs). It does not work. (Interviewee 35).

The influence of the political character, in a top-down movement, was also reported during the conduction of a specific project. In the field, it was reported that a project had been approved in a very short time, circumventing all the bureaucracy of the company because it came from a minister's order.

In two months, it has already been approved on technical specifications, the public call has happened, it has already been contracted and it is already funded. What explains a thing like this, to try to make it the rule, not the exception? This was the minister of state who said: "You need to do it". (Interviewee 13).

4.3The R&D&I context

First, I will present the theme related to the R & D & I context of the company, which I divided into three historical periods, in order to understand the current's research situation. Subsequently, I present the organizational context of this research, describing the themes that have arisen for analysis, in detail, one by one, specifying their characteristics.

Electrics' R & D & I activity is governed by Law 9.991/2000 (2000), which seeks to promote a culture of innovation and investments in R & D & I in the Brazilian electricity sector. For the law's implementation, ANEEL is the organization responsible for its supervision and also for the supervision of the sector companies. Furthermore, in order to promote project management at Electric, an area was created in 2010 to manage internal R & D & I - GPD, for supporting project managers. Officially, the R & D & I activity in Electric is organized as it follows:

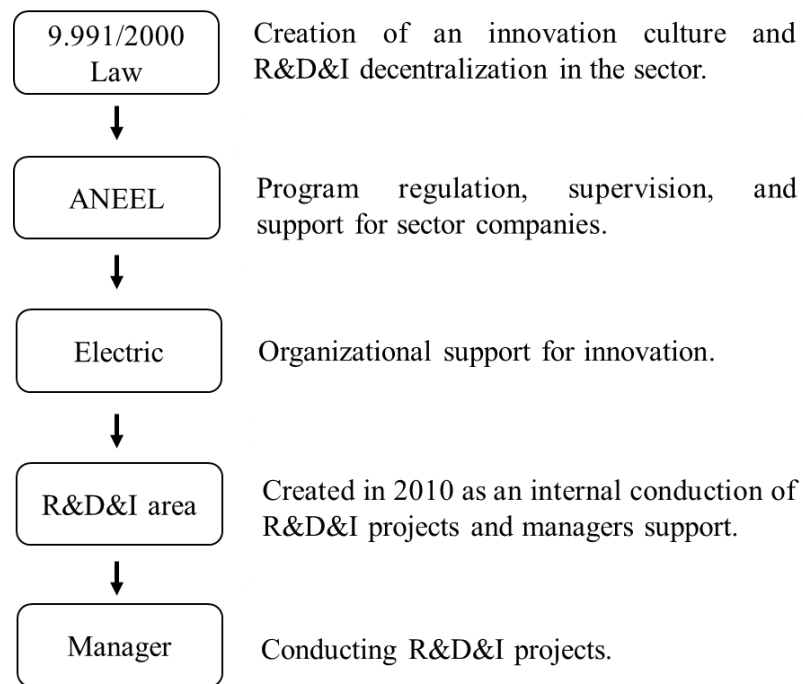


Figure 9 - Official context of company's R & D & I.

Source: Author.

Despite following the official structure foreseen in Aneel's R & D & I Manuals since 2001, this field research has shown that the R & D & I program of Electric has undergone changes from its inception to the time horizon of the research - a 16-year period from 2001 to 2017. It took more than six months for me to build a broader view on the R & D & I processes in Electric. As my first visits to the field occurred with the consulting team, I initially felt a certain distance from the field. It was only after the change of the company's 'hat' for a doctoral researcher that I was able to get closer to the interviewees, which allowed me to take questions and fill gaps found in the previous immersions.

In order to map the complex and tortuous paths covered by the interviewed managers, I proposed to analyse their reports through analysis dimensions in the historical period course. That was the way I found to organize myself in the data, and to organize the data for me. Thus, the dimensions and historical periods attributed here, far from acting as an analytical-temporal "Procusto's bed" in the data, were my analysis mechanisms for understanding the phenomenon and also the gaps found.

For the analysis and findings contextualization, I divided the Electrics' R & D & I management into three main periods: (i) from 2000 to 2008; (ii) from 2009 to 2012; and (iii) from 2013 to current.

Period: 2000 to 2008

Despite the investments and changes made in the sector since the end of the 1990s, during the sector's privatization process, carried out by the current government, only in 2000 there was a regulation of the sector's R & D investments. Thus, on July 24, 2000, the Federal Government published Law nº 9.991, dealing with investments in R & D for distribution concessionaires, and companies operating in the electricity generation and transmission segments. Law nº 9.991 of 2000 was later amended by Law nº 10.848, 2004, and by Law nº 11.465, 2007.

This main Law was a key milestone for R & D in the electricity sector and provided the application of a minimum percentage of its Net Operating Revenues (ROL) in R & D programs (0.5% to 1.5%), as well as in Efficiency Energetic Programs (PEE). Since this Law, investment in R & D became mandatory and no longer a right of choice for these companies.

But in a way, in the conversations I've had with other people, the strong point was that I had to get projects to fulfil that legal investment obligation, the minimum mandatory amount I had for you to send to ANEEL. So this is not a truth for Electric, but for the whole electrical system. In this period, until mid-2005 or 2006, companies regarded this investment strongly as an obligation, not as a competitive differential, something that could improve them (Interviewee 17).

During this period, the projects were submitted and started in programs (cycles / years) that occurred on specific dates, and must comply with the regulations set forth in the Aneel's Manual. In this period, there was a predominance of projects "from the outside to the inside", which were created by professors of Institutes of Science and Technology (ICTs) of the region. "The guys knew that Electric had money, so here it was full of professors with dreams proposing a project" (Interviewee 18).

Another characteristic of this period is that there was a limitation of Aneel for projects up to R\$ 400.000,00. In this case, projects that are budgeted at over R\$ 400.000,00 had to

present an economic feasibility study, and the responsibility for this amount, in case of disapproval, would be assigned to the company's owner. This arrangement meant that there was a spraying of small projects that did not exceed this limit, and it was the period with the largest concentration of projects. *“- Few companies wanted to pay the risk, so they preferred to make a lot of projects, adding the fraction of each project by year to their goal, in order to fulfil their legal obligation. The companies did not take it seriously.” (Interviewee 18).*

Then ELECTRIC took all the projects, approved, disapproved, or anything that was entitled, because it was like this: “Ah, I want to make popcorn”. “Is it an R & D project? So do it!” When it took everything, in an attempt not to be fined, they passed. The committee was created to make this decision, “we will finance everything that constitutes a project, or we will be fined. We need to commit that money, to at least tell ANEEL that the money is committed” (Interviewee 18).

During this period, when a project was submitted, it was first analysed by Aneel, and after its analysis, the project could go through the hiring process. This project management layout caused a lot of delay in the projects' approval. There were reports about Aneel's delay in approval, as can be seen in the following section: *“So the third project that I participated took so long for Aneel's approval and for the hiring that we had to give up. We've waited for eight years, then it lost the innovation sense” (Interviewee 29).*

Finally, regarding the manager figure, in the period between 2000 and 2008, according to the institutional structure, the manager was directly responsible for the project, which means that the manager himself would be responsible for its technical and administrative management. The responsibility for success was of all project managers, since their CPF (national individual registration) were registered in the project, what gave a strong personality tone to these projects.

Period: 2009 to 2012

In 2008, Aneel's new regulations were launched, dealing with the R & D & I projects management and development. Three important institutional changes occurred here. The first was about the seasonality of proposals submission. Since the new regulation, at any time of the year, R & D & I project proposals could be submitted. It turns out that this change was only possible because there was a relaxation of project's evaluation. This means that, since the new 2008 Manual, the risk has passed to the companies, that is, project submission has become

continuous; but if a project, at the end of its development, was not characterized as R & D, its company had to bear with the project's value, in addition to the R & D budget. In this sense, Aneel's participation would only occur at the end, approving or not approving a project. Despite bringing flexibility to the projects' start, the risk fell on the companies of the sector.

And so ANEEL, I think it should be more demanding about regarding project's management. Their auditing is one thing, and we're trying to implement this here, but in order to make that auditing a more permanent thing. At the end of the project, the audit will be immediately done, and do not let it become so long. This generated a large liability for projects that we have audited, and that can create a problem for us in the area of research and development. But anyway, let's see the future, how it will be (Interviewee 11).

It was an activity of the closest one to the president, which two other people supported. There was a change in Aneel's regulations in 2008. Until then, they were looking for projects to leverage that mandatory investment, of course by looking at the results issue, to solve company problems. With the regulation change, as it transferred more risk to energy companies, Electric found itself in a position to seek a better structure to handle this process. At that time, Electric had a very high R & D account balance, and by Aneel's rule you could not have a high balance, but only two annual obligations: two years of obligation accumulated in the account of R & D. Electric had at that time 200 and a few million, so it was forced to have a certain structure to leverage those projects results (Interviewee 16).

In addition, another change with the new regulation was the forecast of an area dedicated to R & D projects management, and an area that would be responsible for contract management. In Electric, the area responsible for managing projects was GPD, which in 2010 was structured, but only in 2015 began to appear in the company's organization chart. This negative point, regarding the lack of organizational visualization of the area, was raised by GPD employees.

By the end of 2010, Eletrobras requested that companies created an area to address two issues. One was about business planning, and the other part was about innovation. And then, as the deputy also dealt with business planning, the GPD was created at the end of 2010. At GPD, I had seven people working. That's when we started to appear on the company's organizational chart, in 2015, and innovation was inserted into the process because it was not from R & D anymore: innovation was included [as an area]. A normative was written to create coordinators, and their activities and responsibilities were assigned, where part of the innovation process and intellectual property were placed as activities, with importance (Interviewee 16).

Despite having an area for contract management and bureaucratic activities at Electric, the manager continued with his CPF linked to the project, and this point of direct accountability for the project was pointed out in all interviews with project managers. However, regarding the activities' accumulation, starting in 2010, with the structuring of a specific area for contracts, the project manager began to act more like a "fiscal" project, only following the progress and making the necessary articulations with his partners.

The projects evaluation is first carried out by the GPD that sends the project to the Board and, if approved, to an institutional Committee formed by people from different areas. After its approval, it goes to Aneel. I then questioned the respondents about the possibility that Aneel disapproves the project at its end, and what could happen to the manager, once the personality criterion still continues. The respondents were not able to inform me about the penalties that could be imposed on the managers (individuals). The only penalty told is that Electric would finance the project's cost, so only speculation was raised on whether the manager should respond to the Court of Union Auditors - TCU.

Not to answer your question, we decided not to take risks. (...) One thing is 300, 400 thousand reais, which was the old projects' average; another thing is 8 million reais at the time that we are (Interviewee 01).

Despite the structuring of an area to manage R&D projects in Electric, this area manages R & D contracts throughout the company, with the exception of the Operations Directorate (OD). During the field research, I learned that this internal situation happened because of political issues, as when the contract area was structured, officials from various boards were required. It turns out that that same year there was a Voluntary Resignation Plan (PDV) in the company, which practically restricted the OD staff, so the OD did not send anyone to the new area. Thus, the Director of contracts area prohibited the management of R & D & I contracts from OD.

Here at Electric, a department was created just to do contract administration. But the manager there said that he would not receive any contract from the Operating Directorate - OD, which is the area that has more projects, because when the contract's area was created, they called up on people from OD, but there was no one to send there, so they don't analyse contracts from OD area (Interviewee 01).

The flexibility promoted by Aneel allowed more robust projects to be carried out. As a result, R & D investments have also grown. As can be seen in the figure below, the average value per project, from 2006, is twice the average per project in the period prior to 2006.

Table 5 Data from 2000 to 2016.

Periods	2000 to 2006	Aneel 2006 -2007	Aneel 2009	Aneel 2011	Aneel 2014	Aneel 2015	Structuring projects
Projects	163	28	32	15	4	1	9
Valid projects	14	9	13	12	2	1	6
Disapproval and cancellation rate	8,60%	72%	59%	15%	50%	0%	30%
Average per project	517.502	1.202.670	1.333.168	2.369.310	2.675.637	57.053.085	37.146.940

Source: Field research.

From 2011 program, the value doubled again, reaching an average of two million per project, which allowed the development of more structured projects.

We even moved our referral. We had many retail projects, small projects, based on individual initiatives, on specific needs. With Aneel's introduction, with stronger projects, which requires not only financial resources but greater results, our tendency is to seek these projects, to make a wholesale innovation, not only retail. Our tendency is: we will, every day more, find partners; once for doing something in a greater volume, we need to have partnerships. This is the tendency, and the understanding of the board itself. We will not stop doing those retail projects, which are small ideas that can generate results, and these results, although small, have a very great importance, these retail projects. It is about creating an innovation culture. It does not have the dimension of a great project, but it creates the culture (Interviewee 14).

On the other hand, the cancellation and / or disapproval rate increased, when compared to the period prior to 2006. Another point is the decrease of the projects' total number. Empirical evidence suggests that this is a positive point, once the projects were no longer "sprayed".

Period: 2013 - current

The last period, which lasts to nowadays, is characterized by a crisis in the Brazilian electric sector that began at the end of 2012. After Provisional Measure 579 (MP 579), of September 11, 2012, which was subsequently transformed into Law nº12.783, complemented by Decree nº 7.805, dated on September 14, 2012, there was a fall in the electric system. This fall arose from the secondary consequences of this MP. The primary goal of MP was to reduce the energy tariff for Brazilian consumers by about 20.2%.

The year 2012 was delicate. At that time, the industrial sector growth was in decline, and therefore, the reduction in the electricity tariff would be positive. In addition, during this same period, the anticipation of concessionaires' renewal was under discussion, with the investments indemnification not yet amortized for power plants, lines and substations. It occurs that only the first payment of this indemnity has been paid, and there is no provision for the others payments, which impairs the conduct of R & D & I projects. In the case of Electric, about 90% of total generation assets (hydroelectric plants in MW) and transmission (transmission in km) were affected.

The consequences for the R & D & I area in Electric were negative. Projects were stalled, and due to the decrease in investments, there were losses to some projects' continuity in partnerships with ICTs, due to the difficulty of keeping those researchers without their scholarships. The country's crisis also caused other partners to run out of money and paralyze projects, and as a result of the changes in the sector, the revenue of Electric was halved.

We had loss of people in this process, because in 2012 Electric was impacted by the MP 579. MP brought the companies concessions renewal in the electricity sector, but it was a renewal with encumbrance, then it lost business profitability. In Electric, we had a loss of 50%. Because of this, in 2013, a voluntary resignation plan - PDV was made in the company, which ended in 2013. Some people left in 2014, and about 1500 people came out of Electric. Our area was impacted. We had seven people, with the manager, and then there were four: almost half left (Interviewee 17).

In addition, in 2013, there was another PDV in the company, which led to areas restructuring, with a reduction of 1400 employees, contributing to the difficulty of continuity of the projects. Figure 10 also shows that the level of investments in R & D in 2016, due to the crisis experienced in the sector, is lower than the investments made in 2002, showing a sector downturn.

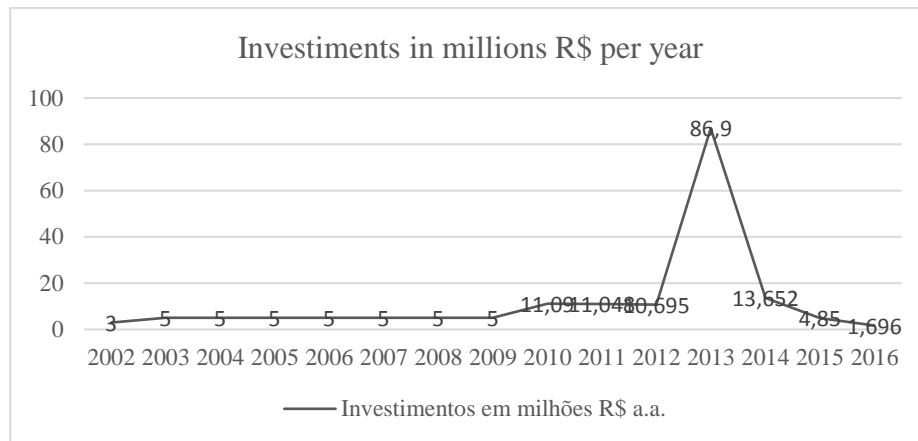


Figure 10 - Electrics' investments in R & D per year⁹.

Source: Field research.

Due to the decrease in R&D&I investments, the value to be invested increased as a result of the legal obligation (investment 0.5% to 1.5%), which was expected after Law n°.9.991/2000. As can be seen in Figure 11 below, in 2016, with the decrease in investments, the balance of legal obligation was accumulated in 2 years, which generated large fines for the company.

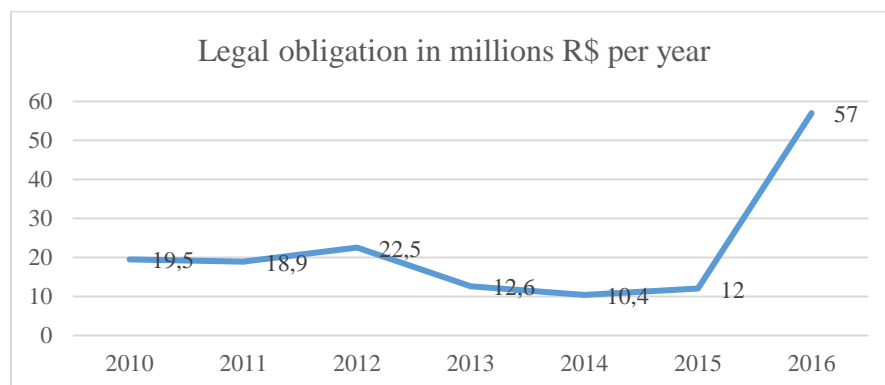


Figure 11 - Legal obligation in millions per year.

Source: Field research.

⁹ In the year of 2013, the value in investments made in R & D is highlighted in the chart, due to a high voltage laboratory development project, in partnership with Furnas. Only for this project, Electric disbursed 75 million to the Electric Energy Research Center – CEPEL.

As can be seen in Figures 10 and 11, R & D & I investments are declining, notably in 2016, when investments (up to August) were lower than in 2002. In addition, legal obligation to invest in R & D & I has increased dramatically, giving indications of the crisis that the sector is experiencing.

4.4 Who is the project manager?

According to Aneel's Manual (2012, p. 24), the R & D project manager must be a member of the company's effective staff and must be registered in Aneel's R & D Management System. In this sense, any employee of the company can be a project manager, as long as he observes the recommendations for the management of a project. Actions for conducting R & D projects are also provided in the Aneel's Manual, but the project manager does not receive training for the function. He or she should read the Aneel's regulation, the legal provisions attached, the normative of the company, and act with the development team of the project, but there is no specific training for all these tasks. In this sense, the lack of training for the function was pointed out as an obstacle to the exercise of the post, since the project managers end up discovering, in practice, how to act, despite the forecasts in the Aneel's Manual and also in the normative of the company.

I think what I said, the lack of standardization, you don't know how to manage an R & D, what to do, you have to use common sense, get a report, I see that way, because you don't got training. These uncertainties of how to act as a manager, hinders, this thing of how to manage, is a natural impediment, because you have a team that acts in one way, well organized, another totally. (Interviewee26).

