The University Of Sheffield.

PRIVATISATION AND MANAGEMENT ACCOUNTING CHANGE IN A BRAZILIAN ELECTRICITY DISTRIBUTION COMPANY

A thesis submitted to the University of Sheffield for the degree of Doctor of Philosophy in the Faculty of Social Sciences

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PhD Thesis

Management School

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PhD in Management Accounting

July, 2010

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Abstract

The main objective of this study is to explain how the management accounting information system of a privatised Brazilian electricity distribution company was shaped by both inter and intra organisational factors. As a consequence, this thesis seeks to explore the key factors that influenced the dynamics of management accounting change in the privatised company. In so doing, there is a great interest in understanding the complex interaction of both intra-organisational factors (e.g. organisational culture and power relations within the company) and inter-organisational factors (e.g. the electricity sector regulation system) which influenced the process of change in management accounting practices.

This study adopts an interpretive case study as research method to analyse the changes in management accounting that occurred in the case company over a period of 8 years, that is, from 2000 (the privatisation year) to 2007. Face-to-face interviews semi-structured in design constitute the primary method of data collection in this study. For its theoretical framework the study draws upon institutional theory and its extensions, as well as structuration theory to explain the process of management accounting change in the case study organisation. More specifically, this study uses three theoretical frameworks that explain changes in organisations, namely: Dillard et al (2004); Seo and Creed (2002) and Burns and Scapens (2000). By combining these three frameworks, this thesis provides a new theoretical framework to understand the process of management accounting change.

The analysis of this case indicates that there were profound changes in the case company's management accounting systems after the process of privatisation. In particular changes were evident in the budgetary system; the performance measurement system; and in the way that managers use the management accounting information. It was also identified that the Balanced Scorecard system played a ceremonial role in the organisation. This study also explores the regulator's role in the process of management accounting change in the case company as a source of coercive isomorphism.

Acknowledgements

I wish to express my sincere gratitude to my supervisor, Professor John Cullen, who guided me through my PhD. His tutelage and encouragement have been crucial to the completion of this thesis. I am also grateful to my second supervisor Professor Phil Wright for his relevant comments and suggestions.

My gratitude is also due to Professor Jesse Dillard for accepting me as a visiting scholar at Portland State University. I really enjoyed worked with him during my stay in the USA. I would like say thank you to Professor Mathew Tsamenyi for his friendship, encouragement, and critical insights.

I am indebted, too, to my friends Edilson Silveira and João Paulo. This research was only possible because of their help and I am really grateful for that. I wish thank all members of the Impacto Consultores. I had a great time there during my field work.

This research would not have been possible without great co-operation from the case study company (Electra). I am very grateful to staff of Electra who spent their valuable time to discuss and share their knowledge and experience with me. The collaboration was invaluable to this research.

I would further like to thank my PhD colleagues, especially, my nice office mate Su Ann, Andre, Moritz, Steve, Raquel, Adriano, Haslida, Hesham and all the colleagues from the Management School, Victoria Street and IWP.

I also wish to thank my sponsor CAPES (Coordenação de Aperfeiçoamento de Pessoal de Nível Superior) for its financial support for the duration of this research.

This thesis is dedicated to my family: my mother Tânia, my father Fred, and my brothers Sérgio and Flávio.

Last but not least, my gratitude goes to all my friends both in Sheffield and in Brazil, whose support and encouragement was fundamental to the completion of this PhD.

Chapter One: Introduction

1.1 Introduction

Many countries have deregulated so-called public services utilities, causing changes in the institutional environment of this sector. The main justification for such reforms has been the policy makers' claim that privatised organisations would be more economic, efficient and effective in their operations and services within a competitive environment (Boubakri and Cosset, 1998; Jacobs, 2009; Jaruga and Ho, 2002; Johnson, et al., 2000; Ogden, 1995; 1997; Tsamenyi, et al., 2008).

Such a process has also taken place in Brazil, through a privatization programme between 1995 and 2002, which created about US$ 100 billion for the government (BNDES, 2002). Privatisation was a consequence of political decisions made by the Brazilian government which followed the neo-liberal doctrine. In addition to the internal pressure for privatisation, external organisations, in particular the World Bank and the IMF (International Monetary Fund), played an essential role in the process of deregulation of the utility sector in Brazil (Amann and Baer, 2005). In the electricity sector, the privatisation process resulted in the sale of 23 distribution companies, which represented more than 60% of the distribution market in the Brazilian electricity sector (Mota, 2004).

Generally, privatisation has a huge impact on the organisations undergoing the process as alterations are needed in areas such as their organisational culture, as well as their accounting systems in response to the new privatised environment created. Privatisation is portrayed as a radical process of change, because it involves profound disruptions to the institutionalised values and beliefs which characterise the existing organisational context and culture (Hoque and Alam, 2004). However, in terms of management accounting research, the impacts of privatisation are unclear and limited research has been conducted, especially in developing and less developed countries (LDCs) (Hopper, et al., 2003; Uddin and Hopper, 2001; Uddin and Tsamenyi, 2005). As such, this thesis aims to provide empirical evidence on the impacts of privatisation on management accounting systems in LDCs using Brazil's electricity sector as a case.

This chapter sets out to introduce the nature and scope of the study which shall be developed in the subsequent chapters of this study. First, the purpose of this thesis is stated and discussed. The second section presents and explains the research questions of this study, whilst the final section describes briefly how the thesis is organised.

1.2 Purpose of the Study

The objective of this study is to explain how the management accounting information system was shaped by both inter and intra organisational factors, in a privatised Brazilian electricity distribution company. As a consequence, this thesis seeks to explore the key factors that influenced the dynamics of management accounting change in the privatised company. In so doing, there is a great interest in understanding the complexity of interaction of both intra-organisational factors (e.g. organisational culture and power relations within the company) and inter-organisational factors (e.g. the electricity sector regulation system) which influenced the process of change in management accounting practices.

In order to achieve this purpose, an alternative research approach based upon an interpretive perspective will be adopted to support the analysis of the process of management accounting change in the company. Specifically, this study is based upon a theoretical triangulation which uses new institutional sociology (NIS), old institutional economics (OIE) and insights from a dialectical perspective and structuration theory.

Due to the ontological and epistemological position adopted in this thesis (interpretive perspective) the most appropriate research method is a case study approach. This is because it considers the historical, social, economic and organizational aspects of the phenomena in question. In addition, a case study allows the analysis of the exogenous and endogenous factors, which are difficult to quantify, such as: government regulations, organizational cultures and attitudes regarding changes. Therefore, the case study method adopts a holistic vision to understand the process of change (Berry and Otley, 2004; Scapens, 1990; Scapens, 2004; Tsamenyi, et al., 2006; Yin, 2003).

1.3 Research Questions

The research questions are designed to explain and understand the process of management accounting change in a Brazilian Electricity distribution company, after its privatisation. Therefore, the main research question of the present investigation is: **how was the distribution company's management accounting system shaped by the intra and inter organisational factors, following privatisation**. Four specific research questions derived from the main research question form the basis of this study. They are the following:

1) How was the privatisation process conducted?

This is a general question which aims to describe and analyse the main aspects of privatisation and the changes in Brazil in general in addition to the electricity sector in specific. This is an important question to this research, because it provides a comprehensive overview of the macro environment that influenced the decision of adapting a particular accounting system instead of another. Furthermore, it provides the opportunity to identify the main institutional actors, the new regulatory system that was created after the process of privatisation, and the accounting regulatory system. This information is essential to understand the interactions of macro and micro factors that shaped management accounting in the case company.

2) What are the intra and inter organisational factors that shaped management accounting practices?

This research question aims to identify the main drivers of management accounting change in the case study organisation. The drivers of change after the process of privatisation normally come from different sources from inside and outside the organisation. In addition, this question also aims to identify any sources of institutional isomorphism (coercive, mimetic and normative). DiMaggio and Powell (1991, p. 66) define isomorphism as "a constraining process that forces one unit in a population to resemble other units that facet the same set of environmental conditions". DiMaggio and Powell (1991, p. 67) also indentify three mechanisms of institutional isomorphism which are: "(1) *coercive* isomorphism that steams from political influence and the problem of legitimacy; (2) *mimetic* isomorphism resulting from standard responses to uncertainty; (3) *normative* isomorphism, associated with professionalization". This question seeks to identify the internal factors, which aimed to improve the efficiency and financial performance of the company, in the process of management accounting change in the case study organisation.

3) When, why and how did organisational actors decide to enact changes in management accounting systems?

This research question deals with the role of agency in the process of management accounting change. This issue has been neglected by accounting researchers, in particular those orientated by institutional theories (Abrahamsson and Gerdin, 2006; Burns and Baldvinsdottir, 2005; Burns and Nielsen, 2006; Scapens, 2006b). According to Seo and Creed (2002), institutional theory has a problem in explaining when, why and how organisational actors recognise that the present institutional arrangements are no longer adequate. In other words, institutional theories do not clarify when individuals come to the collective recognition that change is required. In order to overcome such a problem, this thesis uses insights from the dialectical perspective to investigate the role of human agency in the process of management accounting change (Benson, 1977; Seo and Creed, 2002).

4) How did new management accounting practices become accepted and take root as values and beliefs in the organisation?

This question seeks to describe and evaluate the process of institutionalisation of the new management accounting practices introduced into the case company after the process of privatisation. According to Burns and Scapens (2000), the institutionalisation process has four stages: encoding, enacting, reproduction, and institutionalisation. This particular view about the process of institutionalisation has been used largely to study stability and resistance to change in the process of organisational change. Therefore, this question aims to explain how the new management accounting practices were taken for granted by the large collective of organisational actors and how these new practices supplemented the earlier set of routines and rules.

1.4 The Structure of this Thesis

In order to achieve the purpose of the study set in section 1.2 and to answer the research questions outlined in section 1.3, this thesis is organised into nine chapters as follows:

Following this introduction, chapter 2 reviews the relevant literature on management accounting change. It discusses the development of management accounting and the emergence of recent management accounting change studies. The literature on accounting change is also examined from two different perspectives, namely: the factor approach and the process-oriented approach. Particular attention is given to the literature regarding privatisation and accounting change in developing countries.

Chapter 3 presents the theoretical background to this thesis. This chapter begins with a description and analysis of the theories that inform this research. These theories are: new institutional sociology (NIS); old institutional economics (OIE); and structuration theory. Subsequently, this chapter presents and explains the thesis theoretical framework by discussing the three frameworks that are part of the thesis framework: the Dillard et al. (2004) framework, the Burns and Scapens (2000) framework, and the Seo and Creed (2002) framework. Finally, this chapter provides the justifications for the thesis theoretical framework.

In chapter 4, the methodological approach undertaken by the researcher to conduct the study is outlined. The philosophical assumptions underpinning the research are discussed, and the research methodology justified. Chapter 4 also describes the research design and explains how the research was conducted. As such, the chapter aims to demonstrate philosophical foundation of the thesis, as well as the relevance of the interpretive case study method employed.

Chapter 5 sets the economical and political background to the case study. The main purpose of this chapter is to locate the case study organisation and its management accounting system against the background of the process of privatisation and reforms in the Brazilian electricity sector. Therefore, this chapter provides the foundation to understand the case study company's macro environment and the reforms undergone in the Brazilian electricity sector. This chapter focuses on the issues that had to some extent impacted on the process of management accounting change in Electra (the case study company). These issues include the tariff review process and the regulatory accounting based on the price-cap regulation.

Chapter 6 presents the organisational field and intra-organisational levels by providing an overview of Electra, its holding company and the main associations of the Brazilian electricity sector. The main objective of this chapter is to discuss Electra's history and organisational structure, as well as Electra's management accounting systems before the privatisation.

Chapter 7 aims to present and explore the changes in Electra's management accounting systems after the process of privatisation. This chapter begins with an explanation of the management and cultural changes in the organisation after privatisation. After that, this chapter discusses the management accounting changes introduced after privatisation. These management accounting changes involve four themes: (a) the new budgetary system; (b) the new performance measurement system; (c) the new reporting system and management accounting utilisation; and (d) the implementation of the Balanced Scorecard.

Chapter 8 is the central chapter of this thesis as it deals with the main purpose of this study which is to explain how Electra's management accounting system was shaped by inter and intra organisational factors after the privatisation. This chapter applies the theoretical framework of the thesis to explain the process of management accounting change in Electra. Chapter 8 starts with a discussion about the political and social dynamics involved in the process of management accounting change in

Electra. Subsequently, this chapter focuses on explaining and understanding the process of management accounting change at the intra-organisational level of the thesis theoretical framework.

Finally, chapter 9 concludes the thesis with a review of the research objectives and a summary of the findings. It also presents the theoretical and practical contributions of this study. The limitations of the thesis are also highlighted and recommendations for further study are identified.

Chapter Two: Management Accounting Change

2.1 Introduction

Management accounting has become an important area of research because practitioners and scholars have started to recognise that the information it provides is essential for companies' survival in a competitive environment. Moreover, a well-designed management accounting system can provide competitive advantages to a company relative to its competitors (Langfield-Smith, 2006; Scapens, 2006a; Scapens, 2006b).

Despite the importance of management accounting to organisations, a number of experts have argued that management accounting has changed much more slowly than necessary to fulfil the demand for information in the present organisational environment (Burns, et al., 1999; Johnson and Kaplan, 1987; Scapens, 2006a; Scapens, et al., 2003; Sorensen, 2009). Taking this view into account many researchers have focused their attention on the process of management accounting change. This relatively new area of investigation is based upon a wide range of approaches and theories (Busco, 2006). These include different approaches to studying management accounting change, such as studies where the principal objective is to analyse organisational tensions, conflicts, and resistance toward change, and research where the main aim is to examine management accounting change as a process (Lukka, 2007).

This section is structured as follows. First, the different views of what management accounting is and its evolution will be presented and discussed. After that, the definition of management accounting change and an overview of this area will be presented. The next subsection will deal with the different approaches to conducting research in management accounting change. After this, the relationship between privatisation and management accounting change will be analysed. Finally, the conclusion and summary of this section will be presented.

2.2 Management Accounting

The conventional view of management accounting is that it is a branch of accounting and its main purpose is to provide information to assist the decision-making process. Management accounting is concerned with the provision and use of financial and non-financial information to managers within organizations, allowing them to take better decisions regarding the future of their business. Unlike financial accounting which provides information to external users and produces public reports, management accounting produces confidential information for key managers within an organization.

According to the Chartered Institute of Management Accounting (CIMA), management accounting can be defined as:

> "The process of identification, measurement, accumulation, analysis, preparation, interpretation and communication of information used by management to plan, evaluate and control within an entity and to assure appropriate use of and accountability for its resources. Management accounting also comprises the preparation of financial reports for non management groups such as shareholders, creditors, regulatory agencies and tax authorities" (CIMA Terminology, cited in Lunt, 2006, p. 8).

Similarly, Horngren et al. (2005) state that management accounting measures and reports financial and non-financial information that helps managers make decisions to fulfil the goals of an organization. Therefore, management accounting is framed as providing an important element in the establishment and efficient realisation of goals embedded in a company's strategy.

Management accounting can be considered to have been first practiced when managers began to receive information about their business. As a consequence, it is not easy to determine the start of management accounting practices within organisations. Taking this situation into account the following part of this subsection will describe the evolution of management accounting in the twentieth and twenty-first centuries (Ryan, et al., 2002).

In the first fifty years of the twentieth century the main focus of management accounting was on the calculation and determination of costs. Great attention was paid to the cost of the product and the control of direct labour, direct materials and overheads. The major concern of cost accounting was the double entry recording systems to control costs and the identification of the cost of each product or department. Absorption costing was the principal tool that was used by companies to determine the product cost or the department cost. This cost system calculates the full product cost, that is, direct costs plus indirect costs (Horngren, et al., 2005; Johnson and Kaplan, 1987; Ryan, et al., 2002).

It can be said that in that phase the utilisation of management accounting information was extremely limited. However, in the second half of the twentieth century there was an increasing awareness that management accounting should meet the demand for information required by managers. As a consequence, the emphasis of management accounting moved to the managerial decision making process. This was possibly due to the fact that managers started to recognise that management accounting information could be useful for planning, as well as for the process of control (Andon, et al., 2003; Baxter and Chua, 2006).

According to Horngren et al. (2005), the process of planning deals with two aspects (a) selecting organisational goals, predicting results under various alternative ways of achieving these goals, deciding how to attain the desired goals and (b) communicating the goals and how to achieve them to the entire organisation. Control is related to taking actions that implement the planning decisions and to decide how to evaluate performance and what feedback to provide that will help future decision making.

Management accounting literature expanded rapidly in the 1960s. In this period new techniques for providing accounting information to managers were created and developed. A noticeable example of this process was the performance measurement system developed by General Electric. This system aggregated a considerable number of new tools to evaluate performance. Ryan et. al. (2002) point out that the change in the nature of the internal accounting function which took place in this period is apparent from the decision taken by the Institute of Cost and Work

Accounting to change the name of its journal from *Cost Accounting* to *Management Accounting* in 1965 and its own name to the Institute of Cost and Management accountants in 1972.

Despite these advances in management accounting in the 1960s, management accounting practices in the 1970s and 1980s were focused exclusively on financial control systems, with particular emphasis on budgeting, cost control and product costing techniques. The management control system was generally based upon systems of responsibility, which divide a company into responsibility centres that can be monitored separately, with individuals given incentives for meeting budgets or other goals in their areas of responsibility. As a result, this system emphasises the role of individual business units, departments, sections, group and individual personal responsibility for the activities of an organisation (Berry, et al., 2005; Broadbent and Cullen, 2005; Scapens, et al., 2003).

The role of this performance system is to monitor the performance of each area of responsibility, and produce financial reports which will be consolidated to produce financial reports for the business as whole. The underlying assumption of this model is that there should be someone responsible for each area of the business, and their performance can be quantified so that an incentive can be applied. Consequently, the incentive is linked to individual performance. According to Scapens et. al. (2003) this approach is based upon a narrow economic view of rationality and motivation. Moreover, it can lead to potentially negative actions as employees are likely to focus on their own area of responsibility and compete against their colleagues.

This kind of system and the technique of determining the cost of production (absorption costing) were severely criticised by many authors, in particular by Johnson and Kaplan (1987) in their book *Relevance Lost: the Rise and Fall of Management Accounting*. Johnson and Kaplan (1987) argued that much of the development of management accounting practices took place in the early twentieth century, and there were few further developments over the following sixty years; and by the 1980s management accounting had lost its relevance, having become subservient to the needs of external financial reporting.

This book was very controversial and many studies were developed around the world to discuss the relevance of management accounting for the business environment. In the United Kingdom this book influenced a series of papers and books which were mainly supported by the Chartered Institute of Management Accountants (CIMA). Bromwich and Bhimani (1989; 1994) produced works that stress the evolutionary rather than revolutionary nature of change in management accounting practices. Bromwich and Bhimani (1989, p. 3) state that "no general crisis has been identified within the management accounting profession vis-à-vis a changing manufacturing environment and therefore no radical reforms are recommended in this stage".

Enlarging the controversy and the discussion regarding the relevance of management accounting, Johnson (1992; 1994) published one book and one paper. In these studies, he presents a different view to the one he supported in the book *Relevance Lost*. The main argument is that the problems caused by management accounting after World War II were not due to poor management accounting. The real problem was the fact that managers started to use accounting information to control operations. Johnson (1994, p. 262) concludes that "relevance was not lost by using improper accounting information to manage. It was lost by improperly using accounting information to manage".

Despite the changed view of Johnson (1992; 1994) regarding the reasons for the loss of relevance of management accounting, Kaplan (1994) continued to support the book Relevance Lost which criticises the obsolescence of established costing practices and the inability of traditional financial performance measurement techniques to provide useful information for managerial decision-making process, especially from an operational perspective.

To summarise, the book *Relevance Lost* generated a huge discussion about the role of management accounting as a vital system for the decision-making process in the business environment. As a consequence, it had important implications for management accounting research and practices around the World. Because of these debates and the changes in the organisational environment, new approaches to management accounting were introduced in 1990s. For instance, new techniques of cost management, such as activity-based costing (ABC), target costing, and throughput accounting were introduced. In addition, companies were encouraged to recognise that organisational and managerial factors need to be considered in the accounting information systems design. The importance of strategic management accounting was also emphasised as was the need to extend the boundaries of the management accounting system to encompass supply chains and the like. Another important system developed in this period was the Balanced Scorecard (BSC) which is based upon a balanced representation of the operational and financial measures organized according to four perspectives: financial, customer, internal business process and learning and growth (Kaplan and Norton, 1992; 1996; 2001).

In the first years of the twenty-first century, these management accounting approaches have become embedded in organisational practice around the world. Management accounting is perceived as an essential instrument in the decision-making process and an important element in the establishment and realisation of the strategic organisational goals. In fact, much of the contemporary debate about management accounting involves the need to maintain its relevance in guiding an organisation towards the achievement of its goals and mission (Baxter and Chua, 2006).

2.2.1 The Gap between Management Accounting Theory and Practices

Despite the consolidation of management accounting as a primordial system of information within organisations, a gap has been identified between 'theory and practice'. Ryan et. al. (2002, p. 70) point out that "many of the textbook techniques appeared to be little used in practice". Scapens (2006b) states that the main reason for this gap is the fact that these books are normative and are based upon neoclassical economics tradition which seeks to explain the observed practices of management accounting.

This gap between theory and practice was analysed by Scapens (1994) in his paper '*Never mind the gap: towards an institutional perspective on management accounting practice*'. The article emphasises that there is a clear gap between the theoretical material in textbooks and the management accounting practices. The

Scapens' paper calls for the utilisation of institutional theory to study management accounting practices. The main message of this paper is "never mind the gap, study management accounting practice" (Scapens, 1994, p. 303). Scapens (1994) encourages management accounting researchers to study accounting as a practice, rather than comparing accounting with some ideal approaches developed by normative theories based upon neoclassical economic analysis.

This call for the utilisation of institutional theory to study management accounting practices has had a great impact on this thesis which is based upon institutional theories, namely old institutional economics (OIE) and new institutional sociology (NIS), to explain and understand the process of management accounting change in a privatised electricity company in Brazil. The institutional theories can be considered as an alternative approach to management accounting research (for further discussion about alternative approaches in management accounting see section 4.2). The alternative approaches challenge the core assumptions of the mainstream of management accounting which are based upon the neo-classical economic stance.

Consequently, rather than adopting the conventional view of management accounting as the provision of information for the decision-making process in a neoclassical economic sense, which has the core assumptions of economic rationality and market equilibrium, institutional theory portrays how management accounting provides the institutional basis for decision-making and structures the formation of expectations and beliefs. In other words, management accounting is a set of rules and routines that gives social coherence and meaning to organisational behaviour and allow individuals and groups within organisations to give meaning to their day-to-day activities (Scapens, 1994).

Having discussed management accounting and its definition, the next subsection provides an overview of the management accounting change area. In addition, the present stage of research in management accounting change will be presented and discussed.

2.3 Management Accounting Change

The issues regarding the relevance, nature and roles of management accounting systems within organisations have been debated by researchers and management accountants over the past 25 years. This debate has intensified due to the major transformations in the organisational environment which have taken place in the last few decades (Marginson and Ogden, 2005). Nowadays, organisations face an uncertain business environment with increasing market competition. As a result, organisational resources and processes have to be organised and monitored to achieve organisational goals. In order to achieve this, management accounting systems play an essential role because they provide information for the decision-making process.

In the late 1980s, the discussion about the process of management accounting change within the broad organisational context became a popular topic of debate among management accounting researchers, in particular after '*Relevance Lost: the Rise and Fall of Management Accounting*' Johnson and Kaplan's book in 1987. As mentioned previously, Johnson and Kaplan (1987) questioned the relevance of contemporary management accounting practices. The main argument was that management accounting did not follow the fast development of the organisational environment. In other words, there has not been sufficient change in management accounting techniques to match the changes in the organisational environment, and to support the growing demand for information. Johnson and Kaplan (1987) stated that in general, companies opted for internal information systems which were mainly designed to meet the requirements of external financial reports. For this reason they called for the development and implementation of new 'advanced' management accounting techniques.

Since then, new 'advanced' techniques have been developed and introduced in the management field. The principal management accounting techniques introduced in 1990's were: activity-based costing (ABC); activity-based management (ABM); life cycle costing; target costing; quality costing; functional cost analysis; throughput accounting, strategic management accounting; shareholder value techniques;

economic value added (EVA); the balanced scorecard (BSC); and supply chain management (SCM) (Ax and Bjornenak, 2007).

The debate over the changing nature of management accounting has been supported by a wide array of research, whose findings are not uniform and, sometimes, contradictory (Burns, et al., 1999; Burns, et al., 2003; Busco, 2006). On the one hand, management accounting change can be understood as the introduction of new management accounting techniques, such as ABC or the BSC. This particular view is largely supported by North American accounting scholars (Lukka, 2007). On the other hand, management accounting change can be understood as the process of change in the manner in which traditional and/or new techniques are actually being used. Therefore, management accounting change occurs with the creation and introduction of new techniques or with changes in the way managers use management accounting information generated by traditional systems.

2.3.1 Drivers of Changes

On one hand, management accounting practices are shaped by the external, as well as by the internal organisational environment. On the other hand, management accounting can shape the external and internal environment of the organisation (Moll, 2003; Moll, et al., 2006a). Therefore, management accounting change can be studied in these two ways, that is, the process of management accounting in itself and the impact of management accounting change on the organisational change. In this thesis the former approach will be adopted. As a result, this thesis seeks to explain and understand how management accounting was shaped by internal and external organisational factors.

In the same vein, studies regarding the origins and diffusion of management accounting innovations support the view that management accounting is shaped by the inter and intra organisational environment and management accounting plays an important role in the process of organisational change (Ax and Bjornenak, 2007; Lapsley and Wright, 2004; Perera, et al., 2003). One such important study by Perera et al. (2003) investigated transfer pricing in a Government Trading Enterprise in

Australia. They draw on the Rogers' (1995) diffusion of innovation theory to explain the introduction, abandonment and re-introduction of transfer pricing over a 10-year period. Perera et al. (2003) identify three aspects that can contribute to the study of accounting change which are: (1) the importance of inter-organisational pressures over the process of accounting change. In this Government Trading Enterprise, Perera et al. (2003) found that transfer pricing was introduced as a result of government pressure for the organisation to become more commercialised; (2) the importance of focusing on the subjective values, norms and past experiences of the organisation actors (intra-organisational factors); and (3) the empirical evidence of the paper supports the view that an accounting practice or mechanism can help an organisation shift from one organisational practice to another by generating changes in ways of thinking and behaving and in the climate and the culture of the organisation.

Regardless of the nature of management accounting change, it is widely accepted that management accounting practices are changing. As a consequence, change has been the subject of considerable research and debates in management accounting (Ribeiro and Scapens, 2006). According to Burns and Scapens (2000, p. 3) 'Whether management accounting has changed, has not changed, or should change, have all been discussed'.

Taking this popularity into account many researchers have sought to establish the causes of changes within organisations. For example, Senior (1997, p. 23) identifies three aspects of an organisation's environment that may cause an organisational change, including management accounting: first, the so-called temporal environment, which encompasses the longer-term historical influences, such as 'the changes from an agricultural economy to one based on machines'; second, the external environment which includes factors associated with political/legal, economic, technological and socio-cultural change; third, internal environment, which may include 'change in people (attitudes, beliefs, skills), scale of activities and organisational tasks, organisational strategy and structure, products or services, reward systems or use of technology'.

Many studies have been dedicated to the identification of the causes for change in management accounting. For instance, Innes and Mitchell (1990) carried out seven field studies in the electronics sector about management accounting change. This study identified the following factors: (a) a competitive and dynamic market environment; (b) organisational structure; (c) production technology; (d) product cost structure; (e) management influence; and (f) deteriorating financial performance. More recently, Scapens et al. (2003) carried out an investigation regarding the changing nature of management accounting among UK companies. This study presents four changes in the broader business environment that have had impact on management accounting in recent years: (1) globalisation and customer focus; (2) technological change; (3) changing organisational structures; and (4) fashion and other internal factors, such as 'a feeling at top-level management that change is necessary' and 'changing management information needs' (Scapens, et al., 2003, p. 6).

Another study investigating change drivers was carried out by Yazdifar and Tsamenyi (2005). The aim of this paper was to understand the process of management accounting change and the changing roles of management accountants in dependent and independent companies. The findings of this investigation were supported by 279 questionnaires answered by professionally qualified management accountants within CIMA. Yazdifar and Tsamenyi (2005) present a ranking of change drivers in management accounting. This ranking in order of importance is the following: (1) information technology; (2) organisational restructuring; (3) customer-oriented initiatives; (4) e-commerce/electronic business; (5) new accounting software; (6) external reporting requirements; (7) new management styles; (8) core competency aims; (9) globalisation; (10) quality-oriented initiatives; (11) new accounting techniques; (12) take-over/merger; (13) external consultants' advice; and (14) production technologies.

From these studies it can be observed that organisational change, in particular management accounting change has many reasons or drivers for change. Change can occur as a response to external sources, such as market pressures, government laws, consumer expectations, technology, social and political change or internal pressures, such as a change in the power dynamics of the organisation, a change in dealing with a process or behaviour problem, or a change in the size and complexity of the organisation (Carruthers, 1995; Greenwood and Hinings, 1996). Changes can also be made in pursuit of organisational strategies to achieve efficiency (Lawrence and Sharma, 2002; Tsamenyi, et al., 2006). This would suggest that organisations do not always wait for legitimacy to be given, but can make a conscious choice to be perceived as legitimate. Clearly, there are multiple pressures for change that may be interdependent (Dawson, 1994; Deegan, 2002). Dawson (1994, p. 14) gives an example that illustrates this last statement "a push for change in technology may result from competitive pressures or from the exposure of local engineering personnel of the benefits of new developments in capital equipment".

The discussion above regarding the reasons and drivers for changes in management accounting has an important impact on this thesis because this study accepts the view that management accounting changes can occur due to internal and external institutional pressures, as well as due to market pressures to increase the company's efficiency.

2.3.2 Typology of Change

Researchers have tried to classify the different types of management accounting change. For example, Sulaiman and Mitchell (2005) proposed a typological representation of management accounting change. This paper presents five different types of changes in management accounting, which are according to Sulaiman and Mitchell (2005, p. 426):

(1) *Addition*: introduction of new techniques as extensions of a management accounting system;
(2) *Replacement*: introduction of new techniques as replacements for an existing part of a management accounting system;
(3) *Output modification*: modification of the information output of the management accounting system (e.g. the preparation of weekly as opposed to monthly reports);

(4) *Operational modification*: modification of the technical operation of the management accounting system (e.g. the of regression analysis as opposed to an inspection basis for separating fixed and variable costs); and

(5) *Reduction*: the removal of a management accounting technique with no replacement.

The typology of management accounting change proposed by Sulaiman and Mitchell (2005) suffers from several of the shortcomings in the definition of change identified by Quattrone and Hopper (2001), in particular the view that change is the passage from one identifiable and unique stage to another. However, this typology can provide helpful insights for the study of the process of management accounting change because it is derived from previous empirical investigations into the process of change in management accounting practices.

In the context of this thesis, this typology can provide useful insights for descriptions of the process of change in the studied company. As mentioned above, Sulaiman and Mitchell's (2005) framework presents five different types of changes in management accounting. After the process of privatisation, it is likely that the management accounting system suffers radical changes because the organisation is moving from the public sector to the private sector where the pressures for efficiency are normally stronger. These kinds of changes lead frequently to resistance because change which conflicts with existing routines and institutionalised ways of thinking is likely to be much more difficult to implement (Burns and Scapens, 2000; Scapens, 1994).

2.3.3 Research in Management Accounting Change

Research in management accounting change has been conducted using a wide variety of approaches and theories. However, Burns and Vaivio (2001, p. 392) state that 'there is still much to be learnt, developed and understood' in the management accounting change field. Taking this situation into consideration, their paper, which is an introduction of the special issue of the *Management Accounting Research* journal, presents a 'beginner's guide' for conducting research in management accounting change. This involves taking into account three perspectives regarding management accounting change: the epistemological nature of change; the logic of change; and the management of change.

(1) *The epistemological nature of change*: this is related to the intrinsic concept of change. This perspective deals with the question: What can be considered as an organisational change? Burns and Vaivio (2001) highlight the importance of making a distinction between normative claims of change and change as an evidenced empirical phenomenon. Burns and Vaivio (2001) also point out that management accounting change is conceived a priori as a positive phenomenon. However, management accounting change can be progressive or regressive. The former implies that previously dominant values and practices are questioned and transformed with the aim of improving certain aspects of organisational life (instrumental change). In contrast, regressive change is predominantly ceremonial, preserving existing power structures and restricting institutional change (Modell, 2007).

The epistemology of change also includes the discussion about the dichotomy between change and stability (Granlund, 2001; Lukka, 2007; Siti-Nabiha and Scapens, 2005). Scapens (2006b) highlights that in the process of change there are elements of stability within the process of change and stability and change cannot be understood as mutually exclusive phenomena. In the same direction, Siti-Nabiha and Scapens (2005) found in their case study in a South East Asian oil company that stability and change are not necessarily contradictory or opposing forces, but can be intertwined in an evolutionary process of change.

Another piece of work about the epistemological perspective on change was conducted by Quattrone and Hopper (2001). This paper is based upon Latour's sociology of translation and social constructivism. Quattrone and Hopper (2001) claim that the definition of what constitutes change is often taken for granted in research concerning organisational change and a debate about its meaning is avoided by researchers. Change is generally assumed to be a transition from one well-defined point (stage A) to another (stage B) (Andon, et al., 2007). Quattrone and Hopper (2001, p. 403) suggest that 'a-centred organizations and drift should replace conventional definitions of organizations and change'. Drift resembles incomplete attempts at organising rather than a linear move from one point to another tangible, definable and reified point. As a result, drift makes the organisation a-centred: 'multiple centres and points of view attempts to order events, but each attempt is incomplete and unable to centre the organisation in itself' (Busco, 2006, p. 230).

(2) *The logic of change*: This perspective is concerned with the reason and motivation for undertaking the process of change within a company. Burns and Vaivio (2001) categorise the logic of management accounting change as managed/formal or unmanaged/informal. In the former, change in management accounting is a consciously planned and rationally executed. In this view, the process of change becomes something that has been premeditated by organisational actors. In contrast, informal change is not consciously planned and rationally executed and the informal elements are presented in the process of change. The logic of management accounting can also be categorised as linear or nonlinear. The former can be understood as a systematic change with explicit objective, ordered stages and agreed procedures, while the latter is unsystematic and unpredictable with ambiguous goals, abrupt turns and unwanted phases of development.