From data analysis, different characteristics related to the figure of the manager appeared. Thus, I organized the findings in three typologies of managers that express the main differences felt by me in the interviewed managers' speech. For that, I considered the main characteristics observed in the field, and the reports of the experiences in projects (language mode, temporality of verbs, use of pronouns, use of metaphors, perception of innovation and identity), as we can observed in Table 6. This process did not occur sequentially, but during the

interviews analysis, documents, and my field diaries, I wondered how these types could be grouped together.

The first type of manager I called *self-centered manager* and I understand here the individual who identifies himself with the function of project manager, expressing in his speech an acceptance of the position and agency according to his position. As can be seen in the illustrations on this first type, the meaning given to its function is that of success / implementation of the project.

The second type of manager is the *self-mixed with functions within the project*. In this category we can find the managers who identify themselves with a different position from that of project manager, such as the role of researcher, position that should be occupied by a person in a science and technology institution. This distinction is important because the satisfaction and recognition sought in this position are related to the role of researcher, a function not foreseen in the company, which may compromise the commitment and involvement of the manager in the project.

According to some interviewees, the lack of a clear provision on the position of project manager can bring confusion to the project manager, since there is a confusion between the project manager function and the researcher role, as can be observed in the following section:

We talk about research, we talk about R & D & I, but when it comes to what your employee needs most will run. Because? Because the view is that it's not a university here. It's not making science, it's about engineering. So this relationship of practical engineering with the academic part, it is very confusing. We do not know the limits of each one of them, nor the intersections. Not even the managers. Or they come from one side or from the other. These conflicts are eternal (Interviewee 41).

Finally, the third type raised is the *floating manager*, who is the manager who has little connectivity with the project. This condition arises from the transfer of projects already in progress to these managers, resembling a parachute fall. This condition can cause poor connectivity between managers and the conduct of projects, contributing to their failure.

I consider this distinction among managers important, since the identification and non-identification of the individual with the managerial role can impact the management of the company's R & D projects, in the sense that a floating manager can act with less personal

involvement than a manager who identifies himself with his social position. In addition, the differentiation proposed here has a close relationship with the individual perception of social recognition, a subject that will be discussed *a posteriori*.

Table 6 *Manager's typology.*

Managers typology	Characteristics	Excerpts from the data set
Self-centered manager	Identification of the manager with the project management function.	<p><i>"It's that story: I do not make the project because I want to be a researcher, I make the project because I want to see it implemented. My personal satisfaction as a researcher, well, I deal with this in a different way." (Interviewee 30).</i></p> <p><i>"Look, I'm a manager; we first have to think positively, right? We need to think about the project success" (Interviewee 42).</i></p>
Self-mixed with functions within the project	Narratives demonstrate non-identification with the role of manager, but with the role of researcher.	<p><i>"Because people were leaving, you have to create a structure that is responsible for it in some way, and whoever is researching [has to] be worried about the technical part. It is about giving people the opportunity to research". (Interviewee 03).</i></p> <p><i>"But the recognition for the research itself, I never had, this thing of the researcher, never had a specialist, researcher, is not in positions and salaries this does not exist." (Interviewee 04).</i></p>
Floating manager	Narratives have weak connectivity between the respondent and the management function.	<p><i>"Before the manager went to another department, she worked here, so maybe she has more knowledge about it, because really, in her way out, some final issues of some contracts that were left, I assumed, but as I said to you, it was something like that, the bureaucratic part." (Interviewee 24).</i></p> <p><i>"When I came to work with this project, to administer it, it was already in progress, in about 30%, so I only continued the bureaucratic part." (Interviewee 26).</i></p> <p><i>"When a project such this one arrives, it's like a job falling out of a parachute." (Interviewee 23).</i></p>

Fonte: Autora.

4.4.1 Relationship with actors

In the previous theme, we analysed the social position of the interviewee as a project manager in the company Electric. In this sense, this theme and sub-themes are intended to deepen the sometimes complex and paradoxical relationships established between the figure of the project manager and other organizational actors. This theme is relevant, since these relationships are determinant for the success or failure of the projects, as pointed out by the interviewee:

Unfortunately we don't have much success in the projects, because they are projects that, often, the managers of these projects, not that they didn't give, but the areas didn't give the due importance ... I think it lacked a little of attention, perhaps, and their delay in being worked on. I think that there was a lack of attention of those involved in relation to them, and then throughout the project it ends up losing its meaning. (Interviewee 11).

For the purpose of presentation, I inserted in figure 12 below the spheres with which the project manager has to deal during the course of the project, and the arrows represent constructions of meaning with each of the actors: (i) legislation, (ii) organization, (iii) GPD, and (iv) partners for the project development.

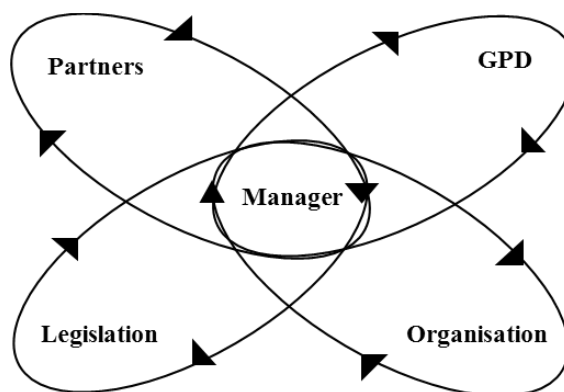


Figura 12 - Relationship with actors.

Source: Author.

(i) *Legislation*

The first actor is the legislation, and here I consider legislation as the whole body of devices, laws, norms, and administrative acts of an organizational and institutional spheres. The manager needs to be aware of the legislation, since his actions will be evaluated based on respect and compliance with the law. The manager needs to read, understand and make sense of all legal devices in order to act.

Regarding the interaction between managers and legal devices, the presence of the normative was described in all interviews. The normative is an administrative act that was promulgated internally by Electric on January 26, 2015, and was presented to Electric in a seminar, so that all employees became aware of it. The normative was presented by GPD, which is the organizational area responsible for the management of R & D projects.

When this legislation was launched, we felt it necessary to make it known. So we did a part-time seminar, where we showed it to the house, we spent several days saying we had a R & D policy, making a report, saying when it would be the date, then we did it, and when it was the day, we did the seminar. (Interviewee 11).

The normative was pointed out as an inflection for bringing the provisions of Aneel into the company, in this sense it has the function of internalizing the provisions of the company in the Aneel Manual, serving as a guide for the formatting of R & D projects. *“It is INAS03001, enacted on January 26, 2015. It was a very big inflection in the process, until then it did not exist”* (Interviewee 17). In this way, it is the main legal instrument with which the manager deals with the conduct of the projects, since it indicates the structuring necessary for the conduction of R & D projects.

We have a normative, and we expect the normative, and whenever we can remind the management of projects that are finalizing, that are starting, or in progress, that they pay attention to the normative. And then we go, explain what this policy is. (Interviewee 11).

The legislation was launched last year, at the end of last year, beginning this year. It came to bring structure, but it is not everything. It gives the way of how it should be done for you to generate an idea and then it be processed in a R & D. It has a goal within a structured way, think, seek innovation, do some project; it also has two important values. One is to make people aware that there is a process, that there is a path, and a clear path. And the second is to make a disclosure. (Interviewee 14).

In addition to serving as a guide for Electric managers, the drafting of the standard was also important to guide others involved in R & D projects, who were accustomed to more informally act during the last fifteen years, as described by the manager below:

We have been mapped very well the process of designing projects, and we are trying to turn the page of the monitoring, because we still have a lot of trouble, due to the lack of personnel and the very nature, you have practically 15 years where the people and our clients were accustomed to do it in a way,. The normative itself was a paradigm break within the company. We put there how we should report, and such. (Interviewee 17).

The normative is freely accessible and is located on the company's intranet so that all employees can have access. This accessibility to Aneel's rules and guidelines on the intranet represented a freedom for project managers, since they no longer need to call upon superiors to consult the regulations; they personally have access, as described in the following excerpts:

We have a place in the company, an intranet, and we put the regulations. Every area has a normative, so we put it in a place that everyone knows and can see it. We turn to the R & D managers what is the normative, we remind them, when it is the case, depending on the problem, we say: "Look, there is such a thing as R & D policy", or we explain to him about it, and then we ask him to see what the process is, but usually when he starts a R & D project, we remember that rule. (Interviewee 11).

People often stay on top. Today, with the normative, which is disclosed in the company, has a disclosure process, and everyone gets a message saying "there is such a policy to guide", everyone has access to it, it is not mandatory, so this helps because it is independent of the boss. (Interviewee 14).

Despite the accessibility to the normative, this instrument is not yet absorbed in the company, in the sense that many managers are still not sensitive to what is disposed in it, as can be observed below:

Such an instrument also needs internalization. We had a meeting where we called people to introduce this normative, and to facilitate the understanding. We note that, too, it generates a bias. Once again the people who are most willing to do this present themselves at the meeting. Today, people are looking for us - "Look, how are we going to do this here?" - Somehow people who had already started a project, had participation or already had an interest. We have a big problem today: we have a normative instrument; we started the disclosure, small. There is no need to massify this information, a problem. Second problem: Managers, due to several reasons, because of the reduction of the workforce, increased activity, external demands, the electrical system is increasingly demanding the direct participation of managers, these managers have not yet - at the moment, I I speak in the matter of the moment - they did not worry even, that is to say, their head did not change, even having this instrument. The idea of this tool is to get people to start thinking differently, to start building structured ideas. This is not happening yet, because many of the managers we wanted to target have yet to come out. (Interviewee 14).

Although it serves as a guide for conducting R & D projects in the company, the normative was also described as something cold, dumb and plastered, in the sense of being impersonal and not suited to the needs of managers. The following section describes the criticism of the normative:

I just have to do what the normative says. And normative is a cold, dumb and stuck thing, right? It has a goal, which is not for anyone to do the way you want because it assumes that people will always leave to gain an advantage. And laws are made that way. And we as a public manager turn around to try to do something (Interviewee 41).

ii. Manager and organization (hierarchical relations)

The second sphere to be described is the relationship between the manager and the organization. We understand here how to organize all manager contacts with people in the organizational environment. We will emphasize here the relations with the hierarchical structure, since they were the relationships highlighted in the interviews.

Sponsorship by the superiors doesn't occur only in the high hierarchy, but also in the middle-management - superintendence and departments. Although there are positive reinforcement cases of managers, there are numerous reports about the lack of support from middle-managers, which makes it difficult to conduct R & D projects.

I am totally disbelieving in regard to new projects, first because the department does not support.

(...)

There is a support, but it's only a "mouth's support". If you ask, everyone supports it, but I want to see a support at the time when you have to fight with someone to implement the project (Interviewee 02).

Does the company support? No, zero. To the point of asking for almost a resignation to be able to do. Well, in short, they gave me an unpaid leave (Interviewee 41).

(...) Well, we do not have that stimulus. If the guy said, "Look, if you do a R & D, I'll support you, but it gets difficult." (Interviewee 31).

In conducting my project, I did not have much support from my boss. Being able to go to Atlantic Institut, go to CPQD, stay together. And that is not well seen and obviously this generates more expense, more cost, so it is not well seen. It's even a paradox, right? Because if the company is forced to invest in R & D & I, it is obvious that it has an expense. But spending to do R & D & I is not an interesting thing because it came out of the pocket (Interviewee 05).

I particularly have a problem, today, in the issue of projects, more with the lack of internal support, with the lack of people in the hierarchy that understand the importance of the project and want its continuity (Interviewee 02).

The support of managers is important for two reasons: a financial reason, once managers can allocate part of the area's funds to project progress; and a political reason, because the immediate managers can "fight" for the project, helping the company to "buy" it. In this sense, the lack of hierarchical support may hinder the initial development of ideas, but also the conduction of R & D & I projects.

So it is very difficult when you do not have managerial support. He was a very specific person, would not even give it as a reference, but when you do not have support from

his direct hierarchy, it was not to say that it is impossible, but it is difficult. This is a cultural change, the company would have to undergo a change in processes. Sometimes you really lack knowledge, you have the immediacy, the question some people's people deal with things differently from others, it has all of that. Responding quite objectively: if something else came up, I would assess the context well. Maybe I would not do it the same way, but I would try, otherwise, to give vent to that, perhaps proposing a R & D, a more formal thing (Interviewee 21).

There have been reports of cases where the superiors humiliated or even harmed R & D & I managers.

For some, the person is doing a R & D, there the boss supports, praises, and there are others that the boss comes to punish, and say "No, you will not do this project here, do your activities". He had a colleague who took a vacation to complete his R & D. Imagine you need to lose your holidays in order to complete a project (Interviewee 20).

So the project manager is left alone trying to get his R & D out without the support of the manager. Often, they even penalize, they are: "Oh no, you're working for me", it's like you do not belong to Electric. (Interviewee 11).

iii. Manager and GPD

As previously mentioned, Electric' R & D & I area is GPD, which was created in 2010 and currently consists of five company employees. GPD's action in the early years was more alien to project management, as can be seen in the Advisor's speech (Interviewee 18):

The previous process was as follows: the deputy was responsible for animating the process of searching for projects, you internalized, encouraged the process of hiring that project. Animating was the process of project capture, you made a call, captured the projects, picked up the people who gave the ideas, evaluated, selected the project with the technical area, and then set up the hiring process for that project, which was actually to make his portfolio, for the personnel of our area, of supply, to hire him. The work of the staff who worked with the deputy went there: he encouraged the process, set up the briefcase and sent for the contract, and then went to the technical area to play. The technical area played as she understood it, was in the contract there, governed by 8666. The accompaniment that should have for our area, which was responsible for responding to ANEEL, was not happening in the project step-by-step.

In short, it was an accompaniment from afar. People questioned and everything, called together to solve some problems, but was not taken on the rein.

Currently, the area has developed greater control of the projects, but still demonstrates a grip gap in relation to the management and follow-up of the organization's R & D & I projects. Thus, with regard to the relationship between GPD manager, there was reported absence of support from the GPD team. Despite the efforts of this area, there is still a gap between the area and the projects carried out. Problems as incomplete information, lack of knowledge about projects progress, collision projects, project management problems (partner management, budget management, non-forecasting, lack of technology prospecting) were reported in the interviews.

We have been well mapped the process of designing projects, and we are trying to 'turn the page' of monitoring, because we still have a lot of difficulty, due to the lack of personnel, and the fact that for 15 years people and our customers were accustomed to do it in a way, so it is difficult to change (Interviewee 16).

What does not happen? A better monitoring of the GPD and the area where the project was generated because my manager knew nothing about what was going on.(Interviewee 02).

You see, I do not know about innovation, but in terms of structure, I think I'd have to have control, I even talked to Jorge in one of the first chats with him, and he said, "How come is that it? ", and he said" No, it doesn't work ". There is currently no member of GPD, the body responsible for R & D, within the project. There are about 30 ongoing projects, and no one knows what is happening. It has 30 projects, and four people in the team, we will divide, and each person will be a member of that R & D team. Are you having a meeting? Go, participate. Report, have you? Give it to me, I need to get it. (Interviewee 07).

But the issue of control, the participation of the structure of the GPD within each project, I feel a huge lack. (Interviewee 12).

The lack of control over the projects stems from GPD's own organization. It was reported in interviews a difficulty in finding and sharing information concerning the projects among

GPD managers. In addition, this information is not passed on to new members of GPD, in the sense that when an employee leaves the Area, knowledge is lost within the company, as can be seen in the following sections:

What I see is this: as soon as I arrived, I said, and went to one of the points that I touched with Jorge, and this is something of mine, that I found, and it's a healthy thing that was already the way I act. For example: a shared folder. In my old sector, people kept things on the computer, and I kept it in the net, anyone who wanted to take it, got it. Because it's not for me, it's for everybody that expects that result, so what I did, it's there. Then, talking to him, he said, "Well, nice." Then, when I went in and went to see, I saw that the folder was shared, and I think that's why he said it. Except that shared folder is so full, so without pattern, that I cannot navigate through it. It's an immensity of documents. The fact of not having a pattern, not having a system, makes it very difficult. Unfortunately, today, the team has four people and Jorge, directly linked to R & D. (Interviewee 07).

There have been people who were R & D and a few years ago and they are still on Electric, but in some other places. There is this problem in the transfer of knowledge, in the structure. You have to start from scratch. It was the advisor that Jorge had before that began to provoke different. (Interviewee 12).

The area was created by a law in 2010, but only in 2015 it started to appear on the organization chart. This fact has been reported in several interviews with managers of GPD, referring to the lack of attention that the company has with the Area, which causes discouragement. The lack of organizational recognition of the area is also observed in the lack of training of managers of the GPD itself, that is, GPD's own managers do not have adequate training to manage the company's R & D & I program.

Electric has to improve a lot in this area of research. Not criticizing the sector that does this, I think it is even a small sector, which should have more structure to accompany the R&Ds. I think this is even a factor that has so much wrath and is not so efficient for you to put a R&D forward, suddenly the company itself does not give so much stimulation to this area. Then people become discouraged. (Interviewee 32).

We need to empower ourselves, in fact. Thus: Paul is the oldest here. I still did not go through a training, I did some projects and courses, but so, a few hours, 40, 60 hours at most, but I wanted something more robust, like an MBA, a specialization, an extension, something like that. So neither I nor Paul and Fábio had this more dense

training that would make us necessary. But anyway, it is the most conceptual. We realize that on a daily basis, by experiencing, we will be able to obtain this necessary knowledge, let's see. (Interviewee 11).

Although it was created in 2010, only in 2013 began to have more active participation in projects conduction. This caused a negative view of the area, being known organizationally as an area that does not earn additional to work there and an area that does not have much work to be done.

I realize that there is no enthusiasm from people working in this area, so I do not know if it's because the area is not well sold, I do not know if it's because other areas have other gains. For example: those who work in the executive branch have a hazardous gain, this is a complicating factor, 30% of the salary. Then I can say that is one of the factors, but I do not know if it's because of him. And then people already see with that culture that R & D does not work. It's frustrating, because you go into that area and then you surrender, you do not do anything. That's the belief, so our picture is very small, the people that we have are new, and to me it's amazing that where I worked, in all areas, we had a very small turnover, the youngest person had 8 or 10 years in that area. Not today, with less than a year the person wants to leave, wants to change area. After I got here, of five people, three have already been changed. On the initiative of the person, not by another factor (Interviewee 14).

In addition to the participation of GPD in the management of projects, attention was drawn to the construction of senses of innovation by GPD employees. In the first two field trips, I assumed that because they are the body of Electric responsible for R & D & I management, all employees would share the same understanding of what innovation would be. Only after the encodings and comparisons of the data did I realize that something was not making sense, thus arising from the different senses of innovation data within the GPD itself, which are briefly described in the Figure below.

The first group of managers understands that the R & D & I project is a contract like the others within the company, so the project manager must be a project administrator and proceed with the bureaucratic progress of the project. For this reason, this type of manager understands that GPD is not to blame for the failure of the projects. In addition, he understands that the criterion for success of a R & D & I project is that it will come to an end. Thus, upon completion, the project would be considered successful.

The second type of manager of GPD understands that the area (GPD) is also responsible for the failure of R & D & I projects and that business innovation is a complex phenomenon that needs to take care and attention from its ideation to outcomes.

The third type of GPD manager understands that innovation in the company occurs in two flows: one in the company's R & D & I program, and the other in the Innovation Prize, where there is more informality. Because it has the sensitivity that there are two streams of innovation in the company, this type of manager focuses on the figure of the project manager and reflects on their difficulties.

Table 7 Sense of innovation for GPD employees (to be continued).

Innovation sense	Typology of GPD managers	Characteristics	Illustrations
Project to be finalized - bureaucratic vision	R & D Contract Administrator.	It understands that innovation management is carried out through normative, and that the criterion of success is when a project is finalized. Manager understands that the area has no direct fault on the failure of the projects. Manager understands that the area needs robust training, in the postgraduate or master's degree format. Use of scientific knowledge to justify innovation discourse.	<p><i>I think they lacked some attention, perhaps, and their delay in being worked on. I think that there was a lack of attention of those involved in relation to them, and then throughout the project it ends up losing its meaning. That would be a probability, I do not know if that's really it. (Interviewee 11).</i></p> <p><i>We do not have to empower them, we have a place in the company, an intranet, and we put the rules. Every area has normative, so we put it in a place that everyone knows and sees this normative. We turn to the R & D managers what is the normative, we remind them, when it is the case, depending on the problem, we say: "Look, there is such a thing as R & D policy", or we explain to he or she talks about what it is, and then we ask him to see what the process is, but usually when he starts a R & D project, we remember that rule. (Interviewee 11).</i></p>

<p>A complex phenomenon that requires follow-up from ideation to the market</p>	<p>Assumes the position and responsibility of R & D & I management.</p>	<p>Manager understands the responsibility of the area in the failure of the projects, and points institutional aspects such as corporate culture, frequent change of presidency, bureaucracy, organizational resistance to innovation. Manager understands that R & D & I activity on Electric occurs only by legal obligation, and only "technology survival" occurs. It highlights the lack of sharing of information.</p>	<p><i>The hiring impacts very negatively, because it is very time consuming, then loses the sense of the thing, the thing is innovation. If you think, this morning we were talking. Eight years, then that certainly is not more innovative. (Interviewee 07).</i></p> <p><i>Electric has never had it in terms of innovation outcome. Electric never had a prescription, financial survival, Electric never needed innovation to pay my salary, it needed the Xingó turbines to generate what they generated, because the Xingó turbines held all the inefficiencies of the company. The machines are yes, but the electricians are not. Period. Objectively speaking, you do not have to.</i></p> <p>(...)</p> <p><i>I was manager until July of last year, and I asked you to leave because you see that the effort you make, had an employee who went to court alleging harassment because I gave a warning, it was not a suspension. You know what it is that you take a role, for lack of supervision, and says "You have caused damage to Electric, you did not do what you should have done, and by not complying with the regulations, you are being warned, please sign your warning." "I will not sign." He entered there, saying it was bullying. (...) I increased 40 pounds in the period I was in management. I even weighed 136 pounds. Then I asked to leave. (Interviewee 13).</i></p>
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<p>Two streams focused on innovation in Electric: R & D & I program perverted for other purposes, and 'innovation' that offers freedom and informality.</p>	<p>It assumes the position and responsibility of innovation manager. Manager that brings the micro dimension (manager) to the analysis.</p>	<p>Recognizes that there is a weak discourse of innovation in the institution and that there are two streams of innovation: R & D & I that is standardized, and does not work; innovations based on informality. It recognizes the importance of regulations and highlights the lack of monitoring of projects. Manager recognizes the bias of the R & D & I system for individual interests, and understands that project managers need to be trained.</p>	<p><i>Some acted well, but by choice. On the other hand, not only was there no education, because it has to have instruction and monitoring. This monitoring, I realize that it is very weak, and so things happened, happened, and there was no real understanding. (Interviewee16).</i></p> <p><i>The company will work with innovation, this is still a bit ethereal, is not down with the ground what this means. But if I say to you like this: "Let's innovate, but innovate why? It's bad? Let's earn money? Is it by competition? Is it because of the brightness of the company, is it to get a job? What am I going to innovate for? "These points, they still have interrogation. There is, therefore, no direction. "Look, I want to innovate because my processes can generate new results because I'm out of time." This vision of innovation is still very lacking. (Interviewee 17).</i></p> <p><i>So, just to divide schematically, there are two ways of generating ideas and innovation. One is the ideas processed through the so-called R & D, which follow the manual and all. And the other are initiatives by local necessity, which has more freedom there. (Interviewee 14).</i></p> <p><i>I even think the issue of innovation is not difficult to change. What is harder to change is this thinking - I do not want to put the manager as an ugly duck here - in general, structuring processes, this is more difficult. The culture is so strong to be done with informality that when you try to give</i></p>
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			<p><i>a format, people come back from the idea. The difficult thing is to change this culture of informality. (Interviewee 18).</i></p>
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iv. *Manager and partners*

The relationship between the project manager and the science and technology institutions is delicate, due to the difference in the nature of this type of organizations. It was emphasized in the interviews that, while in Electrical time routine and bureaucratic issues are important, academic research is differently treated because of its temporality.

Who is in the university is very far from the routine tasks. It is not that it is not important to have this formal training, but there is a barrier. Sometimes the guy at the university thinks everyday things are silly, the problems we have, and the design guy thinks the guy at the university is out of touch. We do not have this bridge between the need and the framework of the institution; it is one of the problems. This issue of project time is extremely critical (Interviewee 21).

And we have a good part of our projects; most of them have partnerships with the universities here. Problems: we have serious problems, because universities do not have a business vision. They have an academic view, and this is a terror, because they do not have a concern, for example, in time, they do not have a bureaucratic concern of a company, they do not have a concern with effective results, they focus on studying and search, and stay on a level that is not what we want. Often the result is very difficult to take place within a university. Mainly, one of the biggest problems that we have inside university is the time factor, because we have concern over time, but research has no concern with time. But there enters a conflict with the philosophy, because if it were like this would not have term to fulfil a project, it does not have. If it has, it is because time is valuable, and the university has not. So we have some frustrations, but our interest is to maintain the partnership (Interviewee 14).

The bureaucracy breaks the meaning of what they are building, for example, you have project with 12 years to be able to be finalized. Bureaucracy breaks down trust between partners. You cannot keep any team at university, everybody runs away. There is no systematization or organization of processes. (Interviewee 07).

Besides temporality in the development of projects, it was also pointed out that the final objectives between academic and industry are different. While the industry is seeking the end of a project for its commercialization, in the academy, researchers turn to the development of the research itself for the production of papers and for reaching the frontier of knowledge.

What has had conflict was, nor was it a conflict, is you learn to deal with the ego of the doctors, the academy. In order to deal with the ego of these people, they have to learn because they want to advance very far in the border and not converge, so the main conflict was that at one point we said, "Let's stop moving on the border and we'll converge to that". There is this conflict of making the project converge, something like "Let's stop publishing paper and let's work on the software to generate a result". (Interviewee 22).

This difference between the institutions causes problems in the conduction of projects, since the adaptation of the ICTs to the bureaucratic dictates is difficult, as it is a research organization, not familiarized with corporate bureaucracy.

The rule has to put somewhere, as a set of rules, an interface for users, and it was not done so, there I returned. And the guy's response was: "I'm not a software house, I'm an academy." But there were those who were going to do the project and put a decent set of methods that were acceptable. Then he hired the IT people and rewritten and sent us a reasonable thing. (Interviewee 22).

The volume of bureaucratic impediments... I say even for me. I am required to demand activities and actions from the universities, in which I put the researchers to be much more bureaucratic than researchers, right? A lot more... I have no doubt about that. Boy, searching is a dynamic thing. Today you have a student and that student leaves soon. It has to be automatic, okay? Ah, you increase your value here because you were a master's degree student and you went on to be a doctoral student. Ah, but you have to make additives, you have to do not know what, it's so bureaucratic that I swear to you, I think twice before getting into such a deal. And I am a professor and I have followed the academic part of all these processes. So I have experience on both sides: on the side of the proponent and on the side of the executor. It's not easy. (Interviewee 40).

The difference in nature between institutions impairs the progress of R & D & I projects, since universities have to adapt to the bureaucratic needs of Electric, which causes disruptions and delays for further research.

According to the project coordinator, the professor-researcher, often they do not have the money in hand, and what happens: they have to pay for the later to reimburse them, and often they do not have cash in the box. And then they will wind up this process until cash comes up. (...) If it was done here, it also has its bureaucracies, but I believe it would be faster in the end. (Interviewee 32).

In order to reduce these difficulties, the respondents were told that a good resolution was a pre-dating, which would be a preview in the agreement for the development of a technology. In this preview, the technology itself, its temporality and the team constitution can be discussed.

The best R & D, when born well, is when there is pre-dating. What is the pre - dating I say: before I submit the project on the site of Electric, that she wants to do that R & D & I already talked to the university, what is what we want, what people will do, what are the stages, how long, more or less, because we, in this part, left with everything practically assembled, and when it left the site, we already knew what university to propose, that had the capacity of achievement. We got a college proposal that we knew we really did not even know what it was. It's good this way. When you launch an idea that has no conversation, I believe it is harder for you to generate, because you often do not know the university, the people who will develop it, so it is extremely problematic. I think this pre-dating is extremely important, because then you already know where you have knowledge, competence, know that the staff is able to realize the product you are wanting. At least my projects I always ran with universities that I knew the product would come out of. (Interviewee 06).

4.5 Trajectory of a R&D&I project

To initiate a R & D & I project, the manager needs to follow a project management path set forth in the Aneel's Manual and the company's R & D policy. For purposes of illustration, the figure below, constructed from our field interviews, seeks to show the trajectory followed by a project. This trajectory consists of the phases of (i) design, (ii) approval, (iii) contracting, (iv) development, (v) audit, and (vi) implementation. In addition to these phases, guiding an R & D project involves the influence of the national political scene, as well as characteristics of the organizational environment, as seen in the current chapter. Next, I describe each one of the phases, with illustrations from excerpts from the mentioned interviews.

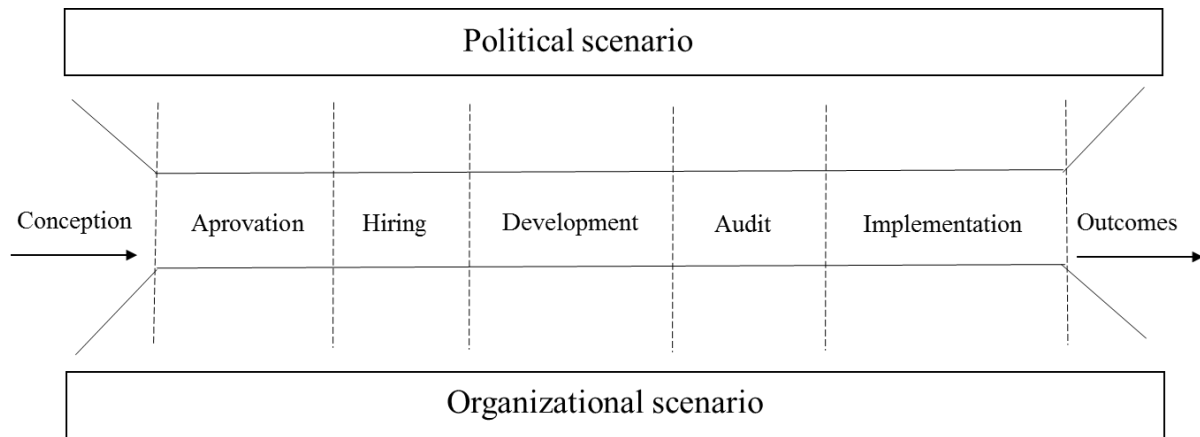


Figure13–*Trajectory of a R&D&I.*

Source: *Author.*

i. Ideas conception

The first phase in the trajectory of an R & D project is the conception of the idea of innovation to be developed. With regard to the generation of ideas for R & D projects, they arise from the difficulties faced by the interviewees on a day-to-day basis, as well as the personal willingness of respondents to research a specific subject. However, for the search of ideas, it was not described in the field the realization of systematized research prospects in research platforms, which can complicate the projects, as far as their originality is concerned, as described by the interviewees below:

The process of seeking originality is very subjective, very fragile, because one does not have a reliable database. And this is in the hands of a single person, there is no system. At the Academy, you have a system to confront the work to see originals, copies, plagiarism, etc. But here, there is no way to archive this, to the phase of pointing out a project that already exists here. So it gets complicated. (Interviewee 07).

The search was in the publications in the same market area, using Google. Even though, when you are going to launch a R & D, you already have to have an innovation, so you have to do a whole research of the market and of publications to see, if you already have some work being published, being done. (Interviewee 32).

At the time, we did not do it, we did not have this concern to seek prior patents, these things, because it was very focused on solving the problem, and Electric has no culture, that is, it does not develop [projects] in general. (Interviewee 21).

As pointed out by these interviewees, the searches in the publications are made available by Google. In the field, systematized searches were not cited in patent banks, or technological platforms, which may lead to a limitation in the technologies to be developed.

ii. Approval

After selecting an idea, the start of the R & D project must be approved by the organization. However, during the period from 2000 to 2008, the idea put forward in the annual's R & D call needed to wait for Aneel's approval, in order to proceed. *"ANEEL was, at the beginning, wanting to take responsibility for itself, so you had to submit, it analyzed everything, it could only begin after it had said yes or no, it was a bit complicated"* (Interviewee 06). It turns out that Aneel needed to analyze R & D projects of all companies in the sector, which caused a delay in the approval of projects, as can be seen in the following sections:

After the beginning, this phase of approval was very distressing for me, because it took a long time and I was afraid of losing the timing of the process. If I knew that would happen from 2010 to 2013, until the hiring part, I think I would have jumped out of the project. But as we got into the process, we have to go to its end, so let's finish this project. (Interviewee 05).

The proceedings took a long time to be authorized. They made a delay on this project, of almost eight years to be approved. (Interviewee 01).

The delay for Aneel's initial approval undermined the novelty of the R & D projects, given the technological gap between the project proposal and its approval. In the field, it was described that managers tried hard to "save" some innovation in the projects, as in the descriptions:

It's about saving because the project passed three years to be approved and that research, which was valid for three years, is no longer within the scope anymore. Either you change, to try to save something, or do nothing, you will do make-believe.

So much that I am totally disbelieving in regard to new projects, first because the department does not support.

(...)

Those projects that I participated in, took years to be approved, then when you approve them, you look at the scope and see that it is outdated, you cannot change the object, you do a huge gymnastics to change it without ANEEL realizing, trying to save the project, that's what I did. (Interviewee 02).

In addition, the delay hampered the development of projects, in the sense of partners withdrawing from the project, given the time lag for approval. *"I was even starting another project with them and, for my surprise, this project was cancelled because the university was not anymore interested in it, and it was also a project that took a long time to pass: five years."* (Interviewee 02).

Due to the delay for approval, Aneel modified the approval rule for the projects. Currently, the idea is submitted in the management system and it is approved to move through the company itself. Only at the end of the project, Aneel approves the project or not. Although it facilitates part of the progress of projects, since managers do not have to wait for an initial approval to start them, the risk has passed to Electric, as there is a possibility of non-approval by Aneel. Thus, projects already finalized may not be approved, and the company must return the amount invested, increasing its debit balance.

This change has been very dynamic. Initially, when R & D had prior approval by ANEEL, it had a behaviour different from the current one. This behaviour was even more rigorous, because it is only submitted if it was approved. Here at Electric we had a lot of problems because there was no discipline in the R & D training process. At the present time, I understand that although it is free for each entity to generate its R & D, it also keeps a greater responsibility behind it, because it has to be sure that R & D is in line with what ANEEL expects. (Interviewee 14).

Given that the risk of the project passed to the company, and consequently to the manager with approval at the end, respondents answered that Aneel's change caused fear in many managers who preferred not to engage themselves in R & D projects, given the risk of their participation.

The society lost because we were afraid of this project' change. That's the big problem. It ended up that the money stayed there, the ideas started to diminish, and it was the

professional, the technician, being responsible for things of the head of some technicians of the ANEEL. Other than that they take the project, say that there are no people to analyze and spend five, six, seven years to authorize a project. The rule was bad and they managed it to get worse (Interviewee 01).

As seen, in addition to the fear reported by the interviewee, Aneel's new rule was criticized in order to cause a discouragement for R & D projects in the company.

iii. Hiring

After approval of the project, the hiring phase begins, in which happens the search and selection of partners for the development of the project. Hiring was described as one of the most critical phases during the R & D trajectory for two reasons: (i) bureaucracy in contracting and de-contracting processes; (ii) intellectual property policy and technology transfer of the company.

The first reason is the bureaucracy, which stems from the fact that the contracting of partners must follow the provisions of the company's regulations, as well as the provisions of the national law of bidding, according to Law N° 8.666 of June 21, 1993. Thus, for contracting partners, it is first necessary that a call for proposals be properly prepared and launched, next the selection of the proposals of three participants, and finally the selection and contracting of the chosen proposal. Compliance with the legal provisions causes an excessive delay in contracting, which impairs the success of many projects, as can be seen in the following sections:

This hiring process in Electric is very time-consuming. (Interviewee 06).

R& D& I here at Electric is like this, it takes a lot of time for hiring. We had one that was urgent two years ago and has not been hired yet, so I do not know how R & D& I people see this problem of these hiring delays, but it's something that greatly undermines the project. (Interviewee 32).

What I think I need to have is the hiring process to be faster and within the company. Six months is not much, but more than six months cannot happen. It should be a maximum of six months. (Interviewee 05).

The projects take a long time for hiring. If I could list the reasons, there were several reasons, but one of them is that they were very bureaucratic matters to draw up the contract. Very bureaucratic. (Interviewee 44).

So the difficulty I saw was in the matter of hiring, because we have internal procedures, time and deadlines, and there is a queue of processes to be analyzed, it was more in that sense. (Interviewee 19).

So, just to choose a partner, in a company like Electric, you have to make a public announcement, and we went through, making this announcement, going through several people, it was a new thing, it took a while, and it's been a year we put the notice ready on the site of Electric. And there is still a delay there with the TI people, and it was only in December of the last year that it went to the site. It was put there to choose a partner, and so far, and we are in September, we did not close with a partner, because some were interested, asked questions and everything, but a manufacturer contacted us several times, and the people had a videoconference with him, phone contacts almost weekly, and the news I had last week were that by the end of the month they will send us their proposal. I think that if it arrives, there is a whole process until formalizing the project, signing and initiating it. (Interviewee 06).

In the field, it has been described that projects take up to three years for hiring, causing that the partners Institutes of Science and Technology - ICTs discourage with the delay of the process. The disincentive comes from the fact that, working with the three-year timeframe just for hiring, master degree and doctoral students have to change their research object, migrating to another research. In addition, the lengthy hiring time means that students assigned to the project may already have completed their master's and / or doctoral courses. Thus, it is necessary to make changes in the contract, which requires more time, making it difficult for the partner ICTs to have a predictable start of the contract, as described below:

But the hiring issue wears very, very much. Anything you try to do, it does not happen in less than six months. Then you come up with an idea - and I'm an instantaneous person myself, I want to see the result - you launch a proposal, or you want to change

it. That's a year from now that you can continue. So, the people who were involved in that project took so long and other issue appears for person to discuss,[but] the person goes there. So you've lost that body of thinking heads to another project, is it going to make sense? Then that ends. (Interviewee 07).