Burns and Vaivio (2001) also point out that change in management accounting can be a revolutionary phenomenon that has devastating impacts within organisations, or an evolutionary phenomenon which is a more incremental process (Soin, et al., 2002). Revolutionary change refers to radical and fundamental disruption of rules and routines. Burns and Scapens (2000) state that revolutionary change involves radical change to existing routines and fundamentally challenges the prevailing institution. Such revolutionary change is likely to be possible as a result of external events, such as take-over, economic recession and privatisation. In contrast, evolutionary change is incremental and involves only minor and, sometimes, unconscious adjustment to the take-for-granted assumptions. In this type of change the process of change is shaped by a combination of random, systematic and inertial forces, which together create the context for the emergence of new practices (Burns and Scapens, 2000).

(3) *The management of change*: This perspective emphasises the importance of studying how the process of management accounting change was conducted. Burns and Vaivio (2001) state that change can be a central effort, where the organisation's top management plays a key role. On the other hand, management accounting change can be seen as a fundamentally local concern. This perspective also deals with internal issues, such as relations of power, politics, and organisational culture, which may impact on the process of management accounting change. The management accounting literature shows that power, politics and organisational culture and its implications at various hierarchical levels of an organisation play an important role in the process of management accounting change (Burns, 2000; Tsamenyi, et al., 2006; Yazdifar, et al., 2005).

The *Management Accounting Research* journal published in 2007 its second special issue on management accounting change. In this special issue five papers about management accounting change are presented. Busco et al. (2007b) introduce this special issue and suggest that research in management accounting change has proliferated in the past few years, but there are still some issues that should be considered by researchers in the area. Busco et al. (2007b) propose that this reflection about the nature of management accounting change should be organised in four key dimensions: the agents and object of change; the forms and ratio of change; the space and time of change; and the interplay between change and stability.

(1) *The agents and object of change*: this dimension deals with two questions: a) what and who makes change happen? and b) what and who is changing? The first question highlights the issue of what and who drives management accounting change. Busco et al. (2007b) point out that in order to answer this question the issues of agency, structure and their interaction should be considered. In addition, Busco et al. (2007b) identify that there are a wide range of different views about the drivers of change and the dichotomy of agency and structure. As a consequence, change factors have been identified

in the actions of human actors, as well as in non-human actant. Some other studies have sought to identify these drive factors within broader contextual issues, such as institutional pressures, political decisions, and some combination of them. Busco et al. (2007b) also emphasise the important contributions made by structuration theory and actor-network theory to the management accounting literature to overcome the dichotomy between agency and structure in the study of the process of management accounting change.

The second question of this dimension (what and who is changing?) deals with the epistemological and ontological problem of change. According to Busco et al. (2007b) there are two main problems we encounter when trying to understand the concept of change. From the epistemological stance, the difficulty in understanding the nature of object (the process of change) can be attributed to the observer, that is, the object means different things to different people and constitutes a means to establish communication between different communities of practices (Law and Singleton, 2005). On the other hand, Busco et al. (2007b) state that in the ontological view, objects (the process of change) are inherently complex, not only because people interpret them differently.

(2) *The form and ratio of change*: this dimension seeks to discuss the question: How and why change happens? This dimension is concerned with the process through which new ideas and management accounting innovations are created and implemented. According to Busco et al. (2007b, p. 127), there are some obscure questions in the management accounting literature regarding this issue, which are: "How are management accounting techniques able to spread and become practiced? How do they manage to engage practitioners who are driven by different and sometimes opposing agendas? How do they manage to instil hope (of solving a problem, be it at the personal level of the manager or at the institutional level of the organization) in the prospective user?".

(3) *The space and time of change*: This perspective deals with the question: When and where change happens? This is a controversial issue because the task of determining the starting point of a process of change in many cases is simply an exercise of speculation. This is because in many situations change does not happen on a linear timeline that the researcher can monitor, but in a network of relations that create multiple spaces and times which are very difficult to account for (Quattrone and Hopper, 2001; 2005). In addition, Busco et al. (2007b) highlight the problem that researchers have to fully understand the process of management accounting change which involves a complex network of interactions. They conclude by saying "despite the length of time spent within the organizational context researchers need to confront the impossibility of fully representing and understanding the object of their enquiry as if it was out there, evolving in front of them along a linear pattern" (Busco, et al., 2007b, p. 140).

(4) *The interplay between change and stability*: This dimension discusses the dichotomy between change and stability in management accounting practices. Change and stability seem to be antagonistic definitions. However, management accounting practices are not a single, stable system at a point of time, and change and stability seem to co-exist within a company. As a consequence, Busco et al. (2007b) stress the importance of understanding the interplay between change and stability in the context of the process of management accounting change.

From the first issue of the *Management Accounting Research* journal on management accounting change in 2001 to the second issue in 2007, the number of studies in management accounting change increased considerably and this topic has been consolidated as an important area of research in management accounting. These two issues on the *Management Accounting Research* journal have many similarities. First of all, both issues provide guidelines to help researchers conduct their studies taking into account polemic issues regarding the process of change in management accounting practices. In addition, the dimensions presented in both papers have many similarities. For instance, the perspective of 'the epistemological nature of change' proposed by Burns and Vaivio (2001) has the same concerns regarding the intrinsic concept of change as presented in 'the agents and objects of change' dimension in the Busco's et al. (2007b) paper. However, Busco et al. (2007b) stress the ontological problem in the definition of change in the process of management accounting.

The main differences between these special issues on management accounting change can be summarised as follows. First, Burns and Vaivio (2001) stress the importance of the issues of power, politics and organisational culture in the study of management accounting change. Although Busco et al. (2007b) mention the significance of these issues for management accounting change research, they pay less attention to these issues than the previous special issue. Second, Busco et al. (2007b) pay great attention to the interplay between change and stability. For them, this is a key dimension to understand the process of management accounting change within an organisation. Burns and Vaivio (2001) also highlight the relationship between change and stability, but they did not give the same importance as Busco et al. (2007b). Finally, Busco et al. (2007b) present a discussion about research methods in management accounting change, while Burns and Vaivio (2001) did not discuss this issue. According to Busco et al. (2007b), a longitudinal case study is portrayed by the literature in management accounting change as the most adequate research method to investigate the process of change in management accounting. However, Busco et al. (2007b) emphasis that due to the complexity of the change phenomenon, research may not fully represent and understand the process of change. Table 2.1 provides a summary of the main similarities and differences between the first and the second issues on management accounting change.

Overview	1st Issue (Burns and Vaivio, 2001)	2nd Issue (Busco et al., 2007)
Dimensions of analysis	(1) the epistemological nature of change; (2) the logic of change; and (3) the management of change.	(1) the agents and object of change; (2) the form and ratio of change; (3) the space and time of change; and (4) the interplay between change and stability.
Main Similarities	**1st Issue (Burns and Vaivio, 2001)**	**2nd Issue (Busco et al., 2007)**
The main aim	To provide a guideline to help researchers.	To provide a guideline to help researchers.
The intrinsic concept of change	This concept is analysed in 'the epistemological nature of change' dimension.	This concept is discussed in 'the agents and object of change' dimension.
Main Differences	**1st Issue (Burns and Vaivio, 2001)**	**2nd Issue (Busco et al., 2007)**
The issues of power, politics, and organisational culture in the process of management accounting change.	Burns and Vaivio (2001) stress the importance of these issues and they are discussed in great detail.	These issues are mentioned in the paper, but less attention is paid regarding these themes.
The interplay between change and stability	The paper mentions this interplay, but there is no further discussion regarding this issue.	These two concepts are analysed in great detail. In addition, Busco et al. (2007) stress the importance of this interplay in the process of management accounting change.
Discussion about research method	There is no discussion about research method.	The paper presents a discussion regarding this issue. Busco et al. (2007) also highlight that management accounting change is a complex phenomenon.

Table 2.1 – Summary of the Comparison between the First and the Second Issues on Management Accounting Change

From these two special issues on management accounting change it seems clear that management accounting change is a topic in development with many obscure issues and questions waiting to be answered. It is undoubtedly an important topic of research because it can improve theories and studies in management accounting, as well as it can make a great contribution for practitioners. As Busco et al. (2007b, p. 146) conclude "Management accounting change is a laboratory, a theoretical puzzle the solution of which is difficult because there will always be a missing piece which will allow the continuous work around the composition of the picture".

In the context of this thesis, the main purpose of this comparison is that these papers provide useful guidelines to explain and understand the process of management accounting change in a privatised electricity distribution company. Some of the issues discussed in these papers are addressed in the thesis, in particular the discussion regarding the epistemological nature of change and the logic of change which were analysed by Burns and Vaivio (2001). In addition, the issue of relationship between power, politics and organisational culture will be analysed in this thesis (see chapters 7 and 8). The set of questions discussed in the paper by Busco et al. (2007b) will be used for a systematic analysis of the process of change in the studied company: 1) What and who makes change happen? 2) How and why does change happen? 3) What and who is changing? 4) When and where does change happen? 5) What is the relationship between change and stability? In so doing, the thesis seeks to shed more light on the process of understanding management accounting change.

As mentioned previously, the management accounting literature is paying considerable attention to the process of change in management accounting. Some authors, such as Lukka (2007), consider the publication of the papers by Hopwood (Hopwood, 1983; 1987) as the starting point in the discussion about accounting change. Lukka (2007, p. 79) identified four clusters of literature on management accounting change. First, the 'consulting genre' cluster in which the main objective is to produce texts regarding new management accounting technologies and their successful implementation. This kind of research is common among the North American researchers (see Kaplan and Norton, 1996). The second cluster is formed by management accounting studies that seek to analyse organisational tensions, conflicts, and resistance toward change endeavours, or failures of change (see Granlund, 2001; Scapens and Roberts, 1993). The third cluster is based on the model proposed by Innes and Mitchell (1990) to understand the process of management accounting change. Finally, the fourth cluster seeks to study change as a process (see Burns, 2000; Burns, et al., 2003; Burns and Scapens, 2000).

The emerging interest in management accounting change has contributed to the increase in the number of studies in this field. There have been various studies of management accounting change and the diffusion of new practices. Some research in this area has been guided by a broad range of social theories with some adopting a managerialist emphasis, while other studies have taken a wider view of the organisation and the various stakeholders who influence the change process. According to Modell (2007), research in management accounting can be broadly classified into two categories: factors studies and process-oriented approaches. Factor studies seek to identify the drivers and obstructions for a successful implementation of management accounting techniques. Process-orientated approaches however are concerned with the socio-political dynamics of new management accounting approaches implementation. In the next subsection, these two categories of research in management accounting change will be discussed and analysed.

2.3.3.1 Factor Studies

This stream of research in management accounting change seeks to explain and identify the factors that contribute and hamper management accounting change. Modell (2007) identified a series of studies concerning the implementation of ABC (Activity Based Costing) mainly relying on survey-based investigations. The main aim of these studies was to identify and explain the drivers of effective implementation of this cost management system (Anderson and Young, 1999; Foster and Swenson, 1997; McGowan and Klammer, 1997; Shields, 1995).

More generally, a number of studies have developed a theoretical understanding of what stimulates and hampers management accounting change. Based upon seven field studies in the Scottish electronics industry, Innes and Mitchell (1990) identified the drivers for changes in management accounting which can be divided into three categories: motivators, catalysts, and facilitators. Motivators are factors that influence change processes in a general manner. They provide decision makers the reasons and grounds to initiate and permit change. Therefore, motivator factors comprise general changes in the wider organisational environment, such as a competitive market, organisational structure, production technology, product cost structure and short product life cycle. Catalysts are directly associated with management accounting change. They include factors directly related to the timing of change, such as poor financial performance, loss of market share, launch of competing product, new accountants, and other organisational changes. Finally, facilitators comprise a set of factors conducive to change, such as staff and computing resources linked to the accounting function, organisational autonomy from the parent company, and the authority of accountants.

The motivator and catalyst factors interact positively to generate change in the sense that motivators provided the impetus for the emergence of catalysts, while facilitators paved the way for subsequent change initiatives. Motivators, catalysts, and facilitators do not need to be related to each other as they occur. However, change drivers become related to each other by the role each of these drivers plays in the change process. Innes and Mitchell (1990) paid particular attention to changes in costing practices and performance measurement. However, little attention was paid to the social and political process involved in the choice of specific management accounting techniques in the studied companies (Modell, 2007).

Cobb et al. (1995) conducted an in-depth longitudinal case study of a division which took place in a large multinational bank by studying changes in management accounting reports. They found that several of the change initiatives in management accounting failed or encountered severe implementation problems due to internal barriers, such as changing priorities during the change process, accounting staff turnover and resistant attitudes to change. Therefore, the influence of individuals as change agents was extremely important in this case. This result supported Cobb's et al. (1995) framework which expanded on the accounting change model proposed by Innes and Mitchell (1990) by including the conceptions of barriers to change, leaders and momentum for change. The barriers to change refer to the factors that hinder, delay or even prevent change, such as the changing priorities and staff attitudes. Moreover, the expectation of continuing change is referred to as momentum, and the role of individuals in management accounting change as leaders. Therefore, the interplay between these factors has a significant influence on whether change initiatives take place or not.

Finally, Kasurinen (2002) added a final refinement to the accounting change model proposed by Innes and Mitchell (1990) and Cobb et al. (1995) by specifying the types of barriers that may hinder, delay, or even prevent management accounting change in practice. Kasurinen (2002) conducted a longitudinal case study in a strategic business unit of a multinational Finnish based metal group, specifically investigating the barriers to Balanced Scorecard implementation. He concludes that the barriers to change can be divided into three categories: *confusers* which include individual level aspects, such as diverging goals of key individuals; *frustrators* which refer to wider organisational phenomena, such as organisational culture and existing reporting systems; and *delayers* which are related to technical and temporary issues, such as inadequate information systems. The final accounting change model can be seen in figure 2.1.

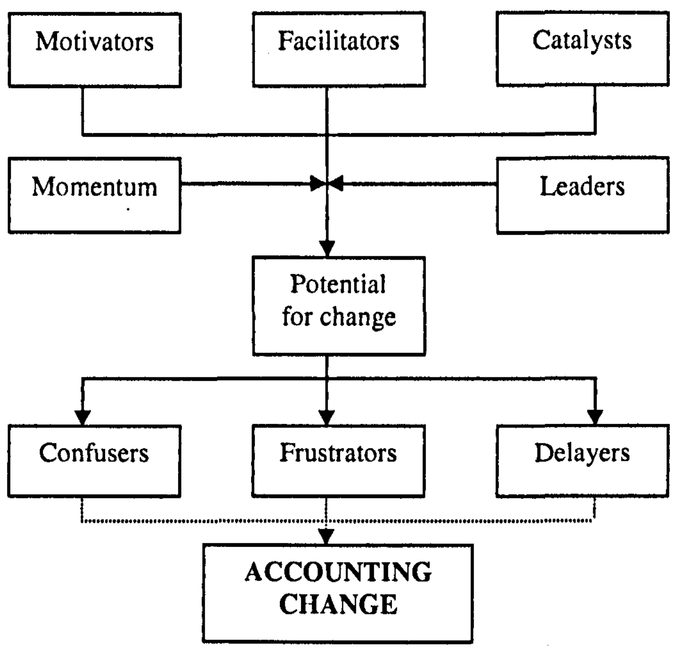

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Figure 2.1 – Management Accounting Change Model
Source: Kasurinen (2002, p. 338)

Many factor studies draw on the contingency theory as a framework to study management accounting change. The contingency theory is based upon the open system approach that studies the organisation and its subsystems by reference to its wider environment. As a consequence, contingency theory views management accounting change as an attempt to match organisational properties and arrangements with internal and external circumstances (Groot and Lukka, 2000). For example, Waweru et al. (2004) adopted contingency theory to understand the process of management accounting change and the drivers for change in four retail companies in South Africa. Haldma and Laats (2002) examined management accounting change in Estonian manufacturing companies from 1996 to 1999 and explored contingent factors that influenced it. They analysed 62 responses to a questionnaire survey and found that there were changes in cost and management accounting practices that were associated with shifts in the business and accounting environment as external contingences, and with those in technology and organisational aspects as internal contingences.

Other researchers have preferred to use more statistical tools and surveys. Laitinen (2006) carried out a survey among 145 manufacturing companies in Finland in order to identify the factors and motivations for the process of change in management accounting in these companies. Another example is Baines and Langfield-Smith's (2003) paper which is based upon a survey of manufacturing companies in Australia. This paper used structural equation modelling to examine the relationships between the changing competitive environment and organizational variables, such as strategy and organisational design, as antecedents to management accounting change.

Factors studies made an important contribution to the development of management accounting change research by analysing the process of change in a broader organisational context. In so doing, this type of research demonstrates that management accounting change depends on both the nature of the implementation process and a broad range of contextual factors, which in many cases are beyond the control of the organisation.

However, the limitations of factor studies can largely be traced to their theoretical and methodological underpinnings. The limitations of this approach can be summarised as follows. First, factors studies ignore the socio-political aspects of organisational life and the way in which these affect management accounting practices. Second, little attention is paid to understanding conflicts of interests that might explain management accounting change. As a result, few insights are provided to explain the interplay between the relations of power inside the company and the process of management accounting change. Finally, the drivers for changes are normally attributed to economic or technical factors, such as market competition or the introduction of a new technology, while the wider social process involved in the diffusion of new management accounting techniques across organisations are not analysed in detail (Modell, 2007).

2.3.3.2 Process-Orientated Approaches

Many studies seeking to explain management accounting change have been informed by insights of social science theories. There has been a recent sharp increase in the number of studies that have adopted qualitative methods and social science theories. This kind of research is called 'alternative' management accounting research (for more detail about alternative management accounting research see section 4.2 of this thesis). In contrast to the mainstream approach adopted by factor studies, the process-orientated approaches share a concern with the wider social and political ramifications of change beyond merely managerial considerations. Therefore, the main distinction between process-orientated approaches and factors approaches is the fact that the former pays great attention to the intricate social and political dynamics of implementation of changes in management accounting, while the latter does not give the same importance to these issues with change generally attributed to economic or technical factors.

Studies based upon the process-orientated have drawn upon different alternative theories. However, institutional theory seems to be the most popular approach. According to Scapens (2006a, p. 341), the theoretical basis of these studies 'has tended to be in institutional theory, including both new and old institutional economics, and institutional sociology'. In fact, there are a considerable number of studies in management accounting change based upon institutional theories. Many of those draw on the old institutional economics (OIE), in particular the framework developed by Burns and Scapens (2000) (Burns, 2000; Burns and Vaivio, 2001; Guerreiro, et al., 2006; Lukka, 2007; Scapens and Burns, 2000; Soin, et al., 2002). Other work on management accounting change has been based upon the new institutional sociology (NIS) (Carruthers, 1995; Covaleski, et al., 1993; Covaleski, et al., 2003; Hussain and Gunasekaran, 2002; Major and Hopper, 2004; Modell, 2002; Powell and DiMaggio, 1991; Tsamenyi, et al., 2006; Yazdifar and Tsamenyi, 2005). More recently, some authors have tried to integrate the OIE and NIS to improve the understanding about the process of change in management accounting (Greenwood and Hinings, 1996; Hassan, 2005; Ribeiro and Scapens, 2006; Siti-Nabiha and Scapens, 2005; Yazdifar, 2003; Yazdifar, et al., 2006). Institutional theory, which is the theoretical basis for this thesis, will be analysed and discussed in the next section.

Despite the relevant contribution of the institutional theories in management accounting change, this is a heterogenic area of research. There are a considerable number of papers which draw on other alternative approaches, such as structuration theory, critical theory (middle-range thinking), actor-network theory, and labour process theory (Baxter and Chua, 2003; Busco, 2006).

For instance, Conrad (2005) used structuration theory to investigate the consequences of regulation for management control and organisational change in the gas industry in the UK. Seal et al. (2004) also drew upon structuration theory to investigate a case of a supply chain initiative in UK electronics manufacturing. These authors conclude that structuration theory shows how inter-firm transactions and accounting can be analysed through the duality of structure.

Labour process theory was used by Major and Hopper (2005) to analyse the resistance and conflicts associated with the implementation of a new costing system (ABC) in a Portuguese telecommunication firm. Broadbent and Laughlin (2005) present an overview of management accounting change and suggestions for the future agenda research in this area. This paper advocates that middle-range thinking based on Habermas' critical theory is the most adequate to investigate accounting and organisational change. Mouritsen (2005) adopted the actor-network theory to distinguish between design and mobilisation in the process of management accounting change. Mouritsen (2005, p. 111) conclude that "using the concepts design and mobilisation, it is possible to show how change and transformation are developed by all sorts of actors including accounting and management control systems themselves, and that the future is no predetermined project".

Other researchers have used theoretical triangulation by combining two or more alternative approaches. They believe that theoretical triangulation enable studies to take advantage of the complementary nature of different theories and gain alternative interpretations of the management accounting phenomenon. For example, Gurd (2007) used theoretical triangulation based upon two theories, structuration and middle-range, to study accounting and organisational change at the Electricity Trust of South Australia. Dillard et al. (2004) proposed a framework to understand accounting change based upon structuration and institutional theories. Dillard et al. (2004, p. 506) conclude that "expanding the focus of the institutional theory based accounting research can facilitate a more comprehensive representation of accounting as the object of institutional practices as well as provide a better articulation of the role of accounting in the institutionalization process".

The main contribution of alternative approaches to management accounting change research is the view that the management accounting change process is influenced by a wide set of socio-organisational factors, such as; historical conditions, organisational culture, local meanings and values, local rationalities found in particular organisational settings, the individual habitudes of organisational participants, and the relations of power within the organisation. However, alternative approaches fail in explaining how socio-organisational factors and economic and/or technical factors interact in the process of contributing or hampering changes in management accounting. Therefore, as Modell (2007, p. 352) suggests "we still know very little about how economic, technical and institutional factors interact in the change process".

2.4 Privatisation and Management Accounting Change

The literature about organisational change suggests that companies are unlikely to undertake any change unless significant reasons to do so emerge (Hoque and Alam, 2004). Privatisation is directed at changing the basic character and set of beliefs and values of an organisation, because privatisation leads to a new relationship between the organisation and its competitive organisational environment. After a process of privatisation, change can occur for different reasons: deregulation, increased competition, external pressure from financial institutions, public demands, and social, political, and cultural pressures (Hoque and Alam, 2004).

The process of privatisation can be described as a radical change which results from forceful managerial actions and/or externally induced shocks or crises. As a consequence, privatisation leads to formal, revolutionary and progressive change according to the three dimensions of change proposed by Burns and Scapens (2000), namely formal/informal, revolutionary/evolutionary and progressive/regressive change (these dimensions were discussed and defined in the section 2.3.1). Formal change refers to conscious, directed, and more easily observed kinds of design. Revolutionary change involves radical disruptions to the institutionalised values and patterns of behaviour which characterise the existing organisational context and culture (Burns and Scapens, 2000; Busco, 2006). Finally, progressive change is of an instrumental nature, implying that previously dominant values and practices are questioned and transformed with the aim of improving the organisational performance.

In addition, cultural change resulting from privatisation entails a new paradigm for managing the organisation. According to Hoque and Alam (2004), cultural change after privatisation is often directed by a new leadership introducing customer focus and long-term strategies in place of the political agenda associated with state-owned companies.

2.4.1 Research in Management Accounting Change and Privatisation

The research regarding the process of management accounting change after privatisation can be classified into two main streams. First, there are studies in which the main aim is to demonstrate and explain that accounting can influence and support the process of privatisation by helping the construction of a new organisational culture (see Cole and Cooper, 2006; Craig and Amernic, 2006; Dent, 1991; Ogden and Anderson, 1999; Shaoul, 1997). One example of this stream is Ogden's (1995) paper which aims to investigate the ways in which accounting and accounting information contributed to the process of organisational change in the privatised UK water industry. Ogden (1995) focuses on the transformative capacities of accounting having to redefine organisational objectives, change the meaning of the organisational activities, and reshape perceptions of what are critical issues for the organisation. The second stream seeks primarily to understand how accounting has been shaped by the process of privatisation (see Conrad, 2005; Hoque and Alam, 2004; Hoque and Hopper, 1994; 1997; Major and Hopper, 2004; Tsamenyi, et al., 2006; Uddin and Tsamenyi, 2005). This thesis can be categorised into the second stream of research.

The studies about management accounting change and privatisation are characterised by the diversity of theories applied by the researchers to understand such a phenomenon. It seems that researchers in this area are using more alternative approaches rather than positivist research. Some scholars have adopted a view that the processes of management accounting transition are sensitive to cultural, political and ethnic issues. According to Hopper et al. (2003), this sort of research is likely to be based upon case studies and have a stronger focus on anthropology and political economy. One example of this kind of research is the paper of Wickramasinghe and Hopper (2005) based upon a longitudinal case study in a textile Mill in a traditional Sinhalese village in Sri Lanka. This article draws on political and economy theory, as well as the modes of production (MOP) theory and cultural anthropology to illustrate that accounting is influenced by, and influences, the organisational and social context within which it operates.

Another study with these characteristics was conducted by Uddin and Hopper (2003). The main purpose of this paper was to compare the results of the privatisation process in Bangladesh reported by the World Bank and the results found by the researchers. International organisations, in particular the World Bank and IMF (the International Monetary Fund) have supported and encouraged many LDCs (Less Developed Countries) to privatise their state owned companies. The authors argue that the World Bank and IMF did not provide enough support for the process of privatisation and many countries did not achieve the expected results that had been reported. The paper is based upon an intensive case study in a privatised company in Bangladesh. The authors criticise two points of the World Bank claims. First, the sources of information used by the World Bank are not reliable. Second, the criterion used by the World Bank is narrow, because it only takes into account the companies' profitability. Uddin and Hopper (2003) proposed four areas to evaluate the process of privatisation which are: (a) economic performance (sales, profit, ROA, and share performance); (b) social returns (GDP and numbers of employees); (c) labour conditions (average wages and contribution to state); and (d) transparent financial regulation (adherence of regulatory requirements). The results of this analysis show that the privatisation did not improve the Bangladesh situation and the World Bank conclusions about the privatisation are incomplete or wrong.

As aforementioned, there have been a wide variety of theories applied to study privatisation and management accounting change. Among the alternative theories, it seems that structuration theory, institutional theory, and labour process theory are the most popular among researchers. For example, Uddin and Tsamenyi (2005) used the dialectic of control from structuration theory to study how budgeting operates in LDCs (less developed countries). This paper is based on a longitudinal case study in a Ghanaian enterprise. Another example, also based on a single case study, is the Conrad's (2005) paper which draws on the structuration theory to understand the conflicts and contradictions in changes in the Uk's privatised gas industry.

Other studies draw on institutional theory (see Euske and Riccaboni, 1999; Major and Hopper, 2004; Tsamenyi, et al., 2006). Tsamenyi et al. (2006) used new institutional sociology theory to understand how the change in the accounting and financial system of a Spanish electricity distribution company was shaped by both exogenous and endogenous forces after the process of privatisation. This paper extends new institutional sociology theory by analysing the interplay between institutional and market forces, and the interplay between institutional forces and intra-organisational power relations. New institutional sociology theory was used by Major and Hopper (2004) to analyse the reason and consequences associated with the implementation of a new costing system (ABC) in a Portuguese telecommunication firm which was privatised. Euske and Riccaboni (1999) draw on new institutional sociology theory to understand the influence and role of management control systems during the privatisation process. This paper is based upon a single case study in the Credito Italiano, which is a large Italian bank.

Labour process theory has also been used by researchers to explain the relationship between the process of management accounting change and privatisation. For instance, Uddin and Hopper (2001) draw on the labour process theory with a special focus on conflicts within capitalist enterprises. The main aim of this article is to identify whether accounting can facilitate the process of control over the labour force by coercion or consent. In addition, this paper seeks to understand why and how socio-economic factors shaped accounting control in a LDC (less developed country) company. This paper is based on an intensive case study in a Bangladesh company which was privatised. The main findings can be summarised as follows: (a) Different regimes of control shape accounting; (b) The management control systems were used to provide external legitimacy (accounting practice became de-coupled); (c) The private owners did not improve the previous management accounting systems; (d) The government and international organisations, such as the World Bank and IMF, did not provide a adequate support for the privatisation process in Bangladesh; and (f) Accounting was used as an instrument of coercive pressure over the labour force.

To conclude, it can be said that scholars claim that organisational activities are influenced by historical development, as well as the result of political, economic, technological and socio-cultural influences (Burns and Scapens, 2000; Ezzamel, et al., 2007; Hopper, et al., 2003). As a consequence, in management accounting change research a wide variety of perspectives and theories have been used to explain the findings. The same is true in the literature about privatisation and accounting change.

In terms of the contribution of this study, this thesis seeks to expand the literature on privatisation and management accounting change, in particular in developing and LDCs. Despite the fact that many examples of studies in this area presented in this subsection are based upon LDC experiences, they are exceptions to the norm, therefore, there are still few studies concerning the effects of privatisation on accounting in developing countries and LDCs (Uddin and Hopper, 2001; Wickramasinghe, et al., 2004). According to Uddin and Hopper (2001) and Wickramasinghe et al. (2004), there are few studies concerning the effects of privatisation on accounting in developing countries. As a consequence, there is a dearth of relevant material for practitioners, policy makers, donor agencies and academics to draw upon. In the context of the Brazilian literature in this issue, there is no study dedicated to understanding the relationship between privatisation and management accounting change. Therefore, the thesis is the first study in this issue in Brazil and this investigation aims to fill this gap by providing a comprehensive analysis of the process of privatisation and its impacts on management accounting practices.

2.5 Conclusion and Summary

This chapter has discussed the main aspects of management accounting change and the present stage of research in the area. This section started with an overview of management accounting and its evolution in the last century. Management accounting was initially defined as a set of calculative practices to support the process of decision-making and control within organisations. However, this definition has been criticised because this technical-managerial view represents the conventional wisdom of management accounting which is based on the neoclassic theory of the firm.

A gap between management accounting theory (based on the neoclassic theory) and management accounting practices was identified. As a result, Scapens (1994) argued that management accounting practices should be studied and interpreted by investigating what is actually happening, rather than being much concerned with a gap between theory (as presented in major textbooks) and practice. Therefore, the interpretative view of management accounting as portrayed by the institutional theory (which is the position adopted in this thesis), defines management accounting as a set of rules that can be routinised and institutionalised as accepted practices to give social coherence and meaning to organisational behaviour and allow individuals and groups within organisations to give meaning to their day-to-day activities.

Regarding management accounting change, the book *Relevance Lost* by Johnson and Kaplan (1987) was identified as the starting point of the discussion about this subject. This book presented the issue of inappropriateness of management accounting which according to the authors offered little capacity for providing useful and timely information for better decisions and control in the areas of production costing and managerial performance.

Since this publication, the number of studies regarding management accounting change has proliferated and the issue of change has been consolidated as a popular area of research in the management accounting field. However, the concept of change is a controversial one. The meaning of change is problematic and its definition is also avoided (Quattrone and Hopper, 2001). For this thesis, management accounting change is considered to occur with the creation and introduction of new techniques or with changes in the way that managers use management accounting information generated by traditional systems.

Research in the field of management accounting change can be characterised by its methodological diversity which includes interpretive research, critical research and the traditional functionalist and positivist research. A variety of research methods have also been used, including surveys, fieldwork, case studies and ethnographic studies, as well as studies that have adopted a more conventional quantitative approach, such as contingency-type studies. In addition, researchers have drawn on a wide range of theories, including traditional positivistic theories, such as economic theory and contingency theory, and alternative theories, such as institutional theory, structuration theory, actor network theory, middle-range thinking, labour process theory, political economy, and Foucault's theory. Therefore, management accounting change is a heterogenic field of research with a non-dominant paradigm.

Despite this methodological diversity, management accounting change research can be classified into two major categories: factor studies and process-orientated approaches. The former aims to identify and explain the factors which contribute and limit changes in management accounting practices. However, this sort of research has been criticised because it ignores the socio-political aspects of organisational life and the way in which these affect management accounting practices. On the other hand, process-oriented approaches seek to explain the process of management accounting change by analysing the influence a wide set of socio-organisational factors, such as historical conditions and organisational culture.

However, the process-orientated approaches do not provide enough insights in how socio-organisational factors and technical and/or economic factors interact in the process of change in management accounting. To address such a limitation, this thesis adopts a process-orientated approach with the objective of examining the interplay between government regulation and other institutional forces and market forces in the Brazilian electricity sector, and how the company responded by designing structures and management accounting systems to cope.

Finally, this section dealt with the relationship between privatisation and management accounting change, arguing that privatisation normally generates radical changes in management accounting practices within an organisation. The episodes which cause revolutionary change, such as privatisation, have a significant impact on the existing routines and institutions. Therefore, revolutionary change involves radical disruptions to the institutionalised values and patterns of behaviour which characterise the existing organisational context and culture. It was also noted that there are few studies which investigate the impacts of privatisation on management accounting, in particular in developing and less developed countries. As a consequence, this study seeks to expand on the currently available literature on privatisation and management accounting change in developing countries.

Having reviewed the literature on management accounting change by discussing the development of management accounting and the emergence of recent management accounting change studies, chapter 3 moves on to present and discuss the theoretical framework which is adopted in this thesis. First, chapter 3 describes the main characteristics of the theories that are used in this study, namely new institutional sociology (NIS), old institutional economics (OIE), and structuration theory. After that, chapter 3 deals with the thesis theoretical framework model which combines three other organisational change frameworks: Dillard et al. (2004), Seo and Creed (2002), and Burns and Scapens (2000).

Chapter Three: Theoretical Framework

3.1 Introduction

Management accounting is conventionally portrayed as a set of techniques that faithfully represent the economic reality and are able to support managers in the rational decision-making process (see section 2.2). This view is underpinned by assumptions of individual rationality and the market equilibrium characteristic of the neoclassical economics theory of the firm (Scapens, 1994), which implies that no consideration is usually given to the social and institutional context in which management accounting operates. On the other hand, institutional theories, in particular new institutional sociology (NIS) and old institutional economics (OIE), have been prominent in extending the study of management accounting and its change towards the inclusion of social and institutional dimensions of organisations and their environment.

The emphasis of institutionalists is on the relationship established between predominant cultural aspects in a social setting, such as symbols, beliefs, values and cognitive systems, and the individuals and organisations that operate in this social setting. These aspects often attain an institutionalised status, in the sense that they reflect the widely shared constructions of reality and tend to be taken-for-granted as legitimate. The key concerns of institutional theories (NIS and OIE) are: how institutions shape the actions of individuals and how new rules and institutions may emerge. Under an institutional perspective, management accounting systems are seen as inextricably linked with prevailing rules and norms that structure organisational life.