It is an interruption, sometimes abrupt. This interruption impacts on the contractual issue, because it has a time, and this breakup is not easy. Sometimes there is no other person who has affinity with that subject, who has the experience, then that person will have to go back to try to follow a research that already exists. So it's hard. Now, this, in most cases, I believe that the difficulty is in the time it takes for the hiring, because it is enough difficult. (Interviewee 44).

There was an email I received today about the possible cancellation of a project because of the time it took to consider contracting it. It ended that Electric considered cancelling it, but the university said, "Wait, we invested in this project." It ends up causing a bit of wear and tear because the person was betting on that. I speak, in a university, for two or three years. Then, imagine: there were people doing a master's degree waiting for it there, in the expectation of a master's degree, that is, the person finished [the course], and the project was not contracted. Then, you have to get people to complete that body, develop the research again and such, so I think that impacts a lot. (Interviewee 07).

In addition, the delay in contracting puts in check the sense of innovation of the project, given the past time lag. Thus, projects that have been delayed to be approved, as seen in the previous item, take time to be hired, causing the project goal to be lost after years of waiting. In the field, there were cases of projects that had about eight years of waiting until its beginning (approval and contracting), which puts in question the novelty of the employed technology.

The hiring impacts very negatively, because it is very time consuming, and then it loses the sense of the thing, the thing is innovation. (Interviewee 07).

I think this: I should have had agility to put into operation such equipment. If it brings benefit to society, then let's build it! These difficulties of hiring, choosing a manufacturer, were to be minimal. It was for a director, a company president, to call a manufacturer and say, "Dude, I want to build this equipment, I pay for everything, I have R & D resources, how much do you want?" And start up and then say "Oh, it works!" (Interviewee 06).

If for carrying out the hiring, the bureaucratic process is slow, for undoing the hiring, the process is even more complicated. As can be seen in the field, disengagement involves more risk for the company, since it is more difficult to control what has already been spent / invested in the project for the subsequent return of resources. The following excerpt describes a state of discontent:

We have an example of a project in Petrolina, for example, a R & D, which last Friday was in negotiation with Aneel asking for the project to continue, which we can. Five years and failed to build the plant. Five years. You're going to say "Did you do anything?" No. I made the first bidding that all businesses were disabled. I made a second bid that only had one company qualified. We signed a contract with it, all right. The company started doing the work. After months later the company asked to leave the project. You have no idea. If hiring is complicated, undo this is ten times more complicated inside the public service. We talk about bidding, but nobody talks about the reverse process. That is why we have so much stopped work. Because it's complicated and you have no idea how difficult it is to undo. Because there we have to prove why you want to undo, the company wants some money yet, it's so much. Because when you hire, you have a bidding process and with the cute tables, you do it and you get it. When you do not, do not. Dude always spends more than he can. He decided to undo the process because he did not want to pay a fine. It can scroll through processes. It is very difficult. It's a risk. (Interviewee 41).

In addition to bureaucracy, the second reason that hiring is critical refers to the company's intellectual property policy and technology transfer. It is well known that the ultimate goal of a project focused on innovation is the transfer of technology to the market. It happens that, in Electric, the intellectual property policy provides 100% (one hundred percent) of the technology generated for the company itself, which makes it difficult to establish partnerships, since partners also seek to profit from the generated product.

This issue of intellectual property is a very complicated thing, because Electric puts in the contract that 100% of intellectual property is from itself, since the beginning. This even led to contestation by some universities, for a university that had said that it could not sign a contract with this clause and stopped doing R & D with Electric because of that. There were universities that couldn't do any project with Electric because of this. Because of this, Electric has now been unable to do different things (Interviewee 06).

Thus, the intellectual property policy of Electric ends up limiting possibilities of insertion of products in the market, in addition to limiting partnerships.

iv. Development

After going through the bottlenecks of approval and hiring, the projects enter into the technology development phase. As a result of the previous phases, the projects face a lot of difficulty in this new phase, and often managers have to work with concepts of innovation that are already outdated, juggling projects in an attempt to save the idea of innovation.

What happened: this project that was being presented, it went through difficulties, the staff failed to develop the proposal, and simplified, simplified one thing, simplified another, and when it came out of these series of simplifications, it was incompatible with another project. Changed the scope, greatly simplified its scope, and [they have] conflicted. It has abandoned its challenge and [just] wanted to finish [the project]. In my opinion, it hasn't fulfilled its research. (Interviewee 07).

It lasted so long that the staff couldn't develop the proposal. (Interviewee 44).

In addition, another difficulty faced by managers refers to the budget envisaged in the project. Due to the time elapsed since the approval of the project, budget projections become obsolete and market prices raised, which causes problems on project development.

When the price came, we saw that it was very different, three times more than the price we had set. It was not possible there, and what was decided at the level of R & D coordination: to close the project there, only with the equipment specification, and to propose a new R & D [project] in which its first part would be precisely the construction of the equipment and its installation (Interviewee 06).

v. Audit

Upon completion of the project, an audit takes place. This audit is intended to assess whether a R & D & I project has been developed. Until 2008, ANEEL evaluated the project before it has started, so it was already approved as a R & D & I project. After 2008, the evaluation of whether or not a R & D & I project has gone to the end, companies in the electricity sector ran the risk of having to return resources if the project was not eventually approved as a R & D & I project. In this sense, the manager takes the chance based on nature and development of the project.

One of the main problems pointed out by the audit at the end is that it does not occur

immediately at the final of the project, but it can take years, which can cause loss of project memory due to the loss of project documents, or cause of retired managers, or even when people leave the area, so it is difficult to keep the documents and the project memory organized.

There are projects here that ended five years ago and have not been audited yet. It's not that they will not be audited, but when? Four years from now, I may not be here anymore, not that I'm leaving tomorrow, but I may be leaving, and the memory of the project may no longer be present. So, what was the initial goal, what were the results, where did it come from? So it's something I do not know. Or you document that very well, and that's in the management assignments, or it makes the process quicker. (Interviewee 05).

And ANEEL, so I think it should be more demanding about it, auditing them is one thing, and we're trying to implement this here, that auditing is a more permanent thing. At the end of the project, the audit would be immediately done, and do not let it become so distant. This generated a very large liability for projects that we have audited, and that can create a problem for us now, in the area of research and development. But anyway, we will see the future, as it will be. (Interviewee 11).

Because that documentation was in the manager's folder of the contract, in a dusty closet, and no one else ever looked at anything. Just because we are going to be audited by Aneel is that GPD asked "but boy, where are the projects?". This was done to confront Aneel. Because we run a very big risk as we decide what R & D is, but Aneel approves it a posterior, and says whether it is R & D or not (Interviewee 45).

For me, I think the right punishment is not to go to this project, and the company to pay for the cost of it. If you have spent a million reais, enter that reserve that the company is obliged to. That's why this work has to be very serious. And like I said, ANEEL used to do an initial evaluation and said, "You can play it here, because this is research." Today it does not do this, it lets the company do it, and at the end of that process, after that audit and everything, you can find that it was not a project (Interviewee 32).

vi. Implementation and outcomes

Regarding to the implementation of R & D & I projects, only about 10% of the technologies were implemented in the company, and none in the value chain of the Brazilian electrical system. Difficulties in the implementation and transfer of technology are due to the aforementioned items, and the main consequences for the projects are mentioned in item 4.7.

Honestly, I do not do R&D with hardware anymore because it ends in the prototype. [...] when it involves technology, it's very difficult for you to put on the market.(Interviewee 02).

4.6 Experiencing absurdity

Regarding to the experience of absurd, three major themes emerged out from our analysis: (1) *Fundamental contradictions*, (2) *Guilt and fear*, and (3) *Loneliness*, directly related to interview data. The themes are represented in Tables 08, 09 and 10 shown below. The first theme, *contradictions*, contains the mains incoherencies experienced by managers, either related to the institutional (national), or to the organizational context. The second and third themes, *guilt/fear* and *loneliness*, address the emotional experiences of the interviewed managers.

4.6.1 Fundamental contradictions

Contradiction means the lack of nexus or logic between words and actions. In this sense, in the management of an R & D project, contradictions were described, which, for presentation purposes, were divided into contradictions at the institutional level and contradictions at the organizational level (see Table 08 below).

The institutional level refers to contradictions in the macro environment, involving

national legislation and regulations. The first contradiction concerns the program's own normative forecast. Companies in the electricity sector are forced to invest in R & D & I, but if they can transfer technology and receive royalties, they have their tariffs reduced by the tariff review, since they are obliged to pass on the profits to the society. In normative terms, the provision makes sense, but in business terms, the company is forced to invest, and if it makes a profit from it, it earns less.

This legal provision evidences that, although the law was made to promote research and development, companies in the industry cannot accumulate revenue to invest in more robust projects, which is a contradiction. The law has an obligatory tone, which opens space for projects to be done without the prospect of innovation, but with a legal obligation.

Even in the conversation with him, he passed an interpretation that I agree with him: R & D today is an obligation, not an option. By obligation, one does not have the dedication of when it is done by choice, [like] a voluntary thing (Interviewee 07).

But in a way, in the conversations I've had with other people, the strength was that I had to get projects to fulfil that legal investment obligation, the mandatory minimum amount I had for you to send to ANEEL. So, this is not true for the Electric, but it's for the whole electrical system. In this period, up to mid-2005 or 2006, companies regarded this investment as an obligation, rather than as a competitive differential, something they added (Interviewee 16).

In addition, the company that has high returns through R & D may have its tariff reduced, due to compliance with tariffs (Tariff Revision, Law N°12.783 / 2013). So what is the interest that a company can have in obtaining R & D funding if its tariff can be reduced? And what would be the meaning of the R & D Program in this context?

Because you stand in a thin line: "If I get so much in royalties, I'll have to take that amount and it will focus on the rate review calculation." This is standardized, it is a rule in ANEEL's accounting manual, and it is also a rule cited in the ANEEL R & D's manual, that is, it also impacts on the process.

(...)

At that time, the fact that the balance of the R & D account was very high, and by ANEEL rule you cannot have a high balance, but two annual obligations, two years of

obligation accumulated in the R & D account. Electric had, at that time, 200 and a few million, except for memory, so it was forced to have a certain structure to leverage the results of those projects. (Interviewee 17).

Another contradiction that draws attention is that Electric, as well as companies in the Brazilian electric sector, passed the MP 579, reducing by more than half the profits of Electric. Even with this national provision, the company continues to be forced to invest in R & D & I. Finally, other contradiction at the institutional level is that companies should prioritize results of practical application, but the law provides 100% of the royalties for Electric, which makes unfeasible agreements to exploit the produced technologies.

By organizational level, we call the contradictions that occur in relationships existing within the organization itself. In organizational terms, the R & D & I project managers are responsible for the projects' success, but they have to face a very rigid process, which often makes their actions very unfeasible. In addition to process rigidity, the managers discover by doing bureaucratic standards, turning the project management experience of R & D & I projects terrifying.

Another contradiction that directly affects managers is that the manager is directly responsible for the success of the R & D & I project, but there is no training or prior preparation for this function, leaving the manager even more lost amidst bureaucratic norms and rigidity in the processes.

I think what I said, lack of standardization, you do not know how to manage a R & D, what to do, you have to use common sense, get a report, I see that way, because you do not have a training. These uncertainties of how to act as a manager make it difficult to manage, this thing is a natural impediment because you have a team that acts in a way, well organized, another totally disorganized, that makes it more difficult, it's complicated. That's what I said, you have the difficulty and look for the right people to help you, this optimizes, but the lack of a north, how to act, that complicates [everything]. Sometimes I look for a help, a life GPD, and it does not get quite clear, so it would be nice to have something like a R & D manager training, a couple of days with lectures and such, anyone who has managed the project could watch. He would be a member for sure (Interviewee 23).

The managers also reported that they face two main contradictions in the organization. The first is that, even if managers are successful in running R & D & I projects, people do not accept process or process changes resulting from these projects. Thus, even though there is an effort for the success of the projects, the organization does not "buy" [accept] the innovation,

causing the technology to be shelved.

The second contradiction faced and reported in virtually every interview is that, while there are many rules and rules to follow, the processes within Electric are directly tied to people, not to the organization itself. In this sense, in addition to the organizational processes that the managers face, the R & D & I projects themselves are personal rather than organizational, as they are directly linked to the managers instead of to the organization. The trouble of this situation is that, if the responsible manager is absent due to his retirement, resignation, or because he has left the area, it becomes difficult to access the memory of the project, hampering its progress.

Table 8 *Experience of contradictions (to be continued)*

Experiencing contradictions from the institutional context	Excerpts from the data set
<p>The company has to invest in R & D but if the company earns revenue from R & D projects, it earns less money from customers</p>	<p>Art. 2nd <i>Generation concessionaires and companies authorized to produce independent electricity are obliged to apply annually the amount of at least 1% (one percent) of their net operating revenue in research and development of the electric sector</i> (Law N°. 9.991, of July 24, 2000)</p> <p>Art. 12, Single paragraph. <i>The revenues that are destined to the electric power company will be shared with the society through the process of tariff revision, observing the percentages presented in the Manual approved by this Resolution</i> (Normative Resolution N°. 316, of May 13, 2008).</p>
<p>The company has to invest in R & D but the company's revenue was reduced by more than a half</p>	<p><i>And because they are state-owned mixed-economy, they cannot "swim in the profit" (expression for keeping the profits), you have to reinvest in the system. We are failing to reinvest in the system because the tariff has been cut in half. We have a bomb in our hands. (I1/79-82)</i></p> <p><i>We used to have from 2 to 3 billion reals of profit. We started to give 2 billion of damage, because of this tariff cut. Our only source of revenue is the tariff. (I1/86-88)</i></p>
<p>The company has to prioritize results of practical applications but the company cannot license technology due to intellectual property internal law</p>	<p>Art. 3rd <i>Paragraph 4: In the programs and projects of research and technological innovation in the electric energy sector, priority should be given to obtaining practical results, focusing on the creation and improvement of products, processes, methodologies and techniques.</i> (Law N°. 9.991, of July 24, 2000).</p> <p><i>This issue of intellectual property is a very complicated thing, because Electric puts in the contract that 100% of intellectual property is from itself, since the</i></p>

	<i>beginning. [...] Because of this [Electrics' 100% intellectual property provision], Electric has now been unable to do anything different. (I6/139-49)</i>
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Table 8 *Experience of contradictions*

Experiencing contradictions from the organizational context	Excerpts from the data set
Manager is responsible but there's rigidity in the process	<p><i>Risks and risks do exist. And then you will be penalized for all that project, it will come out of your pocket, it does even harm you. ANEEL said it was not an R&D, the guy did not do well. Let's let the ideas die then. (I1/371-73)</i></p> <p><i>They [the energy electrical system] have restricted more the rule, and we are no longer earning almost anything [...]. (I1/54-55).</i></p>
Manager is responsible but there are bureaucratic rules (discover by doing)	<p><i>There is one [problem] that is terrible and scares everybody [...] the manager has to be responsible for the economic-financial part. (I1/220-21)</i></p> <p><i>This one [the project] I was a contract administrator, a horrible experience, because I had to go into those accounts that said if ISS, INSS were paid, if the ISS of the companies was up to date. The contract management is simply awful. (I4/96-99)</i></p>
Manager is responsible but there's a lack of preparation and structure in managing an R&D project	<p><i>[...] We did not have training or preparation for this [to manage a R&D project]. (I3/259)</i></p> <p><i>The person in charge will need support because it will be difficult to find someone who wants to take direct responsibility with his CPF, which is another</i></p>

	<i>complicating of the story, that the person is directly put there. You do not act by deceit but you are blamed. (I3/260-62)</i>
R&D can change the rules but people don't want to change	<i>You change some type of structure, and the organizational structure is very closed and very self-protective. Everyone says like this: "Let's do it, let's dry the machine, let's improve, optimize" in the "other's house". In yours [house], you have to maintain the status quo. (I2/244-46)</i>
There are many rules but the process are highly connected to the person rather than to the company	<i>The projects are basically created by people, they are not entrepreneurial.(I2/54-55) This is what I say: the project is no longer from the company, but it's personal. (I2/69-70)</i>

Source: Author.

4.6.2 Guilt and fear

The guilt of the manager is an important element that appeared in the interviews. Managers reported that they feel guilty to be responsible for projects being recognized as R & D projects amid situations such as unpredictability of regulations, budget cuts, and time-consuming bureaucratic processes (see table 09).

The environment, where the managers act, is contradictory, as laws at institutional and organizational levels can change at any time, causing apprehension, during the management of R & D & I. One of the fears that makes the experience be reported as an inconvenience is the budget cut of the projects. After MP 579, there was a reduction of more than 50% in Electric's profits, negatively impacting project budgets, and so, many cases of budget cuts were reported. Currently, the company's situation is even worse, since, in addition to MP 579, the company is responding to a lawsuit, causing the imprisonment of a high sum, in addition to its risk of privatization. Thus, in 2016, all R & D & I projects were stopped. Despite the standstill, the legal obligation to invest in R & D & I continues to increase, which represents a contradictory situation.

Another factor for managers to feel guilty, and as a result, with fear, as they directly respond to the projects, is the bureaucracy of ANEEL and Electric. The managers reported experiences of long procedural delays, leading to turnover of people in the project, and lagging of the researched technologies. Managers have reported that they are unable to act due to bureaucracy, but remain directly responsible for the projects' success.

Then you come up with an idea - and I'm an instantaneous person myself, I want to see the result - you launch a proposal, or you want to change it. That's a year from now that you can continue. So, the people who were involved in that project took so long and another issue appears for the person to discuss, the person goes there. So you've lost that body of thinking heads to another project, is it going to make sense? Then the meaning of that ends (Interviewee 07).

We have a big bureaucracy, that's one of the issues that personally I don't do

more R & D project because the disorder and the risk are too big for the person who is responsible for it. (Interviewee 03).

It was pointed out that the main fear of managers is to be economically responsible for the project, and their actions are evaluated in the ANEEL audit. It turns out that the ANEEL audit only occurs at the end of the project. In addition, ANEEL evaluates all project expenses, and if the project is unsuccessful, or if there has been some wrong payment, even without misconduct on the part of the manager, the money must be returned, with the possibility of the manager to respond personally to the Court of Union Auditors.

“You do not act by intent but you are responsible” (Interviewee 03).

They told me "it's absurd to lose the idea!", I said that it was absurd to risk myself for nothing. (Interviewee 01).

[...] and the biggest fear that goes around the project managers is maybe about how the ANEEL audit is going to happen, and if there's anything wrong, ANEEL comes, runs over us, I respond to the TCU lawsuit, it's a shadow that plagues a lot of people, and that's why a lot of people do not assume [a project] anymore (Interviewee 05).

Every project manager has a risk. Risk of delivering something that did not exist, your CPF is there, in contract administration. It's another thing people say here "man, I won't get into it (the project)," less and less people want to give their heads to the prize. (Interviewee 01).

You take the risk. Not the risk of recognition, you run the financial risk of being targeted, if something goes wrong in these things you're not used to do daily. I repeat: this is the main problem (Interviewee 02).

[...] I was the project administrator, it was my CPF that was there, so it's very complicated, very risky, those issues (Interviewee 03).

In addition, ANEEL's audit, as pointed out in item 4.5, doesn't happen immediately after the end of the R & D & I project, but may last for years until the audit is completed. Thus, during all this time, it was reported that the manager is in this anguish waiting, with the risk, even, of loss of documents concerning the projects, given the amount of time.