Therefore, institutional theory's main aim is to provide an alternative framework with a sociological flavour (Wickramasinghe and Alawattage, 2007). Institutional theory has become a popular choice among management accounting researchers who seek to understand why and how accounting has become what it is, or is not (Moll, et al., 2006a). According to Wickramasinghe and Alawattage (2007, p. 427), since the 1990s, institutional theory "has become one of the popular theoretical frameworks in management accounting studies". Moll et al. (2006a) identified five areas in which institutional theories, namely new institutional sociology, old institutional economics and new institutional economics, have been applied in accounting research. These categories of research are: (1) studies which seek to understand and investigate the influence of 'macro' institutional forces on organisational accounting systems; (2) the second strand aims to understand how the institutional environments (organisational field) are shaped. The idea behind this strand is that organisations affect their environments, and the construction and potency of institutions depends to a large extent on organisations within the institutional field; (3) studies that seek to explain the relationship between legitimacy and accounting systems. The premise of this area of research is that organisations adhere to wider social values to achieve legitimacy and these values govern the organisational practices; (4) the fourth strand aims to understand and explain the relationship between the role of agency and the relations of power within the organisation and the process of organisational change; (5) the last area of research seeks to explain accounting as efficient configurations. This strand is oriented by new institutional economics assumptions which describe the existence of particular accounting configurations in cost-minimising or efficiency terms.

The purpose of this chapter is to present and discuss the theoretical framework which is expected to be able to help to answer the research questions proposed in this study. The framework draws on four approaches, namely: new institutional sociology, old institutional economics, structuration theory and dialectical perspective. Specifically, the framework is an attempt to combine three different frameworks which are: Dillard et al.'s (2004) framework, Burns and Scapens' (2000) framework, and Seo and Creed's (2002) framework.

This chapter has six remaining sections and is structured as follows: the first four sections deal with new institutional economics theory (NIE), new institutional sociology theory (NIS), old institutional economics theory (OIE), and structuration theory, respectively. In each subsection the origins, main assumptions, and limitations of these theories are presented and discussed. The following section aims to describe the theoretical framework which is adopted in this thesis. This section presents and discusses the three frameworks that support the theoretical framework of this thesis. In addition, the explanation for the theoretical framework model and its justification are given. Finally, the main conclusions and a summary of this section are presented.

3.2 New Institutional Economics (NIE)

New institutional economics started with the article "*The Nature of the Firm*" by Coase (1937). This paper introduces the concepts of transaction costs into economic analysis (Coase, 1998). The term 'new institutional economics' was coined by Williamson (1975) who intended to differentiate the subject from the 'old institutional economics'. According to Rutherford (1994), other labels have been used for this economic-oriented school, such as 'mathematical institutional economics', 'theoretical institutional economics', and 'modern institutional economics'. NIE is a recent approach compared with the 'old institutionalism', and it is based upon institutional elements of classical, neoclassical and Austrian economics (Rutherford, 1994).

NIE extends the traditional economic approach and applies the assumptions of economic rationally and markets to the governance of organisations. NIE is concerned with the structures used to govern economic transactions (Scapens, 2006b). In addition, NIE theorists seek to explain the existence or appearance of some institutions, and the non-existence or disappearance of others (Moll, et al., 2006a). Rutherford (1994) claims that most work in NIE stems from neoclassical economic theory which has been criticised for its unrealistic assumptions about economic rationality, market equilibrium and atomistic modelling. In neoclassical economics theory, individuals are seen as behaving perfectly rationally and having access to all information. Hence their understanding about reality is accurate and complete, enabling them to choose the optimal solution. Political, social and cultural factors are regarded as not affecting individuals.

NIE encompasses a wide range of sub-theories which include: transaction cost economics, behavioural theory, evolutionary economic theories of the firm, entitlements theory, agency theory and game theory. According to Moll et al.

(2006a), transactions costs economics (TCE) has probably had the most influence on accounting research. Transaction cost economics seeks to explain the differences in markets and hierarchies by using transactions and their associated costs as the primary unit analysis (Williamson, 1985; 1998). Therefore, unlike agency theory where focus is on the contractual relationship between self-interested principal and agent, transaction cost economics takes a transaction as the focal unit of analysis. Its focus is on comparative understanding of the alternative arrangements within which transactions take place (Wickramasinghe and Alawattage, 2007). TCE is essentially a theory of coordination of transactions between and within business organisations (Scott, 2001). In Coase's (1937, p. 388) paper, which marks the beginning of TCE, the fundamental question that TCE attempts to answer is presented: 'Why is any organisation necessary when economic co-ordination is to be done by the price mechanism?'.

Coase (1937, p.389) defines transaction costs as "the costs of negotiating and concluding a separate contract for each exchange transaction which takes place in a market". NIE assumes that companies incur transaction costs, such as cost of contracts, supervision costs, costs associated with opportunistic behaviour, and costs associated with specific assets, especially those that are not easily used for different transactions. TCE postulates that firms will select the governance structure (market, hierarchy and hybrid) that minimises the costs of effecting transactions.

Regarding the application of TCE in management accounting research, Wickramasinghe and Alawattage (2007) identified three major areas in which it has provided an influential theoretical framework: (a) management accounting history; (b) inter-organisational relationships; and (c) management control structures. The first area aims to explain management accounting evolution through transaction costs economics. Perhaps the most famous utilisation of transaction cost economics in management accounting is its application by Johnson and Kaplan (1987) in their 'Relevance Lost' book to support the analysis about the evolution of management accounting practices. The second strand seeks to explain inter-organisational relations through transaction cost economics. A dramatic change in organisational forms has taken place during the last decades. For example, outsourcing, joint ventures and other types of networking have become increasingly common modes of organisation. As a result, this evolution in inter-organisational forms has provided ample opportunities to revisit TCE assumptions with a new set of empirical evidence. Finally, the third area aims to explain management control structures through TCE. Wickramasinghe and Alawattage (2007) highlight that whereas TCE's focus is to explain the trade-off between generic models of governance, that is, market, hierarchy and hybrid, management control literature is focused on the control issues within just one mode: the hierarchy.

As mentioned previously, new institutional economics is based on neoclassical theories and NIE appeals to the idea of optimisation. Hira and Hira (2000, p. 269) point out that "rather than seeking to replace neoclassical economics, the new institutionalists wish only to modify the rational choice, utility-based neoclassical model by relaxing some of its assumptions". As a consequence, the old institutionalists made a series of criticisms which can be summarised: (a) NIE is often too abstract and formal; (b) NIE considers individuals to be rational and autonomous, and not influenced by their institutional and social setting; (c) NIE adopts a reductionist view of individualism; and (d) NIE is incapable of explaining economic change (Rutherford, 1994).

To summarise, for NIE and neoclassical economics researchers, the aim of management accounting is to enhance organisational competitiveness and performance. In other words, management accounting systems are regarded as the search for efficiency to minimise transaction costs. Individuals are portrayed as following profit maximisation goals, and acting entirely in the interest of organisation. Thus management accounting systems are used by them exclusively to accomplish organisational goals. Managers adopt rational management accounting practices, because they may improve organisational efficiency. Only technical reasons can explain why organisations adopt a specific management accounting tool. Political, social, and cultural factors are considered as irrelevant for explain a decision of implementing a management accounting technique.

Taking into consideration the main objective of this thesis which is to explain how the management accounting information system in a privatised Brazilian electricity distribution company was shaped by both intra and inter organisational factors, new institutional economics is unable to help to achieve this objective. This is because of its limited assumptions about organisational live and the behaviour of individuals. As discussed above, political, social and cultural issues are insignificant for NIE researchers when explaining organisational change. In sum, this theory cannot satisfactory incorporate important factors to answer the research questions posed in this investigation.

3.3 New Institutional Sociology (NIS)

New institutional sociology (NIS) theory aims to explore the role of macro economic, political and social institutions in shaping organisational structure, policies and practices (Scott, 1995; 2001). The general idea behind new institutional sociology is that organisations' conformity to the social norms and expectations is required in order to survive and continually gain society's support or gain legitimacy (DiMaggio and Powell, 1983; 1991; Meyer and Rowan, 1977). As a consequence, NIS emphasises that, if the organisations want to be recognised as legitimate and receive support, they must act within institutionalised rules and beliefs (Carpenter and Feroz, 2001; Carruthers, 1995). According to Meyer and Rowan (1992), institutionalization is a process where social values (customs, beliefs and values) became rules in individuals' actions and thinking, whether they are integrated into an organization or scattered in society.

The institutional theory is based on the belief that individuals will accept and follow social patterns without any reflection or resistant behaviour, doing nothing more than defending their interests. Such behaviour goes against the idea that humans are always rational, that is, identifying costs and benefits associated with different kinds of action and always trying to maximize their utility. NIS shows that organisations do not always adopt models and procedures on the grounds that they consider it more rational in the given circumstance. On the contrary, their choices may be guided by an institutionalised conception of what is seen as better, more adequate, rational, fair, etc (Carruthers, 1995).

In this way, the NIS outline supports the idea that accounting does not have only a rational function inside organizations, but also a symbolic one. It is believed that accounting information is used not only to support the decision-making process, but mainly to justify and legitimise a group of actions which are carried out day by day. In the same vein, Carruthers (1995) states that institutions, which is defined as "socio-political and cultural practices which produces legitimacy (meaning and rules) for the conduct of organizational and the existence of management accounting therein" (Wickramasinghe and Alawattage, 2007, p. 432), produce political and cultural reasons rather than technical justification for the existence of certain organisational practices. Consequently, many organisations use techniques partly as artefacts and ceremonies, and partly as devices of actual operation (Hopper and Major, 2007).

Some NIS researchers highlight the influence of the environment on the accounting profile system definition and on the expansion of accounting itself as social science (Granlund, 2001; HassabElnaby, et al., 2003; Meyer, 1986). It is understood that organisations try to adjust their accounting mechanisms as a result of the pressure exercised by several elements that make up their own social system. As examples of the entities which may exercise this pressure, according to Hussain and Hoque (2002), are: a) governments; b) regulating agencies; and c) professional groups.

Thus, the starting point for most NIS studies is the view that organisational structures and procedures are largely shaped by external factors rather than cost-minimising objectives. Moll et al. (2006a, p. 187) point out that "scholars have used NIS insight to explain how the adoption of particular accounting systems can be understood in terms of a need to conform to external pressures as opposed to an overriding (rational-optimising) drive for increased internal efficiency". As a result, NIS has been very useful to understand and recognise the way in which organisations tend to conform to what they perceive as the expectations of their broader environment (Scapens, 2006b).

In order to explain this conformance, the concept of isomorphism is particularly important. DiMaggio and Powell (1991) define this term as a process in which a unit of determined population is forced to be like their peers, under the same environmental conditions. Such a concept presupposes that organisational characteristics are changed to achieve an increasing compatibility with environment characteristics.

According to DiMaggio and Powell (1991), there are two types of isomorphism: the competitive and the institutional. The first presupposes the rationality of a system in which competition for different markets, niche changes and performance measures are emphasized. Institutional isomorphism on the other hand, starts from the presumption that organizations tend to reflect the constructed social reality. Therefore, institutional isomorphism helps to explain why the organizations of a determined segment are homogeneous in several aspects, including when choosing specific accounting tool.

DiMaggio and Powell (1991), divide institutional isomorphism into three groups: a) Coercive, when an organization adopts certain practices due to pressure exerted by those organizations that the company depends on externally, such as government, regulatory agencies and creditors, and also, because of the pressure to conform to the expectations of the wider society; b) Mimetic, which occurs under conditions of uncertainty when organizations imitate certain practices of other organizations which they perceive to be more legitimate or successful, with the aim of reducing the level of uncertainty regarding the efficiency of other alternative methods; c) Normative, stemming primarily from pressures from professional groups that wish to regulate arrangements in organizational structures according to their own interests.

Therefore, according to NIS, isomorphic practices may explain the reasons why organizations choose certain accounting methods instead of others. The acceptance of this methodology is almost a logical consequence, as no one would deny that within the organizational field there are organizations which may be considered active or passive models, allowing others to reproduce their structures, whether for coercive, normative or mimetic reasons (Carruthers, 1995).

Despite of the popularity of NIS among management accounting researchers, many criticisms have been launched at the new institutional sociology approach over the years. The main criticisms of NIS can be summarised as following: (a) no consideration of power issues and interest-based behaviour (Carruthers, 1995; Collier, 2001; Covaleski, et al., 1993; Greenwood and Hinings, 1996; Hopper and Major, 2007; Kostova and Kendall, 2002; Major and Hopper, 2004; Powell and DiMaggio, 1991; Tsamenyi, et al., 2006; Uddin and Tsamenyi, 2005); (b) NIS was originally a theory more concerned with explaining stability than change. In other words, NIS is incapable of explaining organisational change (Burns and Baldvinsdottir, 2005; Burns and Nielsen, 2006; Dacin, et al., 2002; Greenwood and Hinings, 1996; Hopper and Major, 2007; Oliver, 1992; Powell and DiMaggio, 1991; Seo and Creed, 2002); (c) lack of consideration of internal generation of institutionalised forms and lack of emphasis on efficiency factors and on economic environment (Abernethy and Chua, 1996; Collier, 2001; Dacin, 1997; Dillard, et al., 2004; Modell, 2001; 2003; 2005a; 2006; Oliver, 1992; Powell and DiMaggio, 1991; Ribeiro and Scapens, 2006; Scapens, 2006b; Scott, 2001; Tsamenyi, et al., 2006; Yazdifar, et al., 2006); and (d) the assumption that external legitimacy leads to decoupling in all cases (Abernethy and Chua, 1996; Carruthers, 1995; Lukka, 2007; Mouritsen, 1994; Nor-Aziah and Scapens, 2007; Siti-Nabiha and Scapens, 2005). According to Meyer and Rowan (1977), decoupling referring to the situation in which the formal organizational structure or practice is separate and distinct from actual organizational practice. This occurs when organisational practices are introduced to meet institutional requirements and they are used in a ceremonial way (Scapens, 2006b).

Moll et al. (2006a, p. 188) synthesise the criticisms over NIS by stating that the main source of criticism about NIS comes from its typical focus on the macro environment and its influence on organisations' systems. As a consequence, "it has been argued that the theory requires greater integration with 'micro' explanations and acknowledgement of the interactive nature of institutional process, incorporating the intra-organisational processes and the interests and generative capacity of actors into the perspective". A number of studies in accounting have dealt with this micro/macro gap on NIS (Burns and Baldvinsdottir, 2005; Collier, 2001; Dillard, et al., 2004; Modell, 2003; 2005a; Tsamenyi, et al., 2006; Yazdifar, et al., 2006). However, there is potential for further development in this area. As Modell (2007, p. 351) highlights that "there is still a dearth of knowledge of how institutional process at various levels of analysis influence each other".

In the context of this thesis, these limitations of NIS will be addressed by proposing an integration of old institutional economics and new institutional sociology in a theoretical framework capable of explaining the interactions between the wider social, environmental and political pressures for change (inter-organisational pressures) and organisational behaviour (the intra-organisational aspect).

3.4 Old Institutional Economics (OIE)

Old institutional economics (OIE) has its origins in the works of early American institutionalists during the turn of the nineteenth to the twentieth century, such as Thorstein Veblen, Wesley Mitcheel, John R. Commons, and Clarence Ayres (Rutherford, 1994). Among these authors, two of the most influential theoretical references in old institutional economics are Commons and Veblen (Hodgson, 1998; 2000; 2003). Commons contributed to expanding the scope of institutional theory, providing a pragmatic and volitional theory of institutional change based on resolving strategic problems in social relationships between conscious and conflicting individuals (Hodgson, 2003). Veblen saw economics as a process of social provision, which is subject to multiple and cumulative causation, rather than a series of static equilibria. Veblen criticised the 'economic man' and he based his rejection of orthodox institutional economics on the inadequacies of neoclassical economics for analysing economic transformation (Scott, 2001).

OIE is in opposition to the ontological, epistemological and methodological assumptions of neoclassical economics (Scapens, 1994). In fact, it can be said that OIE's emergence and development maybe seen as a response to neoclassical economics. Hence, OIE generally opposes assumptions of individual rationality and methodological individualism as accounting for development and change of social systems. OIE researchers criticise severely the neoclassical assumption that individuals maximise their behaviour (the 'economic man'). The main reasons for this criticism are: (1) decision-makers do not have access to all information to make a decision; (2) individuals have time restrictions and information processing constraints; (3) information is often imperfectly perceived (Rutherford, 1994). In sum, Scapens (2006b, p. 14) states that "OIE starts from a position which questions some of the basic assumptions of neoclassical economics". As a consequence, instead of simply assuming bounded rationality and opportunism, OIE "seeks to explain why people appear to be opportunistic, and why we see particular types of economic behaviour".

OIE is not a clearly delineated theory. As Rutherford (1994, p. 1) argues that "OIE does not represent a single well-defined or unified body of thought, or methodology, or program of research". Rather, OIE is collection of assumptions that can be described as following (Hodgson, 2000):

(1) Institutionalism itself is not defined in terms of any policy proposal.
(2) OIE uses largely ideas and data from other areas of knowledge, such as psychology, sociology and anthropology to improve the analysis of institutions and human behaviour. Veblen (1919, p. 239) defines institutions as "settled habits of thought common to the generality". In the same vein, Hamilton (1932, p. 84) defines institutions as "way of thought or action of some prevalence and permanence, which is embedded in the habits of a group or the customs of a people"
(3) The key elements of analysis are the institutions and the main aim of the old institutionalists is to investigate institutions and the process of stability, innovation and change.
(4) The economy is an open system, located in a natural environment, affected by technological changes, and embedded in a broader set of social, cultural, political and power relationships.
(5) The notion of individual agents as utility maximising is not acceptable. OIE does not take the individual as a given. Individuals are affected by their institutional and cultural situations.

In the context of management accounting, old institutional economics has recently emerged in the literature on management accounting change, particularly through the framework proposed by Burns and Scapens (2000) (see section 3.6.2). A considerable number of studies (Burns, et al., 2003; Busco, et al., 2006; Guerreiro, et al., 2006; Hassan, 2005; Hoque and Alam, 2004; Lukka, 2007; Nor-Aziah and

Scapens, 2007; Ribeiro and Scapens, 2006; Siti-Nabiha and Scapens, 2005; Soin, et al., 2002; Yazdifar, et al., 2008) draw on this framework to explain the process of management accounting change and stability. In addition, this framework has been used largely to study resistance to change and stability in the intra-organisational environment (Scapens, 2006b).

OIE is not without limitations. The main limitations of OIE can be summarised as following: (a) OIE does not provide insights into the drivers of institutional change. It assumes institutions to be present, but OIE does not clarify when organisational actors come to conscious recognition that institutional arrangements are no longer adequate. In other words, OIE does not clarify when individuals come to the collective recognition that something needs to change (Abrahamsson and Gerdin, 2006; Burns and Baldvinsdottir, 2005; Burns and Nielsen, 2006; Seo and Creed, 2002); (b) OIE pays little attention to environmental pressures. OIE is criticised as its focus is primarily on the micro rather than the macro level (Dillard, et al., 2004; Hassan, 2005; Moll, et al., 2006a; Ribeiro and Scapens, 2006; Scapens, 2006b; Siti-Nabiha and Scapens, 2005; Yazdifar, et al., 2006). These limitations will be addressed in the next subsection which aims to describe the theoretical framework of this thesis.

To conclude, among these three institutional theories, namely new institutional economics (NIE), new institutional sociology (NIS), and old institutional economics (OIE), NIS and OIE approaches both offer huge opportunities to support researchers to help explain and understand management accounting practices in organisations and the process of management accounting change and stability. In addition, these two institutional theories share several characteristics in common. For example, both are based upon a wide range of insight from cognitive science, cultural studies, psychology and anthropology. Moreover, NIS and OIE draw attention to multiple levels of analyses ranging from the individual organisation to society (Moll, et al., 2006a; Scott, 2001). In contrast, new institutional economics differs significantly from NIS and OIE, because NIE premises are entirely based upon the neoclassical economics assumptions which describe the existence of accounting configurations in cost-minimising/efficiency terms.

3.5 Structuration Theory

Structuration theory seeks to provide an understanding of the relationship between the activities of knowledgeable human actors and the structuring of social systems (Giddens, 1976; 1979; 1984a; Macintosh and Scapens, 1990). Giddens argues that structures can be considered to be systems of generative rules and resources which, whilst existing outside time and space, nevertheless, provide the binding of time and space in social systems. Roberts and Scapens (1985, p. 446) point out:

> "... perhaps the best way to express Giddens' distinction between systems and structure is to say that systems are not structures, but rather systems have structures, which are produced and reproduced only through being drawn upon by people in interaction with one another. Through being drawn upon by people, structures shape and pattern (i.e. Structure) interaction. However, only through interaction are structures themselves reproduced. This is the 'duality of structure'; it is in this way that structures can be seen to be both the medium and the outcome of interaction."

Therefore, the concept of structuration involves thinking of objectivity and subjectivity with respect to the constitution of social structure, as constitutive of each other, and hence as not being mutually exclusive. In this regard, the relation between structure and agency is one of duality, not dualism. Giddens (1984a) argues that neither the subject (the individual) nor object (society or institutions) should be regarded as having primacy. But each is constituted in, and through, recurrent practices.

Giddens (1984a) distinguishes between social systems and social structures. Social systems refer to "reproduced relations between actors or collectivities, organised as regular social practices" (Giddens, 1984a, p. 25). They include regularised relations of interdependence between individuals or groups, as recurrent social practices. They also exist in time and space and are constituted by situated social practices. These systems exhibit structures, or structural properties, which are "rules and resources, or sets of transformation relations, organised as properties of social systems" (Giddens, 1984a, p. 25) or collectivities. These structures are recursively implicated in social systems and are characterised by the absence of the subject. Social structure exists out of time and space or, more accurately, in virtual time and space and can be instantiated by agents during interaction in specific time-space setting (Macintosh, 1994). In this regard, they are more internal than external to agents, as memory traces and as instantiated by social practices. Social structures do not exist independent of the knowledge of agents about what they do in their daily life.

Social structure, the first half of Giddens' duality, consists of two interrelated components: rules and resources. The rules of social life refer to the "techniques or generalisable procedures applied in the enactment/reproduction of social practices" (Giddens, 1984a, p. 21). They can be seen as being either normative or interpretive (Dillard and Yuthas, 1997). Normative rules represent legitimation structure. These are translated and verbalised by actors as norms, specific rights and obligations, which are associated by sanctions/rewards in interaction. Interpretive rules create signification structure or symbolic systems that provide techniques for agents to interpret social events. Agents reflexively employ interpretive schemes, as stocks of knowledge, to communicate with others.

Resources are the media through which power is exercised and domination structure is reproduced. Domination structure involves asymmetries of resources employed in the sustaining of power relations in social practices. There are two types of resources: allocative and authoritative (Giddens, 1979). Allocative resources are material or economic resources that result from human domination over nature such as raw materials. Authoritative resources are nonmaterial resources and result from human domination over other human actors. These resources provide facilities for reaching specific outcomes. The achievement of such outcomes results in the manifestations of power by those actors controlling the resources. Power itself is not a resource (Giddens, 1979). Resources are the bases of power. The exercise of power is not a unidirectional relation (Macintosh and Scapens, 1990). All social relations involve both autonomy and dependence, or what Giddens (1984a) called the dialectic of control, that is, power relations are two-way: the most autonomous agent is in some degree dependent and the most dependent actor in a relation retains some autonomy. These relations are important in the situations where reaching the agent's outcomes depends on the doings of others.

Agency, the other part of Giddens' duality of structure, is the actions taken by individual members or agents of a social system in time-space. It expresses the activities of agents as a continuous flow of conduct rather than a series of discrete acts combined together. According to Giddens (1984a, p. 9), "agency concerns events of which an individual is the perpetrator, in the sense that the individual could, at any phase in a given sequence of conduct, have acted differently. Whatever happened would not have if that individual had not intervened". Giddens (1979; 1984a) introduces the stratification model of the agent or the self-acting to interpret the personality of the human agent. According to this model, there are three dimensions of the agent's personality: practical consciousness (reflexive monitoring of action), discursive consciousness (rationalisation of action) and the unconscious (basic security system/motivation of action).

Practical consciousness refers to the tacit knowledge that actors have about social conditions, including the conditions of their own action, but cannot express verbally. It is not directly accessible to the (discursive) consciousness and represents the vast bulk of the stocks of knowledge employed by actors in the production of social activities. Discursive consciousness is the discursively available knowledge that actors are able to speak about social conditions, including the conditions of their own action. This type of knowledge provides actors with reasons for their activities or the grounds for their actions. The rationalisation of action, as a process, means that "actors – also routinely and for the most part without fuss – maintain a continuing 'theoretical understanding' of the grounds of their activity" (Giddens, 1984a, p. 5). The unconscious motives refer to the wants that prompt the action. They refer to the potential for action, as they supply overall plans or programmes within which range of behaviour is enacted, and have a direct effect on action only in the unusual situations in which the routinised character or the continuity of social life is highly disrupted. According to the stratification model, actors' wants remain rooted in a basic security system, largely unconscious and established in the first years of life. The basic security system involves the deep-lying modes of tension management to principally minimise and control anxiety (Giddens, 1979).

The modalities of structuration relate agency to social structure (Busco, 2009). They represent the main dimensions of the duality of structure in the production of interaction (Giddens, 1984a). There are three basic dimensions of this action/structure duality: the communication of meaning (paired with signification structure); the exercise of power (paired with domination structure); and the application of moral sanctions (paired with legitimation structure). Action and structures interact with one another along each of these dimensions through three modalities: interpretive schemes, facilities and norms (see figure 3.1), whereby concepts embedded in the structure are given specificity by social agents through the application of their stock of knowledge. The interpretive schemes are the shared stocks of knowledge drawn upon in processes of meaning (re)production. Similarly, resources represent the facilities through which actors draw upon the domination structure in the exercise of power. Norms also refers to the actualisation of right and the enactment of obligations.

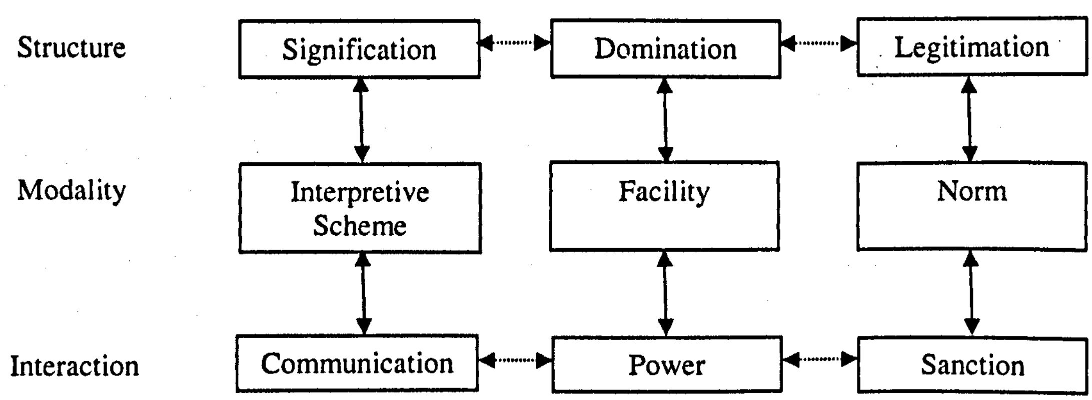


Figure 3.1 – Structure, Interaction and Modalities (Giddens, 1984a, p. 29)

In the management accounting field, Roberts and Scapens (1985), Macintosh and Scapens (1990) interpret management accounting in light of Giddens' structuration theory. In particular, by using key concepts of duality of structure and structuration, they portray structuration theory as follows: "the way in which accounting is involved in the institutionalisation of social relations" (Macintosh and Scapens, 1990, p. 474). In doing so, they argue that "management accounting systems represent modalities of structures in the three dimensions of signification, legitimation and domination" (Macintosh and Scapens, 1990, p. 462). Therefore, management accounting practices can be conceptualised as 'modalities of structuration', i.e. having a pivotal role in the recursive relationship between agency and structure along the three dimensions of signification, legitimation, and domination (Busco, 2009).

Giddens' conception of structuration has been criticised for being too philosophical and abstract as there appears to be an absence of clear links to substantive circumstances and this absence makes structuration theory 'free-floating' (Stones, 2005). Structuration theory attempts to capture the general characteristics of entities such as structure, agent, time and space such that entities would be relevant to all circumstances across time and places. Based on this criticism, Stones (2005) advocates the 'strong' theory of structuration which bridges Giddens' abstract and philosophical structuration (based on 'ontology in general') to a more substantive level.

Stones (2005) suggests for structuration theory a revised and stronger framework which draws from and builds upon the ongoing criticisms, debates, defences and refinements of the theory. This framework is called the 'strong project of structuration' or simply 'strong structuration' as it encompasses the key elements of Giddens' original view while it also consolidates and develops these views.

In addition, Stones (2005) presents the notion of a quadripartite cycle of structuration to elucidate the variety and nature of the elements involved in the duality of structure. This cycle comprises four separate but inter-linked aspects of the duality of structure. These are: external structures as condition of action; internal structures within the agent; active agency (operating either routinely and pre-reflectively, or strategically and critically based on his internal structure) and outcomes (as external and internal structures as events). In the management accounting literature, a number of studies have drawn on Stone's 'strong structuration' (Coad and Herbert, 2009; Jack and Kholeif, 2007; 2008). The Coad and Herbert (2009) paper aims to examine the potential of the 'strong structuration' for management accounting by setting their skeletal model of the structuration process in order to analyse a case study of management accounting practices in a privatised utility company. Coad and Herbert (2009) state that Stone's 'strong structuration' produced useful elaboration of structuration theory through his introduction of the concept of position-practice and the quadripartite model of structuration. As consequence, Coad and Herbert (2009) conclude that Stone's approach to structuration theory can give this theory new potential in management accounting research.

Having presented and discussed the theories which informed this thesis, this chapter moves to explain the theoretical framework adopted in this study which uses the above theoretical constructs.

3.6 The Theoretical Framework

This section presents and discusses the theoretical framework which is adopted in this research. The thesis will be based upon theoretical triangulation which draws on new institutional sociology (see section 3.3), old institutional economics (see section 3.4), structuration theory (see section 3.5), and dialectical perspective (see section 3.6.3). Specifically, this thesis combines three different frameworks that explain organisational change, namely: Dillard et al.'s (2004) framework, Burns and Scapens' (2000) framework, and Seo and Creed's (2002) framework.

This section is divided into four subsections. The aim of the first three subsections is to present and analyse the three frameworks that support the thesis theoretical framework. This analysis is important to enhance the readers' understanding regarding these frameworks, as well as to facilitate their comprehension of the thesis framework. Subsequently, the thesis framework is presented and explained taking into consideration the justification, possible contributions, and challenges of the introduction of this theoretical framework.

3.6.1 Dillard et al.'s (2004) Framework

Dillard et al.'s (2004) framework combines old institutional economic (OIE) and structuration theory research on intra-organisational institutionalisation process with new institutional sociology (NIS) research on external pressure. According to Dillard et al. (2004, p. 506), "most institutional theory research has adequately theorized neither the institutionalization process through which change takes place nor the socio-political context of the institutional formation". In addition, Dillard et al. (2004, p.511) state that the Burns and Scapens' (2000) framework does not "consider the links between the organizational practices and the organizational field, or the possible influence of societal factors or influential actors". Therefore, in the Burns and Scapens' (2000) framework, the organisational practices are not related to the broader social, economic and political context. As a consequence, this framework "is limited in recognizing high level of social, political and economic issues that influence and define the organizational context" (Dillard et al., 2004, p. 511).

To address this limitation, Dillard et al. (2004) propose a framework to explain the institutional dynamics in the process of organisational change (see figure 3.2). This model uses the structuration theory principle that action is changed but constrained by structure (institution) to develop a recursive institutionalization model that prioritises processes over outcomes (Hopper and Major, 2007). Dillard et al. (2004) advocate that the process of institutionalisation moves in a recursively cascading manner through three levels of socio-historical relationships, namely economic and political level (PE), organisational field level (OF), and Organisational level (see figure 3.2).

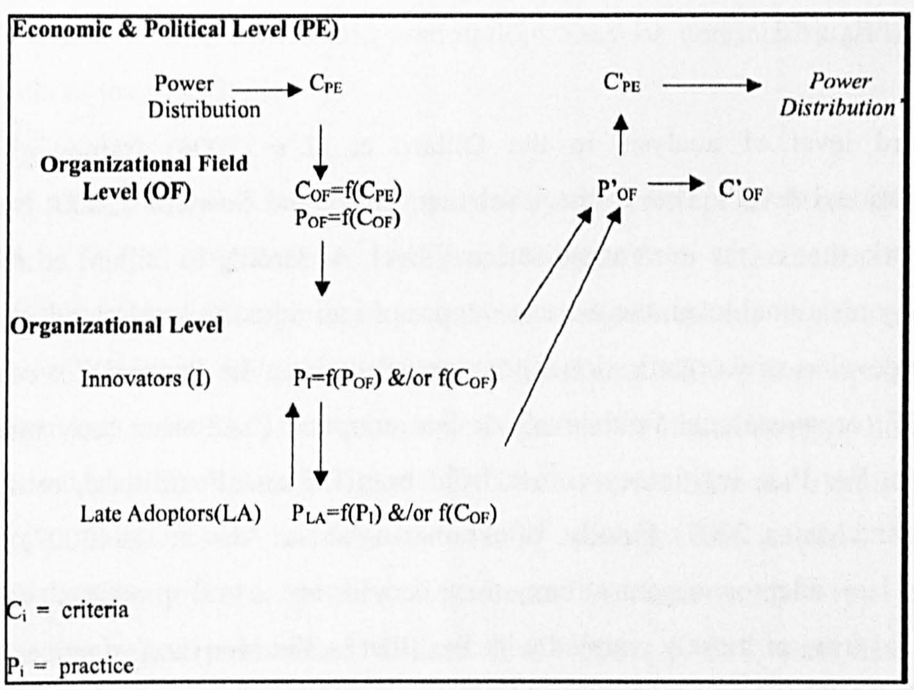


Figure 3.2 – Institutional Dynamics
Source: Dillard et al. (2004, p. 512)

Dillard's et al. (2004) model argues for an institutionalisation process by hierarchically linking the political and economic level (PE) with organisational field (OF). The PE level establishes the most general and widely accepted norms and practices (taken-for-granted norms) influenced by politically developed symbolic criteria (CPE), such as accounting principles, laws and regulations (Wickramasinghe and Alawattage, 2007). Dillard et al. (2004) highlight that these norms and practices tend to be strongly influenced by powerful coalitions (power distribution) and represent the macro context for resource allocation.