But this [audit] rounds, people's fear is because this issue of the audit, after, takes a long time, and in two years, the engineer is a disorganized bug by nature, so it is not the person's bad intent, it is because the guy loses the papers, he throws away, and two years later ANEEL arrives auditing.

(...)

Now the audit, six months or a year at most after the end. There are projects here that ended five years ago and they have not been yet [audit]. It's not that they will not be audited, but when? Four years from now, I may not be here anymore, not that I'm leaving tomorrow, but I may leave one day, and the memory of the project may no longer be present. So, what was the initial goal, what were the results, where did it come from? So it's something I don't know. Or you document all these things very well, [...] or makes the process quicker (Interviewee 05).

Another point reported in the interviews is the managers' lack of confidence in the final result of ANEEL's audit.

ANEEL was, in that beginning, wanting to call the responsibility for itself, then you had to submit, it analyzed everything, it could only begin after ANEEL had said yes or no, it is a bit complicated thing, I even had proposal that they disapproved because they thought it wasn't an R & D, and at a certain point in these forums, with these people that we think they analyzed, we showed them, explained them and they said they did not understand, and then we resubmitted and the project was approved.

(...)

The systematic of ANEEL today it's cool, because they say "We will not be able to do this, so you analyze your R & Ds, the manual is here, you analyze whether it is R & D or not, and when you are done, you send the project that we will analyze ". What I'm worried about is this: who will analyze if it is or if it is not an R&D? (Interviewee 06).

4.6.3 Loneliness

Another issue that emerged in the data is the manager's loneliness, due to the lack of social recognition of the R & D manager, of hierarchical support, and of institutional control of the activity (see Table10 below).

The function of managing a R & D & I project, despite being provided by Law, ANEEL Manual and Company Regulations, was described as a solitary activity, once the manager is directly responsible for the project “*But you cannot just be managing alone this, it does not make sense (Interviewee 03)*”. In addition, the R & D & I project manager function doesn’t generate social recognition, in the sense that the manager doesn’t receive organizational recognition, following the success or completion of an R & D & I project . In almost every interview, this point was pointed out.

We have no mechanism in the company that gives recognition to a person. In a way, you are putting your CPF there, and if it gives you a problem, it discounts, but if everything works out, what do you get in return? Anything. At university you even have something in the form of functional promotion, it's automatic. You do not have it here. (Interviewee 01).

Electric, in a sense, doesn't value people who work with R & D, it's as if R & D is an activity apart from what you're forced to do in your routine, it's a job apart. (Interviewee 06).

Table 9 *Experience of guilt*

Categories			Sub-categories	Excerpts from the data set
Guilt and fear	Manager is responsible for recognition that it is an R & D project	But	Unpredictability in the rules	<i>Until then, ANEEL approved the R&D and you were calm, "this is a real R&D". When it changed, it was "look, go and do the project, and there in the end I say if it was R&D or not. If not, you have to pay". This caused a retraction, a fear in the all people.(I1/184-86)</i>
			Cuts in the budget	<i>When it was in 2012 that a new board arrived and a new R & D coordination too, they said "look, the project is very expensive, we will have to reduce". (I6/107-08)</i>
			Bureaucratic process takes a long time and leads to outdated project	<i>After the beginning, this phase of approval for me was very distressing, because it took so long and I was afraid of losing the timing of the process. If I knew that from 2010 until 2013 until the hiring part, I think I would have jumped out of the project. But as we got into the process, let's go to the end, let's finish this project.(I5/192-95)</i>
			Bureaucratic process takes a long time and people leave the project	<i>It is an interruption [people leaving the project], sometimes abrupt. This interruption impacts on the contractual issue, because it has a time, and this breakup is not easy. Sometimes there is no other person who has affinity with that subject, who has the experience, then that person will have to go back to try to follow a research that already existed. So it's hard. (I7/181-84)</i>

Source: Author.

Table 10*Loneliness*

Theme	Categories	Excerpts from the data set
Loneliness	Absence of recognition	<i>Here we do not have, not as project manager, we do not have as much recognition, and we have more whips than gifts. For punishment, there are several and several laws, and for recognition there is only a report. We have no mechanism in the company that gives recognition to a person. (I1/307-08)</i>
	Absence of hierarchical support	<i>I particularly have a problem, today, in the issue of projects, more with the lack of internal support, for the lack of people in the hierarchy that understand the need of the project and want the continuity of this project. (I2/198-200)</i>
	Absence of institutional control	<i>You see, regarding to the structure, I believe that I would have to have control, I even talked to Jorge in one of the first chats with him, and he said, "How is that?", and he said "No, it does not work". There is currently no member of the GPD, the body responsible for R & D& I, within the project. There are about 30 ongoing projects, and no one knows what is happening. It has 30 projects, and four people in the team, we will divide, and each person will be a member of that R & D team. Are you going to have a meeting? Go, participate. Report? Give it to me, I need to get it. (I7/130-36)</i>

Source: Author.

Regarding to hierarchical support, in most interviews, situations where there was no support from superiors were reported. Cases have also been reported where there was a formal support, but not in practice, as can be seen in the following sections:

I am totally disbelieving in regard to new projects, first because the department does not support.

(...)

There's support, but it's a kind of "mouth support"[not real]. If you ask, everyone supports it, but we need assistance in the moment you have to fight with someone to implement the project. (Interviewee 02).

I even think there are supervisors here at Electric who say, "Look, my team does not have the time to do R & D." It is not my case, I thank God I have enough freedom to do R & D. .

(...)

But we know that there are areas that say, "Look, we're not going to participate in the project as we don't have the time because we have a huge workload", that's really there. (Interviewee 06).

Sometimes they don't comprehend the projects in their own area, and they manage these areas. I see that the R & D & I manager is seen by the hierarchy as a guy who is wasting his time (Interviewee 02).

In addition to the lack of hierarchical support, an absence of control of Electric was reported on the projects, in the sense of having a structure focused on innovation still under construction. This lack of control causes loss of documents, loss of project memories, and also collision of similar projects in the same organization. Consequently the waste of public money.

Which is difficult is what I am saying, the lack of a structure to manage this [the project]. (Interviewee 03).

I believe that in Electric's reality [in the management of R & D & I projects], there is a lack of control, precisely on the top of this systemic vision that you are talking about.

(...)

You see, regarding to the structure, I believe that I would have to have control, I even talked to Jorge in one of the first chats with him, and he said, "How is that?", and he said "No, it does not work". There is currently no member of the GPD, the body responsible for R & D, within the project. There are about 30 ongoing projects, and no one knows what is happening. It has 30 projects and only 4 people in the team, so we will divide them, and each person will be a member of that R & D team. Are you going to have a meeting? Go, participate. A report? Give it to me, I need to get it. (Interviewee 07).

It is logical that we cannot guarantee research, as it is an estimative, and we predict that it will get a favourable outcome, which it will be developed and such. But I think it lacks follow up, control. (Interviewee 31).

Instruction is to say how it should be managed, as it should be placed within ANEEL, the collection of results for the entities. That is: there was a project delivery to entities, universities mainly, and these entities were free to act without a more rigorous commitment of R & D. That's what happened, and there was no instruction for Electric P & D managers to act with true management, concerning, collections, follow-ups. Some [managers] acted well, but by choice. On the other hand, not only was there no education, because it has to have instruction and monitoring. This monitoring, I realize that it is very weak, and so things happened, happened, and there was no real understanding. That was, and I think that was a very negative point, which has caused, today, a series of problems, strikes and non-conformity [situations]. (Interviewee 14).

But the issue of control, of the participation of the GPD structure within each project, I feel a huge lack. (Interviewee 07).

Lack of process control, lack of hierarchical support and lack of recognition of the function of managing a R & D & I project makes the manager organizationally isolated, causing frustration, stress and demotivation, as we will see in the following section.

4.7 Outcomes

Due to the institutional and organizational contexts in which a R & D & I program is inserted, the following consequences have been reported in project management: (i) *Project management as a bad experience*; (ii) *Turnover of people in the project*; (iii) *Project non-implementation*; (iv) *Metamorphosis of the sense of innovation*; (v) *Loss of innovation sense*; and (vi) *Inaction*.

Table 11 *Outcomes*

Organizational contexto	Experiencing the absurd	Outcomes
<ul style="list-style-type: none"> • Bureaucracy • Multiples cultures • Lack of sensegiver • R&D&I colliding with routine • Personality in the processes • Non-registration of activities • Politics • Resistance to innovation 	<ul style="list-style-type: none"> • Institutional contradictions • Organizational contradictions • Guilt • Fear • Loneliness 	<ul style="list-style-type: none"> • Emotional work • Turnover • Project non-implementation • Metamorphosis of innovation sense • Loss of innovation sense • Inaction

(i) *Emotional work:*

Managing a R & D & I project was reported in most interviews as a poor, generating stress, discouragement and fatigue experience for many respondents.

When you get into it, even when I came in, I did not imagine you were going to have all this trouble.

(...)

I do not regret having done the project, but I think it was too much wear and tear.

(Interviewee 03).

The word that resumes everything is frustration (Interviewee 50).

This one [the project] I was a contract administrator, a horrible experience [...] The contract management is simply awful. (Interviewee 04).

Part of the negative experience stems from the fact that managers do not have preparation and / or training for the function, so there is no predictability with regard to the actions to be taken. As pointed out in items 4.4 and 4.6, respondents manage the R & D & I projects practically alone, which create feelings of guilt and fear, since they are directly responsible for the success of the projects. The following excerpts illustrate the question:

I could not get familiar with the structure. This, for me, made it very difficult, because the expression I use is that I would not want to be "wiping ice" [doing a useless work], I will never be able to succeed. (Interviewee 07).

"Were you able to manage the contract?" We never got it. (Interviewee 01).

In this first project, which I hadn't quoted yet, I was the contract manager. This is kind of complicated, because being a contract manager is a horrible thing, you know, because I had to worry about some details that didn't matter to us at all. (Interviewee 04).

(ii) Turnover:

Another related consequence refers to the turnover of people within R & D & I projects. Due to procedural delays in the approval, contracting and development stages, project participants end up engaging themselves in other projects, or students complete their studies

without effective participation in a R & D & I project. Thus, it is necessary to make changes in the contracts, with the insertion of new participants.

This ended, over time, people who were chosen to do the project fell apart, because time passes and changes people, the coordinator remains the same but people change. "Oh, this person is not here anymore, I do not know where, he's already gone," so we have to compose a new team, sometimes it does not get any better, anyway. (Interviewee 03).

[...] We have to close the commercial proposal; it took us a couple of years. There you have the professors, the attendance, see who would attend, because in four years, you know, graduate and master's degree students, after two years, are out [of the project]. Doctorate we still stayed for four [years], but anyway the team was another, we were to form the team, and the professor said, "if I choose the team, when will the contract be signed? Because students are going to end [their courses], they need the scholarship to attend college; it's complicated to close a team without a signed project."

(...)

There is a very frequent change of students, so it is one of the things that could be improved, but I do not know about the solution, I'm just raising the problem, it's about the researcher's profession because you cannot keep a student long in there, and then you lose process quality. Do you still need the student? You do [...] but you cannot maintain that student. (Interviewee 05).

In almost all projects that I participated in, when the project started, the student had already presented his master's thesis, or his doctoral thesis, or even he was no longer in the university; sometimes he was already professor in another university [...] (Interviewee 06).

Then you come up with an idea - and I'm an instantaneous person, I want to see the result - you launch a proposal, or you want to reform. That's a year from now that you can continue. So, people who were involved in that project, took so long that another issue appears for discussion, and the person goes there. So you've lost that body of thinking heads to another project, is it going to make sense? Then the meaning of that [project] ends. (Interviewee 07).

It happens that when new people are hired, the knowledge invested in the first participants is lost, needing an update of the project status, which causes more delays in the

project progress.

It is an interruption, sometimes abrupt. This interruption impacts on the contractual issue, because it has a time, and this breakup is not easy. Sometimes there is no other person who has affinity with that subject, who has the experience, then that person will have to go back to try to follow a research that already existed. So it's hard.(Interviewee 07).

(iii) *Projects non-implementation*

Less than 10% of the projects were implemented in the company. The low implementation rate stems from the problems already reported during project management (Table 11), but also stems from organizational resistance to innovation. Several cases have been reported in which people of the own organization do not accept the organizational and procedural modifications resulting from the innovations, so that the projects are not incorporated into the organizational routine.

We had a problem in finding some national manufacturer who was interested in the prototype. (Interviewee 02).

There are many R & D projects that bring status to the company, but the implementation of these processes creates a lot of difficulties because people already have that culture of "I do it this way and everything is fine", so that you can implant a new tool is difficult. It is very difficult for you to change a culture within the company. [...] Some areas are more susceptible to new processes, new projects. Some of them are very traditionalistic; their staffs are very resistant to the inclusion of these new processes. (Interviewee 05).

Then, when you're going to fight for other things: "No, but you have to, we did, it's good, I do not know what ...". It will bother A, B, change structure A, structure B, they prefer to maintain the status quo. Then you are discouraged from doing projects. (Interviewee 02).

I even think the issue of innovation is not difficult to change. What is harder to change is this thinking - I do not want to put the manager as an ugly duck here - in general,

structuring processes, this is more difficult. The culture is so strong to be done with informality that when you try to give a format, people come back from the idea. The difficult thing is to change this culture of informality. (Interviewee 14).

(iv) *Change in the objective of the project and of the R&D&I programme:*

Another consequence reported in the interviews is the change in the sense of innovation of the projects and the company's own R & D & I program.

The change in the sense of innovation of the projects stems from the procedural slowness of the company. After a long time lag, project objectives had to be redefined, in an effort reported as "gymnastics", so that there would be some innovation. Thus, the primary sense of innovation of many reported projects has been metamorphosed in other ways, in order to maintain some innovation.

These projects that I participated, that took years to be approved, then when you approve, look at the scope and see that it is out of date, you cannot change the object, you do a huge gymnastics to change without ANEEL realizing, trying to save the project, that's what I did. (Interviewee 02).

Due to the lack of organizational recognition for the R & D & I manager role, the managers sought to construct a sense of the project in a different way. During project management, many managers took part in postgraduate courses, in the form of masters and doctorates, becoming the objective of the project in the accomplishment of these courses. Thus, the sense of innovation of the projects was shifted towards the achievement of personal goals, such as postgraduation courses, objectives that are recognized inside the organization.

People were indirectly rewarded, for example, with a master's degree. This is not said to be direct, it is not an explicit acknowledgment, but in projects it was included (Interviewee 14).

We have here some interesting aspects. We have, in one hand, individual initiatives, that is, we do not have, we have very little business initiatives, collective, organ, units, areas. That's when we have very little; we have yet individual initiatives. As I said, from the beginning, the initiatives, have always been individual and even with a bias of particular interests. (Interviewee 43).

That's what happens: for those, which I think have tremendous value, one of the important points is that when it comes out to optimize the process of a person, he seems to have more value, has no bias, is doing that because he wants to improve it. The other, as I have already said, has a bias: the person had the idea, wants to do a master's degree, to study more and such. (Interviewee 38).

Those who like it sometimes are people who have made the project happen, or to get a master's degree, or to look for something personal with that. I am saying this because it is the standard procedure. Either one does not like it, or one who is willing to do it, somehow feels benefited, has some kind of personal or particular interest in doing so (Interviewee 13).

(v) *Loss of innovation sense*

Despite efforts to develop R & D & I projects, more than 90% of the projects have not come to an end, or have not been implemented. These consequences arise from the issues discussed in the organizational context (Table 11), which causes delays in processes. Delays, especially in the approval, hiring and audit phases, cause the technology to lag behind; losing the sense of innovation that was underway. The following excerpts bring the interviewees' speeches in this sense:

This is a complicated thing, even discouraging, that I have colleagues who say "look, I do not get involved with R & D anymore, because we get involved and get carried away with that thing, and when it starts ..." It's as they say, the train has passed. Other people, other companies and other groups sometimes even do something similar to what you were thinking, and then you miss the timing, so that's really discouraging. (Interviewee 06).

The hiring impacts very negatively, because it is very time consuming, then loses the sense of the thing, the thing is innovation. [...] Eight years, then that certainly is not more innovative.(Interviewee 07).

The proceedings here took a long time to be authorized. It made a delay of this project

of almost eight years to be approved. (Interviewee 01).

It's to save because the project has passed three years [to be approved] and that research, which was valid for three years, is no longer within the scope that is there. Either you change, to try to save something, or do nothing, will do a make-believe. (Interviewee 02).

When you do a project is something new but when it is ready, it may get old. The problem, that the solution was designed for, maybe will pass. [...] The tool was useful, but the solutions that were planned nowadays are no longer used. (Interviewee 04).

(vi) *Inaction:*

The last consequence observed in the data is related to the restrictions to the action of the managers. Individuals were in a situation where they had to follow bureaucratic procedures prescribed in a Manual and in the company regulations, but such procedures did not offer the flexibility that innovation demands. *“Due to the amount of bureaucracy, you're in a trap, you know? You can't do anything!”* (Interviewee 40) explained one interviewee.

Thus, inaction causes immobility, once managers don't have the flexibility to act as needed. *“There is no way! We know what needs to be done, but we cannot. There is the contract, schedule, deliverable, you can't do it all. It's impossible! So innovation is lost”.* (Interviewee 50).

4.8 Conclusions

The thematic analysis carried out in the present study allowed subjects to be identified in the interviewees' reports. The main findings can be summarized in the following paragraphs:

- i. The organizational context of the research is a complex, multicultural bureaucracy with diffuse and inconstant command power, strongly influenced by macro politics.
- ii. Despite being a structured bureaucracy, with laws and regulations, processes are highly personal, with a culture of informality prevailing over them.
- iii. Despite being legally obliged to invest in R & D & I, the company's R & D & I program clashes with its own organizational routine, so there is no sensegiver who can beat the routine and promote a culture of innovation inside the company.
- iv. The company's R & D & I program is complex, and involves institutional and organizational contradictions.
- v. Due to the contradictions found in the R & D & I program, managers create different meanings for the project manager's own function. In addition, the senses of innovation built around projects are also modified.
- vi. The managers of GPD, the area responsible for the management of R & D & I in the company, have different views about innovation and about the R & D & I program itself.
- vii. R & D & I projects are personal and not commercial, which puts the manager in a risky personal position as he is directly responsible for the project.
- viii. The managerial function, although legally foreseen, is not previously known by the managers, who end up discovering how to act by doing, which brings fear, anxiety and stress to the function.
- ix. The distinction in nature between partner institutions, e.g. Institutes of Science and Technology, brings complexity to the management of R & D & I, due to the difference in the temporality of the processes, as well as the perception of innovation and research.
- x. Most interviewees reported experiences of participating in R & D & I projects as

bad, stressful and frustrating activities.

- xi. Some interviewees reported being difficult to act, due to organization's bureaucracy.
- xii. Managers reported feeling isolated in the conduction of R & D & I projects, which makes this experience solitary and without hierarchical support.
- xiii. The role of a project manager is risky economically and legally, which brings feelings of guilt and fear to them.
- xiv. Although risky, the R & D & I project management function is not socially recognized in the organization.
- xv. The trajectory of a R & D & I project is long, due to the procedural delays of the company, causing people turnover, loss of project sense, and consequent loss of the sense of innovation.
- xvi. Due to organizational resistance to innovation, the vast majority of projects are not implemented.
- xvii. Managers work in a risky position that will not bring practical effects or results for the organization.