The second level consists of the organisational field (OF) which includes socio-economic configurations, such as industry groups, professional bodies, and consultants. The social, economic and political parameters embedded in the economic level (PE) enter the organisational field through the organisational field criteria (COF), which are a function of the societal level criteria (CPE) (Dillard, et al., 2004). COF provide legitimacy for the actions at the organisational field (OF) level, while CPE provide legitimacy for the existence of COF. The practices in the organisational field (POF) are a function of the organisational field criteria (COF), and provide the legitimating regulative base for action in the organisational level at the bottom of figure 3.2.

The third level of analysis in the Dillard et al.'s (2004) framework is the 'organisational level'. This is the level that Burns and Scapens (2000) built their framework, that is, the intra-organisational level. According to Dillard et al. (2004), in the organisational level, there are two types of individual organisations: innovators (I) who develop new organisational practices (PI) within the POF and COF constraints from OF (organisational field level) or late adopters (LA) who copy innovators' practices. For PLA, legitimacy comes from both OF and PI (Dillard, et al., 2004; Hopper and Major, 2007). Finally, Wickramasinghe and Alawattage (2007) point out that in late adaptor organisations, there could be actual practices which are decoupled from or loosely coupled with PLA, that is, the innovator practices are used in a ceremonial way to give legitimacy to late adaptor companies.

New innovative practices can move laterally and upwards. As a result, the innovative practices may modify the set of normative practices (POF) and criteria (COF) in the organisational field level by reinforcing, revising or eliminating existing practices (Dillard, et al., 2004; Hopper and Major, 2007). Changes in legitimate and accepted practices (P'OF) and criteria (C'OF) at the organisational field level normally influence the political and economic system criteria (C'PE). In addition, Dillard et al. (2004) state that the late adopters also support the process of change in the organisational level by encouraging more late adapters. Dillard et al. (2004, p. 514) conclude that the change in the economic and political level and in the organisational field level "may largely support the earlier accepted practices and criteria with some small evolutionary change, or they may involve larger or even on occasion revolutionary change".

The new organisation field practices (P'OF) and criteria (C'OF) will also modify the political and economic criteria (C'PE) by supporting the norms and practices articulated by the powerful interest groups or by modifying the current configuration of power in the economic and political level (Dillard, et al., 2004). After that, the process of institutionalisation is inverted again and flows downward through the three levels as explained above. Dillard et al. (2004, p. 514) conclude "recursivity is the key to understand change in the institutionalization process since taken-for-granted norms, values, beliefs and assumptions may be continually revised at all three levels of the model".

Dillard et al.'s framework is also supported by the concept of 'axes of tension" proposed by Weber (1958; 1961; 1968) and insights from structuration theory, in particular three structural type concepts, namely: 'signification', 'legitimation', and 'domination' (Giddens, 1976; 1979; 1984a). Dillard et al. (2004) draw upon Weber's 'axes of tension' to indicate how criteria and practice are linked over the three of the social system (the three levels in figure 3.2). The axes of tension are 'representation', rationality', and 'power' which are social actions that explain how the institutionalisation process operates. Representation concerns the way reality is framed or symbolically described. Dillard et al. (2004, p. 517) state that "Weber focuses on the role that ideas, interpretations and meanings play in legitimating social action. He recognizes the central place of these symbolic representations in providing the context for social action". Rationality also recognises symbolic structures as central to social action. As a consequence, Dillard et al. (2004, p. 517) point out that "rationality provides the legitimating conditions for evaluating criteria and practices". Finally, power is conceptualised as the means and degree of control over human and material resources. Dillard et al. (2004, p. 518) conclude that "these three dimensions or axes (representation, rationality and power) are useful in analyzing and understanding organizational actions within a larger institutional societal context".

The 'axes of tension' and structural types (structuration theory) coincide with each other: representation with significance; rationality with legitimation; and power with domination (Dillard, et al., 2004). These pairs of social actions take place at all levels of analysis: the economic and political level (PE), the organisational field level (OF), and the organisational level. As a result, institutionalisation, de-institutionalisation or re-institutionalisation processes would be generated through choosing important norms, values, beliefs and assumptions (representation or signification), through justifying the choices (rationality or legitimation), and through maintaining the same (power or domination) (Wickramasinghe and Alawattage, 2007). Therefore, management accounting systems could be institutionalised, de-institutionalised or re-institutionalised through this process. As a consequence, management accounting cannot be justified merely through economic rationalities. Management accounting practices become institutionalised through the social and political process of institutionalisation which takes place only if the 'axes of tension' occur (Dillard, et al., 2004; Wickramasinghe and Alawattage, 2007).

Dillard et al.'s (2004) framework can capture the dynamics and complexities in the inter and intra organisational environment. As a result, this model can explain why new management accounting practices develop and are adopted by companies. In the same vein, Wickramasinghe and Alawattage (2007, p. 434) highlight that "the Dillard model provides a broader perspective when compared to old institutional theory, some researchers have now begun to apply it to explain upcoming management accounting practices informed by new management accounting techniques". However, Hopper and Major (2007) have identified that the Dillard et al.'s (2004) framework can be extended by improving their analysis of the influence of intra-organisational factors and how accounting technologies are established, in particular at the intra-organisational level. These limitations will be addressed in the section 3.6.4 where the framework of this thesis is proposed.

3.6.2 Burns and Scapens' (2000) Framework

Burns and Scapens's (2000) framework was influenced by the ideas of old institutional economics, structuration theory and evolutionary economics (Wickramasinghe and Alawattage, 2007). According to Burns et al. (2003), this framework was influenced by the management and evolutionary economics literature on change, in particular by the studies developed by Barley and Tolbert (1997); Dawson (1994); and Nelson and Winter (1982).

In particular, Barley and Tolbert's (1997) paper had a great impact on the development of Burns and Scapens's (2000) framework. They developed a model to explain the process of institutionalisation by integrating two conceptual frameworks: institutional theory and structuration theory (Giddens, 1976; 1979; 1984a). This model consists of three interrelated components: institutional realm, realm of action and scripts. According to Barley and Tolbert (1997, p. 96), the institutional realm refers to the social structure that is historically derived from repetitive actions. It comprises "the shared taken-for-granted assumptions which identify categories of human actors and their appropriate activities and relationships". The realm of action represents the day-to-day social conduct in the form of communication, power and sanction. The scripts, which link the two realms, resemble the modalities that are in actors' stocks of practical knowledge in the form of interpretative schemes, resources and norms. However, Barley and Tolbert (1997) argue that the concept of scripts is more empirically identifiable than the concept of modalities as introduced by Giddens, because it can be observed in the behaviours practised in a particular setting of interaction. Barley and Tolbert (1997, p. 98) define scripts as "observable, recurrent activities and patterns of interaction characteristic of a particular setting".

Barley and Tolbert (1997) describe the relationship between actions, institutions and scripts as a process of institutionalisation that comprises four stages: encode; enact; replicate or revise; and externalize and objectify. The first stage involves the encoding process of institutional principles that entails the internalisation of these principles into the scripts used in a particular setting during the socialisation process. The second moment of institutionalisation occurs when actors enact scripts that encode institutional principles. Barley and Tolbert (1997) highlight that in many cases, enactment does not involve conscious choice of action as actors behave according to the 'way things are'. The third process describes the degree of replication or revision of scripts informed social actions. The existence of contextual changes, such as change in technology and economic downturns are essential in questioning and modifying existing scripts. Finally, the last process involves the objectification and externalisation of scripts used in a particular setting. This process includes the disassociation of patterns of behaviour from their particular setting that obscures their relationships to the interests of different actors.

As mentioned above, Burns and Scapens (2000) draw upon the work of Barley and Tolbert (1997) to develop their framework and to incorporate the idea of 'scripts'. Thus, by focusing on empirical scripts in organisations, management accounting can be studied in respect of how new management accounting systems bring rules, how rules became routines and how routines become institutionalised (Soin, et al., 2002; Wickramasinghe and Alawattage, 2007). As a consequence, management accounting practices are depicted as a collection of relatively stable rules and routines. Burns and Scapens (2000) point out that rules refer to the formal ways in which 'things should be done' and they are necessary to coordinate and give meaning to the actions of individuals and groups. Routines refer to the informal practices actually in use. While rules change by explicit decisions at a specific point in time, routines change in a cumulative process of daily action. Therefore, rules are formalised statements of procedures, whereas routines can be both formal and informal procedures actually used. In the context of management accounting, Burns, et al. (2003, p. 18) state that "rules comprise the accounting systems as set out in the procedure manuals, whereas routines are the management accounting practices actually in use". Another modification in Barley and Tolbert's (1997) model was made by Burns and Scapens (2000) who converted the process of institutionalisation into new processes: 'encoding'; 'enacting'; 'reproduction'; and 'institutionalisation'.

In short, the representation of Burns and Scapens' framework given in figure 3.3 shows the links between the institutional realm and the realm of action. The institutional realm encodes institutional principles in rules and routines. Subsequently, the actions and interactions of the actors in the realm of action enact these rules and routines. The repetitive behaviour of actors reproduces these rules and routines until they become institutionalised as new elements of the institutional realm.

The top of figure 3.3 shows the institutional realm which comprises the ways of thinking and the underlying assumptions that condition how people behave (Scapens, 2006b). Burns and Scapens (2000, p. 8) define institutions as "the shared taken-for-granted assumptions which identify categories of human actors and their appropriate activities and relationships". Burns et al. (2003) add that institutions are taken-for-granted assumptions that inform and shape the actions of individuals who mould the company. At the bottom of the figure 3.3, there are the actions which are carried out over time by the organisational actors. The institutional realm and the realm of action are linked by rules and routines, which shape the actions that people take.

Burns and Scapens' (2000) framework combines both synchronic and diachronic elements. Burns and Scapens (2000, p. 9) state that "whereas institutions constrain and shape actions synchronically (i.e. at a specific point time), actions produce and reproduce institutions diachronically (i.e. through their cumulative influence over time)". In the framework the arrows a and b represent synchronic processes and arrows c and d diachronic processes. The process of institutionalisation follows four stages: encoding, enacting, reproduction, and institutionalisation.

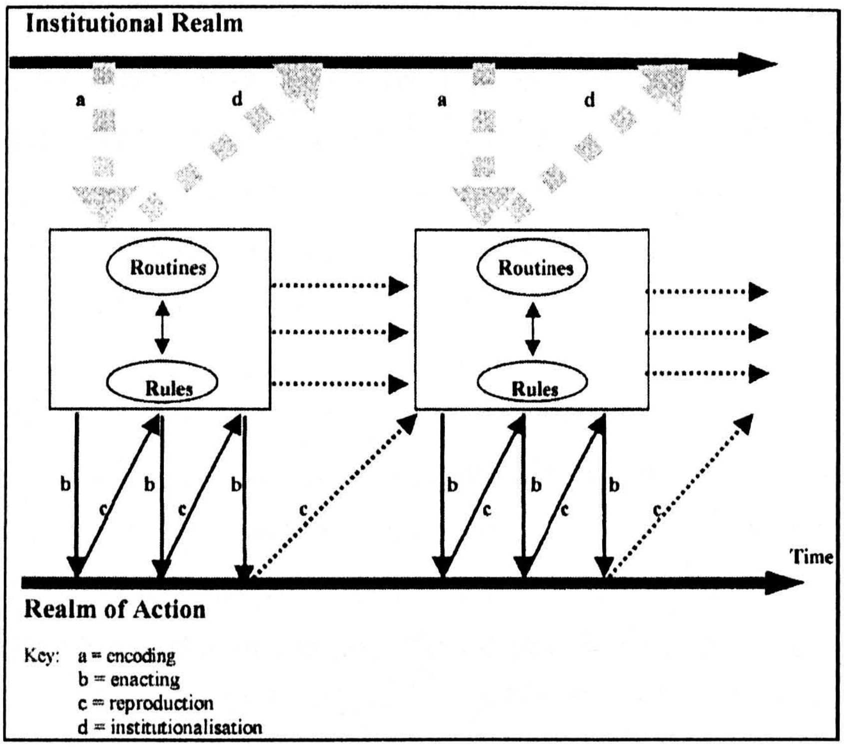


Figure 3.3 – The Process of Institutionalisation
Source: Burns and Scapens (2000, p. 9)

The first step (arrow a) concerns the 'encoding' of the existing institution and taken-for-granted assumptions and meanings into the new rules, routines and procedures which embody organisational values, such as management accounting practices. As a consequence, new rules or procedures are usually interpreted in terms of the current norms and values (institutions) of the group who use the system. Burns and Scapens (2000) introduce the term path-dependent which means that the existing routines and institutions will shape, to some extent, the selection and implementation of the new set of rules and routines. In addition, Burns and Scapens (2000) point out that even a revolutionary process of change, which involves radical change to existing routines and fundamentally challenges the prevailing institutions, will be path-dependent.

The second process (arrow b) refers to the 'enactment', through the day-to-day activities performed by organisational actors, of the routines and rules which encode the institutional principles. The arrow b is shown as a solid line because according to Burns et al. (2003, p. 19) "there is a direct connection between the rules and routines and actions", whereas arrow a is depicted as a broad dotted line, because "institutions are normally general, and the connection (to rules and routines) is more abstract and indirect".

Although the enactment process may involve conscious choices, it is generally the outcome of reflexive monitoring informed by the agent's tacit knowledge (Busco, 2006). In addition, Scapens and Burns (2000) state that resistance to change can arise in this stage, especially if the new rules and routines challenge existing meanings and values, and if actors have sufficient power to intervene in the process of enactment.

The third process (arrow c) represents the 'reproduction' of the rules and routines over time, through their repeated use in practice (Burns et al., 2003). According to Burns and Scapens (2000), the reproduction process might involve conscious and/or unconscious change. Conscious change is likely to happen only when actors are able to understand and incorporate the rationales necessary to challenge the previous rules and routines. On the other hand, unconscious change may occur when the rules and routines are not adequately understood and accepted by the individuals.

The last step (arrow d) refers to 'institutionalisation' of routines and rules which have been reproduced through behaviour of the individual actors. According to Burns and Scapens (2000, p. 11), this process involves "a disassociation of the patter of behaviour from the particular historical circumstances, so that the rules and routines take on a normative and factual quality". In other words, the new set of rules and routines are taken-for-granted by the large collective of actors. Burns et al. (2003) point out that arrow d is shown by a broad dotted line because the process of institutionalisation is gradual and indirect.

To summarise, the process of institutionalisation (figure 3.3) can be described as a process in which rules and routines are first encoded within the institutional realm and then enacted by organisational members and gradually reproduced through their everyday actions, ultimately being institutionalised, that is, taken-for-granted by the majority of the organisational actors.

In this framework, management accounting is seen as a set of institutionalised rules and routines that, together with other organisational rules and routines, allow the reproduction and cohesion of organisational life. The main concern of the Burns and Scapens framework is to understand and explain the processes through which management accounting rules and routines may come to be institutionalised in the organisation. As a consequence, "this framework has been used to study stability and resistance to change, and rather less to study institutional change" (Scapens, 2006b, p. 21).

The Burns and Scapens framework highlights that management accounting change is a continuous process and it draws attention to the relationship between actions, rules and routines, and the underlying taken-for-granted assumptions in the organisation (Scapens, 2006b). For Modell (2007), the most important achievement of institutional research in management accounting research, in particular Burns and Scapens' (2000) framework, is the notion that management accounting change is a continuous process, rather than a discrete movement from one position to another.

Despite the popularity of the Burns and Scapens framework in the management accounting change research field, it is not free from criticisms. There are two main criticisms regarding this framework. First, Burns and Scapens' (2000) framework is concerned primarily with management accounting change within individual organisations, i.e. intra-organisational process of change. Therefore, it does not take into account (extra-organisational) macro institutional pressures, such as economic and political institutions of the organisational field and the society. In the same vein, Dillard et al. (2004, p. 511) emphasise that Burns and Scapens framework "is limited in recognizing higher level of social, political and economics issues that influence and define the organisational context". In addition, they point out that Burns and Scapens framework "does not address the means by which actions at the organisational level may influence the institutional context at the organizational field level or the societal level". Even Scapens (2006b, p. 21) recognises this limitation and he highlights that "in any study of management accounting change it is important to recognise that external institutions can be important in shaping management accounting practices".

The second main critique is that although Burns and Scapens' (2000) framework has been useful to understand and explain stability, resistance to change, and how institutions shape rules and routines, it "has been rather less useful (or just less used) in studying how institutional change comes about" (Scapens, 2006b, p.25). This is a limitation of the institutional theory in general. Seo and Creed (2002, p. 222) state that "during the past two decades, institutional theorists have been able to offer more insights into the processes that explain stability than those that explain institutional change". Therefore, this is a major challenge for this framework and all institutional theorists, because if the actions of organisational actors are constrained and regulated by institutions, how do they come to recognise the need to change, and how do they recognise the opportunities and alternatives to change? (Abrahamsson and Gerdin, 2006; Burns and Baldvinsdottir, 2005; Burns and Nielsen, 2006; Scapens, 2006b; Seo and Creed, 2002).

3.6.3 Seo and Creed's (2002) Framework – Dialectical Perspective

As discussed previously, many studies have drawn on the two streams of institutional theory, namely old institutional economics (in particular the Burns and Scapens' (2000) framework) and new institutional sociology to explain the process of management accounting change. However, some authors argue that institutional theories offer more insight into the processes that explain institutional stability than those that explain institutional change (Burns and Baldvinsdottir, 2005; Burns and Nielsen, 2006; Seo and Creed, 2002). Burns and Baldvinsdottir (2005, p. 728) highlight that "a problem that has been pertinently raised by some scholars is that existing institutional frameworks of management accounting change (notably Burns and Scapens, 2000) lack detailed conceptualisation of institutional change".

The difficulty in explaining change is due to the fact that institutional theory postulates that the actions of organisational actors are constrained by internal and external institutions. As a consequence, institutional theory is unable to answer many questions, such as how organisational actors come to recognise the need to change, and how organisational actors recognise the opportunities and alternatives for change? Burns and Baldvinsdottir (2005, p. 728) conclude that:

> "A major challenge for all institutional theorists at present is to further develop conceptualisation of, and seek empirical evidence for, when, why and how actors influence change while embedded within the institutional fabric of a particular time and

> space. Where does institutional change come from? When, why and how do organisational actors decide to (collectively and/or individually) enact change as they are embedded in existing institutional arrangements? When do organisational groups or individuals come to recognise a need for institutional change, assess the respective opportunities, and then put things into motion?"

In order to overcome this theoretical dilemma, Seo and Creed (2002) proposed a framework which uses a dialectical perspective based upon Benson's (1977) paper to explain institutional change. The main pillar of this framework is the view that institutional change should be understood as an outcome of the dynamic interactions between institutional contradictions and human praxis. In management accounting change research, a number of authors (Abrahamsson and Gerdin, 2006; Burns and Baldvinsdottir, 2005; Burns and Nielsen, 2006; Hopper and Major, 2007) have started to use the Seo and Creed's (2002) framework to explain the process of institutional change in management accounting.

The concept of contradictions is key to Seo and Creed's (2002) framework, because it can explain when, how and why institutionally embedded agents might come to challenge, and subsequently attempt to change, their and other's taken-for-granted beliefs and ways (Burns and Baldvinsdottir, 2005). As a consequence, institutional contradictions can contain the seeds of institutional change. Contradictions, which generate conflicts among the organisational actors, create the conditions for institutional change to take place because groups or individuals recognise the need for change and, subsequently, put ideas into practice through human praxis. Burns and Nielsen (2006, p. 451) state that:

> "Contradictions represents ruptures and inconsistencies among, and within, established social arrangements that can incite tension or conflict and create the conditions for institutional change to occur, as group or individuals as an effect of their perception of such contradictions recognize the potential (and/or need) for change."

Seo and Creed (2002) identified four sources of contradiction: technical inefficiency, nonadaptability, institutional incompatibilities, and misaligned interests. First, isomorphic conformance to the prevailing institutional arrangements to obtain legitimacy might be at the expense of technical efficiency. A number of authors highlight that conformity to institutional arrangements may conflict with technical activities and efficiency demands (Meyer and Rowan, 1977; Powell and DiMaggio, 1991). The possibility of loose coupling can lead to a discrepancy between the functional/technical requirements of the company and institutional requirements. This possible discrepancy can be a source of institutional contradictions. Seo and Creed (2002, p. 227) conclude that "even if institutionalized organizations make decisions that improve both legitimacy and technical efficiency in the short run, those decisions easily become suboptimal if new optimal solutions are not continually pursued and adopted".

Second, contradictions can arise from non-adaptability to the external environment. According to Burns and Baldvinsdottir (2005) once institutions are in place, they tend to be self-enforcing and taken-for-granted. As a result, there is little or no response to shifts in external factors due to psychological and economic lock-in towards (internal) institutional arrangements. Seo and Creed (2002, p. 228) summarise this source of contradiction by stating that "although institutionalization is an adaptive process, once in place, institutions are likely to be both psychologically and economically locked in and, in a sense, isolated from unresponsive to changes in their external environments". As a consequence, this nonadaptability creates a space where contradictions between the present institutions and their external environments develop and accumulate over time.

The third source of contradiction is related to intra-institutional conformity that creates inter-institutional incompatibilities. In other words, conformity to specific institutional arrangements often leads to conflict with alternative institutions. Seo and Creed (2002) emphasise that individual and organisations are increasingly exposed to multiple and contradictory, yet interconnected, institutional arrangements. As a consequence, an organisation or individual that conforms to particular embedded institutional arrangements might be incongruent to other institutional settings and different time-space circumstances (Burns and Baldvinsdottir, 2005). Therefore, these incompatibilities between institutions are the third source of institutional contradiction.

Finally, the fourth source of contradiction is due to political struggles among various participants who have divergent interests and asymmetric power (Seo and Creed, 2002). Seo and Creed (2002) point out that actors whose ideas and interests are not adequately served by the existing social arrangements can act as potential change agents who, in some circumstances, become conscious of the institutional conditions. Therefore, contradiction can emerge due to misalignment between institutionalised ways and the divergent perceived interests of actors embedded in such ways (Burns and Nielsen, 2006). Seo and Creed (2002) suggest that these four sources of contradictions are not separate and mutually exclusive but are likely to be interconnected over time.

Institutional contradictions are the essential driving forces of institutional change, but they do not inevitably lead to institutional change. Seo and Creed (2002) state that human praxis is a necessary mediating mechanism between institutional contradictions and institutional change. Praxis defines human agency of a political nature which, though embedded in existing institutions, attempts to influence and secure change in the institutional configuration (Burns and Nielsen, 2006). In the same vein, Benson (1977, p. 5-6) emphasises that "people under some circumstances can become active agents reconstructing their own social relations and ultimately themselves". Praxis can be defined as "a particular type of collective human action, situated in a given socio-historical context but driven by the inevitable by-products of that context-social contradiction" (Seo and Creed, 2002, p. 230). In addition, Benson (1977, p. 1977) state that the aim of praxis is "the free and creative reconstruction of social arrangements on the basis or a reasoned analysis of both limits and the potentials of present social forms".

Although contradictions may create openings for institutional change, it is praxis that encapsulates the 'doing' of change (Burns and Baldvinsdottir, 2005). According to Seo and Creed (2002, p. 230) praxis has three component parts: (1) actors' self-awareness or critical understanding of the existing social conditions, and how these social conditions do not meet actors' needs and interests; (2) actors' mobilisation, rooted in new collective understandings of the institutional arrangements and themselves; and (3) "actors' multilateral or collective action to reconstruct the existing social arrangements and themselves". In addition, Benson (1977) points out that praxis involves two moments: (a) reflective, when actors critique existing institutions and search for alternatives; and (b) active, when political mobilisation and collective action take place.

To summarise, the seed of institutional change is the accumulation of institutional contradictions (technical inefficiency, nonadaptability, institutional incompatibilities, and misaligned interests) both within and between institutions. Institutional contradictions may trigger, enable, and limit praxis for institutional change (see figure 3.4). However, Seo and Creed (2002) highlight that the relationship between contradictions and praxis is not a linear causal model, because of the complex dynamics possibly involved in the process of institutional change.

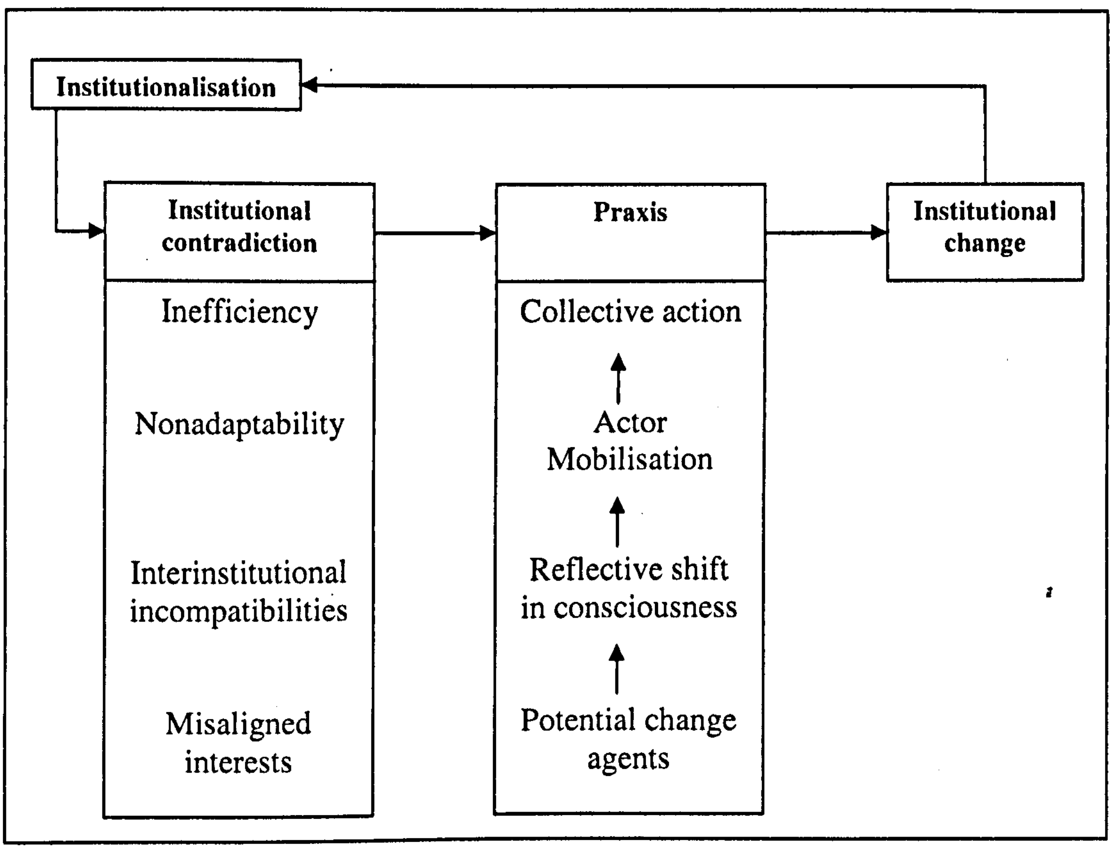


Figure 3.4 – Institutional Contradictions, Praxis and Institutional Change
Source – Adapted from Seo and Creed (2002, p. 232)

Taking this complex relationship between institutional contradictions and praxis into account Seo and Creed (2002) combine contradiction and praxis to make four propositions regarding the nature of institutional change, which are:

(1) The presence and degree of misaligned interests (contradiction) increase the likelihood and the scope of praxis for institutional change by generating potential change agents;

(2) Under conditions of weak nonadaptability (weak contradiction), efficiency gaps and interinstitutional incompatibility increase the likelihood of praxis for institutional change by gradually undermining the perceived inevitability of institutional arrangements;

(3) Under conditions of strong nonadaptability (strong contradiction), efficiency gaps and interinstitutional incompatibility, mediated by institutional crisis (it is perceived as a systematic outcome of institutional contradictions rather than as an idiosyncratic event), promote praxis for institutional change by creating the conditions for the revolutionary breakdown of institutional inertia;

(4) The degree and number of institutional incompatibilities (contradictions) increase the likelihood of praxis for institutional by increasing the number of frames and logics available for the construction of alternative models of institutional arrangements capable of legitimizing and mobilizing change efforts. This effect will be mediated by actor's skills at adopting and deploying the available institutional logics and frames in legitimizing and mobilizing their change efforts.

3.6.4 The Thesis Theoretical Framework

This thesis uses theoretical triangulation in order to explain and understand the dynamics of the privatisation process in a Brazilian electricity distribution company, and how the management accounting information system was shaped by the intra and inter organisational factors. Drawing upon theoretical insights from new institutional sociology (NIS) (see section 3.3), old institutional economics (OIE) (see section 3.4), structuration theory (see section 3.5), and the dialectical perspective (see section 3.6.3), this study focuses on the process of management accounting change in a privatised company.

Theoretical triangulation involves using various factors from a variety of theoretical perspectives simultaneously to examine the same dimension of a research problem (Gioia and Pitre, 1990; Lewis and Grimes, 1999). Hopper and Hoque (2006) state that a considerable number of studies support the utilisation of theoretical triangulation in accounting research, because these researchers believe that a single theoretical paradigm is inadequate for obtaining a comprehensive understanding of accounting practice. Hopper and Hoque (2006) also point out that there are two types of theoretical triangulation. The first type is the utilisation of multiple theories with no or minimal differences in their epistemological and ontological assumptions. The second type is more ambitious and difficult, because theoretical triangulation uses theories which have fundamentally different epistemological and ontological assumptions. The theoretical triangulation which is carried out in this thesis can be classified as the first type as it uses theories which have many similarities regarding ontological and epistemological assumptions. For example, the four perspectives, that is, OIE, NIS, structuration theory, and dialectical perspective share the same view that accounting practices are socially constructed and can be changed by the social actors.

Theoretical triangulation will enable this study to take advantage of the complementary nature of these theories and gain alternative interpretations of the studied phenomenon (Gurd, 2007). No single theory can fully explain the complexity of accounting practices and the process of management accounting change. Hopper and Hoque (2006, p. 481) conclude that; "Overall, by employing a theoretical triangulation approach to future accounting research, more meaningful results can be provided, enabling the discipline to advance at a faster rate and a more soundly manner than the single theoretical approach".

New institutional sociology (NIS) and old institutional economics (OIE) are the two institutional theories which are adopted in this thesis. The theoretical framework incorporating both OIE and NIS appeared the most appropriate one for the purpose of this study which is to explain how the management accounting information system was shaped by both inter and intra-organisational factors, in a privatised Brazilian electricity distribution company. OIE will be used because its focus is primarily on the micro (intra-organisational) level and it is suitable for studies of process of change and resistance to change within organisations. In addition, OIE is a useful theory to help explaining the influence of the power relations in the process of management accounting change. NIS is adopted because its focus is primarily on the macro (inter-organisational) level. For NIS theorists, management accounting change is explained as a search for legitimacy from the external environment and environmental interactions upon organisations. Therefore, the combination of OIE and NIS can improve the understanding of the process of management accounting, because this multi-institutional framework can help to analyse the impact of both inter-organisational and intra-organisational levels and the interactions among them on the process of management accounting change.

A dialectical perspective is also used in this thesis. This is due to the existence of a theoretical dilemma in institutional theories which is: if the actions of organisational actors are constrained and regulated by institutions, how do they come to recognise the need to change, and how do they recognise the opportunities and alternatives to change? In order to deal with this dilemma, the dialectical perspective postulates that institutional change is an outcome of the dynamic interactions between two institutional by-products: institutional contradictions and human praxis. As a consequence, this perspective can help to overcome the institutional theory dilemma and to answer an important research question of this study which is when, why, and how organisational actors influenced change while embedded in the institutional fabric of their organisational setting.

It is expected that this theoretical triangulation will enhance understanding of the process of management accounting change in a privatised Brazilian distribution company. The reason for conducting this theoretical triangulation is that the strengths in one theory counter balance the weaknesses in another. This thesis also adopted the view that multiple theories within a theoretical triangulation approach are not mutually exclusive, because they complement each other (Hopper and Hoque, 2006; Klumpes, 2001).

3.6.4.1 Theoretical Framework Model

This subsection presents the thesis theoretical framework model (figure 3.5) which is adopted in this thesis. This model is based upon three frameworks that aim to explain the process of organisational change, namely Dillard et al. (2004) (see subsection 3.6.1); Burns and Scapens (2000) (see subsection 3.6.2); and Seo and Creed (2002) (see subsection 3.6.3). Figure 3.5 depicts the theoretical framework model that is used in chapter 8 of this thesis to explain the process of management accounting change in Electra. In chapter 8, the analysis of the process of change in Electra starts with the thesis theoretical framework model (figure 8.1) which supports the discussion and explanation about the process of management accounting in Electra.

The theoretical framework model (see figure 3.5) adopts Dillard et al.'s (2004) view that the process of institutionalisation moves in a recursively cascading manner through three levels of social-historical relationships, namely the economic and political level (PE), the organisational field level (OF), and the intra-organisational level. The framework model re-labels the 'organisational level' of the Dillard et al. (2004) framework as 'intra-organisational level' to denote how companies are functionally and hierarchically different. In doing so, this model can focus on the impact of external, as well as internal factors on management accounting systems in a specific company which is the main objective of this thesis.

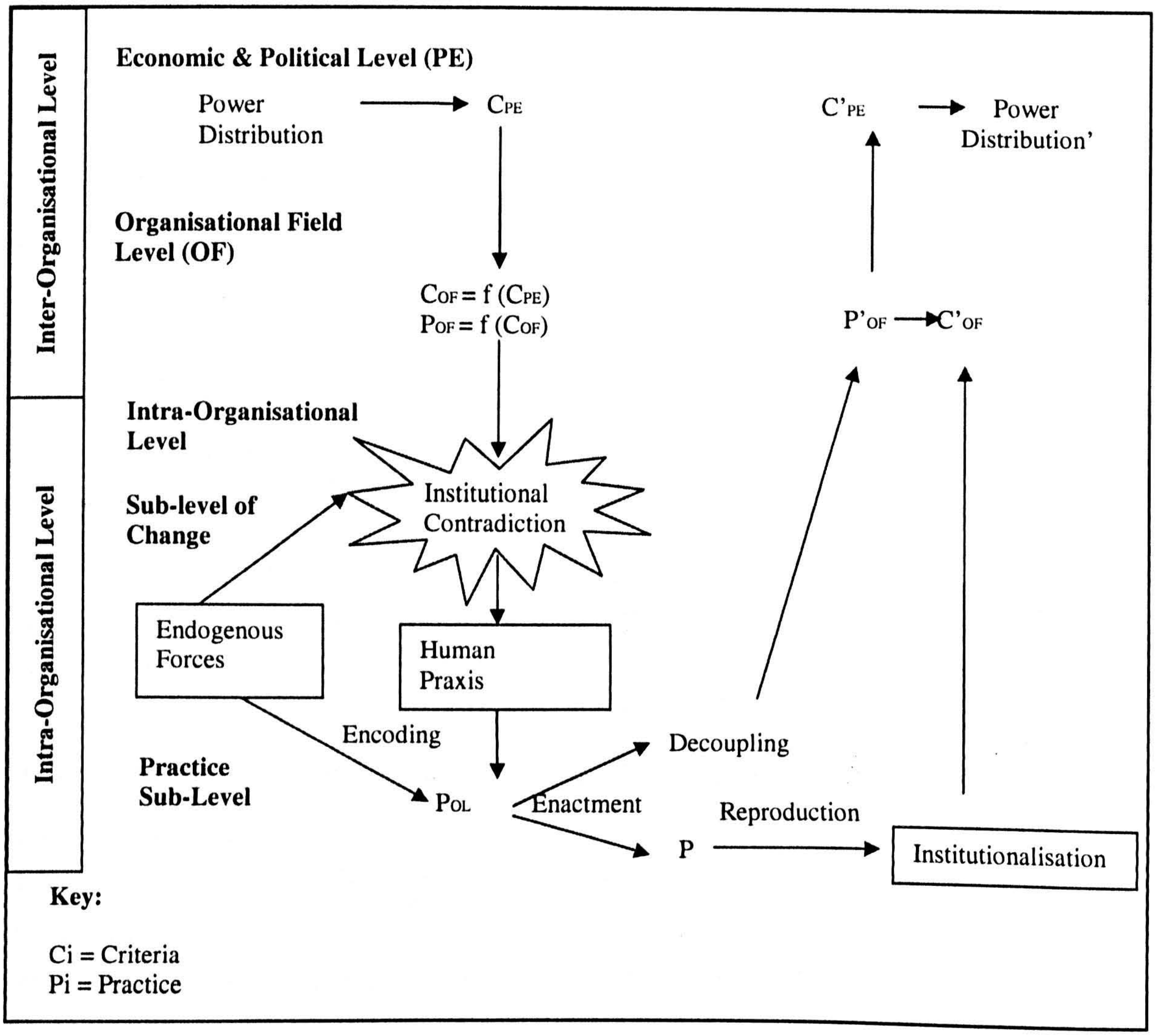


Figure 3.5 – Thesis Theoretical Framework Model

The process of organisational change starts within the economic and political level. In this level the most general norms, such as laws, and practices (C_{PE}) are established. According to Dillard et al. (2004), the economic and political level criteria are influenced by the present distribution of power in society. These macro sets of norms and practices shape the organisational field level criteria (C_{OF}), which is a function of the societal level criteria (C_{PE}). As a consequence, the organisational field practices (P_{OF}) are influenced by the organisational criteria which were previously shaped by the economic and political level principles. At the intra-organisational level, the model was divided into two sub-levels: the sub-level of change which is a more abstract concept to discuss the role of human agency in the process of organisational change; and the practical sub-level which comprises the actions that are carried out by the organisational individuals.

The actual process of organisational change at the intra-organisational level starts with the accumulation of institutional contradiction which is a result of external environmental (economic and political level and organisational field level) pressures, as well as intra-organisation practices and the underlying assumptions (endogenous forces), such as divergent interests among organisational actors. In this model the endogenous forces represent the set of rules, routines, and assumptions that the organisational actors followed before the process of change. This concept demonstrates that the intra-organisational factors play an important role in the process of management accounting change, as well as contemplates the concept of path-dependent.

Seo and Creed (2002) identified four sources of institutional contradiction: technical inefficiency, nonadaptability, institutional incompatibilities, and misaligned interests. The first three sources of contradictions are intrinsically connected with the external environment, while the last is more related to the intra-organisational factors, such as relations of power within the organisation. The accumulation of contradictions may create conflicts among the organisational actors and generate the conditions for institutional change to take place, as these contradictions will trigger and enable human praxis for introducing institutional change. This change will be introduced into the organisation through a new set of rules and routines which will be institutionalised. In other words, they will be taken-for-granted by the large collective of the organisational actors. According to Burns and Scapens (2000), this process of institutionalisation has four phases: encoding, enacting (in this phase the new practice can be decoupled), reproduction, and institutionalisation.

After the process of institutionalisation, the new intra-organisational management accounting practice may influence the set of normative practices (P_{OF}) and criteria (C_{OF}) in the organisational field level by reinforcing, revising or eliminating existing practices (Dillard, et al., 2004). Changes in organisational field practices (P'_{OF}) and criteria (C'_{OF}) will normally influence the political and economic system criteria (C'_{PE}). As a result, the new political and economic criteria will challenge the present configuration of power in the economic and political level.

This recursive model is the same as presented by Dillard et al. (2004) which is influenced by the concept of duality of structure from structuration theory. This concept postulates that structures (institutions) provide recursive rules and resources which shape and inform human interaction in terms of its signification, legitimation, and domination. But human agency may change these structures. Such changes might result from either conscious choices to act differently or the unintended consequences of behaviour (Baxter and Chua, 2006). Therefore, this framework is supported by the concept of the duality of structure (Giddens, 1976, 1979, 1984) whereby institutions are both the background for action but may, in turn, be recursively modified through action of human agents (Seal, et al., 2004). However, this study will not analyse the influence of the intra-organisational environment on the assumptions and practices of the organisational field and economic and political levels. The main reason for this is the limitation of time and resources to conduct such an investigation during the PhD project.

3.6.4.2 Framework Justification

As discussed before, old institutional economics (OIE) has been criticised because its focus is primarily on the intra-organisational level rather than the macro-level. As a consequence, OIE is incapable of explaining the impact of environmental pressures on the process of management accounting change. In contrast, new institutional sociology (NIS) has been subject to criticism because it focuses on the inter-organisational level. According to Greenwood and Hinings (1996, p. 1023), NIS "is weak in analysing the internal dynamics of organisational change. As a consequence, the theory is silent on why some organisations adopt radical change whereas others do not, despite experiencing the same institutional pressures". The main criticism is that insufficient attention has been paid by OIE and NIS theorists to intra and inter organisational level, respectively. NIS arguments are insufficient to explain adequately intra organisational behaviour. On the other hand, OIE is criticised for insufficient attention to environmental pressures. Therefore, the two theories can cover these flaws and complement each other.

In the context of the thesis framework, the combination of OIE and NIS is possible by applying Dillard et al.'s (2004) framework, which combines OIE and NIS. Therefore, the adoption of Dillard et al.'s (2004) model in the thesis framework is important to understand the interplay between inter-organisational and intra-organisational factors in the process of management accounting change. However, as mentioned previously, Dillard et al's (2004) framework can be extended by improving the analysis of the influence of intra-organisational factors, such as the relations of power within the company, and how accounting technologies are established at the intra-organisational level. In order to deal with this limitation Burns and Scapens' (2000) framework will be combined with Dillard et al.'s (2004) model. The reason for this is that Burns and Scapens' (2000) framework provides a more comprehensive and detailed explanation of the process of institutionalisation of new management accounting practices at the intra-organisation level than the Dillard et al. (2004) framework. As one of the thesis objectives is to understand how new systems and practices have become accepted and taken root as values and beliefs, and how they supplement earlier norms, it is essential to investigate the process of institutionalisation at intra-organisational level in-depth. In order to do this, Burns and Scapens' (2000) framework seems to be more useful than the Dillard et al. (2004) framework to explain the intra-organisational process of institutionalisation of new accounting systems.

The combination of the Dillard et al. (2004) framework with the Burns and Scapens (2000) model will not lead to inconsistencies regarding epistemology and ontology, as both frameworks share similar views about the world and human beings. According to Dillard et al. (2004, p. 512), "Burns and Scapens' ideas could be integrated" into Dillard et al.'s (2004) framework on the organisation level. Dillard et al. (2004, p. 533) also state that "the framework provided by Burns and Scapens (2000) might be applied in describing the micro process taking place" within a organisation. Therefore, it seems that the integration of Burns and Scapens' (2000) framework with Dillard et al.'s (2004) framework can be made without any problem of ontological and epistemological inconsistency.

As discussed previously, institutional theory is incapable of explaining the role of agency in the process of organisational change, because this theory has a dilemma, which is: "when and how do actors actually decide to revise behavioural scripts when their actions and thoughts are constantly constrained by the existing institutional system? (Seo and Creed, 2002, p. 224). In order to deal with the role of agency in the process of management accounting change and to overcome the institutional theory dilemma, the thesis framework model incorporates the Seo and Creed (2002) framework. Burns and Baldvinsdottir (2005) support the utilisation of Seo and Creed's (2002) framework. In their view, this framework can complement the existing institutional perspectives on management accounting, in particular Burns and Scapens' (2000) framework. This would be important because Seo and Creed's (2002) framework does not explain the process of institutionalisation of the institutional change. As a result, Burns and Scapens' (2000) framework can shed more light on the process of institutionalisation of a new institution by analysing the four steps, namely: 'encoding'; 'enacting'; 'reproduction'; and 'institutionalisation'.

To summarise, the main justification for combining these three frameworks is that each framework complements the others. The Dillard et al. (2004) framework is particularly useful to understand the interplay between inter-organisational and intra-organisational factors in the process of management accounting change. The Burns and Scapens (2000) framework is adopted to explain the intra-organisational process of institutionalisation of new management accounting systems. Finally, Seo and Creed' (2002) framework is important to deal with the role of agency in the process of management accounting change. Seo and Creed's framework is particularly essential to answer the question: how do embedded agents engage in institutional change? Section 8.4 of this thesis also discusses the idea of combining previous theoretical frameworks in the light of the empirical data obtained in this case study. Moreover, section 8.4 evaluates the importance of the thesis theoretical framework in explaining the process of management accounting change in Electra.

Scapens (2006) states that to make sense of diversity in management accounting practices it is essential to understand the complex mish-mash of inter-related influences which shape management accounting practices in individual organisations. These influences come from broad systematic pressures that have economic and legitimacy considerations. In addition to these external pressures, there are internal pressures for and constraints on management accounting which include: the importance of trust in accountants, the relations of power, and the role of agency in institutional change (Scapens, 2006). Therefore, the understanding of the interplay between internal and external institutions is primordial to explain the process of management accounting change.

Taking this situation into account the proposed framework model aims to explain the process of management accounting change by understanding both inter-organisational and intra-organisational factors which shape management accounting practices. The proposed framework also seeks to demonstrate that management accounting can shape and influence the inter-organisational environment by adopting the concept of duality of structure from the structuration theory. This demonstration is made in a theoretical level. As mentioned previously, this thesis does not investigate the influence of intra-organisational practices on the inter-organisational environment.

3.6 Conclusion and Summary

This chapter has aimed to present and discuss the theoretical framework which is adopted in this thesis. The section started with a description about institutional theories, namely new institutional economics (NIE), new institutional sociology (NIS) and old institutional economics (OIE) and structuration theory. The first theory holds the assumptions postulated by neoclassical economics theory of the firm in which individual rationality and market equilibrium are the main characteristics. In addition, NIE pays little attention to political, social and cultural factors that may shape management accounting practices. Owing to this, NIE is not suitable as a theoretical background to explain the process of change in the case study organisation.

In contrast, NIS and OIE hold similar ontological and epistemological position regarding the nature of management account and its process of change. In other words, NIS and OIE are against the NIE view that the existence of particular accounting practice is a consequence of cost-minimising or efficiency objective. In addition, both theories are based upon a broad variety of insight from cognitive science, cultural studies, anthropology and psychology.

Despite the usefulness of NIS and OIE to explain the process of management accounting change and their increasing popularity among management accounting researchers, these theories have suffered many criticisms. The main criticism about OIE is that this theory has paid little attention to inter-organisational factors that can shape management accounting practices. In contrast, NIS has been criticised because it has been paid insufficient attention to micro-level institutions in the process of organisational change. As a consequence, it seems natural to combine these two theories in order to obtain a better understanding of the process of management accounting change as it will be considerate of both the intra and inter organisational pressures that shape management accounting practices within the organisation.

The proposed theoretical framework combines both OIE and NIS. However, there is a theoretical dilemma in institutional theories which is the problem of embedded agents in the process of organisation change. In order to overcome this dilemma the dialectical perspective will be used. Taking these limitations in the institutional theories into accounting the thesis theoretical framework is an attempt of combining three other frameworks, namely Dillard et al.'s (2004) framework, Burns and Scapens' (2000) framework, and Seo and Creed's (2002) framework.

Having discussed the theoretical framework model, the next chapter explains the research methodology that is adopted in this thesis. This chapter discusses the methodological position of this work and the research method used in this thesis.

Chapter Four: Methodology

4.1 Introduction

This thesis adopts an interpretive approach to studying the process of management accounting change in a privatised Brazilian electricity company. As a consequence of this position, a qualitative research study was conducted based upon a single case study. This chapter has two main aims. The first objective is to present and describe the management accounting research field by analysing the differences between mainstream and alternative approaches. The second aim is to present and discuss the research methodology and methods that were used to collect and analysis empirical data.

The remainder of this chapter is divided into five subsections. First, an overview of the management accounting research field is presented. The basic aim of this subsection is differentiate the alternative accounting research from the mainstream accounting research. The following subsection outlines the methodological position of this thesis. This subsection aims to state that this research is based upon the interpretive perspective and a qualitative methodology has been adopted. The next subsection presents the justifications for doing qualitative research. Subsequently, issues regarding the research method are discussed, in particular the research strategy (single case study), the case study organisation, the sources of data, data analysis and the credibility of the research. Finally, the main conclusions and a summary of this section are presented.

4.2 Management Accounting Research – Mainstream *versus* Alternative Approaches

"Research is a process of intellectual discovery, which has the potential to transform our knowledge and understanding of the world around us" (Ryan, et al., 2002, p. 7). Therefore, management accounting research deals fundamentally with the discovery, interpretation and communication of knowledge regarding management accounting issues.

In order to facilitate the process of creation and evaluation of research in management accounting, some researchers classified management accounting research according to philosophical issues, such as ontology, epistemology and methodology. For example, Hopper and Powell (1985) used a subjective-objective perspective to classify management accounting research.

Hopper and Powell (1985) drew on the framework developed by Burrell and Morgan (1979) to elaborate their taxonomy of accounting research. This framework is constructed from two independent dimensions: (a) the nature of social sciences (assumptions about ontology, epistemology, human nature, and methodology); and (b) the nature of society (regulation and radical change).

Ontology is related to the status of reality. An objectivist position (concrete construction) assumes that reality exists independently of human cognition, while subjective ontology (individual consciousness) assumes that what we take to be reality is an intangible mental construction, that is, reality exists in the mind of the individual (Burrell and Morgan, 1979; Guba and Licoln, 1994; Hopper and Powell, 1985; Johnson, et al., 2006; Kakkuri-Knuuttila, et al., 2007).

Epistemology is concerned with the nature of knowledge, that is, what forms knowledge takes and how it can be obtained and transmitted. Gill and Johnson (2002, p. 226) define epistemology as 'the branch of philosophy concerned with the study of the criteria we determine what does and does not constitute warranted or valid knowledge". The objectivist view of epistemology presupposes that there is a theory-neutral observational language. As a result, it is possible to access the world objectively. On the other hand, the subjectivist view refutes the possibility of a neutral observation. From this point of view, the social world can be understood only by first acquiring knowledge of the subject under investigation (Chua, 1986; Hopper and Powell, 1985).

Assumptions about human nature are related to the relationship between human beings and their environment (Hopper and Powell, 1985). The status of human behaviour can be understood in a deterministic way (*eklaren*/objectivism), which treats people as if they were analogous to unthinking entities under the influence of external forces, or in a inter-subjective way (*verstehen*/subjectivism), which believes that a human being is an agent capable of making choices and interpreting different situations (Johnson, et al., 2006).

These three sets of assumptions have direct impact on methodology. Ryan et al. (2002) point out that when reality is viewed as concrete and objective, and human behaviour is deterministic, knowledge is gained through observation, and a positivistic method will be appropriate. However, if the subjective experiences of individuals and the creation of a social world is stressed, then knowledge is most appropriately gained through interpretation (Chua, 1986; Hopper and Powell, 1985).

The second dimension of Burrell and Morgan's (1979) framework is the nature of society. This dimension deals with the different approaches which researchers can take towards society. On one hand, researchers are concerned with 'regulation' and the creation of order and stability and the main aim is to explain why society tends to hold together. On the other hand, researchers are interested in conflicts, inequalities and unequal distribution of power in society. As a consequence, researchers are concerned with the potential for 'radical changes' (Burrell and Morgan, 1979; Hopper and Powell, 1985)

By combining these two dimensions, Burrell and Morgan (1979) obtained four mutually exclusive frames of reference: functionalist, interpretive, radical humanism, and radical structuralism. These terms are used by Burrell and Morgan to categorise organisational research which can be reclassified into three categories of management accounting research: (a) mainstream research; (b) interpretive research; and (c) critical research (see figure 4.1) (Baker and Bettner, 1997; Chua, 1986; Chua, et al., 1989; Laughlin, 1995).

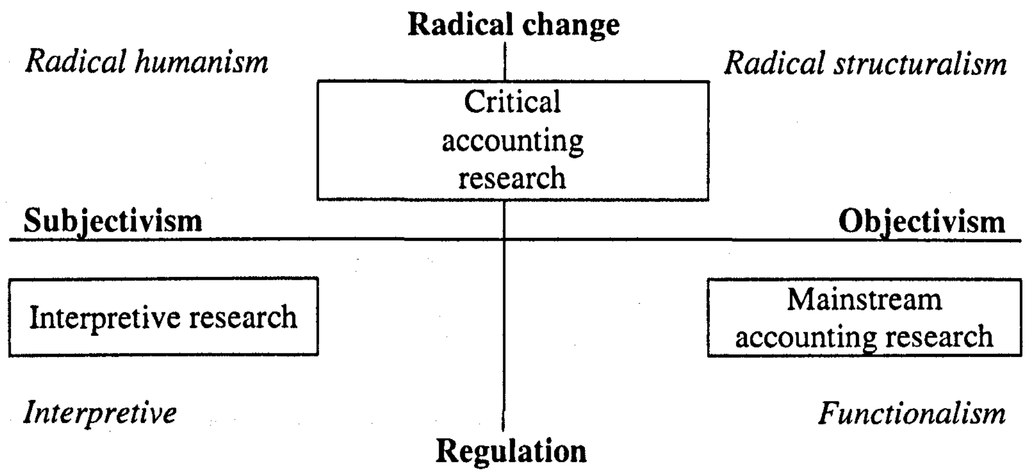


Figure 4.1 – Taxonomy of Management Accounting Research
Source: Ryan et al. (2002, p. 40)

Management accounting mainstream research is the dominant type of research in this area and it is concerned with the function of management accounting. This category of research has the following characteristics: an objective view of the world, regards individual behaviour as deterministic, the utilisation of empirical observation and a positivist research methodology (Andon, et al., 2007; Chua, 1986; Hopper and Powell, 1985; Ryan, et al., 2002; Tuttle and Dillard, 2007). Therefore, mainstream management accounting research is grounded in a set of philosophical assumptions based upon the instrumentalist and positivist perspectives which are characterised by an ontological belief about a generalisable world waiting to be discovered (Baker and Bettner, 1997; Laughlin, 1995).

The outset for interpretive research (this approach is adopted in this thesis) is the belief that social practices, including management accounting, are not natural phenomena. As a result, interpretive studies are based upon the belief that accounting practices are socially constructed and can be changed by the social actors (Burrell and Morgan, 1979; Hopper and Powell, 1985; Kakkuri-Knuuttila, et al., 2007). Such studies in management accounting have the main objective of interpreting and understanding management accounting as a social practice (Kakkuri-Knuuttila, et al., 2007; Ryan, et al., 2002).

In order to conduct an interpretive study in management accounting it is necessary to investigate current practices taking into account historical, economic, social and organisational contexts (Ryan, et al., 2002). In so doing, Hopper and Powell (1985, p. 447) highlight that "by using interpretive research methods, to study how accounting meanings are socially generated and sustained, a better understanding of accounting will be obtained". Baxter and Chua (2003) and Ryan et al. (2002) give some examples of interpretive approaches applied to management accounting which include: structuration theory by Giddens; institutional theory; and the Latourian approach. Critical Perspectives on Accounting Journal published a special issue (issue 19 volume 6) about the future of interpretive accounting research. This issue has 9 papers (Ahrens, et al., 2008; Armstrong, 2008; Baxter, et al., 2008; Davila and Oyon, 2008; Dillard, 2008; Merchant, 2008; Parker, 2008; Scapens, 2008; Willmott, 2008) with the aim of discussing that interpretive research was needed to connect to practice and to functionalist accounting research.

In critical research, society is perceived as a component of contradictory elements supported by systems of power that lead to inequalities and alienation in all aspects of life. Critical researchers are concerned with developing an understanding of the social and economic world to provide a social critique and promote change in society (Hopper and Powell, 1985). One of the criticisms of interpretive research made by critical researchers is that interpretive studies do not incorporate a programme for social change. Baker and Bettner (1997) conclude that the main distinction between an interpretive study and a critical study is that the latter has a concern about the political and societal research implications. Some examples of critical approaches in management accounting are: critical theory by Habermas; labour process theory by Braverman; and Foucault's approach (Baxter and Chua, 2003; 2006; Ryan, et al., 2002).

Chua (1986) in her paper describes and presents the main assumptions regarding mainstream accounting research, interpretative research and critical research. For each category, Chua (1986) summarises the principal points regarding epistemology (beliefs about knowledge) and ontology (beliefs about physical and social reality). In addition, she adds some comments about the relationship between accounting theory and practice. In table 4.1, the summary of dominant assumptions about the three categories of research in management accounting can be seen. This is based upon Chua's (1986) paper with slight modifications.

1. Mainstream Accounting Research

a) *Beliefs about knowledge*
Theory and observation are independent of each other. Data analyses should be based upon quantitative methods to allow generalisations.

b) *Beliefs about physical and social reality*
Empirical reality is objective and external to the subject (and the researcher). Human beings are passive objects, who rationally pursue utility maximisation. Society and organisations are basically stable, and dysfunctional behaviour can be managed through the design of adequate management control systems.

c) *Relationship between accounting theory and practice*
Accounting is related to means, not ends. A theory can be value neutral, and existing institutional structures are taken for granted.

2. Interpretive Accounting Research

a) *Beliefs about knowledge*
Theory is used to provide explanations of human intensions. The adequacy of a theory is evaluated via logical consistency, subjective interpretation and common-sense interpretations. In this type of research, ethnographic study, case studies, and participant observation are the most adequate research methods to investigate actors' everyday world.

b) *Beliefs about physical and social reality*
Reality is socially created and objectified through human interaction. All human actions have meaning and intention and they are grounded in the social and historical context. In addition, social order is assumed and conflict is mediated through a common set of beliefs and values.

c) *Relationship between accounting theory and practice*
Accounting theory aims to explain action and to understand how social order is produced and reproduced.

3. Critical Accounting Research

a) *Beliefs about knowledge*
Criteria for judging theories are temporal and limited by the environmental context. Historical, ethnographic research and case studies are the most appropriate research methods for doing critical research.

b) *Beliefs about physical and social reality*
Empirical reality exists and is objective, but it is transformed and reproduced through subjective interpretation. Human intention and rationality are accepted, but have to be critically analysed because human potential is supported by false consciousness and ideology. Moreover, it is assumed that conflict is common in society because of social injustice which restricts human freedom.

c) *Relationship between accounting theory and practice*
Theory plays an important role in the process of identification and removal of domination and ideological practices.

Table 4.1 – The Main Assumptions of Mainstream Research, Interpretive Research, and Critical Research

Source: Adapted form Chua (1986) and Ryan et al. (2002)

To summarise, management accounting research can be classified into three streams: mainstream research, interpretive research, and critical research. In the mainstream approach, the researcher is assumed to be a neutral and objective observer of the phenomenon in question, and attempts to measure associations between relevant variables in order to make predictions about these phenomena. On the other hand, researchers who adopt interpretive or critical perspectives (alternatives approaches) reject the position of positivist researchers. For them, a study about social science is neither objective nor value-free. The main difference between interpretive research and critical research is that the former seeks to understand the world, while the latter adds an element of social critique and need for change in the research agenda.

4.2.1 Alternative Approaches in Management Accounting Research

Management accounting practices are portrayed as 'a highly situated phenomena' (Baxter and Chua, 2003, p. 108). According to Baxter and Chua (2003), management accounting systems are limited by: (a) historical conditions that are specific to given times and places; (b) local meanings and values; (c) local rationalities found in particular organisational settings; and (d) the individual habits of organisational participants who are connected to the conduct of management accounting work.

The main criticism of mainstream management accounting research is the fact that it does not consider all the limitations (described above) of management accounting practices to investigate management accounting phenomena (Lukka and Mouritsen, 2002). Ryan et al. (2002, p. 79) state that management accounting research based upon positivist theories; "may be useful for predicting general trends, but they will not be helpful in explaining individual behaviour; nor are they likely to be useful as guides to individual managers or firms about their own economic behaviour".

The criticisms of mainstream management accounting based upon neoclassical economics encouraged a number of management accounting researchers to develop alternative approaches. The popularity of these alternatives has expanded rapidly over the last 35 years, in particular in the UK (Baxter and Chua, 2003; 2006; Busco, 2006; Hopper, et al., 2001; Ryan, et al., 2002; Scapens, 2006a; Scapens, 2006b). To address this trend in management accounting research Baxter and Chua (2003) carried out an investigation of the publications of alternative approaches in management accounting research in the journal Accounting, Organizations and Society (AOS) between 1976 and 1999. They identified seven different streams of alternative management accounting research. Such streams can be synthesised as follows:

1) *Non-rational design school*: This is considered one of the earliest streams of alternative management accounting research. This frame emphasises the contributions of management accounting to the processes of experimentation that help organisations discover and learn about their goals. Management accounting has an important aim to serve in assisting organisations confront their futures and uncertainties. "This is frequently achieved in ways that do not conform to images of economic rationality" (Baxter and Chua, 2006, p. 46). Overall, this perspective questions presumptions of rationality in organisational choice. Moreover, according to Baxter and Chua (2003, p. 98), 'the non-rational design school help us to appreciate the problematic construction of management accounting information systems and their constitutive/constraining role in organisational sense-making'.

2) *Naturalistic approach*: This approach seeks to study and understand management accounting in its day-to-day or ordinary context. In addition, the naturalistic theorists believe that management accounting practice is socially constructed. This approach stems from an interpretive philosophy of the production of knowledge. As a result, it does not accept the objective nature of knowledge as postulated by a positivist stance (Baxter and Chua, 2006). Baxter and Chua (2003, p. 99) conclude that from naturalistic studies 'we learn that management accounting technologies are enacted quite differently from one organisation to another; conveying local values, meanings and nuances.

3) *The radical alternative*: This perspective basically draws on two theories: critical theory (see Habermas, 1968; 1976; Laughlin, 1987) and labour process theory (see Braverman, 1974; Hopper and Armstrong, 1991). The main aim of this approach is to connect management accounting research to major struggles and conflicts caused by capitalism. Baxter and Chua (2006, p. 49) point out that "research conducted under this banner is united by, and distinguished from, other reframings of management accounting by its

affiliation with, and commitment to, the politics of emancipation". It can be said that radical research provides a platform for critique, change, and improvement within organisations and society.

4) *Institutional Theory*: (this theory was explained in sections 3.3 and 3.4): Institutional theory is based upon the belief that individuals will accept and follow social patterns without any reflection or resistant behaviour, doing nothing more than defending their interests. Such behaviour goes against the idea that humans are always rational, that is, identifying costs and benefits associated with different kinds of action, and always trying to maximize their utility. There are basically two streams of research: studies which draw on new institutional sociology (NIS), and works which draw on old institutional economics (OIE). The former draws fundamentally on the works of Meyer and Rowan (1977); DiMaggio and Powell (1983); and Powell and DiMaggio (1991). Researchers adopting NIS argue that management accounting is influenced by technical and institutionalised environments and the latter plays an important role in the design of management accounting systems because companies seek external legitimacy. Researchers who adopt OIE seek to explain management accounting practices as a set of rules and routines that enable organisations to reproduce behaviour and achieve organisational cohesion (Busco, 2006).

5) *Structuration theory*: This perspective is based upon the work developed by Giddens (see Giddens, 1984a; Stones, 2005). The duality of structure is the main concept of this theory. This emphasises that structures provide rules and resources, which shape and inform humans in terms of signification (or meaning), legitimation (or morality), and domination (power relations) (Conrad, 2005; Dillard, et al., 2004; Gurd, 2006). Baxter and Chua (2006, p. 54) state that human agency perpetuates and changes in the structures and these changes "may result from either conscious choices to act differently or the unintended consequences of behaviour". Researchers who adopted structuration theory tend to investigate the links between micro-accounting practices and institutional structures (see Macintosh and Scapens, 1990; Roberts and Scapens, 1985).

6) *Foucauldian approach*: This approach is based upon the work of the French philosopher Michael Foucault (see Foucault, 1972). This approach influenced the emergence of the so-called 'new history' of management accounting (Busco, 2006; Hopwood, 1987). This frame seeks to understand how management accounting systems emerged. In addition, this approach takes into consideration the relations of power embedded in the management accounting systems. To conclude, Baxter and Chua (2006, p. 57) state that management accounting researchers who have used Foucault's approach seek to understand how and why management accounting 'truths' emerge.

7) *Latourian approach*: This theory is based on the works developed by Bruno Latour (see Latour, 1987; 1993). Latour has been a key figure in the area of sociology of technology and the Latourian approach is known as actor-network theory. This theory assumes that the actors (both human and non-human) take the shape that they have due to the relationship between one and another. Management accounting practices are seen as action nets shaped by the interests of human and non-human actors. As a consequence, actor-network theory aims to demonstrate that management accounting information is constructed to accommodate different interests within the organisation (Busco, 2006). Baxter and Chua (2003, p. 102) conclude that actor-network theory assumes that "management accounting numbers are 'fabrications' or inscriptions 'built' to take on the appearance of 'facts'".

To conclude, it can be stated that these alternative approaches have one characteristic in common which is the critique of the rational view of management accounting in which management accounting is implicated primarily in the efficient and effective realisation of organisational strategy. In addition, these alternative approaches, in contrast to the positivistic mainstream research, seem to be able to shed more light on the process of understanding and interpreting management accounting phenomena.

4.3 The Methodological Position of this Study

This study is based upon the interpretive approach, this decision takes into account the research questions, the researcher' beliefs regarding the nature of social sciences (ontology, epistemology, and human nature), and the aim of this study, which is to explain and understand the process of management accounting change in a specific organisation and institutional context.

By adopting the interpretive approach, this thesis assumes that the social world is socially constructed. Therefore, management accounting is not a natural phenomenon and it can be modified by the actions of individuals. In order to understand the social world, the interpretive perspective suggests that the focus of this study should be on the meanings and perceptions of those who inhabit it. As a consequence, this study aims to understand the shared realities of social (organisational) actors (Moll, et al., 2006b). In other words, this thesis seeks to understand and explain the dynamics and interplay of management accounting practices in the social and organisational context (Ahrens, et al., 2008).

Drawing on the interpretive approach, this thesis does not look for universal laws and generalisations (as in the natural sciences). As a result, this study does not provide predictive theories that are sought by positivist researchers (Maxwell, 2005, p. 23). This study instead seeks to identify rules/patterns, both explicit and implicit, which structure social behaviour. In order to achieve this and enable us to interpret and understand management accounting as a social practice, it is necessary to locate the current management accounting practices and the process of management accounting change in their historical, economic, social and organisational context. Therefore, to conduct this investigation a deeper and richer understanding of the internal and external environment is essential. This last statement leads us to the methodology adopted in this thesis, which is the qualitative approach. The next section explains the reasons for the adoption of the qualitative approach.

4.4 Rationale for Adopting Qualitative Research

Qualitative research is greatly concerned with *Verstehen* (human beings are agents capable of making choices and interpreting different situations) (Johnson, et al., 2006). Hopper and Powell (1985) point out that qualitative research can be seen as a strategy that can be employed to analyse the social aspects of a phenomenon. As a consequence, although definitions of qualitative research vary, there is a common view that this type of research has an element of strategy that aims to provide a richer understanding of process and social realities.

One useful way to understand qualitative research is to distinguish it from quantitative methodology. According to Maxwell (2005, p.23):

> Quantitative and qualitative researchers tend to ask different kinds of causal questions. Quantitative researchers tend to be interested in whether and to what extent variance in x causes variance in y. Qualitative researchers, on the other hand, to ask how x plays a role in causing y, and what the process is that connects x and y.

In the context of management accounting, Vaivio (2007, p. 439) states that "a qualitative study is a theoretically informed, focused, intensive, well-documented and plausible analysis that increases our understanding of how management accounting operates in different societal, cultural, institutional and organisational settings". Therefore, qualitative research is useful when a researcher aims to understand how management accounting phenomena are produced, experienced, and interpreted by social actors within a complex social environment.

This thesis is based upon a qualitative research design due to the main aim of this investigation being to explain how the management accounting information system was shaped by both internal and external factors in a privatised Brazilian electricity distribution company by obtaining a holistic, systematic, and integrated understanding of the impact of the process of privatisation on the management accounting system of the case company. The quantitative approach is not an option for this study because quantitative research rules out the possibility of studying in-depth issues, such as relations of power within the company and the environmental pressures, which are normally related to why and how management accounting practices come to exist (Moll, et al., 2006b). Supporting the decision to use qualitative research, Vaivio (2007, p. 439) points out that "qualitative research has the potential to enhance our appreciation of how management accounting practices shape, and are shaped by, the unique contexts in which they are applied".