CHAPTER 5
EXPERIENCING ABSURDITY: A DIVE IN THE KAFKAESQUE
UNIVERSE

CHAPTER 5 – Experiencing absurdity: a dive in the Kafkaesque universe

5.1 Introduction

In this chapter, I will first present, in a concise way, the theory generated from the thematic analysis carried out, in order to answer my research question **“How do managers make sense of absurdity in bureaucracy?”** Subsequently, I will discuss how the themes found are related to the literatures of sensemaking and absurdity.

5.2 Theory presentation – A Sisyphus work

The research context is a bureaucratic, time-consuming, political organization with multiple cultures within it, in which processes are more personal than organizational. The organization has been reported as an environment where there is frequent change of leaders, which impairs the driving of the sense of innovation. In addition, the R & D & I program, the focus of this research, collides with the bureaucratic organizational routine. These elements described in chapter 4 constitute a complex context of research, which generates situations that are sometimes meaningless. The theory generated in this study explains how individuals experience and make sense of what they call “absurd” and “meaningless” situations in a bureaucratic organization.

Relying on existentialist philosophy and Kafka's work, I define absurd as a conflict between human's tendency to search for meaning in life and the inability of man to find it. In this perspective, the absurd derives from a gap between the relationship of man and the world, leading to a sense of disorientation and despair. It was with this absurd first notion that we conducted the research.

According to the findings, managers reported that they felt alone in conducting R & D & I projects. As discussed in the previous chapter, managers reported that the R & D & I project

manager function is not an organizationally recognized function, is risky, has no hierarchical support, and lack institutional control. In this way, the managers did not have organizational support and did not have social recognition.

In addition, it was reported that the research environment presents institutional and organizational contradictions, which contribute to the occurrence of meaningless situations. It was also reported that the experience of absurd situations generated in the respondents feelings of fear and guilt. Thus, From the analysis of the data, it was possible to observe that the participants determine that (i) *loneliness*, (ii) *environment of contradictions*, (iii) *feelings of fear*, (iv) *guilt* and (v) *inaction* are all elements of an experience of the absurd, as we can observe in the Figure 14. During data analysis, it was clear the influence of these elements in the construction of senses on absurd for the interviewees.

Based on a thematic analysis from the collected data, we constructed a theoretical model integrating the findings. Figure 14 below shows the respondents' perception of the absurd: environment of contradictions, loneliness, inaction, frustration, guilt and fear.

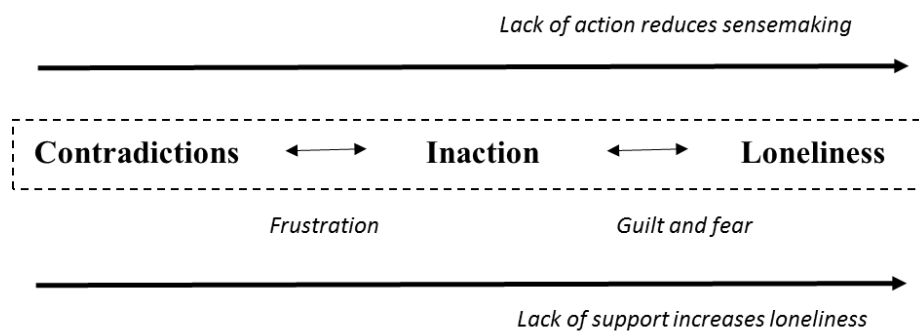


Figure 14 – Building absurdity.

Source: Author.

As shown in Figure 14 above, the experience of institutional and organizational contradictions causes inaction, once respondents reported that they couldn't act as they thought they should act. From this experience, respondents reported frustration.

From the felt inaction of institutional and organizational contradictions, managers reported feeling lonely, causing feelings of fear and guilt, for being responsible for the projects success, but not being able to do so.

The inaction caused by the contradictions reduces opportunities for sensemaking in the organization, because the managers alone cannot act as they interpret the environment. In addition, the lack of organizational support and institutional control provokes more sense of loneliness. So, we contribute to the conception of absurdity, in the sense that the man who is alone in a contradictory environment increases the conflict between the human tendency for meaning and the inability of man to reach it, causing fear and feeling of guilt.

Furthermore, from the interviews, we investigated the retrospective trajectory of managers' participation in R & D & I projects and realized that they faced many difficulties in conducting these projects. A first problem pointed out was the organizational and institutional contradictions that affected the researched bureaucratic organization, causing a climate of loneliness, guilt and fear. Because managers are directly responsible for the projects, which place them in a position of personal risk; when in an environment of many contradictions, they felt frustration, guilty and fear, for not being able to act and build sense of innovation of their projects. Thus, while managers make sense of the contradictions embedded in organizational and institutional contexts, and of the absurd these contradictions carry, they still feel guilty of not being able to perform their job well, and also feel lonely, as their superiors did not help or support them at all. This position promotes a climate of insecurity, fear and guilt to these managers, when they fail to build these senses. So, managers resemble Kafkaesque characters, as in *The Castle* (2009 [1924]) and in *The Trial* (1914/1925), when they face alone contradictory bureaucratic organizations, bringing an atmosphere of guilt and fear.

In *The Castle* (2009 [1924]) we can understand power relations as the image of a huge bureaucratic apparatus that serves as a disintegrating force and that imposes innumerable difficulties on the actions of the characters, and which, at last, maintains a rigid hierarchical structure and static. Kafka worked the idea of the castle as the idea of a society that has the bureaucracy as this structure that maintains the power relations as they are, in an unchanging constant between superiors and subordinates, in a reality in which social mobility is immobilized by the complex apparatus standards and the administrative scale itself. Such a fact in *The Castle*, in the reflection on the hierarchy and its inaccessibility, occurs when no one knows how to do to talk to Klammer and all attempts of K. to have personal contact with this high official will gradually prove useless and fruitless, the more K. tries this, the more the gulf opens.

Another problem pointed out is that the researched bureaucratic environment, as in Kafka's works, prevents managers from acting as they really believe they should act, for example, the need for approval and contracting of projects in smaller times, avoiding first temporal delays and later technological lags during the project's development phase. In this sense, despite getting clues to the environment, they are unable to act according to what they believe is necessary, as the bureaucratic structure prevents them. This reduces sensemaking opportunities in the organizational sphere, besides bringing questions related to the identity of these managers.

Data analysis also showed that respondents have a dual relationship with their work: although they believe they are conducting projects that contribute to innovation in the company, many of them are aware that their efforts will not produce effective results, which were pointed out as an absurd. In this sense, the work of these managers resembles the work of Sisyphus (Camus, 1942/1991), who is condemned to repeat the same task of pushing a rock on the top of a mountain, and when it has almost reached the top, the stone rolled down the mountain, invalidating the efforts expended. For this reason, works that involve useless efforts are called *Sisyphean Work*. Thus, managers find themselves taking risks and struggling to conduct R & D & I projects, but being aware that their efforts will have no effect on the organization, i.e. projects will not be really implemented.

5.3 How do the findings relate to sensemaking and absurdity?

After presenting the theory that emerged in this research, I will present below how the findings relate to the gaps raised in the theories of sensemaking and absurdity described in chapter two.

Sensemaking and absurdity

Regarding the theoretical gap, while sensemaking literature has focused on “extreme” (see Weick, 1988; 1990; 1993) as opposed to ordinary, habitual contexts, much less is known about “absurd” situations. This way, this research addresses this gap in approaching experiences of individuals in absurd situations, which happens in a bureaucratic context.

Absurdity (senseless, purposelessness, meaninglessness) arose in my empirical data as the judgement that something that doesn’t make sense, or doesn’t have a purpose. I use absurdity as an analytical umbrella to say “this is nonsense”, “this doesn't make any sense”, “there is no sense in doing this”, which were used by the respondents when reporting their trajectories on R & D & I projects. These trajectories were reported retrospectively, allowing managers to reflect on their experiences in the past. As pointed out by the philosopher Thomas Nagel (1970), the feeling of absurdity is the result of the human capacity to look back and analyse his own practice in a disengaged posture. Thus, as shown by Vohnsen (2017, p. 22-23), I “*take absurdity to be a perspective the human can move in and out of and not an objective condition that underlies and orders social reality*”.

Thus, as shown in Figure 14, absurd contexts were reported as composed by, inaction, loneliness, environment of contradictions and feelings of guilt and fear. As I said before, in the empirical research conducted in this study, absurd experiences have been reported as an environment of contradictions and loneliness that leads to inaction, causing fear, guilt and frustration.

The conducted thematic analysis showed that, in addition to the characteristics mentioned in chapter 2 (inaccessibility, incongruous events, emotional component, and isolation and loneliness), individuals also experience contradictory environments, and feel guilty, frustrated and scared. Complementing Clegg et al. (2016) work, this study deepens our understanding of managers’ experience and sensemaking of absurdity in Kafkaesque bureaucracies. In particular, it outlines that while managers make sense of the contradictions embedded in the organizational and institutional contexts, and of the absurd these contradictions carry, they still feel guilty of not being able to perform well their job, and feel lonely, as their superiors did not help or support them at all. In this way, this research brings a contribution to the individual experience in a Kafkaesque atmosphere.

So, this research collaborates to the literature of absurdity when researching personal experiences and how individuals feel in absurd situations. While some research brings to light the Kafkaesque aspects of modern bureaucratic functioning (Bennett, 1991; Clegg, Pina e Cunha, Munro, Rego, & Sousa, 2016; Hodson, Martin, Lopez, & Roscigno, 2012; Hodson, Roscigno, & Lopez, 2013; Jorgensen, 2012; McCabe, 2013; Munro & Huber, 2012; and Warner, 2007), they remain rather silent on the organizational members' experience and sensemaking in this context. Even ethnographic analyses remains silent when it comes to people's experience of the absurdity and meaninglessness of bureaucracy (Vohnsen, 2017). With the exception of Clegg and al. (2016) then, studies inspired by Kafka's works do not address participants' experience of Kafkaesque bureaucracies and the meaninglessness or absurdity that they have to go through. In this way, we contribute to the conception of absurdity, as loneliness in a contradictory environment contributes to increase the human's conflict between his tendency for meaning and his own inability to reach it, causing feelings like fear and guilt.

Absurdity and its consequences

As can be seen in Figure 14, the inaction provoked by contradictions environment reduces opportunities for sensemaking in the organizational context, as managers alone cannot create a sense of innovation in R & D & I projects. As pointed out by Maitlis (2005, p. 21), *“sensemaking allows people to deal with uncertainty and ambiguity by creating rational accounts of the world that enable action”*, so, the inability to act diminishes sensemaking opportunities.

Weick, Sutcliffe and Obstfeld (2005, p.410) argue that *“people organize to make sense of equivocal inputs and enact this sense back into the world to make the world more orderly”*. It happens that, in the context studied, although the managers have the notion of what needs to be done, after situations of equivocal inputs, they cannot properly operate due to the inaction caused by the bureaucratic structure, thus restricting the organizational sensemaking. As observed by Louis (1980, p. 241):

Discrepant events, or surprises, trigger a need for explanation, or post-diction, and, correspondingly, for a process through which interpretations of discrepancies are developed. Interpretation, or meaning, is attributed to surprises. Based on the attributed meanings, any necessary behavioral responses to the immediate situation are selected.

As noted above, in the process of sensemaking, interpretation or meaning are attributed to surprises, and behavioral responses to these surprises are subsequently selected, see Weick (1979, p.132).

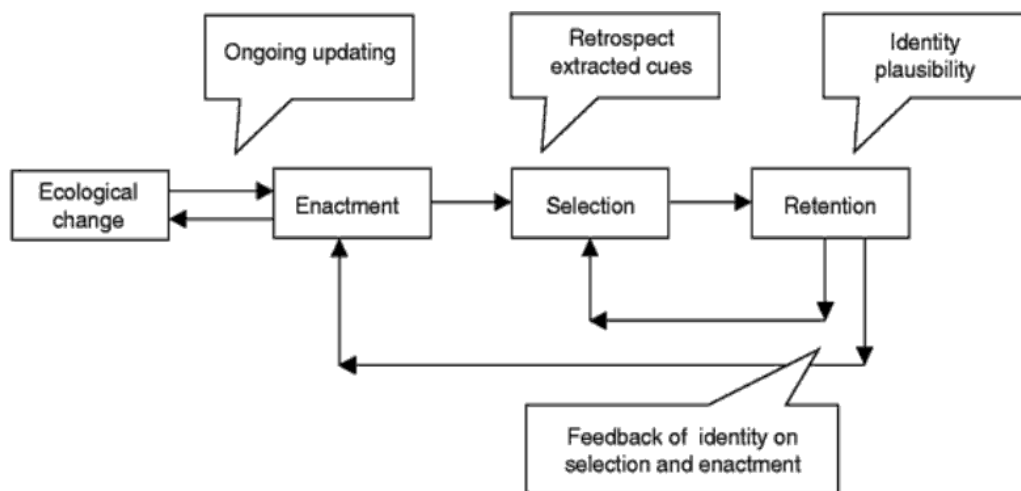


Figure 15 – The relationship between individual sensemaking and organizing activities.

Source: Weick (1979, p. 132).

It occurs that the individuals interviewed faced situations of surprise, but could not act as they thought they should act. Respondents reported that they acted differently in order to construct an approximate sense. E.g. a partner decides to leave the project. The right thing to do would be to look for another partner for the continuity of the project, but the procedural delays are so large that they are unable to act as required. They then proceed to work on the meaning of an R & D & I project as the sense of accomplishment of a postgraduate course, given that the construction of innovation sense is not possible anymore. Thus, this study aims to contribute to sensemaking literature, as working with the consequences for organizational sensemaking stemming from an inaction built by the organization itself.

The situation of the interviewed managers resembles Kafkanian's characters, in the sense of wanting to act according to what they think is necessary, and their impossibility to

operate due to bureaucratic structures. K., in *The Castle* (2009[1924]), seeks to introduce himself to his hiring, but walks in unanswered circles. His homonym, K., in *The Trial* (1914/1925), seeks to know the cause of his trial, unsuccessfully.

In addition to context inaction, most respondents reported that they were alone in this process, i.e. without hierarchical support, which further reduces the opportunities for sensemaking, as sensemaking is an organizational process, and one of its characteristics is being social (Weick, 1995). As pointed out by Maitlis (2005, 21), “*Organizational sensemaking is a fundamentally social process: organization members interpret their environment in and through interactions with others, constructing accounts that allow them to comprehend the world and collectively act*” (Maitlis, 2005, p. 21). This process of constructing understandings through creation, interpretation and discovery (Weick, 1995), gives meaning to life and identity in collectivity and then enacted into organizational life. Once they cannot enact the desired environment, they seek to create meaning in what they can do, such as turning the project into a postgraduate opportunity.

As consequences of the verified organizational inaction, emotional work, turnover of people in the projects, non-implementation of projects, metamorphosis towards innovation, and loss of sense of innovation were found. In this way, this study seeks to cooperate with the literature of sensemaking, regarding the consequences of an organizational inaction.

5.4 Practical reflections

The research experience provided by this study allowed us to live the field and go beyond what was apparently placed, revealing some practical contributions in the scope of innovation management practices that concern the project manager, and that are not limited to the follow-up of bureaucratic normative instructions, are necessary. Cases of managers who feel alone, without hierarchical and organizational support to conduct their project are commonplace. How do you require a project manager to conduct the project in the best way if he or she does not have organizational support, do not receive training and the fruit of their work will not be recognized and / or incorporated into the organizational routine? In this sense,

it is important that innovation management policies in bureaucratic structures speak the same language of R & D & I project managers.

It is also crucial that a more flexible management policy that is also less dependent on bureaucratic structures innovation, which end up strangling innovation, is developed.

We also understand that the focus of this project can contribute to the guiding and improvement of public policies in the electricity sector that seek to promote innovation (productivity, cost reduction, improvement of quality of offered services, accessibility to energy, and international exchange of electric energy).

Finally, in the following chapter, the conclusions regarding the theoretical-empirical debate constructed throughout this work will be delineated.

CHAPTER 6

CONCLUSIONS

CHAPTER 6 – Conclusions

6.1 Introduction

This research had as main objective, to analyze absurdity in an organization. For this, a qualitative study was developed in the largest company of the Brazilian electric sector in the northeast region.

As methodological guides, the set of interview was chosen as a research strategy. The field work began in October 2015 and ended in December 2016. During these fifteen months, 50 interviews were carried out, in addition to three field diaries. The large volume of data was analyzed through the thematic analysis.

The study data, after an intensive process of analysis and reflection, was structured in six main themes, and 13 sub-themes, as presented in chapter 4. Empirical evidence contributes to the academic debate on sensemaking and absurdity, reflecting important considerations that integrate the complexity of this debate.

This research presented, as object of study, the experience of individuals with the absurd in a bureaucratic organization. From a thematic analysis, we developed a theory about it. The research question **“How do managers make sense of absurdity in bureaucracy?”** was defined throughout the collection and analysis of the data. To respond it, we interviewed 50 managers who directly participated in R & D & I projects.

This question allowed us to establish the general objective of the work, which comprised analysing how do managers make sense of absurdity in bureaucracy, and led us to the following specific objectives related to the theme: (i) To analyse existent definitions and meanings of absurd; (ii) To develop theories about absurdity in bureaucratic organizations, based on the collected data; (iii) To examine what causes absurdity in bureaucracy causes.

During the literature review, we identified that the sensemaking area still has a gap: while sensemaking literature has focused on “extreme” (see Weick, 1993; 1990; 1988) as opposed to ordinary or habitual contexts, much less is known about “absurd” contexts. And the absurdity literature has also gaps: a definitional gap, and also a contextual gap. While some research brings to light the Kafkaesque aspects of modern bureaucratic functioning (Bennett, 1991; Clegg, Pina e Cunha, Munro, Rego, & Sousa, 2016; Hodson, Martin, Lopez, & Roscigno, 2012; Hodson, Roscigno, Martin, & Lopez, 2013; Jorgensen, 2012; McCabe, 2013; Munro & Huber, 2012; and Warner, 2007), they remain rather silent on the organizational members’ experience and sensemaking in this context.

This study was designed to analyse how individuals create sense of absurdity in a bureaucratic organization, since there is a lack of empirical studies in both the literatures of sensemaking and absurdity. This study’s findings section presented some themes emerging from the data: (1) *Organizational context* (sub-themes: bureaucracy, multiples cultures, lack of sensegiver, collision with organizational routine, personality in the processes, informality, and politics); (2) *The R&D&I context*; (3) *Who is the project manager?* (sub-theme: relationship with actors); (4) *Trajectory of an R&D&I*; (5) *Experiencing absurdity* (sub-themes: fundamental contradictions, guilt, fear and loneliness); (6) *Outcomes*. At the end of the chapter 4, a summary containing the main findings pertaining to each theme was presented.

We conclude that in the studied context, the elements of loneliness, environment of contradictions, feeling of fear and guilt all make up an experience of absurdity. In this way, we conclude that while managers make sense of the contradictions embedded in organizational and institutional contexts, and of the absurd that these contradictions carry, they still feel guilty of not being able to perform their job well, and also feel lonely, as their superiors did not help or support them at all. We also conclude that the experience of the absurd is to perform a formal function, knowing that it will have no real effects on the organization results, resembling the Greek figure of Sisyphus.