In conclusion, a qualitative research approach was chosen to study the management accounting system of the case company and its process of change in its complex everyday context (Flick, 2006). This approach is argued to be compatible with the research questions, which seek to understand the process of management accounting change in a specific organisational and institutional context. As a quantitative approach tends to focus on the technical and ignore the institutional and organisational aspects of management accounting change, it is considered to be inadequate for the purpose of this study. The reasons for adopting a qualitative approach lie on the need to study management accounting as a process (for the process-oriented approach see section 2.3.3.2), in its institutional and organisational context, and as a phenomenon that is not neutral and objective.

4.5 Research Method

Having discussed the methodological position of this study and the rationale for adopting the qualitative approach, this subsection presents the research method which is adopted in this thesis. According to Moll et al. (2006b), there are three types of research methods that provide qualitative evidence: case study, field study, and field experiments.

The case study is preferred when 'how' and 'why' questions are the focus of research, when the researcher has little control over events or circumstances of the phenomena in question, and when the investigation has some real life context (Yin, 2003). Generally, a case study analyses an individual, a group, a department or an organisation. In addition, this method is normally limited to a specific stage of an organisational period. Then, the purpose of case study is to identify and explain relevant information about each case of interest and it is most useful when a topic remains unexplored (Moll, et al., 2006b). Finally, the case research approach involves a combination of data collection tools, such as interviews, documents and observations (Berry and Otley, 2004; Lee, et al., 2007; Yin, 2003).

The second type of research method - field studies - has similarities with case study approach. However, it involves limited depth studies of two or more organisations. Therefore, a distinguish feature of the field study method is that it usually involves less intensive data collection than the single case study (Moll, et al., 2006b). Finally, field experiments are easily distinguished from the other two research methods, because they involve the researcher observing a strict predefined range of behaviour under controller circumstances (Moll, et al., 2006b).

Among these three types of qualitative research methods, namely case study, field study, and field experiment, the case study method was chosen for this research. The reason for this is that the case study method enables this thesis to explore, understand and explain the complex dynamics of change related to the adoption, implementation and consequences of management accounting change in a specific historical and contextual setting (Ryan, et al., 2002; Scapens, 1990; Scapens, 2004).

4.5.1 Case Study

The case study has become a popular research method in accounting. The reason for this is that the case study approach helps a researcher gain a deep understanding of the operation of management accounting system in an organisation by taking into consideration the organisational and social contexts (Adams, et al., 2006; Berry and Otley, 2004). Case study research in management accounting can be categorised into five types according to the primary objective of the research: descriptive, illustrative, experimental, exploratory, and explanatory (Ryan, et al., 2002; Scapens, 1990; Scapens, 2004).

Descriptive case studies aim to describe current accounting practices. As a consequence, this type of case study seeks to describe accounting systems, tools and procedures use in practice. Illustrative case studies illustrate certain phenomena in a descriptive mode. They seek to illustrate possibly innovative accounting practices used by particular company (Scapens, 2004). Experimental case studies are used to investigate the difficulties and benefits of implementing new accounting techniques. These procedures are developed from existing theoretical perspective, using a normative approach. An exploratory case study explores a phenomenon that has no clear, single set of outcomes. Exploratory research does not attempt to provide conclusive answers to the phenomenon, but it guides a researcher to develop ideas for future studies (Adams, et al., 2006). Finally, an explanatory case study not only describes a phenomenon, but also explains why or how this phenomenon being studied is happening.

The case study that will be used in this thesis can be classified as explanatory. This type of case study uses existing theories in order to understand and explain the reasons for observed accounting practices. As a result, theories play an essential role in this kind of research. Theory is used in order to understand and explain the specifics, rather than to produce generalisations. Scapens (2004, p. 260) highlights that "if available theories do not provide satisfactory explanations, it will be necessary to modify them or to develop new theories, which can then be used in other case studies". An explanatory case study also aims to generate theory or modify existing theories in order to provide good explanations regarding the phenomenon being investigated. Therefore, the thesis case study can be classified as explanatory, because this study aims to introduce a framework to explain and understand the process of management accounting change.

Scapens (2004) also emphasises the importance of making a distinction between positive and interpretive case studies. Ryan et al. (2002) provide a detailed comparative analysis of the role of case studies in positivist and interpretive research (see table 4.2). From the positivistic perspective, a case study is a small sample that cannot be used to make a statistical generalisation about the population from which it is drawn. However, it is useful in providing limited tests and developing hypotheses that will be tested by other research methods, such as surveys. Scapens (1990) argues that case studies, informed by positivistic theories, deal with aggregates not specifics. Therefore, these theories are unable to provide suitable explanations for individual cases. According to these theories, the scientific explanation is a process of deduction in which a particular relationship is explained by deducting it from general laws. As a result, they fail to locate management accounting practices in their historical, economic, social and institutional contexts.

Type of Research	Positive	Interpretive
View of the world	External and objective	Social construction
Types of study	Exploratory	Explanatory
Nature of explanation	Deductive	Pattern
Nature of generalisation	Statistical	Theoretical
Role of theory	Hypothesis generalisation	Understand
Nature of accounting	Economic decision-making	Object of study

Table 4.2 – Differences in Case Study Research

Source: Ryan et al. (2002, p. 146)

In contrast, case studies in the interpretive approach are considered as a method by which theories are used to explain observations. They seek to provide theoretical generalisations so that theories explain the observations that were made. Interpretive case studies adopt a holistic approach in which the relationships between various parts of the system and the system's own relationship with its context serve to explain the system. This type of explanation is called the pattern model of explanation that views case studies as a way to explain social practices in a particular set of circumstances (Scapens, 2004). It is helpful in establishing a two-way relationship between theory and observation. According to this relationship, theory will be used in order to explain observations, and observations will be used to generate or modify theories.

In the context of this thesis, interpretive case study research will be undertaken, because it provides a rich description of social, cultural and political contexts. The role of case studies in the interpretive approach, which is based upon a belief that management accounting practices are socially constructed, is to locate practice in its historical, as well as its economic, social and organisational contexts in order to help understanding the social structures which shape current practices. In this regard, this study adopts explanatory case study research in order to understand the process of management accounting in a specific privatised electricity distribution company.

4.5.2 Case Study Operationalisation

This thesis analyses the changes in management accounting that occurred in the case company over a period of 8 years, that is, from 2000 (the privatisation year) to 2007. Moreover, this study followed the main research steps suggested by Scapens (1990), Ryan et al. (2002), and Yin (2003) when conducting case studies. They are: (1) preparation; (2) collecting evidence; (3) assessing evidence; (4) identifying and explaining patterns; (5) theory development; and (6) thesis writing.

Scapens (1990) points out that the first step in case study research is the process of reviewing the existing literature associated with the topic under analysis. This review determines the way in which the researcher approaches a case. In the context of this thesis, the literature review was done and the result of this review is included in chapter two, three, and five of this study. Therefore, the case study was conducted according to institutional theory lenses, as well as insights from the dialectical perspective and structuration theory. Some authors argue that a researcher should begin a case study totally unencumbered by prior theory. However, this is considered practically impossible, because every researcher will be influenced by his past experience, previous research, papers and etc (Ryan, et al., 2002).

Yin (2003) suggests three other activities that should be done before beginning the process of collecting evidence from the field: (a) the researcher training and preparation for the case study; (b) the development of case study protocol; (c) the conduction of a pilot case study. Regarding the first activity, the researcher reviewed the literature about the research method, in particular the process of interviewing, observation and document analysis in order to anticipate possible problems during the process of data collection. A case study protocol was also developed. The main aim of this protocol is to increase the reliability of the case study by guiding the researcher in carrying out the data collection (Yin, 2003). Finally, a pilot study was conducted to help the development of the guide interview that was used in the data collection. It is important to highlight that some interviews have been carried out with the former and present head of the accounting department of the case study organisation before the actual field research. These interviews and the documents analysis permitted to draw a broad picture of the process of management accounting change that took place in the case study company. However, it was necessary to conduct further investigations before going to the field. As a consequence, a pilot study was required to develop the guide interview and to identify the possible interviewees who would be able to provide a good account of the process of changes in management accounting as a consequence of the interplay between intra and inter organisational factors.

The third stage is the process of data collection. This thesis uses three sources of data: interviews, documents, and informal conversations (for further discussion see subsection 4.5.3). After the data collection, the next step was to assess the evidence to ensure its quality. Normally, the quality of evidence is assessed according two criteria: validity and reliability. However, Guba and Licoln (1994) and Johnson et al. (2006) argue that the different philosophical stances produce distinctive research perspective and results. As a consequence, it is not acceptable to evaluate the research evidence using a universal criterion of assessment based upon the positivist paradigm. Taking this into account Scapens (2004) states that interpretive case study evidence should be evaluated in terms of procedural reliability and contextual validity.

Procedural reliability implies the adoption of the appropriate and reliable research methods and procedures in a case study (Flick, 2006). In order to ensure procedural reliability in this study, a comprehensive research plan was developed; the majority of the interviews were recorded and transcribed, in addition, field notes regarding these interviews were made; field notes were made to document the researcher's observations; and as a consequence, the case study analysis was fully documented. It is expected that these measures could demonstrate that the case study findings are reliable and another researcher could examine what has been done, this is known as an audit trail in the qualitative research literature (Guba and Licoln, 1994).

In interpretive research, the validity of evidence can only be assessed in the context of the particular case (contextual validity) (Scapens, 2004) which previously developed theories are used to explain the empirical results. In this regard, Ryan et al. (2002) suggests the triangulation of evidence by collecting different evidence on the same research issue, collecting other evidence from the same source and working in teams in order to reach an agreed interpretation of a particular case. This thesis used of multiple source of evidence (interviews, documents, and informal conversation) to ensure the contextual validity of research evidence.

The fourth step deals with identifying and explaining patterns (see subsection 4.5.4). The patterns that were identified by the researcher served to describe and explain the case. This study will adopt Miles and Huberman's (1994) methods of analysing qualitative data which consists of three complementary flows of activity: data reduction, data display, and conclusion drawing/verification. Data reduction refers to the process of selecting, focusing, simplifying, abstracting, and transforming the data that appear in written-up field notes or transcriptions (Miles and Huberman, 1994). In this thesis, data reduction was achieved by writing summaries, coding transcriptions, and writing memos. According to Miles and Huberman (1994), a display is an organised, compressed assembly of information that permits conclusion drawing and action. Matrices, graphs, charts, and networks are examples of displays. Diagrams were prepared to represent the interplay between inter and intra organisational factors that shaped the management accounting system of the case study organisation (see chapter 8, e.g. figure 8.2). Finally, the last activity is to draw and verify the conclusions of the case study analysis. This was done by meeting the criteria of plausibility, sturdiness, and confirmability suggested by Miles and Huberman (1994). It is important to highlight that this research used the NVivo version 8.0 (a qualitative data analysis software) to help in the process of data analysis.

The next step is concerned with theory development. Since this case study is explanatory, the researcher used existing theory to explain the empirical findings. According to Scapens (1990), if existing theories cannot explain the empirical findings, theories should be extended to meet the new circumstances. It is important to highlight that the thesis framework to study the process of management accounting change had been developed according to insights from the current literature in management accounting, but further developments in the thesis framework were made with the insights obtained during the field work analysis.

The last step in this case study was the writing-up of the thesis. The main aim of this stage is to present, explain and discuss the result and findings of the case study. According to Scapens (1990, p. 276), the case study report "will make the case and its explanations intelligible and plausible to outsiders ... providing enough evidence to convince readers that the researcher has a good understanding of the relevant circumstances and that the explanations are based on sound reasoning". This aim was achieved in this thesis by meeting the three criteria of a good case study: authenticity, plausibility, and criticality (Scapens, 2004).

4.5.3 Reasons for the Selection of the Case Study Organisation

As discussed previously, interpretive case studies are used to develop and extend theory. As a result, the selection of a case should reflect the needs of theory development, rather than making generalisations about some larger population (positivist research) (Ryan, et al., 2002). According to Scapens (2004, p. 262), "the research question(s), together with the theoretical framework that underpins the research, will define the characteristics of the cases to be studied, and the researcher should try to select cases that display those characteristics". This was done in order to select the case study company for this study.

In the context of this thesis, a case was selected in order to enable modifications in institutional frameworks that explore the process of management accounting change. This is a case that involves a different setting to be investigated. In other words, the majority of the studies in the management accounting change area deal with multinational companies in developed countries (Scapens, 2004). In addition, the process of privatisation may cause a huge impact on the management accounting system. However, these effects on management accounting are unclear and limited research has been done (Alawattage, et al., 2007). Similarly, Scapens (2004, p. 262) states that "it would be of interest to broaden the research to study management accounting change in public sector organisations that are in the process of being privatised". Therefore, the main reason for selecting the case study company is that this organisation fits into the main objective of the thesis which is to examine change in management accounting system and how it is shaped by the interplay between intra and inter organisational factors. Moreover, by selecting a case study company in a developing country, this thesis may contribute to shedding more light on the management accounting literature regarding the process of change in developing and less-developed countries.

Having decided to study the impact of privatisation on the process of management accounting change in a developing country, the researcher had to select the sector of the case study company. The process of privatisation in Brazil focused on the so-called infrastructure sectors, in particular, the telecommunication and electricity sectors. As a result, the researcher had two potential sectors to study and select the case study company. The electricity sector was chosen, in particular the electricity distribution sector, because of its complexity in terms of regulation and issues regarding regulatory accounting and tariff review process. A company that operates in the Brazilian electricity sector is obligated to comply with a set of regulations which has considerable influence on the company's management and accounting systems (see chapter 5 for the overview about regulation in the Brazilian electricity sector). Therefore, this complexity in terms of regulation could enhance the discussions and provide rich empirical evidence to support the theoretical and practical contributions of this thesis; and as a consequence, shed more light on the growing literature on management accounting change.

Another reason for selecting the case study organisation is that the case study company is very important in the Brazilian economy. The company was among the 100 largest Brazilian organisations in terms of turnover in 2006. Furthermore, this company is the second biggest organisation in its Brazilian state and it supplies electricity to about 5% of the Brazilian population. Finally, another important reason for selecting the case organisation is that the researcher has access to the company's information. The researcher has a good relationship with the former and present head of the accounting department. In addition, the researcher has previously undertaken research in the electricity sector, in particular in electricity generation companies. Therefore this previous experience facilitated the understanding of the process of management accounting change in the case study organisation (Electra).

4.5.4 Sources of Data

The field research is based on three sources of data: interviews, documents, and informal conversation. First of all, it is worth to comment how the researcher gained access to key organisations and interviewees. As aforementioned, the researcher has a good relationship with the former and present head of Electra's accounting department. These existing contacts facilitated the access to other members of Electra, as well as external members, such as the holding company and the regulator (ANEEL). Then, the technique of snowball sampling (Bryman and Bell, 2003; Saunders, et al., 2003) was employed to recruit participants for the study. Such a technique implies that the existing contacts who are the initial interviewees were asked to nominate other interviewees who fulfil the theoretical criteria of the study. Another important contribution to gain access to the company was the fact that the former head of the accounting department, who is now a consultant, has an office near Electra and he offered this place to the researcher during the field work. The proximity to the research site facilitated the contact with the members of the company. In addition, the researcher got an Electra's badge, which provided full access to the case study company at any time. Therefore, the researcher obtained good access to all the main departments of Electra, and to a considerable number of managers and employees in different organisational levels and other organisations.

Semi-structured and face-to-face interviews constitute the primary method of data collection in this study. In summary, over the period of 6 months, 50 interviews (involving 49 different people) were carried out for a total amount of 64 hours (see appendix I). 25 interviewees are people who worked in the case study company during the privatisation process. Among these 25 interviewees, 16 are still working in Electra, which represents 33% of the people interviewed in this study. This aspect can help to overcome one of the major issues of this study, which is the fact that the thesis is concerned with the changes in management accounting over a period of 8 years. As a consequence, there was a concern that many of the key organisational actors in the process of change had already left the company and the researcher could not contact these people.

Interviews were carried out among 8 different organisations (see appendix I), which are: (a) Electra; (b) Electra's parent company; (c) the holding company of the group; (d) the regulator (ANEEL); (e) Electra's State regulator agency; (f) the association of accountants of the Brazilian electricity sector (ABRACONEE); (g) the Brazilian electricity distribution companies association (ABRADEE); and (h) the Brazilian development bank (BNDES). As management accounting change has strong links to the process of organisational change, it is essential to have a holistic view of the micro and macro foundations that impact in such modifications.

To support the interviews a basic interview guide was developed. However, different interview guides were prepared depending on the interviewee's functions and organisations. As a result, the interview guide was used in a flexible and sensitive way. This means that every time the researcher felt that something not covered in the previous plan was worth exploring, alterations to the guide were made. On the other hand, if a particular topic or issue appeared irrelevant during the interview, it was dropped.

Interviewees were encouraged to speak freely. To facilitate free communication and interaction between the researcher and the interviewees, the purpose and methods of the research were presented at the beginning of each interview. In addition, the interviewer stressed the confidentiality of the information provided, before beginning the interview. Free speech was also incentivised by asking for recording permission. Some of the interviewees asked for the researcher to not record the interviews and in other cases, the researcher decided to not record the interviews in order to give more freedom to the interviewee. As a result, 12 interviews were not recorded; on the other hand, 38 interviews were recorded and they were transcribed to facilitate the process of data analysis.

Notes were taken as a complement to the recording. They were used to help the researcher to probe and to prepare follow-up questions and to capture some of the aspects mentioned by the interviewees that could facilitate later analysis. When interviews could not be recorded, notes were taken more exhaustively in order to capture some of the most relevant words and expressions of the interviewee. Immediately following each interview, the interviewer wrote down observations on:

(a) who was present at the interview; (b) where and when the interview was carried out; (c) relevant issues that resulted from the interview; and (d) the interviewer's reflections about the way the interview was conducted, and its meaning and significance. The researcher decided to end the interview process when the interviewees referred to anything other than recurring issues, themes and aspects collected in the previous interviews.

Besides generating data from interviews, other sources of data were used to collect evidence. Several documents were collected from Electra, its parent companies, the holding company, the regulator and the Brazilian electricity distribution companies association (ABRADEE) (see appendix II). Also, external documentation pertinent to these organisations, such as newspapers and magazine reports, were gathered. It is important to highlight that the researcher had access to corporate systems, such as the performance measurement system and the normative system. The researcher also visited the Electra's historical archive about the privatisation process and many documents were analysed, such as the privatisation evaluation report commissioned by BNDES (the Brazilian Developed Bank) and the auction invitation.

Another source of data was through informal conversation. As mentioned before, the researcher worked in an office near the case study organisation with the former head of the accounting department, who is now a consultant, during the field work. The Electra's former superintendent of control and finance and the Electra's former manager of the accounting department also work in this consultant firm. As a result, the researcher developed a good relationship with these people and they started to speak freely about their experiences in Electra when the company was a state company and other stories about the privatisation process, and about the present situation of the company. In addition, the researcher built a strong relationship with members of Electra, in particular with the head of the accounting department and managers of the planning and control department. They also spoke freely about Electra, in particular, about the changes that took place into the company after the process of privatisation. Moreover, when the researcher felt that the validity of some of the evidence gathered, as well as some of his preliminary data analysis interpretations, needed to be checked, the researcher contacted the head of the accounting department or the managers of the planning and control department several times by either email or telephone. In every situation the researcher received feedback and a focused answer about the question(s) posed.

4.5.5 Data Analysis

Data analysis involves processes of ordering and making sense of large quantities of data (Marshall and Rossman, 2006). This step has been identified by researchers as the most difficult and challenging when conducting case studies (Mason, 2002; Miles and Huberman, 1994; Patton, 2002; Yin, 2003). The process of data collection and data analysis were to some extent intertwined, the latter being undertaken alongside the data collection in a dynamic way. Patterns and theoretical concepts were gradually developed and used in an iterative process between insights and the field material until they explained observed patterns of behaviour.

Several methods have been suggested to analyse data (Mason, 2002; Miles and Huberman, 1994; Patton, 2002; Yin, 2003). As discussed before, in this study, the researcher adopted Miles and Huberman's (1994) methods of analysing qualitative data. This consists of three complementary flows of activities: data reduction, data display, and conclusion drawing and verification. The data reduction process started in the early stage of fieldwork and was conducted throughout the research project. It involved selecting, focusing, simplifying, abstracting and transforming the data in the field notes and interview transcripts. After transcribing the interviews, or at the end of each visit to the field if the purpose of the visit was other than interviewing organisational members, field notes and/or interview transcript were studied carefully. Reflections and remarks were noted in the margin of the transcript, and a contact summary sheet was produced to summarise issues from a particular field contact. The contact summary sheets identified people or events involved during the visit, summarised main themes or issues discussed during the visit, identified any new issues suggested by the contact, and determined further information needed.

The process was then followed by coding. Initial codes were broad categories developed from research questions and data from several first interviews. The codes were continuously refined as the research continued and at the end of the data analysis 48 codes were created to support the case analysis. During coding the researcher had to identify and tentatively name the conceptual categories into which the phenomenon observed will be classified. This is to assist the researcher to create descriptive, multi-dimensional categories which form a preliminary framework for analysis (Hoepfl, 1997). In addition, emergent themes were identified through a continual review of field notes and interview data, and supplement codes emerged from the data during the fieldwork and subsequent analysis. While searching for patterns and similarities, the researcher was also sensitive to inconsistencies, for example, divergent views offered by different groups of individuals, such as the view about the success and failure of the Balanced Scorecard in the organisation. Data was organised and displayed in charts, graphs, and metrics to aid further analysis (for examples see figure 8.2 and 8.3 which were developed to support the writing up process). Themes and patterns emerged, guiding further data collection, and they were further refined in the process.

Special attention was paid to the detection of dissimilarities of perceptions among interviews, and to evidence that could disconfirm patterns previously identified. This procedure was used to assure the validity of the analysis, following Miles and Huberman's (1994, p. 246) recommendation, quoted below:

> "The human mind finds patterns so quickly and easily that it needs no how-to advice. Patterns just "happen", almost too quickly. We rapidly make "stories" from a range of data (Goleman, 1992). The important thing, rather, is to be able to (a) see added evidence of the same pattern ("recurring regularities", as Guba, 1978, puts it) and (b) remain open to disconfirming evidence when it appears."

The process of coding and categorising data was conducted with the aid of the qualitative data analysis software package NVivo 8.0. This study was conducted in a Brazilian electricity distribution company, in which the first language of all interviewees was Portuguese. Therefore, all interviews were conducted in Portuguese, resulting in almost all of the data being in Portuguese. The researcher could have translated data into English; however, this would have involved the risk of losing the meanings and perspectives of the interviewees in the process of translation. Some quotes from the interviews were translated to provide supporting evidence in chapters 6, 7 and 8.

The subsequent third stream of activity analysis was the drawing and verification of a conclusion. After major patterns, themes and categories had emerged from the analysis, and after building interrelationships among all constructs, rival explanations were formulated (Yin, 2003). These alternative explanations were derived from both induction (i.e. by looking at other ways of organising evidence that could have driven the researcher to different conclusions) and logical reasoning (i.e. by thinking of other possible explanations, and then checking if these other explanations could be supported by evidence) (see Patton, 2002 on this matter). These explanations resulted from linking the findings of the study with theory (thesis theoretical framework). This means that the constructs, before being obtained, were confronted with existing theory on the subject. Also, in order to test these explanations, different meetings were arranged with interviewees from Electra, the regulator and other organisations to discuss the findings and the researcher's interpretations. In some cases, these 'feedback meetings' occurred when the researcher was still collecting data and the first explanations were beginning to take shape. Getting feedback early on from informants was very helpful for the researcher, since it has improved his confidence in the evidence collected. By both of these processes - checking out rival explanations and getting feedback from interviewees - the researcher concluded that the explanations developed were meeting the criteria of plausibility, sturdiness and confirmability (Miles and Huberman, 1994).

4.5.6 Credibility of the Research

The value of scientific research is usually ascertained by the degree of validity, reliability and generalisability of the research (Johnson, et al., 2006). To ensure that the findings, interpretations and conclusions of the research are credible and trustworthy, two interrelated issues – validity and reliability – are crucial. The issue of validity is more concerned with the interpretation of observations, whereas the issue of reliability is more related to the data collected, although the two constructs also interplay, for instance poor reliability impacting on validity. Kirk and Miller (1986, p. 20) define validity as "the degree to which the finding is interpreted in a correct way". They define reliability as "the degree to which the finding is independent of accidental circumstances of the research". Any researcher needs to take the two issues into account, both separately and together, irrespective of their research methodology. However, meanings of validity and reliability, and ways to enhance the validity and reliability of research may vary, depending on the philosophical and theoretical standpoints of the researchers (see Seale, 1999). Therefore, it is important that one does not impose criteria for evaluating the validity and reliability of one research methodology to evaluate research drawing upon another methodology.

In the interpretive management accounting research, Lukka and Modell (2010) discuss the issue of validation which they define as "an issue of convincing readers of the authenticity of research findings whilst simultaneously ensuring that explanations are deemed plausible" (Lukka and Modell, 2010, p. 462). Lukka and Modell (2010) argue that interpretative research suffers from a 'crisis of validity' as they believe that there is some consensus that interpretive research cannot be validated with traditional validation methods and it is still unclear how interpretive research should be validated. Based on two management accounting studies Lukka and Modell (2010) proposed two strategies to enhance validation in interpretive research. The first strategy is to "mobilise theoretically informed explanations which may not yet fully accepted by the wider research community by appealing to the need to give voice to the 'Others' who remain under-represented by established theories" (Lukka and Modell, 2010, p. 475). The second strategy is to take theories which are firmly entrenched within particular research community as "a starting point and rely heavily on rich, emic accounts whilst leaving explanations somewhat open-ended and thus affirming the messy and often paradoxical nature of life in complex organisations" (Lukka and Modell, 2010, p. 475). As a consequence, this second strategy stresses the 'authenticity of representations'.

In the current research, throughout the research process, various strategies and tactics were employed to enhance the credibility of the research. During an early stage of the research, a case study protocol was developed to guide data collection (Yin, 2003). This helped the researcher keep track of data, methods and decisions made during the project (Lincoln and Guba, 1985). An interview guide was formulated and used in other organisations during the exploratory stage of the research (Silverman, 2006). It should be noted that the interview guide was used flexibly, in order to maintain the open nature of the interview, and was continually refined as the research progressed in order to capture the new issues that emerged.

During the data collection process, data was collected systematically. Interviews were recorded, whenever possible, and transcribed carefully; notes were also taken systematically to enhance the reliability of the research (Silverman, 2006). The researcher spent considerable time in the field, and whilst present, was attentive to informal discussions among organisational members. This process helped the researcher to better understand both the working environment within the organisation and the relationships between various organisational members, which helped the researcher to identify 'party-line' talk. It also allowed more observations, so that more comparisons could be made (McKinnon, 1988).

At the data collection stage, multiple sources of data or data triangulation were also used. However, this was not used to achieve validity, as suggested by Yin (2003). Rather, multiple sources of data were combined to make better sense of the other data. The researcher did not treat data from any particular source as superior to that from anywhere else. Whenever conflicting information was found from different sources of evidence, the researcher further investigated reasons for the conflict. Data triangulation forced the researcher to consider "how multiple, but somehow different, qualitative measures might simultaneously be true" (Silverman, 2001, p. 42).

During the analysis process, the researcher continually iterated between theory and observations. Rival explanations were considered, and theories were developed, tested, discarded and refined throughout the process. The iterative process helped ensure that the researcher provided a valid account of the phenomena observed (Ahrens and Chapman, 2006). Narratives of the case study findings were also written and presented to neutral researchers for criticism and challenging interpretations (Lincoln and Guba, 1985).

In writing case study reports, extracts of data have been presented where appropriate and detailed relevant contexts of observations were noted. It is helpful (and indeed inevitable) for readers to formulate their own ideas and feelings about the perspective of the people who have been studied (Bryman and Bell, 2003), as this will help enhance the reliability of the research (Silverman, 2006). It will also help enhance external validity, or in Lincoln and Guba's (1985) terms, "transferability", as it allows readers to use their own judgement to evaluate whether the findings are applicable to other settings familiar to them.

Several scholars have suggested respondent validation (i.e. the feeding-back of the researcher's interpretation of the phenomenon to the subject of the study, in order to confirm the researcher's interpretation) as one of the ways to enhance research validity (e.g. Scapens, 1990; Yin, 2003). The researcher employed this strategy in order to clarify the main points in terms of the process of management accounting change. This respondent validation was basically done in informal conversations and probing questions during the formal interviews. The former and present head of the accounting department and the manager of the planning and control department were the main source of respondent validation in terms of informal conversation.

In terms of the discussion about validity in management accounting research (Ahrens and Chapman, 2006; Lukka and Modell, 2010; Modell, 2005b), this thesis adopted the second research strategy proposed by Lukka and Modell (2010), as highlighted above, to enhance the validation of this investigation. The starting point of this research was the well-established theories in the field of management accounting change, namely institutional theory and structuration theory. In addition, the thesis relies heavily on rich and emic accounts of the process of management accounting change that took place in the case study company. Morris, et al. (1999, p. 781) explain that "the emic or inside perspective follows in the tradition of psychological studies of folk beliefs (Wundt, 1888) and in cultural anthropologists' striving to understand culture from the native's point of view". As a consequence, this research adopted the emic approach to understand and explain the process of management accounting change in the case company by taking into consideration the perspective of the organisational actors involved in the process of change introduced after the privatisation. This was conducted through the interview process that involved 49 individuals who were involved in the process of change. As a result, this approach reinforces the fundamental paradigm adopted in this thesis that the social world is socially constructed; and therefore, management accounting is not a natural phenomenon and it can be modified by the actions of individuals.

In addition to validity and reliability of the research, another important issue of concern among researchers with regard to the value of research is generalisability of the research findings. Case study, particularly single case, research has often been criticised for its inability to generalise beyond specific case(s). The scientific value of case study research is usually challenged by the argument that results and conclusions of such studies are unconvincing because they cannot be replicated in other settings. It has been argued that the depth and insight of case research is gained at the expense of a loss in generality.

The issue of generalisability is largely related to external validity of the research. The argument that research is valuable if its results can be replicated in other contexts is influenced by a positivistic approach which assumes an objective reality 'out there', the properties of which can be discovered (and often then acted upon to 'improve' how things are done), therefore, focusing on finding replication and reoccurrence of the phenomenon in different contexts. However, from the interpretive and constructivist perspective, meanings are temporary and changing; realities are being constructed and re-constructed. The search for generalisable findings and the application of these to solve problems are both activities doomed, if not to failure, at least to discover that the findings are limited and the solutions temporary, as human action, reaction, thought and insight appropriate, distort and transform both into new forms and further mutations.

As Ryan, et al. (2002) argue, the aim of constructivist research is to produce new insight into what the phenomenon means, and thus, to illustrate the fluid nature of practice; hence, replication as suggested by positivist researchers is not a focus and a 'replication logic' is refused. In his opinion, from a constructivist point of view, the case study approach is powerful precisely because things are presented as being heterogeneous, relational and performative. Generality is only one of many ways knowledge can be generated. As Flyvbjerg (2001, p. 76) argues; "Formal generalization is only one of many ways by which people create and accumulate knowledge. That knowledge cannot be formally generalized does not mean that it cannot enter into the collective process of knowledge accumulation in a given field or in a society".

A number of accounting studies have shown that management accounting practices are highly context-specific. The specificity of theorising qualitative field-based research is one of its strengths, rather than one of its weaknesses (Ahrens and Chapman, 2006). For this reason, in the present study, the researcher is concerned with how the empirical findings from the specific case may enhance existing knowledge in the field; generalisation of the findings to a wider population is not a major issue of concern. Therefore, this study seeks theoretical generalisation (Scapens, 2004) or the similar concept of analytic generalisation (Yin, 2009). Yin (2009, p. 38) state that generalisation in a case study research is "analytic generalization, in which a previously developed theory is used as a template with which to compare the empirical results of the case study. If two or more cases are shown to support the same theory, replication may be claimed".

4.6 Conclusion and Summary

This section has presented and discussed the main methodological issues that were followed in this investigation. This section started with an overview of the management accounting research area. Two streams in management accounting research were identified: mainstream accounting research and alternative approaches. The former is the dominant type of research in the management accounting field, in particular in the USA (Baker and Bettner, 1997). This category of research is based upon instrumentalist and positivist perspectives and it is grounded in neoclassic economics theory assumptions.

In contrast, the alternative approaches are divided into two categories: interpretive research and critical accounting research. The interpretive research aims to understand the social world. As a consequence, this stream of research is based upon the view that accounting practices are socially constructed and can be changed by the individuals. Critical research aims to promote changes in society by incorporating into its studies a programme for social change. Finally, it was advocated that alternative studies are more adequate than mainstream research, because the latter fails to locate management accounting as a social practice. In other words, the mainstream studies do not take into consideration the historical, economic, social and organisational context when they are studying the management accounting phenomena.

Having discussed the different streams in management accounting research, this section moved to discuss the thesis methodological issues. This thesis followed the interpretive approach. This decision was made by taking into account the researcher's beliefs regarding the nature of the world, the research questions, and the aim of this thesis. As a consequence of this decision, this study is based upon a qualitative research design. In terms of research method, this study will be based upon a single interpretive explanatory case study. The case study company is a Brazilian electricity distribution company, which was privatised in 2000. In operational terms, this study analysed the process of management accounting change in this specific company over a period of 8 years from 2000 to 2007. The main sources of empirical data are: semi-structured and face-to-face interviews, documents, and informal conversations.

Chapter 5 moves on to present and discuss the process of privatisation and reforms in the Brazilian electricity sector by taking into consideration the main changes in the Brazilian regulatory framework. Therefore, this chapter aims to analyse the macro environment (the economic and political level in this thesis theoretical framework) in order to support the analysis of management accounting change in the case study organisation.

Chapter Five: Privatisation and Reforms in the Brazilian Electricity Sector

5.1 Introduction

The Brazilian government implemented significant changes in the country's electricity sector in the 1990s, including privatisation, the introduction of competition and the creation of a regulatory system. This process of change was a consequence of internal pressures from a new neo-liberal government, as well as pressures from external organisations, such as the World Bank and the IMF (International Monetary Fund). The basic aim of this reform was a desire to transform the electricity industry from a monopoly into a competitive market so that the electricity could be bought and sold like other commodities and products. Therefore, the main goals for this change in the electricity sector were to inject competition into the generation and supply links of the sector's production chain and to reduce public debt via privatisation of state-owned utilities that dominated the pre-reform sector.

The privatisation of the electricity sector attracted great interest, resulting in considerable premiums over the advertised prices. Most of the shares were sold through public auctions, with minority stakes sold to employees or by public offering (BNDES, 2001; Carvalho, 2001). The privatisation process started in 1995 and to date, 23 distribution companies were privatised for roughly US$ 22 billion (Araujo, 2006). This represents about 70% of the Brazilian energy distribution market. However, the privatisation process in the electricity sector was severely criticised, as the reforms during the Cardoso administration (1995-2002) followed nearly independent schedules, instead of the 'text-book' sequence of restructuring-regulation-privatisation (Araujo, 2006). The main problem in the Brazilian reform process was that the government's main priority at the beginning was to generate revenue for the Treasury. As a consequence, the government paid little attention to market development and overall efficiency gains in the industry. In addition, the privatisation started even before a regulatory structure was organised and established by law. This sense of failure was exacerbated in 2001 when Brazil faced its worst electricity supply crisis in fifty years (Almeida and Pinto, 2005; Pinto and Lootty, 2005). This crisis was caused by underinvestment in generation and transmission, aggravated by severe drought conditions. As a result, a rationing of electricity consumption by 20% was imposed from June 2001 to March 2002 (Araujo, 2006). In order to deal with these problems, the new administration established a new model in 2004. This model views electricity as a key public service that needs to be upheld by a strong state role, as well as delivering a pragmatic assessment of the weaknesses of the first reforms, and the need to establish a regulatory system that delivers investment for reliable power and thus avoid another electricity shortage.

The main aim of this thesis is to explain how the management accounting system in a privatised Brazilian electricity distribution company was shaped by both inter and intra organisational factors. Taking this main purpose into account, this chapter aims to provide the foundation to understand the company's macro environment and the reforms undergone in the Brazilian electricity sector. As a consequence, this chapter provides the broad picture of the Brazilian electricity sector and its regulatory system. Therefore, this chapter supports the analysis of the process of management accounting change in the case study company presented in this thesis, in particular in chapters seven and eight.

The remainder of the chapter is organised into five main sections. First, an overview of the Brazilian electricity sector is provided. After this, the electricity sector reforms are described by taking into account the first reform after privatisation from 1995 to 2003, and the second reform in 2004 after the 2001 crisis. The third section deals with the Brazilian tariff review process. In this section, the main features of this review process are presented and analysed. The next section is concerned with Brazilian regulatory accounting and describes and analyses the development of regulatory accounting in Brazil by taking into consideration the so-called core issues in this area. The final section provides concluding comments and the summary of this chapter.

5.2 The Brazilian Electricity Sector

Brazil is the largest economy in Latin America, the 10th largest electrical power consumer in the world and the largest consumer in Latin America. Therefore Brazil plays an important role in the world energy theatre. Brazil had a power generation installed capacity of about 100,000 MW in 2007. The generation mix is about 75% hydro and 25% thermal sources. Brazil has a hydroelectric potential of 259,668 MW, but less than 30% of this capacity is in operation. In addition, there are about 61.5 million customers, 85% are residential users which represents 95% of Brazilian households (ANEEL, 2008).

During the first two decades of the 20th century the Brazilian government played an insignificant role in the electricity sector. This sector featured several private companies that managed the generation, transmission and distribution of electric power (Mota, 2003). Public investments were not significant until the beginning of the 1950s, when the public sector started to construct its own generating plants to guarantee the electrical energy supply. After the military coup of 1964, several public companies entered the energy sector, consolidating the expansion of the public sector (Carneiro, 2003; Tolmasquim, et al., 2002).

Approximately 50% of the generation and transmission companies were steadily incorporated by federal companies, the other half by the states. The electricity distribution sector was dominated by state governments (Leite, 2007; Memoria, 2001). In 1995, just before the privatization process started, the state electricity distribution companies supplied almost 90% of Brazilian demand (Memoria, 2006). Each state (from a total of 26) had its own distribution company and some had more than one. A few of these companies were totally vertically integrated, with significant generation and transmission networks (Mota, 2004).

In the 1990s, the combination of the debt and fiscal crisis coupled with doubts about hyperinflation encouraged the Brazilian government to adopt a set of neo-liberal policies, including privatisation. The neoliberal paradigm replaced a previous economic paradigm that had been in place in Brazil since the 1930s. The previous paradigm was based more on inward orientation and the greater intervention of the state in economic matters (Gwynne and Kay, 2004). The pressure to privatise state-owned companies came not only from Brazilian entities, but also from the demands of Brazil's major external creditors, in particular the World Bank and the International Monetary Fund - IMF (Amann and Baer, 2005).

As a consequence of this reform, the Brazilian electricity sector is now composed of a wide variety of agents, numbering more than 1,250 (Araujo, et al., 2008b): generators, large and small; thermal power plants burning fossil fuels; independent producers, mostly with gas-fired power plants; transmission companies; large consumers; power traders; and distribution utilities that tend the network business and serve captive consumers. The Sector includes one very large government controlled holding company (Eletrobrás, the ex-monopoly incumbent) for generation, transmission and distribution assets. Eletrobrás controls the three largest generation plants, which represent 39% of installed generation capacity, 62% of transmission lines, as well as the government owned distribution companies (OECD, 2008). The generation activity in Brazil has about 1,000 organisations, which ranges from large hydro-plants to small independent producers (ANEEL, 2009).

Brazil's main transmission system, the National Interconnected Grid (Rede Básica) is one of the largest interconnected systems in the world with more than 85,000 km of transmission network (ANEEL, 2008). This grid comprises four interconnected subsystems: North, Northeast, Southeast/Central-west, and South. System operation for the main grid is based on the ISO (Independent System Operator) model (OECD, 2008). ONS (National Electric system Operator) is responsible for operating and managing the national grid. In addition, there is an isolated system for part of the Amazon region which is managed by Eletrobrás.

There are 64 utilities in the distribution segment in Brazil. These companies supply electricity to about 61.5 million consuming units. 85% of these consumers are residential and large consumers (3MW or more) may contract for their power in the free wholesale market, or direct with distribution companies. 99% of the Brazilian municipalities are supplied with electricity; this means that this service is practically universal in Brazil (ANEEL, 2009). After the second reform in 2004 (see next section), distribution companies are no longer allowed to own generator plants directly.

5.3 Electricity Sector Reforms

As in many other countries, the Brazilian Electricity sector was originally based on a set of vertically integrated companies, for the most part under public ownership. Difficulties in keeping up with growing demand worsened in the 1990's. This triggered major market-oriented reforms in 1996, inspired by reforms in the United Kingdom and Latin America. The new system was designed to encourage competition in generation and retailing, while transmission and distribution remained regulated activities with provisions for open access. Other reform ingredients included the establishment of an independent system operator, as well as the privatisation of most distribution utilities and of transmission expansion (Rudnick, et al., 2005).

Brazil's electricity sector went through two major reforms. The first reform took place between 1995 and 2003. The second Brazilian electricity reform started in 2004 with the introduction of a long term market which replaced the short term market introduced in the first reform.

5.3.1 The First Reform

The first reform can be divided into 2 main phases (Araujo, et al., 2008b): the first phase when privatization and reform followed nearly independent paths between 1995 and 2000 and the second phase from 2000 to 2003 which was marked by correction and adjustments to the reform mechanisms, and coping with the 2001 crisis and rationing.

5.3.1.1 The First Phase, 1995-2000

The Brazilian electricity sector reform started in 1995 with three distinct sets of actions (Araujo, et al., 2008b): First, the basic legislation was modified with the aim of altering the concession regime, forcing utilities to give up concessions, and mandating open access for large consumers and independent power producers. The objective of these measures was to stimulate investments in new power plants, as well as the expansion of the network system. Second, a study to restructure the power sector was launched (RE-SEB project) which aimed to introduce competition and to divest all of distribution, transmission and part of generation. Finally, the Brazilian government stopped investing in new power plants even before any restructuring and regulatory framework had been put in place (Oliveira, 2007).

At the end of 1996, the regulatory agency for the electricity sector (ANEEL) was created (Law 9,427). Its main functions included: a) preparing technical parameters to guarantee high quality services to consumers; b) inviting tenders for generation, transmission and distribution; c) establishing criteria for transmission costs and d) implementation and fixation of tariff reviews in the retail market (BNDES, 2002). The law 9,648/98 created a national system operator (ONS), and a wholesale market (MAE). The latter did not settle short-term transactions until the end of 2002, because of legal dispute among some utilities (Bajay, 2006). The national system operator (ONS) aims to improve the operation of the national interconnected power system and guarantee that all the agents have access to the transmission network.

As a consequence of this first reform, a large number of state companies were privatised. A wholesale power market was established under which large consumers (over 10 MW and above 3 MW after 2000) were allowed to contract electricity with generating companies, including Independent Power Producers (IPPs), in a wholesale power market. A regime of regulated third party access to the grid was established for the transport of contracted power. A new institutional framework to oversee the new system was created, with the establishment of the regulator ANEEL (Agência Nacional de Energia Elétrica – National Electricity Agency); a system operator, ONS (Operador Nacional do Sistema Elétrico – National Electric System Operator) separate from transmission assets; a market manager, MAE (Mercado

Atacadista de Energia Elétrica – Wholesale Electricity Market); and a co-ordinating policy body, CNPE (Conselho Nacional de Política Energética – National Energy Policy Council) (OECD, 2008).

The first reform was mainly based on the British experience (Littlechild, 2006; Newbery, 2006): a regulator, an independent system operator, a bulk market operator, open access, a spot market, bilateral contracting, regulation of the network business, unbundling of generation, transmission, distribution, and trading (Araujo, et al., 2008b). The reforms were ambitious but incomplete and flawed in important aspects (Araujo and Oliveira, 2005). This model was not able to attract the planned private investment thus setting the scene for the 2001 supply crisis. Installed generation capacity expanded only 28% between 1990 and 1999, compared with demand growth of 45% (OECD, 2008). Most of this was hydro-power, and very little was additional thermal capacity needed to secure the stability of a largely hydro-based system. One of the reasons for this underinvestment in the Brazilian electricity system was that the spot price signals were inadequate (Pinto Junior, et al., 2007). It is expected that short-term spot price should provide the correct economic signal for the entrance of new players in the generation activity. However, in the Brazilian case, spot prices did not provide that economic signal, mostly because they were highly volatile due to the fact the Brazilian electricity sector is predominantly based on large hydro-power plants. Therefore, spot prices may be very low for several years and then increase sharply for few months before going back to the previous levels.

This regulatory model received severe criticism because the process of reform in the electricity sector did not follow an ideal order, that is, first to create and implement a regulatory system and then to conduct privatisations and open the electricity market for foreign investors. In addition, delays in the construction and commissioning of power stations and transmission lines combined with few new investments both in hydro and thermal power plants caused a power shortage in 2001. The reason for this was a high perception of risks among private investors. According to Bajay (2006), the main problems with the Brazilian electric power section deregulation were: (a) the government priority was state debt reduction. As a result, the regulatory model did not consider a plan for generation expansion, a serious mistake that caused the electricity shortage in 2001; (b) the perception of risk was high among private investors and free consumers; (c) increasing tariff levels; (d) lack of concerted action between the Ministry of Mines and Energy (MME) and sector's regulatory agency (ANEEL).

5.3.1.2 The Second Phase, 2000-2003

This phase was characterised by correction and adjustments to the reform mechanisms, and coping with the 2001 crisis and rationing (Araujo, et al., 2008b). Therefore, from late 2000 to 2003, the Brazilian government tried to correct the flaws in the market design by making ad hoc measures and policy adjustments.

As mentioned previously, the rationing in 2001 was a crisis brought on by inadequate investment in generation and insufficient diversification away from hydro-power, against the background of reforms that had failed to stimulate appropriate and timely investment, and a shortage of gas. The wholesale market was undermined by financial and contractual disputes, mostly between generators and distributors, which the institutional framework was unable to deal with (OECD, 2008). Disputes and difficulties bounced around the organisations set up to manage and control the new model, with no institution appearing to be able to take a clear lead or co-ordinate. The strategic planning and policy function that had been embedded in MME (Ministry of Mines and Energy) was dismantled, and resources for critical functions were scattered (Losekann, 2008).

One year or so before the 2001 crisis, prices in the wholesale market reached an unprecedented high which finally triggered investment in new hydro-power plants. But it was also clear that these investments would not be in time to prevent an electricity shortage. The government decided to intervene, and launched the emergency PPT (Priority Thermoelectricity Plan, PTT in Portuguese) programme in 2000, aimed at encouraging investment in gas-fired plants. But the programme was a relative failure and never completed. Only 15 of the planned 49 plants were built. Investors stayed away partly because of the high cost of gas, as well as continuing worries about the regulatory regime and the stability of the government's policy objectives. It was too little and too late to avoid a power crisis, the immediate trigger of which was an unusually dry summer that reduced reservoirs to a critical level at a time of growing demand spurred by economic recovery (OECD, 2008).

In May 2000, the Brazilian government set up a programme (the Emergency Electric Power Consumption Programme) and an institution (the Electric Power Crisis Management Chamber) to implement emergency measures, which lasted from June 2001 until February 2002. Power consumption was reduced by 20%. Energy saving and efficiency measures taken by consumers, such as tariff bonuses for those reaching set goals, sanctions against laggards, and an information campaign on television were among other measures took by this chamber (Almeida and Pinto, 2005). These measures had a sustained effect and demand did not recover to pre-crisis levels until 2004.

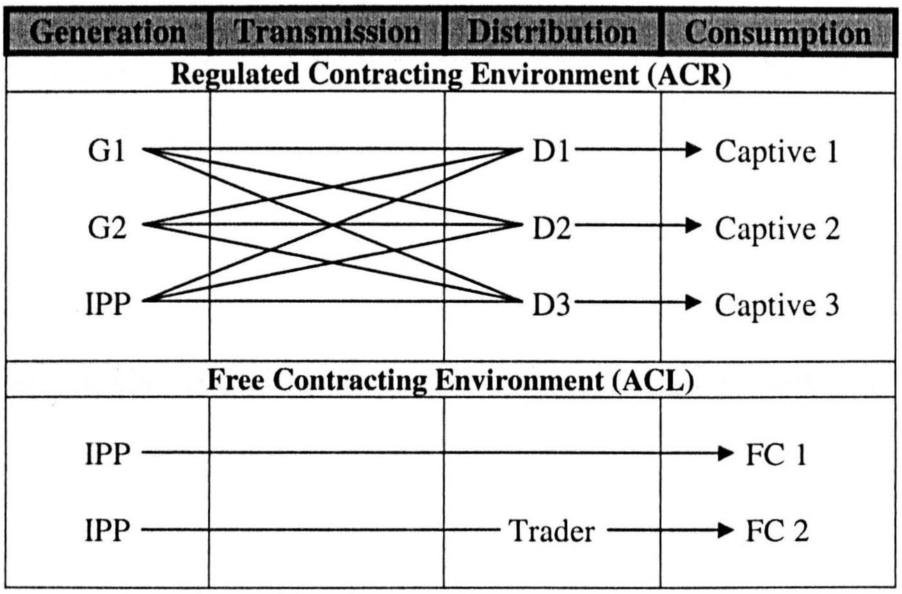
Therefore, the 2001 crisis required measures ranging from rationing to special contracts for merchant plants and a number of exceptions to regulation in order to encourage new investment in new generation plants. A number of ad hoc contracts were signed, leading to conflicts after the rationing ended (OECD, 2008). In addition, the unexpected reduction of electricity demand had significant financial impacts on the electricity sector, in particular, the distribution companies, which were negatively affected by reductions in demand and revenues (Almeida and Pinto, 2005). The reduction in demand also had an important impact on the PPT programme since the economic and regulatory uncertainties produced a very difficult environment to encourage new projects.

5.3.2 The Second Reform

The new regulatory framework in the Brazilian electricity sector was proposed by the Ministry of Mines and Energy (MME) in 2003 and it was enacted by the Brazilian congress in 2004 (Laws 10,847 and 10,848 from 2004 and decree number 5,163). As a result of this reform, electricity policy changed considerably in order to attract investment for sustained development of the sector. This new policy had five explicit purposes: (1) to build a stable regulatory environment; (2) to ensure enough electricity supply by reducing the perceptions of high risks in this industry, while providing a fair return to investors; (3) to promote reasonable tariff at lowest possible costs; (4) to respect contracts; and (5) reintroduce planning in order to cope with demand growth (Araujo, et al., 2008b; Bajay, 2006).

To achieve these objectives, mechanisms were introduced to enhance security of supply including: (a) a requirement that distribution companies contract for 100% of their forecast demand over a five year time period; (b) building realistic forecasts for guaranteed energy plants; (c) contracting hydropower and thermal plants in a mix that balances reliable supply and cost; and (d) permanent control over the security of supply, in order to detect imbalances between supply and demand and to take actions to restore security of supply at least cost to consumers (Araujo, et al., 2008b). Therefore, the second reform reinforced the role of the government in the electricity sector, as the federal government reclaimed functions of planning and policy-making. Two features are apparent in the new arrangements: first, more centralisation of decision-making and second, a greater weighting for government policy than in the first reform.

Reflecting these varied objectives, the new model is a hybrid one. Two environments were created in the wholesale market: Regulated Contracting Environment (ACR) and Free Contracting Environment (ACL). The regulated market is organised around a wholesale power pool, based on long-term contracts (15 and 30 years) between generators and distribution companies serving captive consumers. The contracts underpinning the regulated environment (PPA – Power Purchase Agreement) are based on long term concessions allocated to generators and distributors for the supply of electricity to captive consumers though competitive auctions. The free contracting environment (ACL) comprises large consumers (over 3 MW) that are free to contract directly with generating or trading companies (see figure 5.1). Therefore, at the ACL, the energy is negotiated through bilateral contracts with generators and traders. The contracts last for different periods and short-term contracts are predominant (Losekann, 2008).



Key: G – Public Generator
IPP – Independent Power Producer
D – Distribution Company
FC – Free Consumers

Figure 5.1 – Brazilian Electricity Model
Source: Adapted from Almeida and Pinto (2005)

In the regulated market, the distribution companies buy energy in public auctions. They submit their forecast demand in 5-year horizon to EPE (Energy Research Enterprise). Based on those projections, the EPE sets the total market that will be offered in the auctions. This can be characterised as the single buyer model to purchase energy. In these auctions, generators compete making bids ($/MWH and $/MW) to attend the captive market (Losekann, 2008). This contract pool format leads to a single reference tariff for the pool at each auction. This means that all distribution companies participating in an energy auction purchase at the average price of the total amount of energy contracted in the auction. However, the captive consumers' tariff are different and are a function of the composition of distribution companies' contract portfolios (Araujo, et al., 2008a).

As mentioned previously, distribution utilities have to contract 100% of their market through auctions. If after a 12-month period the distribution company finds itself short of electricity, it will have to buy energy through short-term contracts, with prices subject to the vagaries of the spot market. These prices may not be passed through to final consumers above the limit of 103% of the tariff (Araujo, et al., 2008a). As a result, when a distribution company is over contracted, a difference settlement will produce revenue gains or losses. Allocation of these gain and losses must obey the following rules: (a) over contracting up to 3% of the market: gain will be appropriated by the utility and losses will be passed through to consumers next year; (b) over contracting above 3% of the market: gains and losses are absorbed by the distribution company (ANEEL, 2009; Araujo, et al., 2008b).

To deal with the regulated and free environments, the Electric Power Trading Chamber (CCEE) was created. This organisation replaced MAE, absorbing its functions and incorporating all MAE's organisational and operational resources. CCEE has the following purposes: (a) to manage the contracting of energy sales and purchases of public distribution utilities; (b) to conduct energy purchase auctions for distribution companies, under authorisation of ANEEL; and (c) to perform the functions of accounting and settlement in the two contracting environments of the market, ACR and ACL.

This second reform also created two new institutions: the Electricity Industry Monitoring Committee (CMSE) and the Energy Research Enterprise (EPE). CMSE is hosted by the Ministry of Mines and Energy (MME) and it monitors the power supply and demand in order to identify problems regarding the security of supply. If any problem is identified, the CMSE will suggest mitigation measures to avoid energy shortage (Almeida and Pinto, 2005). The EPE was created to re-establish a central energy planning function lost under the pre-2004 reforms. The EPE plays a central supporting role in the management of the power sector. It draws up and submits strategy and long-term goals for energy to the MME, including power supply. These are used as the basis for the auctions to contract generation and transmission projects. Strategy studies formulated by the EPE include one with a ten-year time horizon, revised yearly, and one with a 25-year time horizon, revised every three to four years (OECD, 2008). The EPE's studies are used by the MME to plan the power technology portfolio.

After the 2004-reforms, the main institutions of the Brazilian regulatory systems are (see figure 5.2): (a) Ministry of Mines and Energy (MME) which is the central institution. It dominates the decision-making process in this sector. (b) ANEEL is the regulatory agency of the sector and is in charge of both economic and technical regulation. It is responsible for the monitoring of concession contracts, the establishment of the criteria for transport pricing, and the readjustment and review of tariffs; (c) the Council for National Policies in Energy (CNPE); (d) the National System Operator (ONS); (e) the Electricity Industry Monitoring Committee (CMSE), established to monitor supply continuity and security; (f) the Energy Research Enterprise (EPE), a research body which is a planning entity for MME; (g) the Electric Power Trading Chamber (CCEE) with the job of enabling and managing trading of electricity (Lock, 2005).

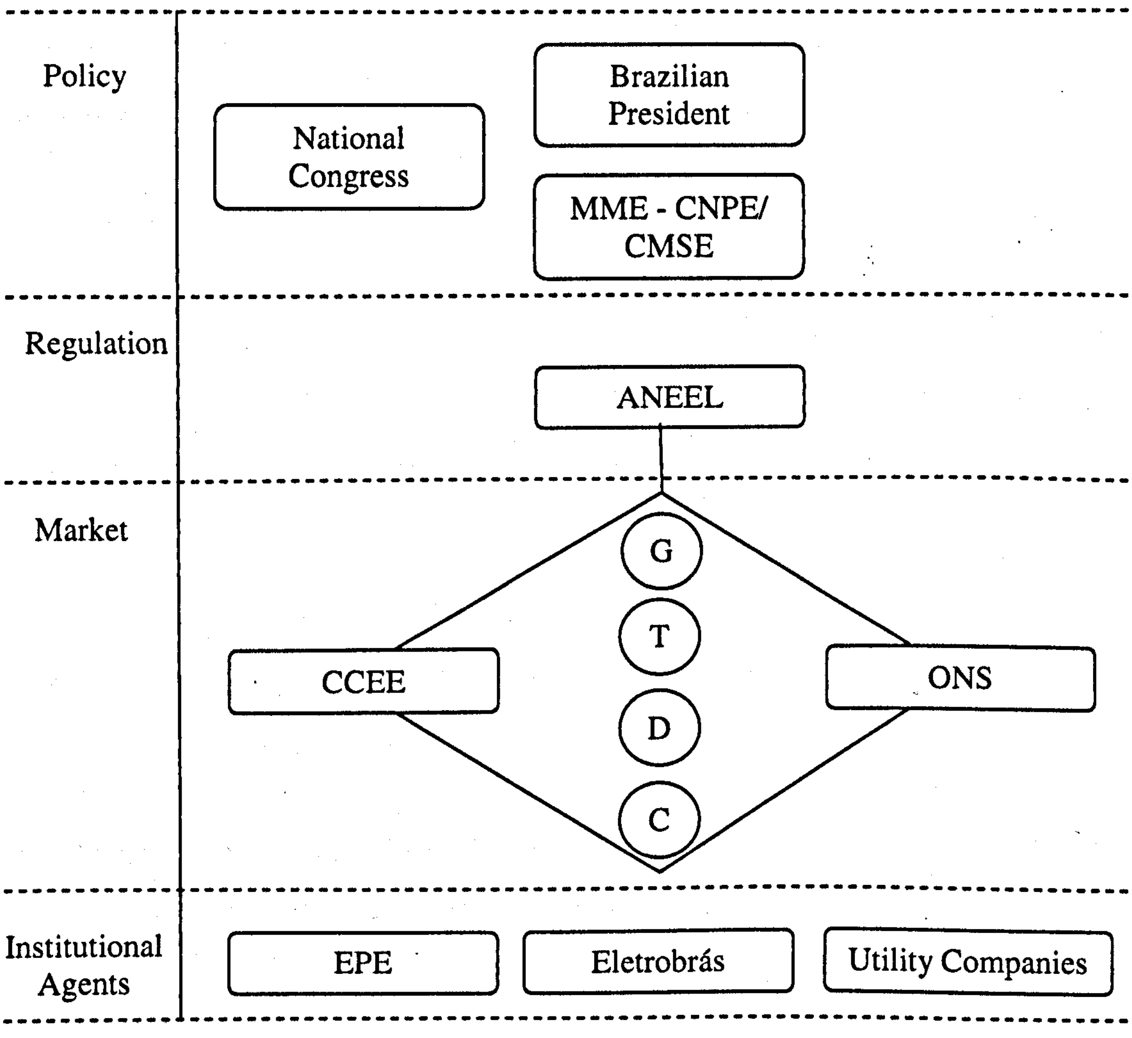


Figure 5.2 – Institutions of the Brazilian Regulatory System
Source: Adapted from (ANEEL, 2008)

Having discussed the Brazilian electricity sector reforms in macro terms, the next section focus on the specific issue of the tariff review process by analysing the introduction and evolution of price-cap regulation in Brazil.

5.4 Tariff Review Process

Distribution companies' tariffs historically were established by the Brazilian government through a set of laws. This legal framework was a very complex system of subsidies and compensations which was applied to the distribution utilities to equalise the tariffs at national level (Alvarez, 2007). This system was implemented in 1974, when the electricity tariffs were equalised over the country. The aim of this measure was to create incentives to industrial investment in less-developed states and regions. The tariff equalisation was done through an equalisation fund managed by Eletrobrás (Araujo, 2006). As a consequence, low-cost utilities transferred their surplus to the fund, and this resource was transferred to high-cost companies. As can be predicted, this methodology had some flaws that lead the distribution companies to face financial difficulty in the 1980's, which put pressure on the Brazilian Electricity system to introduce changes in this methodology.

In 1993, distribution companies were authorised by law 8,631 to set their own tariffs, subject to approval by the licensing authorities, in particular DNAEE (Department of Waters and Electric Energy). As a result, this law ended the guaranteed return on investment, as well as tariff equalisation among the distribution utilities, and annulled intra-sector debts (Alvarez, 2007; Araujo, 2006). This law adjusted tariffs according to the actual costs of service rendered by each utility (cost-plus methodology) in accordance to the future privatisation programme enacted in 1990.

Law 8,987 (enacted in 1995) established the overall concession regime, introducing price cap regulation and competitive bidding for all public concessions. Price cap regulation occurs when the government and utility set caps on service tariffs that the utility is allowed to charge. The price is adjusted periodically to account for inflation, technological progress and exogenous changes (Lima, 2002). According to Kang, et al. (2000, p. 113), price cap regulation "is commonly referred to as RPI-X regulation, where RPI is the retail price index and X is a factor that reflects anticipated productivity gains, and specifies the rate at which the regulated firm's prices must fall in real terms on an annual basis". Varela and Redolfi (2007) point out that in the price cap regulation, once the tariff is set for the settlement period (in the Brazilian case from 4 to 5 years), the utility is free to manage its costs and there is an incentive to convert the benefits resulting from the efficiencies obtained, which can be passed through to the customers in the subsequent tariff period, as at the end of the settlement period, X factor is reset by the government, and the process is repeated.

As discussed previously, investors were hesitant to invest in the Brazilian electricity sector because there was the absence of a clear picture of the structural and regulatory framework during the first electricity reform in Brazil. As a consequence, to ensure the viability of the investment, the concession contracts usually specify initial tariffs and the formula and condition for reviews and inflationary adjustments. Contracts use the same basic formula in which non-controllable costs are adjusted annually to an inflationary index and controllable costs are adjusted to the same index minus a productivity factor (Factor X) (Mota, 2003). The Brazilian government decided to add ad hoc clauses in the concessions contract, such as a X factor set to zero for 8 years (from 1995 to 2003), a readjustment index (IGPM, a bulk price index) correlated with commodity prices and exchange rates, and lowered requirements for energy quality (Araujo, 2006). Therefore the X factor was set to zero for the first period for all distribution companies. As a consequence, the first periodic tariff review process with the X factor different from zero was conducted between 2003 and 2006 and the second periodic tariff is being performed from 2007 to 2010.

According to the Brazilian tariff rules, the electricity tariff to captive consumers can be adjusted through three processes (ANEEL, 2009):

- The periodic tariff review process (between 4 and 5 years);
- The annual tariff adjustment (IRT, in Portuguese); and
- The extraordinary tariff review, which can occur whenever the financial and economic equilibrium of the concession contract is broken. This process will not be dealt in this study, because this occurs only in exceptional cases.

5.4.1 The Periodic Tariff Review Process

The tariff revision process occurs every 4 or 5 years, depending on the concession contract. The first periodic tariff review process (2003-2006) was in accordance to ANEEL's resolution no. 493/02, while the second periodic review is regulated by ANEEL's resolution no. 234/2006. There are some differences between the two resolutions, but they are not very significant and the underlining assumptions are still very similar. The periodic tariff review process encompasses two stages: (a) tariff repositioning (RT, in Portuguese), which establishes the level of efficient operating costs and fair return on the capital invested; and (b) determination of the X factor (Rocha, et al., 2007).

The tariff repositioning (RT) is represented by the following formula:

$$RT(\%) = \frac{Allowed\ Revenue - Other\ Revenues}{Verified\ Revenue}$$

The RT compares the allowed revenue for the test year (12-month period after the revision date) with the utility's verified revenue. The allowed revenue comprises the revenue compatible to cover efficient operating costs and provide an adequate return on prudent capital invested. The verified revenue consists of the revenue that would be obtained with the tariffs in effect before the revision, applied to market sales in the test year. Other revenues are revenues that do not refer exclusively to the tariff, but they have an indirect relation with distribution service or with the operational distribution company's asset, in the Brazilian case other revenues are sharing network revenues. The allowed revenue is reduced by the other revenues (90% of the other revenues) to try to keep tariffs at moderate levels.

According to Burns and Estache (1998), there are two equivalent methods to calculate allowable revenue: the traditional accounting based method and the cash flow approach. In the former method, revenues should be expected to cover: operating cost; plus depreciation; plus a return on capital. The cash flow approach sets regulated revenues over a price control period equal to: the present value of operating and capital expenditures over the period; plus the present value of the change in the asset value over the period.

The Brazilian regulator (ANEEL) adopts the traditional accounting based method to determine the allowed (regulated) revenue of the distribution companies to achieve the concession financial-economic balance. In order to calculate the regulated revenue, ANEEL divides utility costs in two parts: part A (uncontrollable costs) and part B (controllable costs). The calculation is based on the forecast market for the first year of the new period (test year) (Alvarez, 2007). Uncontrollable costs (Part A) accounts for approximately 70% of a distribution company's tariff, while controllable costs (Part B) accounts for 30% (see figure 3) (InstitutoAscendeBrazil, 2007).

The uncontrollable costs (Part A) are, a priori, beyond the utility's control and they are totally passed on to the captive consumers. Uncontrollable costs (Part A) comprise:

- *Energy purchase costs (sells + losses);*
- *Costs for the transmission system (energy transport); and*
- *Taxes and sector charges.*

Losses constitute a special case of uncontrollable costs. Distribution companies have two types of losses: (a) technical losses, which are associated with energy transport (joule effect, losses at the transformers, etc); and (b) non-technical losses resulting from power thefts, measurement errors, etc. In terms of Brazil, the non-technical losses are a huge problem, as the percentage of non-technical losses is extremely high, in some cases more than 20% of the energy purchase (Alvarez, 2007). Therefore, ANEEL establishes the efficient loss level in the regulated revenue. In the first review process, ANEEL required the distribution companies to submit a characterisation of their losses in their concession areas and a plan to combat their level of losses. In general, ANEEL recognised the average loss over the past three years as the regulatory value of losses. In the second review process (2007-2010), ANEEL is using a mathematical network model based on the methodology adopted in the national electricity distribution procedure (PRODIST, in Portuguese) to determine the regulatory technical losses. The regulatory non-technical losses are determined on a case-by-case basis considering the information submitted by the utilities and based on the general criteria established in the ANEEL resolution no. 234/2006, in particular, the complexity index, which takes into consideration the wide range of factors that influence the non-technical losses (for further detail about the complexity index see ANEEL Technical Note no. 290/2008 SRE/ANEEL).

The controllable costs (Part B) are those under the distribution company's control and encompass:

- *Operating expenditures* (OPEX), which involve the management, commercial, operating and maintenance expenditures which an efficient distributor should incur to supply the market;
- *Return on capital*, which results from multiplying: (a) the net regulatory asset base (NBRA) by; (b) the opportunity cost to develop the distribution activity in Brazil; and
- *Depreciation.* The regulatory depreciation is the value to be annually recovered to replace the assets at the end of their operational life, and it is obtained by multiplying: (a) gross regulatory asset base by; (b) the annual depreciation rate.

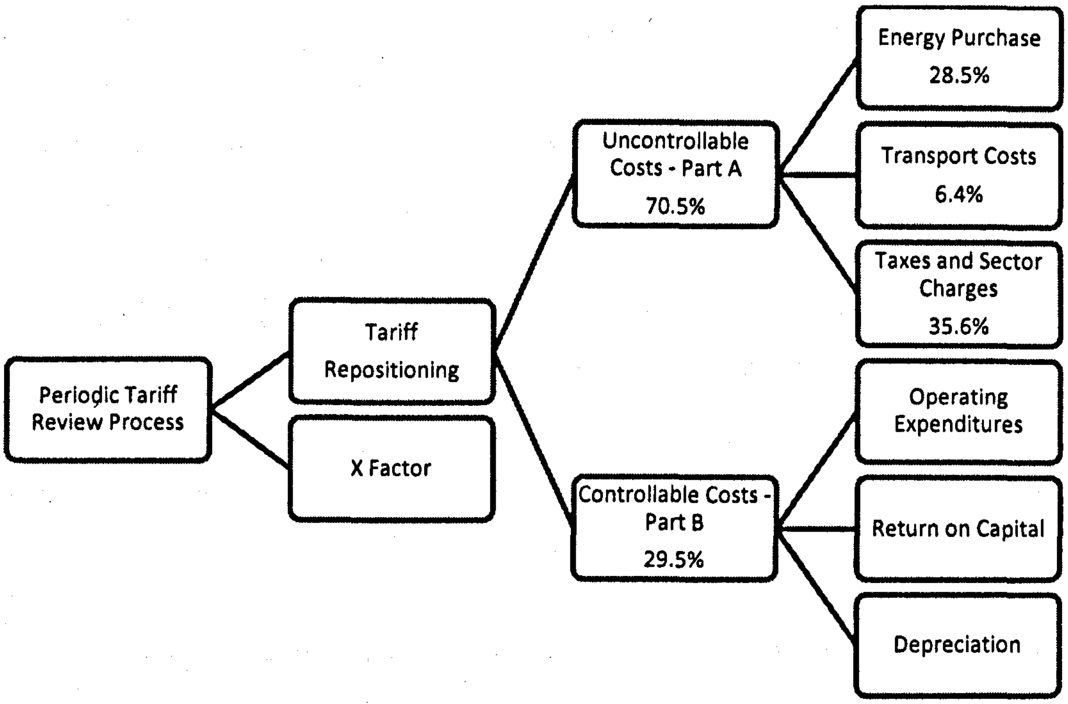


Figure 5.3 – The Periodic Review Process
Source: Adapted from (InstitutoAscendeBrazil, 2007)

Operating expenditures (Opex) is calculated by applying the Reference Utility methodology, also known as Model Utility (Varela and Redolfi, 2007). This methodology is based on the concept that the operating costs can be determined by specifying the main tasks of distribution companies' activities, allocating the necessary resources (labour and materials) and evaluating them at the market price in concessionaire's area. Therefore, ANEEL aims to establish a market reference adjusted to the actual geographical and macroeconomic conditions in the utility's concession area to calculate the corresponding efficient Opex.