To answer the third specific objective, to examine what causes absurdity in bureaucracy causes, data showed that occurs: emotional work (frustration, guilt and fear), turnover of people in the project, non-implementation of the project, metamorphosis of the sense of innovation, loss the sense of innovation and inaction provoked by the bureaucratic structure.

In answering the proposed research question, we were able to address these gaps by: (i) proposing a definition of absurdity; (ii) describing how individuals create sense of the absurd in a bureaucratic context; (iii) doing an in-depth qualitative empirical research in a context of emerging/developing countries that has received little attention in the international academic scene.

We understand absurdity as loneliness in a contradictory environment that contributes to increase the human's conflict between his tendency for meaning and his own inability to reach it, causing feelings like fear and guilt. As shown in the Figure 14, while managers make sense of the contradictions embedded in organizational and institutional contexts, and of the absurd these contradictions carry, they still feel guilty of not being able to perform their job well, and also feel lonely, as their superiors did not help or support them at all. This position promotes a climate of insecurity, fear and guilt to these managers, when they fail to build these senses.

It was also important to develop an in-depth qualitative empirical research in a context of emerging/developing countries, due to the lack of studies like these in the international literature.

6.2 Research limitations and future research

Regarding the limitations, it's important to highlight some of them. We consider that the first shortcoming is related to the fact that part of the collected data did not compose this analysis, because, although it was relevant to the understanding of the meaning of absurdity, some subjects would not significantly contribute to the understanding of the phenomenon proposed in this research.

The second refers to the limitation of the researcher herself. I have my life history, my academic trajectory and natural conditions that limit my perception about the phenomenon studied and the analyses carried out. As a human being, I externalize my thoughts, from a projection of my spirit into the nature surrounding me (Hegel, the bride espoused by spirit). In

this sense, my perception of what the reality is and how it is constructed passes through an axiological abyss, so the senses that I experience pass through my personal valuation.

Third, there is the limitation of the reality, reflecting the impossibility of comprehending it in its totality. This problem, which is part of applied social sciences, like administration, is called the gnosiological abyss, which deals with the perfect non-compatibility between idea and reality. This reciprocal incompatibility limits our ability to know. Thus, for the research accomplishment, the limitations deriving from the epistemology, used as a theoretical foundation and a methodology for conducting the research must be taken into account.

There is also an imminent deficiency in the employed language during the transmission of thoughts. The applied concepts are attempts to understand reality through thought. It occurs that the abstraction of thought is greater than the object studied and cannot be fully grasped by language, in the sense of Espinosa's conception that the dog concept doesn't bark. This condition is called the gnoseological abyss (Adeodato, 2002), which occurs first between fact and thought, and; later, between thought and language.

In this sense, as spoken by Wittgenstein "*The limits of my language are the limits of my world*", reflecting in this way the mismatch between what is thought and its transmission through language. Or, as argued by Strauss and Corbin (1990, p. 81): "*The word has feeling, sensibility, texture, sensation, smell, and action. These associations are derived from the meanings that we come to associate with that word over the years, for personal or cultural reasons*". Thus, trying to bring the experience of theorizing about the researched reality, we seek to discuss in the present research how the concepts arisen from the field relates to materiality, and not to remain in a purely symbolic discussion.

As suggestions for future research, we believe that it would be interesting to carry out research on the effects and consequences of experiences in absurd situations. From the understanding of the sense of absurdity for the managers, it will be possible to deepen the study on the consequences for these individuals; to what extent do these experiences contribute to their suffering at work? In addition, we suggest that such research can be done in other organizational contexts, such as private organizations or organizations from other sectors, so that the concept of absurdity can be deepened and intensified.

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APPENDIX A – Brazilian electrical sector timeline

Private monopoly		State control	State inductor	State model	Institutional turbulence	Hybrid model	New model of the electric sector
Urbanization and street lighting process		Industrialization and weakening of the agroexport model	Strong state intervention	Sector economic readjustment	Disruption of the self-financing period and national privatization plan	Verticalization of the chain and restructuring for the competitive model	New electric sector model or pool model
(1879 -1900)	(1901 - 1930)	(1931 - 1945)	(1946 - 1962)	(1963 - 1979)	(1980 - 1992)	(1993 - 2003)	(2004 - 2015)
1879 - First permanent electric lighting installation in Brazil (Central do Brasil). 1881 - First public lighting of the Country (RJ). 1883 - First Brazilian hydroelectric	1903 - Beginning of federal regulation of the electric power industry. 1904 - Creation of Tramway Rio de Janeiro, Light and Power, from the same financial group in São Paulo - Light (Toronto). 1908 - Fontes Velha	1934 - Decree 24.643, July 10, 1934. Water Code, by President Getúlio Vargas. Rate stipulated by "cost service", not more for gold. 1936 - Created the ABCE (Brazilian Association of Electric Energy Concessionaires). 1939 - Creation, by Vargas, of the	1947 - SALTE Plan (health, food, transport and energy). 1946 - National Electrification Plan. 1950 - The installed capacity of electric power in Brazil is around 1,900 MW.	1963 - Activation of the Furnas hydroelectric plant, allowing the interconnection of the States of Rio de Janeiro, Minas Gerais and São Paulo. 1964 - Acquisition of Amforp Group companies. 1965 - Creation of the National Department of	1982 - Creation of GCPS (Coordinating Group for Planning of Electrical Systems). 1984 - Completed the first part of the North-Northeast transmission system, allowing the transfer of energy from the Amazon basin to the Northeast. Itaipu hydroelectric power plant, the largest hydroelectric power plant in the world.	1995 - Completion of the privatization auction of Escelsa. Creation of Abradee (Brazilian Association of Electric Energy Distributors). 1996 - Aneel (National Agency of Electric Energy) to regulate and supervise the generation, transmission, distribution and commercialization of electric energy.	2004 - PCH Padre Carlos plant in Poços de Caldas (MG). Approved the new model of the electric sector, with the promulgation, in March, of Laws No. 10.847 and No. 10.848, which define the rules for the commercialization of electric energy and create the EPE (Energy Research Company), with the function of subsidizing planning

<p>power plant - Diamantina, MG.</p> <p>1st public service of electric lighting in South America, and 1st Brazilian line of electric trams.</p> <p>1887 - Activated the Fiat Lux thermoelectric plant, RS, 160 kw.</p> <p>1889 - First large-scale national hydroelectric plant, Marmelos-Zero, owned by Companhia Mineira de Eletricidade,</p>	<p>hydroelectric power plant, the largest power plant in Brazil (24 thousand kW).</p> <p>1912 - Creation of Brazilian Traction, Light and Power Company Client Ltd, which unifies Light Group companies.</p> <p>1913 - Delmiro Gouveia hydroelectric plant, the first plant built in the Northeast region.</p> <p>1920 - The installed capacity of electric power in Brazil is about 360 MW.</p>	<p>National Water and Energy Council (CNAE), whose objective is to solve the problems of supply, regulation and tariff referring to the country's electricity industry.</p> <p>1940 - Regulated the situation of the thermoelectric plants of the country, through integration to the provisions of the Water Code.</p> <p>Brazil's installed electricity capacity increased from 780 MW to 1,250 MW in 1940.</p> <p>1941 - Regulation of the "historical cost" for the purpose of calculating electricity tariffs, which sets the investor</p>	<p>1952 - Creation of BNDE (National Bank for Economic Development), focusing on energy and transportation.</p> <p>1954 - Usina Paulo Afonso I. Belonging to Chesf, it is the first large hydroelectric plant built on the São Francisco river.</p> <p>Usina Piratininga, the first major thermoelectric plant in Brazil.</p> <p>1956 - Creation of Escelsa, administration of the Espírito</p>	<p>Water and Energy, in charge of the regulation of electric energy services in the country (DNAEE).</p> <p>1968 - Creation of Eletrosul (Power Plants of Southern Brazil S.A.).</p> <p>Start of operation of the Santa Cruz plant, Furnas Centrais Elétricas S.A.</p> <p>Creation of Eneram (Coordinating Committee for Energy Studies of the Amazon).</p> <p>1969 - Creation of the CCOI (Interconnected Operation Coordinating</p>	<p>12,600 MW of installed capacity.</p> <p>1985 - Creation of Procel (National Program for the Conservation of Electric Energy), aiming to encourage the rationalization of the use of electric energy.</p> <p>Operation of the Angra I thermonuclear plant, the first nuclear power plant in Brazil.</p> <p>1986 - South-Southeast transmission system, transporting electricity from Itaipu to the Southeast Region.</p> <p>1988 - 1988 - Creation of the Revise (Institutional Review of Electric Power).</p>	<p>1997 - Created Eletronuclear (Eletrobrás Termonuclear S.A.), responsible for the projects of the Brazilian thermonuclear plants.</p> <p>Law No. 9.433, January 8, National Water Resources Policy, and National Water Resources Management System.</p> <p>1998 - Regulation of the MAE (Wholesale Electricity Market). Distinction between: generation, transmission, distribution and commercialization.</p> <p>Establishment of the ONS (National Operator of the Electric System), replacing the GCOI (Coordinating Group for Interconnected Operation).</p>	<p>technical, economic and socio-environmental aspects of electric power, oil and natural gas and its derivatives and renewable energy sources.</p> <p>Created the CCEE (Electric Energy Trading Chamber), the CMSE (Electric Sector Monitoring Committee) and the CGISE (Integrated Management Committee for Generation Projects of the Electric Sector).</p> <p>2005 - Monte Claro hydroelectric plant, This set of plants would increase the installed capacity of generation in the country by 4.4%.</p>
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<p>belonging to the industrial Bernardo Mascarenhas.</p> <p>1892 - First line of electric trams of permanent character of the Country, RJ (Companhia Ferro Carril).</p> <p>1899 - Establishment of São Paulo Railway, Light and Power Empresa Cliente Ltd - SP Railway -, evidencing the entry of foreign capital into the electric sector.</p>	<p>1920 - Crisis in the export model, generating a redefinition of the state (interventionist model). Turbulent period with few private investments (pressure before interventionism).</p> <p>1927 - Amforp (American and Foreign Power Company Client), monopolizing dozens of concessionaires in SP.</p>	<p>compensation rate at 10%.</p> <p>1943 - Beginning of the creation of state and federal companies as Ceee-RGS, Chesf, Cemig, Copel, Celesc, Celg, Cemat, Escelsa, Furnas, Cemar, Coelba e Ceal Energipe.</p>	<p>Santo energy program.</p> <p>1957 - Furnas S.A. Power Station, with the objective of harnessing the hydroelectric potential of the Rio Grande and thus solving the energy crisis in the Southeast.</p> <p>1960 - Creation of the Ministry of Mines and Energy, by President Juscelino Kubitschek.</p> <p>The country's installed electric power capacity is around 4,800 MW.</p>	<p>Committee) to reduce operational problems and improve the interaction process of the companies in the sector.</p> <p>1970 - The country's installed electric power capacity is about 11,460 MW.</p> <p>1973 - Creation of Itaipu Binacional (Brazil and Paraguay), regulating the construction and operation of hydroelectric plants on the Paraná River.</p> <p>Creation of Eletronorte (Centrais Elétricas do Norte do Brasil S.A).</p>	<p>Creation of Comase (Coordinating Committee of the Activities of the Environment of the Electric Sector).</p> <p>Extinction of the single tax on electric energy and transfer to the states of the tax collection, through the ICMS.</p> <p>1990 - President Fernando Collor de Mello sanctions Law No. 8.031, which creates the PND (National Privatization Program).</p> <p>Created the Sintrel (National System of Transmission of Electric Energy), that enables the competition in the generation, distribution and commercialization of energy.</p>	<p>2000 – Activation of the Itá hydroelectric plant, on the border of the municipalities of Aratiba (RS) and Itá (SC).</p> <p>CNPE (National Council of Energy Policy), formulate and propose the guidelines of the national energy policy.</p> <p>Creation of Abrate (Brazilian Association of Large Electric Power Transmission Companies).</p> <p>Creation of Abraceel (Brazilian Association of Electric Energy Trading Agents).</p> <p>Creation of APMPE (Brazilian Association of Small and Medium Producers of Electric Energy).</p> <p>Creation of CBIEE (Brazilian Chamber of</p>	<p>Implementation of 2,747 kilometers of 10 new transmission lines, benefiting 140 municipalities in 11 states.</p> <p>Eletrobrás and South Korea's Korea Electric Power Corporation (Kepco) sign a Memorandum of Understanding for cooperation and partnerships for joint investment in projects in the generation, transmission and distribution of electric power in Brazil and Latin America.</p> <p>In April, a Agropalma Group biodiesel production plant is inaugurated in Belém (PA).</p> <p>The first Brazilian biodiesel production plant is inaugurated in</p>
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			<p>1962 - Creation of Eletrobrás, constituted in 1961 by President João Goulart, with the objective of coordinating the Brazilian electric energy sector.</p> <p>1962 - Formation of the Canambra Consortium, by the World Bank, to develop studies on hydroelectric potential and the electricity market in the Southeast Region.</p>	<p>Creation of Nuclebrás (Brazilian Nuclear Companies S.A.).</p> <p>Creation of the Electric Energy Research Center (Cepel) to develop technology in equipment and electrical systems.</p> <p>1974 - Decree-Law, nº1383. Tariff equalization between regions.</p> <p>1975 - Creation of the Codi (Distribution Committee of the South-Southeast Region) and the CCON (North / Northeast Operation Coordinating Committee).</p>	<p>The installed capacity of electric power in Brazil reaches a volume of about 53,000 MW.</p>	<p>Investors in Electric Energy).</p> <p>The installed capacity of electric power in Brazil is around 72,200 MW.</p> <p>2001 - Major energy crisis in the country. Rationing program in the Southeast, Midwest and Northeast regions and, in August, part of the North region.</p> <p>In August, the Government created the CBEE (Brazilian Commercialization of Emergency Energy) to carry out the contracting of emergency thermals.</p> <p>The Eletrobold thermoelectric plant (RJ), included in the Priority Thermoelectric Program (PPT), is also in operation in august.</p>	<p>March, in Cássia (MG).</p> <p>The EPE (Energy Research Company) concludes in March the studies of the Decennial Plan of Expansion of Electric Energy - PDEE 2006-2015 -, with goals and recommendations for the expansion of the country's generation and transmission systems by 2015.</p> <p>In February 2007, the first turbine of the Campos Novos hydroelectric plant was activated.</p>
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				<p>1979 - Nationalization of Light Serviços de Eletricidade S.A.</p> <p>Start-up of the Sobradinho hydroelectric plant.</p> <p>Installation of Sinsc (National System of Supervision and Coordination and Operation).</p>		<p>2002 - In February, the Machadinho hydroelectric plant starts operating in the municipalities of Maximiliano de Almeida (RS) and Piratuba (SC).</p> <p>In February, rationing ends in the Southeast, Midwest and Northeast regions.</p> <p>In May, the Cana Brava hydroelectric plant starts operating in the municipality of Cavalcanti and Minaçu (GO), with a generation capacity of 450 MW, reached four months after the inauguration.</p> <p>Expiration in June of the GCE (Electric Energy Crisis Management Chamber), replaced by the CGSE (Electric Sector Management Chamber), linked to CNPE (National Council for Energy Policy).</p>	
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						<p>2003 - In November, the federal government launched the National Program for the Universalization and Use of Electric Energy, aiming to bring electricity to 12 million Brazilians who do not have access to the service until 2008. From this total, 10 million are in the rural area.</p> <p>In that year, the installed capacity of electric power in Brazil is around 77,300 MW.</p>	
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APPENDIX B – Interview script

Percepção sobre inovação

- 1) Como você começou a trabalhar na área de inovação?
- 2) O que significa inovação para você?
- 3) Como você pensa em inovar? Tem como resgatar a ideia de uma inovação passada? Onde ela acontece? (Quem contribui para a inovação?)
- 4) Você utiliza metodologias para o desenvolvimento de projetos de P&D&I?
- 5) Qual a relação entre P&D e inovação para você?

Narrativas sobre experiências pessoais em projetos de P&D&I

- 6) Você já participou de projeto de P&D&I. Como foi isso para você?
- 7) Por que você começou um projeto de P&D&I? Qual foi a sua motivação?
- 8) Qual era o seu papel no projeto? O que você fazia no projeto?
- 9) O que é um gestor de projetos de P&D&I para você?
- 10) Onde esse projeto foi gerido?
- 11) Como é a estrutura da sua empresa para o desenvolvimento de inovações?
- 12) Onde foram tiradas as dúvidas do projeto? Como foi esse processo? Como você qualificaria?

Sobre o P&D&I da Electric

- 13) O que acontece na gestão de P&D&I na empresa? O que **não** acontece?
- 14) Quem são os atores envolvidos nesse processo?
- 15) O que esses vários atores estão fazendo?
- 16) Quando agem? Como agem?
- 17) Quais são as maiores questões estruturais aqui, e como esses fatos afetam a sua percepção sobre inovação?
- 18) Como alguém entra em contato para iniciar um projeto?
- 19) Quanto de incentivo há para a inovação na empresa?
- 20) É necessário algum conhecimento especial antes de iniciar um projeto de P&D&I?
- 21) Onde alguém interessado sobre P&D&I poderia fazer perguntas aqui? Quem responderia?
- 22) O que faz a inovação ser de difícil realização aqui?
- 23) O que acontece se alguém liderar um projeto de P&D&I sem usar a estrutura da empresa?

Construção do P&D&I pelo respondente

- 24) O que seria uma gestão efetiva de inovação na empresa? Como você entenderia se funcionasse direito, o que mudaria?
- 25) O que significa ser um gestor de projetos de P&D aqui? Como você acha que deveria ser a atuação de um gerente de P&D?
- 26) Você participaria de outro projeto de P&D&I? Por quê?

APPENDIX C – Interview conducted - example

How did you get started on the project?

How did you get started on the project?

I'm going back to a slightly older story. I always liked innovation, transformation, I'm an electrical engineer, and in college I liked that. I started to train here at Electric in 1980, and I had an old computer, the 1130, which still worked with a perforated card. I went to Teresina (this computer was still here), then I came back and was already in the era of the central computer, I continued programming in Fortran, but then it was already that marvel that was the computer, and there began to be that computer, XT, and we started to find out, and give enough training to people here in the company. I always liked the area of innovation. Updating things a little, I was involved with communication, area that I got involved a lot, but I was always in the area of operation. In those 36 years of Electric I have always been in the area of operation. But always coming back something of knowledge, technology, and aimed at the operators. There were 1400 operators, nowadays we have 730, approximately. And this is falling, today no more operator enters the Electric.

Why?

Because today, everyone in the maintenance area is doing this part of the operation. Before only the operators used to work in maintenance, but this situation is changing because of the restrictions that were happening. When I got here, we were 14,000 employees, today we are 4400, and with a forecast of a PDV with at least a thousand people. How is this possible? Thanks to technological innovations. Previously, in this industry, I had two designers and four typists just to make a report, but only for one kind of report. When the computer arrived, the XT, we used WordStar and Lotus 123, but with that, I was able to report, and these people went to other functions. With all this, we were able to add value to the work and reduce the jobs. The designers were there just to make graphics. The computer does everything, then they leave. That is technology. If you had the opportunity to meet Olivia, who is here by our side, you will see how the operation was. We used to have some panels, and there were the voltmeters, the circuit breaker, we used to have the keys, they were not electric, they were very old things. This today, everything is automated, and the entire interface is per computer. It asks if you want to

open or close the circuit breaker, and that command goes out for our supervision, and in the field, we do the maneuver remotely. That is why it is reducing the operators, we are modernizing the facilities to have less and less presence of the man inside. This is good and bad.

We need to have a high guarantee that that supervision works, because if something goes wrong, we do not have people to put there anymore. Currently, we have 54 remote-controlled facilities, with no one there, remotely assisted. Before, for you to leave someone there for 24 hours, that meant 7 people at least, we usually had, our shift is six hours, then there were four people and others that kept running. There were five people and one more training and another in charge. At least 7. Today, we have a maximum of two people at these teleassist substations. That's why we have to rely heavily on telesupervision. We are not all assisted by the lack of market structure of those who do this type of work, because it is specialized and very risky. We are receiving today a very different model from the one we received in the past. We used to generate, transmit and sell energy. Not now, we get by availability, every asset has a price. The transformer is priced at seven days, 24 hours. If he passes the chain, at the very least, there we take 150 times the price of the minute. On untimely shutdown. In a scheduled maintenance, more than 48 hours before, they charge us at least ten times. If we schedule three years in advance for maintenance, we will have 20 years of exemption. Because they give a fairly rigid rule, there is nowhere in the world that is so violent. This even astonished some countries that were here and were scared. The Spanish people themselves invested a lot here and ran away, because the rule was very violent.

It has now been renewed in July, the resolution 579. If you see, the continuity indices, at Brazil level, are among the best in the world. 99.6, 99.7, you can see high availability. They have restricted more the rule, and we are no longer earning almost nothing, there is an interference in the model. For example: atmospheric discharge, fires, that in Brazil we have a strong agriculture. We lose money on this. The lines here have a terrible problem, in the great capitals, the person pays for those lands under the line and they begin to have possessions. When you turn that line off, we can not reconnect, that's what we call a high-risk line. It may have been some villager who tried to cut. Then we have to do an inspection in the whole line and say that there was nothing serious, that can re-connect, and this whole time is discounted from the company. Among other things. There are some

crazy people who like to climb the line to try to kill themselves. There are two buildings, one in Fortaleza, the other in Teresina, there is one next to the bank, which we put a fence. But even so, the guy goes up there, does that "carnival", calls for his wife, because he fought with her. And then, only when we get her at her house, bring it here, that the guy goes down. But the line is off, the fireman going up. This is taking our revenue, it is difficult, the environment is getting harder and harder to keep up, but we are living.

If you remember, in 2012, there was a reduction in the tariff of energy. That was terrible for the electric sector. When we do a work, the work is financed for 30 years, which is a reasonable time for it to be paid. We had loan from several works. She (the President) said "from now on, you will not have any more fees." But the work would generate a fee, and they said they were going to pay compensation, but that compensation was much much lower than what we owed. Companies are now out of breath. You buy a car and you lose your job, and you get the debt, that's what's happening with the electric sector now. Then there were a lot of increases in the tariff, but they were not for the transmitter and not for the generator, but for the distribution. The increase was even bigger than they needed. The generators and transmitters become weak. And because they are state-owned mixed-economy, they can not "swim in the profit" (expression for keeping the profits), you have to reinvest in the system. We are failing to reinvest in the system because the tariff has been cut. We have a bomb in our hand. All our stewardship is over and now we just cut the meat and cut the bone.

Let's see now with the new government, how will you stay.

Everyone is talking about Petrobras, but Eletrobras is also very "bad on the legs" (doesn't work well) because of this tariff withdrawal. We, in Electric, for example, we used to have from 2 to 3 billion reais of profit. We started to give 2 billion of damage, because of this tariff cut. Our only source of revenue is the tariff. Cut it, people are bad of the legs. But I took a trip now on the question. Which was?

What was the first contact with the project?

I had participated in others projects without being a manager. That same, at the time the colleague was there in Salvador, and came here and spent eight years. The proceedings here took a long time to be authorized. It made a delay of this project of almost eight years to be approved. But there are things that are so innovative that even having this huge

delay the market does not follow, even more being specific things like that. This colleague came here, did the project and has already returned to Salvador. At the time he was the project manager, I helped even more of my own experience with the operation. We've had some mishaps that I'll tell you when you get in the trouble part of things that are common to all of them. I participated, I do not even know if it's there, from the scenario generator to the simulator. I do not know if you have a list of the projects, or if we can talk about the big picture in general.

You can talk in general.

This project came from me. We introduced it to Roberto, who was the department manager, and at the time was the project manager. The part of generating the scenario, generating the problem as I showed you there, or we get a real problem, or we do it by taking out of our head what we want to be tested. And it needs a great specialist to be generating something, because we wanted a person who could generate that experience and homogenize it in all centers. All regional centers are linked to a structure similar to that of the simulator. It is basically that structure, and we wanted to homogenize, because there are some very experienced, who do a great quality training, and others with not so much experience, that does works so well. The scenario generator was just for that, to make it easier, because it is difficult to codify the scenario ready. We needed to share the scenario ready, so that we could give, as there are few specialists, the same kind of quality in all the trainings for all our operators, which today are 700. That was the scenario generator.

As I showed you there, to intervene in some equipment, you have to make an intervention request, you have to schedule at least 35 days before to pay less, or else three years, six years if it is a line equipment . You think what you're going to do six years from now is a bit difficult, but that's the rule. When you ask for the intervention, for example, to disconnect a transformer, there are some types of maneuvers for you to turn off that equipment. One of them was the generator of maneuvers, which is the smart suite, that it checks the conditions and already disconnects the high circuit breaker, then the low one, opens some keys, it generates this automatically. Same thing with a line, it has the ability to take a picture of the system, see how the system is at that time and from that data, generate the maneuver script. Same thing to reconnect it and put it in the system in service.

These were the ones I participated as a consultant. I also participated in another, with several modules.

One of these modules, generated by the people who are now DPA operators, told me "let's put these visualizations together in a unique way so that we can see in a single application", that we have several system tools, and people wanted to see who operated. It goes into several systems. And we saw that only one system using all the information, it was easier for us. This one was almost until the end, but it did not end because one of the things that we needed was the geographic reference of all the towers that we have in Electric, and this process was not well conducted here. We have approximately 45,000 structures, and this gives almost 18,000 kilometers of network. And we wanted all this to be qualified, and when there was a shutdown, he would say, "Look at the exit, that's about 200 kilometers," and on the other side, he said "I've seen it from 100 kilometers ", One would talk to the other. He would go in the other system, georeferenced, and say: "probably it was in the number X tower", he would pick up the type of frame in the towers register and see in another system the nearest access road. Put it all together, converge everything. But due to the reason that this tower part is late, the project was not so cool. The system is ready, but the input, Electric still did not give one with a good quality. We have, but the registration is not good. This also influenced the other project that we had, that was, at the same time I was a consultant, that was of virtual reality inside the substation.

The problem, if you want to call the colleague here who was the project manager, this project also ended up not being so well dealt with. This part of gathering all the media, there are two things that we need to deal to have this here: burnings and atmospheric discharges. The air is insulation, you put two conductors here, it isolates, but when it warms, it ionizes, turns a phase conductor between it and the tower. That's why it's important for us to know where it burns, and now it's a little more complicated. When we check a burn, we have to notify ONS, which is the company that operates the system throughout Brazil. If there is a burn, if we tell them that there was a burn, they start to discard a variable portion, then they disconnect the line, and even if it does not disconnect, we pay because we reported. That's why we have to stay tuned. It would be good if we have good information, so we could know where the burn is. There are lines that pass through cane fields, between Penedo and Arapiraca. When September and October

comes, which is the time of the great burnings, we have fires. Although we work with them, warning them to cut the sugarcane down the line, to burn the sugarcane far from the lines, etc. But the guy is out of money, he needs money, then he starts burning, and the burn starts at a non-ideal time, these guys burn anyway, and the cane is burned, and if not, three or four days it rots. They have to keep an eye on their cane so this does not happen, the burning on that line is difficult in those areas as well.

Another thing that turns off lines are electric shocks. We talked about this same sugarcane project, we were talking about atmospheric discharges, I also participated as a consultant. You have to buy antennas, imported ones, put them on the ground, we were going to put three here in the Northeast, the ministry was going to put eleven more, and with that we would have a very good coverage, with a maximum of 200 meters from where the discharge fell. When the discharge falls, it launches a magnetic modification, and this can be captured by antennas, by triangulation, the same thing of mobile phone, it calculates how many meters of each one and it is possible to know where the discharge fell. You can see the storms, especially in the South, whenever there is a cold wave, you can see the discharges approaching the line. They knowing that the discharge is on top of the line, dropped, even without automatic reclosing, they can reconnect the line shortly after. It's what I told you, the lines are programmed to restart a few seconds later, to try to close the circuit breaker to succeed. Almost 70% of the reclosing is successful. If it is burnt, if it is by discharge, it varies, but it tries. There is an automatic try and there is a manual one, so you can not have as much loss with varied portion, which is that discount, the name is varied portion.

When we predicted this slow in project to be approved, the dollar was at \$ 2.30. When the project was authorized, it was almost \$ 4.00. Due to the reason that this project have imported pieces, we could not continue. We tried. We were going to add more resources, but there changed the rule in Brazil. Until then, ANEEL approved the R&D and you were calm, "this is a real R&D". When it changed, it was "look, go and do the project, and there in the end I say if it was R&D or not. If not, you have to pay. This caused a retraction, a fear in the all people. This projects of lightning does not exist in the Northeast, so the whole society would benefit from it. But if you come to the end, the project cost about \$ 8 million, and we were already without money ...Nobody wanted to be responsible. The society lost it. Remember an airplane that crashed here, was going to Paris and they said

that the problem could have been a lightning? In that region we are between antennas, the resolution was 200 meters, but even then, we could say "look, there was a storm there." We could have warned the whole society. The society have lost because we were afraid of this project. That is the biggest problem. It ended up that the money stayed there, the ideas started to diminish, and the professional, the technician, was responsible for things from the head of some technicians of the ANEEL. Different from this is they taking the project, saying that there are no people to analyze and spending five, six, seven years to authorize a project. The rule was bad and they managed to get worse.

So this ANEEL delay was to approve?

Until 2006, if I'm not mistaken, you can ask in GPD, that was the rule, okay, okay, then they changed. You do; if it comes to an end and it was development and not research, it is your cost. It did not work out right now, R&D's money is stamped. The money stayed there, to do something there in Fernando de Noronha, which is not quite the purpose of the transmitters. There is no transmission there; only generation. So, everyone knows, we do not win that much to have an 8 million fine in the back.

What happen to the manager in case of punishment?

Not to answer your question, we decided not to take the risk. One of the projects that we decided not to take the risk it was the one of the rays. We decided this simply because it was too expensive. One thing is 300, 400 thousand, which was the average of the old projects, another thing is 8 million at that time in which we are. All projects, when developing, usually appear a few things, some offs. When we were developing the smart alarm, there was one that we had to gather the information to make a database of maneuver. With that, we developed what we called SisRTM, a system of maneuver script. It was necessary for the project, and this thing took a huge amount of time, the personnel managed to move to all the substation centers, something that we did not foresee in the original project, it was excellent.

What was the worst problem, as a consultant or as a project manager?

There is one that is terrible and scares everybody: besides being responsible for the technical part, the manager has to be responsible for the economic-financial part. And that's scary, because the guy has to be a project manager, and it's not only professional, it's on his CPF. He needs to approve bills, and there's a lot of things that are done that are

not the daily routine of a technician but of an administrator. Here at Electric, a department was created just to do contract administration, but the manager there said that he would not administer any contract from the operating directorate, which is where there are more things to be done, because when this department was created, he asked for people and we couldn't send anyone, so he doesn't analyse any project from OD.

This one, that I was with a colleague, he said to me "look, I "went into that cold" (be in a problematic situation), but I don't fall in another one. That's enough!". That part I told you about, checking substations for the browser, could have progressed. We had a lot of ideas to improve, to be the same or better than we think, but only on behalf of the administration part he said, "I will not". I asked for help there, and I monitored him, many times. In the administration part, the process is very laborious. It's not our daily activities. We have rules here, and in the administration there is a lot of rule that changes everytime and we need to be updated to prepare a report. It is a difficult process. R&D is a waiver of public bidding, so the amount of document and requirement is much higher. This is a part that scares and drives away a lot of people from doing R&D. For me, it's the main obstacle. Who comes to ask me opinion, I say: "if you want to get into a cold, go manage contract".

But is there no process here at Electric that would require this area of contracts to analyze those projects from operation area?

It should. The manager there was a colleague from here, we tried, and failed, they don't do. Then it scares and drives away. Anyone who wants to "get a cold", enter in an R&D project.

In other areas, from what I've seen, this contract administration function ...

It is very difficult, if I had to list a problem, I would like to list that one. The others we solve with the structure georeferencing, in the long term. Until that is not solved, it is a hindrance.

I did not know about this detail.

It's not a detail, it's even bigger. For the operation area, the contract area don't analyse ours projects. Here in our division of quality control, after the regulations, a third part of people went away. Everyone suffered at the time, 1440 went away on the PDV. And now, at least another thousand more will leave.

And have you used any methodology of innovation management, project management?

In the R&D, as far as I was aware, they commented on the monitoring, because the monitoring is very old, old-fashioned, and laborious, could have many adjectives... in short, is not good. The people themselves, of course, do not have a vision, a qualification, nor did they need to, because the technical part is with the technician, the economic part, the administrative part with the administrator. It's a lot of work, and then you have to do that lot of reports... I have a project now, completed, by the university, my sister was doing the project! And she said that the work that it took to generate this "world of report", is unbelievable. On the developer's part too, she said "if somebody asks me about an R&D project now, I'll say: run!" because the administrative part with a lot of report, it is not good.

What was the period of the project you were in as a manager?

That was from 2012-2014, I think, that it came out last year, in 2015. That other one was now 2013-2015, the one about scenario. The one from the smart view went further. But from 2011-2015, I participated. Of course, at the time, It had a greater retention of ANEEL (delay for approval), and suddenly there were several projects that were "on the shelf" (useless), and it took more than five years to analyse a thing of a few pages, I do not know what they were doing.

And during the development, with whom you used to talk to? Talk about your doubts?

One of the things they did was the seminars, in the centre of Campina Grande, the manager there can always talk to us. I was going to be the manager there, but since I was here in this centre, the department told me that I would not have time, because it takes time, they already knew, take considerable time, then it passed to another engineer who was working there in Campina Grande. So I was able to follow both parts - here and there, through the university, and both complained about the control part, which is very bad.

But was there any problem with your superior due to the time that the project took?

No, he even encouraged me. He was even supposed to be here now, but now he's at Bahia, with a paternity license.

Does the project manager have financial loss for not delivering?

By the new rule, there is a risk. Every project manager has a risk. Risk of delivering something that did not exist, your CPF is there, in contract administration. It's another thing people say here "man, I won't get into it (the project)," less and less people want to give their heads to the prize.

How is the recognition here at Electric? How do you feel as a project manager?

Not that much. The experience I had was more scolding than recognition. The company itself should have a policy to show, to get the thing working well. What I said to you, we have many ideas. Then there was the smart alarm, phases 2 and 3. This we were starting ideas for a project. While it does not start to work at 2 and 3, it does not go to 4. People started to do it because it was released, they liked, so it worked, but without so much worry to "put to grind" (slang for work well). And then it came, "or grind or pay for it." But even so, it can be put to grinding, and there is a lot to be done. When it depends on others, you are always in a bad position. We could never work with a GPS in 45 thousand structures, it is not our task. "Is it so hard?". Yes, there were lines that were so badly made the registration that they were in the forest. There are a lot of problems, sometimes it transcends our competence.

And how would you like to be recognized?

Look, it's difficult because here we do not have, not as project manager, we do not have as much recognition, we have more whip than gifts. For punishment there are several and several laws, and for recognition there is only a report. We have no mechanism in the company that gives recognition to a person. In a way, you are putting your CPF there, and if it gives you a problem, it discounts, but if everything works out, what do you get in return? Anything. At university you even have something in the form of functional promotion, it's automatic. You do not have it here.

And enters in the Lattes platform.

Yeah. But you do not have it here, you take the risk. Not the risk of recognition, you run the financial risk of being targeted, if something goes wrong in these things you're not used to do daily. I repeat: this is the main problem.

What is missing in the whole Electric R&D programme, in your vision?

About the smart view project, which we were a consultant to the DPA, there was a seminar in May here in Porto de Galinhas. The invitation came to us to participate. It was an update of everything we did, and we said "let's see if we can get the inscription". I would pay the shift, hotel, everything, I wanted only the inscription. Then we couldn't get. For me and for the contract manager, we couldn't get the value for inscription. These are things that we are discouraged, because we could update ourselves. One of the great investments we have here is this seminary. We get some ideas of what is happening and bring it here. How much did this cost to the company? You are going to put a consultant here who will stay for days, months to find what the other has already tested, and we can bring it here. But this is negatively perceived.

People act with bad faith, aiming only to travel, and because of some that act like this, everybody suffers. I said I paid for travelling and for the hotel, but I could not get the inscription. We can do seminars, bring people from outside to talk, but we do not have the money to do it. It is a difficult thing. We need to fight against people that we should not fight in life. We should not fight against the full river, angry woman [laughs] and government. "Were you able to manage the contract?" We never got it. Then there are those project hurts. I could not bear getting into another project.

That was my last question ...

No, friend. This project of smart view, which was just to continue it, to do an interface, to open a browser, to leave the way we needed, it didn't work. If it was only the technical part, I could try to continue, but do the contract administration, I said there to GPD, there is no contract manager, so I do not do it. They told me "it's absurd to lose the idea!", I said that it was absurd to risk myself for nothing.

How is the relationship between the areas?

This is not so... it does not hurt so much. The virtual reality project, this is from UFPE, the UFPE did it there at Petrobras, because it could be applied in the same way, it was easy to approve. They said they had both, but it could only be one. They wanted the simulator engine in, I made some demands, and the university does not give the information. We tried, and I said "once you can not do the simulator with the engine, I'm

not going to sign up". But then the other university started and did not finish their project. We already know how it is there, before we started, I already knew if it would be approved or not. The other, that they were doing something similar, it went bad. But here we don't have this kind of things, as I told you, we know what's good for the company, and if another colleague wants to, I'll tell him to be careful with contract administration, but you do not have that jealousy.

But it lacked integration with the sector that takes care of the R&D projects.

The hindrance, I think is the biggest, is a hindrance in the process.

And the manager there?

I think it was a problem with the department head, a jealousy, you can research about it with the GPD, that after this specific smart suite I did not enter in other projects, and I will not entry. So you can check that there was this thing, he does not accept being an administrator of the DO's projects. Ideas we have many, but you can not follow in this current structure.

Now, a new problem arose for me, because I thought that with this new formulation of the contracts area, there was no problem.

Risks and risks do exist. And then you will be penalized for all that project, it will come out of your pocket, it does even harm you. ANEEL said it was not an R&D, the guy did not do well. Let's let the ideas die then. The technology may one day come. Not for everyone, but other things come up. I knew that an idea that I had around thirty years is coming up now, and it was a simple idea. A shower that was a bit smarter, hot and cold, would do that automatically and the electrical part, that I wanted when I was at school in 1980, but now it's on the market. I have some ideas with me that I'll maintain until my retirement and give them to Google, I'm waiting a little bit to get there.