One of the most significant aspects of the regulatory system is the relationship between the regulator and regulated utilities, characterised by the so-called 'information asymmetry'. This refers to the reliance of the regulator on data supplied by the regulated company, when the firm has a great and better knowledge of its own operations (Tozzini, 2008). In order to overcome such a problem, ANEEL decided to adopt, among other measures, the Reference Utility methodology to determine the utilities' operational expenditures. The Reference Utility is a hypothetical distribution company tailored to economic conditions of the geographic area of the actual utility under analysis. ANEEL designs the Reference Utility based on its projection of what it considers to be efficient operation. As result, the Reference Utility methodology seeks to design a model company which the actual utility can compare its performance, as a result, this can create an incentive to operate at a lower cost than the standards set by the regulator.

Tozzini (2008) points out that there are at least two different methodologies to design the Reference Utility. First, the model utility is based on engineering principles taking into consideration the best practices and technologies. Second, the design of standard performance is made by comparing existing companies, both in relation to an efficient frontier and to average performance standards or indexes. ANEEL adopts the engineering principles to determine the model utility. According to ANEEL Technical Note no. 290/2008 SRE/ANEEL, the methodology adopted in Brazil to establish the operating expenditures is the Reference Utility approach based on a normative model. The main characteristic of a normative model is that it does not use actual data from distribution companies to determine the production function. Therefore, the Brazilian model is based on technical standards, instead of actual costs from utilities firms. In addition, the Brazil system uses the price market in accordance to the concession area, instead of price used by the companies, to evaluate the operating costs.

Burns and Estache (1998) point out that regulatory asset valuation has been proved to be an extremely controversial area in the tariff review process. This was also true in the Brazilian context, as Alvarez (2007) states that the determination of the Regulatory Asset Base (RAB) was the most controversial issue in the implementation of the periodic tariff review process. This issue generated a number of conflicts and administrative and judicial claims by the distribution utilities (the Regulated Asset Base will be dealt in the next section, as this is a core issue in regulatory accounting). In 2002, after an intense debate in the electricity sector, ANEEL's Technical Note 148/02 enacted by Resolution 493/02 established DORC (Depreciated Optimised Replacement Cost) as the methodology to evaluate the Regulatory Asset Base. This methodology revaluates assets at depreciated replacement cost, with minor adjustments associated to land occupancy factors and the level of transformers use. For the second review period (2007-2010), the Regulatory Asset Base at the end of the first tariff review will be shielded and rolled forward by two tariff periods. The ANEEL's initial plan was to create a price reference database to value the new investments at market price. However, this idea was not developed due to operational problems faced by ANEEL. As a result, the same methodology used in the first review process has been adopted in the second review process (for further details see ANEEL Technical Note no. 456/2008 SFF/ANEEL).

The cost of capital adopted by ANEEL is the same for all distribution companies in Brazil and it refers to the opportunity cost of an investment of similar risk. It corresponds theoretically to the adequate rate of return to reward the capital invested. The methodology to estimate the cost of capital is the weighted average cost of capital (WACC). According to Burns and Estache (1998), WACC methodology is the standard approach adopted by regulatory agencies and governments to set the cost of capital. In the Brazilian context, this approach considers the remuneration of equity and debt, including the tax benefits, weighted by the average leverage structure for the electricity sector (debt/equity ratio). The cost of capital in the first review process was set at 11.26% per year, while in the second period it was set at 9.95% (Baião, 2007).

The portion that remunerates equity is established through the Capital Asset Pricing Model (CAPM) (which is widely applied around the world) (Jamasb and Pollitt, 2007), which includes the country risk, the foreign exchange risk and regulatory risk. The portion that remunerates debt arises from estimating the distribution companies' credit risk plus the foreign exchange risk and part of the country risk.

Finally, the depreciation is calculated by applying a linear rate that reflects the average accounting life of the fixed assets in service, excluding land. Therefore, depreciation is based on the straight-line methodology where a constant percentage of the undepreciated asset value is deducted from the opening asset value in each period (normally year). The annual regulatory depreciation rates are established by a set of ANEEL resolutions, such as Resolutions 02/1997; 044/1999; and 240/2006. Therefore, in the regulatory context, deprecation is a charge designed to recognise the loss of service that an asset has suffered throughout the years.

The second stage of the periodic review process is to determine the X factor, which represents the mechanism for passing distributors' productivity and efficiency saving to consumers through a reduction of the tariff adjustments index. The X factor is a reducer of the general market price index (IGP-M), which adjusts part B of utility's revenue, as a result, the X factor passes productivity gains to consumers in the next period. Therefore, by multiplying the IGP-M by the X factor, the maximum permitted tariff is established (Rocha, et al., 2007). In the first review process, the X factor was calculated by ANEEL, which considered three components: Xe, Xa, and Xc.

The sub-factor Xe is obtained by the discounted cash flow method, determining the annual revenue reducer that equals the internal rate of return (IRR) to the regulatory WACC. The discounted cash flow comprises: (a) the annual revenue: the annual allowed revenue reduced by the Xe part; (b) the annual costs: they are the model utility costs, annually adjusted according to the forecast market growth; (c) the expanding annual investments; (d) investment replacement; and (f) taxes and charges (Alvarez, 2007). The sub-factor Xa refers to the adjustment of the labour component by the Consumer Price Index (IPCA), that is, a wholesale price index. Finally, the sub-factor Xc captures the consumers' perception on service quality, which was evaluated using a customer survey and Xc ranged from 1% to -1%.

For the second tariff review process, ANEEL improved the rules to define the market and forecast investments, among other measures, in order to determine the Xe component (for further details see ANEEL Technical Note no. 293/2008 SRE/SRD/ANEEL) . In addition, the sub-factor Xc was eliminated, because this was strongly challenged by the sector, due to the fact that it generates a double penalty on quality and leads to sub-evaluation of quality levels due to its impact on the service price (Alvarez, 2007).

5.4.2 *The Annual Tariff Adjustment*

The Annual Tariff Adjustment (IRT, in Portuguese) process is established annually between the revision periods and aims to adjust the tariff according to the inflation, measured by the IGP-M (a Brazilian index) as corrected by the X factor estimated in the revision process (ANEEL, 2005b).

The formula below shows the Annual Tariff Adjustment Index (IRT), where VPA_1 refers to the value of part A (uncontrollable costs) considering the conditions in effect on the current adjustment date and the energy purchased in function of the reference market, which corresponds to the guaranteed electricity market in the 12 months preceding the adjustment; RA_0 refers to the annual revenue, considering the tariffs approved on the previous reference year and the reference market, not including the VAT (state value-added tax); VPB_0 refers to the value of part B (controllable costs), expressed as the difference between RA_0 (annual allowed revenue in the previous year) and VPA_0 (value of part A of the previous reference date); IVI represents the IGP-M for the month before the current adjustment process divided by the IGP-M of the month before the previous reference date; and X refers to the X factor established in the periodic tariff review process.

$$IRT(\%) = \frac{VPA_1 + VPB_0\,(IVI \pm X)}{RA_0}$$

It is important to observe that in the annual tariff adjustment, Part A of the costs is directly added to the consumers' tariff, that is, the entire increase in Part A in the period passes through the tariff. On the other hand, Part B is adjusted by the price index in the RPI-X system. Therefore, the adjustment can be greater or smaller than the inflation index, depending on how large the increase was in the share of costs referring Part A (uncontrollable costs). In addition, it is important to mention that in each tariff adjustment, the tariff will be increased or decreased by the financial component of the Compensation Account for Variation of Items of Part A (CVA, in Portuguese), to offset the financial effects between the tariff adjustment dates for the items of Part A (uncontrollable costs).

Having discussed the Brazilian tariff review process, this chapter moves on to explore the regulatory accounting issues which are strongly linked to the tariff review procedures.

5.5 Regulatory Accounting

Accounting information has an important role in utilities regulation, because accounting can provide useful information to balance the needs of regulators/consumers and utility companies. Pardina, et al. (2008, p. ix) state that "poor accounting practices or creative accounting generates winners and losers. Whoever controls the accounting information is likely to be the winners; the other – including the users, who will pay excessive tariffs, or taxpayers, who will be asked to justify unjustified subsidies – will be the losers". Therefore, in the same way that managers of a company rely on accounting in making their planning and control decisions, regulators rely on accounting in making decisions related to their regulatory responsibilities.

Regulatory accounting can be defined as: "a set of principles and rules of presentation of information for regulated companies" (Pardina, et al., 2008, p. 64). Financial information prepared and published for regulatory purpose often differs significantly from other financial information prepared by companies for statutory or other purposes. In addition, the basis on which regulatory accounts are prepared requires special regulatory rules as well as the application of generally accepted accounting practices.

The main objective of regulatory accounting is to provide information (mainly financial information) to assist regulators in dealing with the particular market situation of utilities in a way that facilitates control of the regulatory objectives. The main focus of regulatory accounting is on: (a) monitoring performance against the assumptions underlying price controls; (b) detecting anticompetitive behaviour, such as unfair cross-subsidisation; (c) assisting in monitoring the financial health of the utility company; and (d) setting prices (Pardina, et al., 2008). In the electricity sector the main regulatory accounting focus is often on monitoring performance, setting fair and reasonable prices, and ensuring that prices reflect efficiency costs.

The regulator should not interfere with day-to-day management of the firm, but the financial situation of the utility company should be taken into account. Even if motivated, disallowance of costs might be limited to maintaining the utility company's solvency and investment capacity, thereby avoiding the greater damage to consumers that would result from firm's insolvency and bankruptcy. In the Brazilian context, ANEEL established many accounting procedures and norms that have to be followed by the concessionaires companies. This regulatory system permits the standardisation of the accounting information which is very important to ANEEL in order to monitor the financial health of the distribution companies.

The distribution companies have to adopt the Accounting Manual for Electric Power Utility Companies, which was introduced by the ANEEL Resolution no. 444/2001 and modifications established by the ANEEL Resolutions no. 473/2006 and no. 219/2006, and ANEEL notes no. 657/2006, 3,033/2006 and 3,073/2006. This manual presents the financial accounting principles and norms established by Brazilian Corporation Law and other rules introduced by other institutions, namely ANEEL, CFC (Brazilian Federal Council of Accounting), IBRACON (Brazilian Independent Auditors Institute), CVM (Brazilian Securities Commission), and IASC (International Accounting Standards Committee).

The main objectives of the Accounting Manual for Electric Power Utility Companies are (p. 13):

1. To standardise the accounting procedures adopted by electric power concessionaires and permission holders of power electric public service in order to allow ANEEL to control and supervise the distribution companies' activities.
2. To ensure that concessionaires and permission holders will follow the appropriate accounting principles and norms established by accounting regulatory organisations, such as CVM and IASC in order to support the

evaluation of the economic and financial equilibrium of the concession contract established by the companies and the Brazilian government.

3. To support the preparation of the financial statements, notes to the financial statements and others accounting information according to the Brazilian Generally Accepted Accounting Principles and the specific norms of the electricity sector. This information should attend to the needs of the external users of the accounting system, such as investors, shareholders, consumers and financial institutions.
4. To permit the adequate calculation of the profit/loss of the generation, transmission, distribution and commercialisation activities.
5. To contribute to the evaluation of the economic and financial situation of the electricity companies.

In the case of electricity distribution companies in Brazil, in addition to the obligation of providing accounting information to the Brazilian authorities, such as CVM, the distribution company should provide accounting information to ANEEL. This requires three different reports which are: (a) the monthly preliminary balance sheet (BMP, in Portuguese); (b) the quarterly information report (RIT, in Portuguese). This report provides information regarding the investments, expenditures and costs, as well as the revenue of the company in the analysed period; and (c) the annual information report (PAC, in Portuguese) which presents the consolidated information regarding the company's performance throughout the year. These are periodic reports that ANEEL receive, there are other reports that ANEEL requests for the periodic tariff review process, in particular those reports related to regulatory asset base (RAB). This set of information is the basic source for the process of monitoring the economic and financial performance of the Brazilian distribution companies (see figure 5.4). This evaluation is based on a financial analysis of about 30 financial ratios, which are calculated and analysed by the ANEEL's specialists. The basic aim of this analysis is to ensure that the financial and economic equilibrium of the concession contract will be not broken.

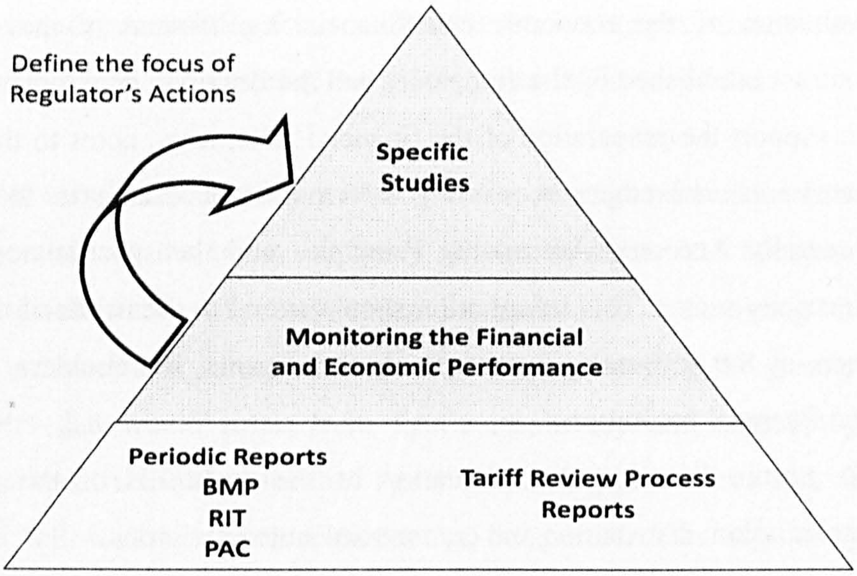


Figure 5.4 – The Process of Monitoring the Economic and Financial Performance
Source: Ganim (2008)

There are four topics that are central to regulatory accounting objectives, and they present particularities that call for accounting treatments that differ substantially from management and financial accounting treatments. Pardina et al. (2008) call these topics the 'core issues in regulatory accounting'. These issues are:

- Separation of activities;
- Regulatory asset base (RAB) determination (concept and valuation);
- Depreciation policies of the regulatory asset base (RAB); and
- Related-party transactions and transfer pricing.

5.5.1 Separation of activities

Separation of the activities of regulated utility companies into regulated activities and unregulated activities is an important issue, because, due to technology change in the electricity sector and the restructuring to introduce competition, regulated activities and unregulated activities coexist in most organisations. Pardina et al. (2008) point out that the treatment of unregulated activities should be framed to meet general regulatory objectives, particularly preserving incentives for productive efficiency, avoiding distortions in competitive markets, and ensuring that consumers benefit from efficiency gains.

There are three alternatives that can be used with regulated firms in treating unregulated activities (Pardina, et al., 2008):

- *Single till regulation* which assumes that all revenue from unregulated activities is considered on the revenue account of regulated activity;
- *Separation of companies* which requires that regulated activities and unregulated activities be developed by different legal entities;
- *Separation of activities and accounting:* accounting information is divided into regulated activities and unregulated activities, but both activities can be performed by one legal entity. As a result, this separate information becomes the basic input for regulatory allocation and determination of the utility firm's revenue requirement.

The Brazilian government decided to adopt the second approach (separation of companies). Law no. 10,848 from 2004 establishes that the distribution companies cannot perform generation, transmission, and trading (free consumers) activities. In order to conform with this law, 24 Brazilian distribution companies had to separate the distribution activity from the above activities (ANEEL, 2005a). As a consequence, different legal entities were created. The Brazilian approach is a less strict form of separation, because this requires that the generation, transmission, and trading (Free Contracting Environment – ACL) activities are performed by a separate legal entity, but it does not prohibit common ownership. Thus the utility firm's shareholders can own a subsidiary company performing unregulated activities. In fact, in the Brazilian electricity sector, a considerable number of distribution companies are part of group of companies that performs generation, transmission, and trading activities. Therefore, each company has its own accounting system which operates independently from the parent companies. In addition, Brazilian distribution utilities operate only regulated activities, that is, distribution and trading in the Regulated Contracting Environment (ACR). As a consequence, accounting separation is not considered a problematic issue for regulation in Brazil. However, it could be argued that this approach is not efficient in terms of costs and operations, as the fixed costs of structure have increased as a result of this decision to create different legal entities.

5.5.2 Regulatory asset base (RAB) determination

The Electricity sector can be characterised as being a capital intensive industry. As a consequence, the remuneration of both past and new investments is a major determinant of consumer tariffs, which can account for about two thirds of total costs (Alexander and Harris, 2005). Given that, asset valuation often proves to be one of the most difficult and controversial issues of regulatory tariff-setting. According to Foster and Antmann (2004, p. 1), the main reason for this is because "valuation cannot be related to a competitive market, no specific procedure for valuation is necessarily correct". In the same vein, Pardina et al. (2008, p. 193) state that "the overview of international experience suggests that consensus on the best way to value the assets of a regulated firm does not exist". In the Brazilian context, it can be stated that the determination of the regulatory asset base was the most controversial issue during the first tariff review process leading to a number of conflicts and judicial claims by the Brazilian distribution companies. In the second tariff review process, the determination of the RAB was also a matter of discussion and controversy between the regulator and distribution companies (see ANEEL technical note no. 456/2008).

The regulator should determine the composition and value of the regulatory asset base to be used in the tariff review process. This essential part of the regulatory process raises two related problems. First, the regulator has to establish which investments by the regulated firm are specific to the service that can meet efficiency and prudence criteria. Second, the regulator should decide how to value these investments for regulatory purposes. In the context of regulatory accounting, the relationship between the regulatory asset base and the book value of the distribution companies' assets is important to consider, as is the matter of how to reconcile the two if they do not match.

For determining the value of the regulatory asset base, asset valuation methods can be characterised under three main approaches: historical cost; market or economic value; and replacement cost. Historic cost based approach relates the value of an asset to the cost of purchasing the asset or the service potential embodied in the asset at the original historic cost. Traditionally, companies have recorded the value of their fixed assets on a historical cost basis, which continues to the basis applied in most statutory accounts.

The market or economic based approach determines the value of an asset from its cash generating capacity. By using this approach, the company's assets value reflects the value of the business, as stipulated by investors in financial markets. This can be measured by the net present value of future cash flows, that is, the net present value or the cash generated by selling the asset (the net realisable value). When a share is listed, the market value provides the best guide to expectations of the future revenues derived from the company's assets and, as a result, the company's economic worth. The price obtained through privatisation provides a snapshot of the market value at one point in time. As a consequence, when asset values are explicitly determined at the time of privatisation, it is possible to calculate the net present value of future cash flows on the price trajectory that has been determined for the company (Grout, et al., 2001). However, in a regulated environment, this approach has a circularity problem, as future revenues depend on tariffs that in turn depend on the asset base derived from future revenues.

Replacement cost refers to the amount that an entity would have to pay, at the present time, to replace any one of its assets. Therefore, this approach considers the cost of building the infrastructure at current prices. However, this approach fails to take into consideration technological improvement and thus to capture the extent to which more efficient modern assets can substitute for existing assets. Therefore, it assumes that the existing asset configuration is the most efficient configuration (Pardina, et al., 2008). In order to deal with such a problem, the regulator has two alternatives based on the replacement cost: depreciated optimised replacement cost (DORC) and reference utility approach, also known as gross optimised replacement cost (GORC).

Depreciated optimised replacement cost (DORC) is based on the replacement cost of modern and optimised equivalent assets, adjusted for over-design, over-capacity and redundant assets, less an allowance for depreciation. The aim of this methodology is to measure the minimum cost of replicating the network system in the most efficient way possible, given its service requirements and the age of the existing assets. Therefore, this approach examines the cost of each asset individually and then adjusts for the age of the asset according to an established depreciation schedule.

The reference or model utility approach is based on a model efficient company (engineering economic model). The assets of the model efficient company, not those of the real utility firm, are used. As a consequence, the regulatory asset base is based exclusively on the new replacement value and has no relation to the capital invested by the utility company. This approach requires the regulator to construct a hypothetical company that provides exactly the same service as the regulated firm, but at an efficient cost. The reference utility approach can be used to determine values for the operational expenditures and the asset base required for provision of services by network industry. The model utility approach is known as the gross optimised replacement cost (GORC), because it results from a process of optimisation that does not take into account the age of the assets (Foster and Antmann, 2004).

Privatisation leads to a different institutional environment in the electricity sector, which affects the way that company's capital is reflected. The relationship between the asset base and the value of capital in the firm's accounting financial statements will depend on the treatment given to the initial capital value during the privatisation process. This effect is only temporary, as time passes, the company's financial statements reflect the investments carried out under the new rules, and the valuation at the time of privatisation loses its relevance. So, ideally the decision of asset valuation methodology should be determined in the regulatory framework before or at the time of privatisation. In addition, the chosen methodology should be adhered to consistently thereafter, as even minor modifications might have significant tariff impact and could substantially contribute to regulatory risk for the distribution company. Burns and Estache (1998) conclude that the asset valuation rules should be clear and transparent in order to minimise the risk to owners of utility companies that their investments will be expropriated by an opportunistic regulator.

In the Brazilian context, as discussed previously, the privatization process started before the establishment of a new regulatory framework. As a consequence, the discussion about the appropriate asset valuation methodology was left to be done before the first tariff review process, which took place between 2003 and 2006. As a consequence, this issue was very controversial in the Brazilian electricity sector. In June 2002, ANEEL enacted Technical Note n. 148/2002, which explained alternative approaches to asset valuation and stated its preferred methodology.

This Technical note rejected the use of methodologies based on market/economic valuation, because according to ANEEL the minimum sale prices calculated at the moment of privatisation were not determined on a consistent methodological basis. This is because each State made a number of assumptions about discount rates, demand growth, tariffs and investment horizons (Gomide, 2005). Moreover, ANEEL rejected the utilisation of the final privatisation selling prices. The reason given was that these prices incorporated a premium that reflects strategic business considerations, and were artificially inflated by the fact that the holding companies were able to obtain tax relief on the value of their acquisitions (Foster and Antmann, 2004).

In this Technical note, ANEEL decided to adopt the replacement cost as the methodological approach to asset valuation. However, ANEEL rejected the simple replacement cost approach, arguing that this methodology fails to take into consideration the effects of technological change that can reduce the cost of capital over time. As a consequence, ANEEL decided to use a more sophisticated version of replacement cost, namely DORC (Depreciated Optimised Replacement Cost). This approach was to be complemented by eventual benchmarking adjustments based on cross-company comparisons. ANEEL argued that by using this approach, the effects of technological change can be taken into account in the asset valuation process.

The Brazilian distribution companies association ABRADEE opposed ANEEL's choice for asset valuation. Generally, distribution companies wanted the value of their assets equal to the price they paid in the privatisation process. The main argument is that the privatisation price is a fair representation of the value of the assets agreed between the government and investors. In the Brazilian case, ABRADEE pointed out that the ANEEL's decision created a wide divergence between market value and replacement cost methodologies. Based on a sample of 16 privatised distribution companies, ABRADEE stated that the ANEEL's approach was on aggregate only 50% of the actual market value paid by the utility companies at the moment of privatisation (Foster and Antmann, 2004). ANEEL rejected ABRADEE's claim and officially adopted the DORC methodology via Resolution no. 493/2002.

This resolution established that the DORC methodology involved individual documentation of each of the distribution company's assets. This required reconciling information in the asset register (accounting information), with physical inspections of assets, which was done in some cases by sampling. Each asset was valued at its current sale price, adjusting for age via straight-line depreciation schedule, and discounting the proportion of the asset that could not reasonably be expected to be used within the next ten years. This valuation process was conducted by firms previously accredited by ANEEL, and subject to quality inspections by ANEEL. In addition, ANEEL resolution no. 493/2002 established that ANEEL could make adjustments to asset valuations for specific companies based on benchmarking of efficiency across companies. However, Foster and Antmann (2004) state that ANEEL did not provide much clarification on how this adjustment would be done.

The implementation of the asset valuation methodology proved to be more complex than ANEEL had anticipated, as the distribution companies' data submitted to ANEEL had several inconsistencies. As a consequence, ANEEL decided to perform a series of training workshops for the accounting firms involved in the asset valuation process, and in August 2003, ANEEL published a new technical note no. 178/2003 to consolidate the asset valuation process. This technical note idenified four stages in the asset valuation process: (a) perform the physical inventory/count of all distribution company's assets and then, perform reconciliation between the physical inventory result and the asset register from the accounting system; (b) measurement of assets' price by using the replacement cost, which reflects the current market price of an asset or the new replacement value. This methodology applied in the first tariff review process took into account market and purchase conditions of each distribution company, as the asset price was set by the average price obtained by each company. (c) reduction of the asset base by the accumulated depreciation which is calculated according to the regulatory depreciation rate based on the straight-line method; and (d) deduction of part of the asset value by applying the utilisation rate which reflects the level of usage of a specific asset of the company.

For the second tariff review period (2007-2010), it was decided that the value of the regulatory asset base (RAB) of the first review period would be used to determine the RAB for the second review process. This means that the assets from the first review process would not be revaluated and, to set the new RAB, the regulator would use the same quantities and assets' prices used in the first review process. These assets value would only be adjusted to consider the period inflation by applying a Brazilian index (IGP-M).

Regarding the new assets that were acquired between the first and second tariff review process (these assets are called the 'incremental base'), it was decided to use the same approach used in the first review process to asset valuation, that is, the replacement costs based on the DORC methodology. However, according to ANEEL resolution no. 234/2006, it was proposed to adopt a regionalised price reference database. As a consequence, the replacement cost will not be individually obtained for each distribution company, which was done in the first review process, but by using the average asset prices of all distribution companies.

Nevertheless, in the beginning of the second review period in 2007, the asset price database from each company was used, as ANEEL had not developed the regionalised price database for the Brazilian electricity distribution sector. ANEEL technical note no. 353/2007 explained the reason why ANEEL did not develop the asset price database for the sector. This note highlighted three basic problems: (a) the necessity of creating modular (block) structure for the company's asset; (b) the difficulty of calculating the small parts and additional costs of fixed assets; and (c) lack of time to develop and consolidate this new approach based on a regionalised asset price database for the sector.

This technical note stated that it would be impossible to use the asset price database for all companies in the second tariff review process. In addition, this same technical note proposes the utilisation of the historical cost approach adjusted by the period inflation. It was argued that the utilisation of the replacement cost methodology based on the current market price, which considers the average asset price of each distribution company (this methodology was used in the first tariff review and in the first companies in the second review process) and has a similar result to the application of the historical cost adjusted by inflation.

This proposal to use historical cost to asset valuation was presented and discussed in the public audience no. 052/2007. ABRADEE (the distribution companies' association) opposed the regulator's idea for asset valuation, pointing to the divergence between the replacement cost approach and the historical cost. In addition, ABRADEE stated that the utilisation of the historical cost approach is a radical modification in the regulatory framework and this can generate a regulatory risk for the Brazilian electricity sector. ANEEL (see ANEEL technical note no. 456/2008) accepted the ABRADEE and other distribution companies' pledge and it decided to use the replacement cost approach based on the current market value of each company's assets. This decision was made in August 2008 when ANEEL completed or started the tariff review process of 70% of the distribution companies in Brazil. Therefore, the change of the asset valuation approach would affect a small number of companies. As a result, the regionalised asset price database for the distribution sector will be developed for the third tariff review process, when all the company's assets will be evaluated using the replacement cost based on the average asset price of all Brazilian distribution firms.

5.5.3 Depreciation

Depreciation is a key issue for the regulator in the Electricity sector. The three main reasons for this are the following: (a) electricity utilities are capital intensive and depreciation is a major component of the costs; (b) the approach to calculate depreciation is considerably flexible, and the choice of the depreciation method can change prices and cash flows and reduce risks for the investor; and (c) changes in depreciation methods can result in gains and losses if not handled carefully.

Depreciation can be defined as the "process of allocating the cost of a tangible or fixed asset (with the exception of land) over the period during which economic benefits will be received by the firm" (Stolowy and Lebas, 2006, p. 646). As a result, the depreciation allowance recognises the fact that the potential of any asset is consumed through usage or passage of time. A range of depreciation methods, which vary in complexity and results, is available to the regulator. Depreciation can be calculated using time-based depreciation methods, such as straight-line, declining balanced method, and sum-of-the-years' digits; or depreciation methods based on activity level, such as productive output and service quantity.

In Brazil, depreciation for financial accounting purposes and tariff review process is calculated on the balance of fixed assets (financial accounting) and on gross regulatory asset base (tariff review process) by the straight-line method, using the rates determined by ANEEL, which reflect the estimated useful life of the assets (Ganim, 2003). In the straight-line method, a constant percentage of the undepreciated asset value is deducted from the opening asset value each year. This approach is the most frequently used method because of its simplicity of application and because it often reflects accurately the schedule of consumption of the productive potential. By adopting this method, the Brazilian regulator assumes that the decline of the fixed assets' potential is related primarily to the passage of time rather than to the level of activity, and it also assumes that the assets will be equally productive each year during their useful life.

The procedure to register the depreciation must be in accordance with ANEEL Resolution no. 15/1997 and DNAEE Resolution 815/1994. The depreciation rate for financial accounting and tariff review purpose must be in accordance with ANEEL Resolution 240 of December 5, 2006.

5.5.4 Related-party transactions

Related-party transactions are common in the electricity sector as utility firms adopt more complex, and often more efficient structures. Utilities seek efficiencies through economies of scale and scope, and placing greater competitive pressures on their own activities. This makes dealing with related-party and transfer pricing more difficult. The challenge for the regulator is to determine when two organisations are related and what powers the regulator has with regard to related-party transactions, as well as the appropriate bases for cost allocation and pricing (Pardina, et al., 2008). Therefore, the regulator, without undermining incentives to improve efficiency, needs to ensure that the benefits of more efficient means of providing services are fairly shared and that no profit shifting or cost padding occurs. The regulator wants to be sure that the regulated firm pays no more than is reasonable for the services provided by related parties and is fairly compensated for services it provides to related parties.

In the Brazilian context, integration of activities was seen as a means to raise the market value of distribution companies to be privatised. As a consequence, a considerable number of distribution companies are part of economic groups that perform generation, transmission and trading activities, as well as these groups having more than one distribution company. During the first reform period, self dealing (the purchase of power by distributors from their own subsidiaries) contracts were allowed within a single economic group. This generated severe criticism, as some distribution companies were allowed to adjust its tariffs to reflect the purchase of more expensive energy from a company of the same group. Araujo (2008b) points out that many of the self dealing contracts were based on the cost of thermal plants, which was much higher than the marginal system cost. As a result, the energy price that consumers had to pay with this scheme was significantly higher than the average system cost.

In order to avoid such a problem, the second electricity sector reform forbade self-dealing or bilateral contracting within a single economic group (articles 20 and 30, law 10,848/2004). This policy forced all purchase of energy traded by distribution companies to be done through public auctions, that is, distribution firms can only contract energy through regulated public auctions based on minimal price.

Other related-party transactions, such as contract for acquisition of new technologies, sharing infra-structure contracts, rendering services, and mutual fund contracts, are regulated by ANEEL in accordance with Law no. 9427/1996 and ANEEL Resolution no. 334/2008. These regulated-party transactions must be sent to ANEEL before the execution in order to be approved by the regulator. There is one specific department in the ANEEL's Superintendency of Economic and Financial Oversight (SFF) responsible to analyse and approve the related part transactions. In addition, ANEEL Resolution no. 334/2008 establishes that assets, liabilities, revenues and expenses related to the related-party transactions must be registered and controlled in the accounting system of each company involved in these transactions in order to facilitate ANEEL's inspections.

5.6 Conclusion and Summary

The Brazilian case shows that the main feature of the Brazilian electricity sector liberalisation was that the market reforms involved independent actions characterised by the lack of planning before privatisation and ad hoc decisions made by the Brazilian government. This approach to reform the electricity sector is described by Araujo (2006) as a reform by trial and error. This approach had a significant impact on the regulatory framework adopted in Brazil. As a consequence, this also impacted on the tariff review procedures and the regulatory accounting evolution as they had to cope with this macro environment and practical issues of dissemination and implementation.

It is important to identify the major events in the Brazilian electricity sector to be able to understand the impact of this trial and error approach on the tariff review process and regulatory accounting. The first distribution company was privatised in

1995 and the first large distribution firm was privatised in 1996 and in both cases the privatisation was based on ad hoc decisions, as at this time there was no regulatory framework implemented. The regulator (ANEEL) was created in December 1996. However, the first board of directors was nominated in December 1997, when 10 companies had already been privatised. Moreover, the government had problems in implementing the proposed model and the wholesale market started to operate in September 2000. In May 2001, the electricity rationing started, this lasted for 10 months. As it can be observed, these events put too much pressure on the recently created regulator as the demand to introduce a regulatory framework had a sense of urgency. In addition, the 2001 crisis demanded emergency measures to guarantee that the electricity system would not collapse. As a consequence, regulatory accounting issues and the tariff review process were neglected. It was much more important to deal with the immediate threats than planning and discussing issues related to regulatory accounting. Therefore, during the period from 1995 to 2002, the basic aim of the regulatory accounting in Brazil was to monitor and ensure the distribution companies' financial and economic performance, in particular, during the rationing. This ensured that the electricity system would not collapse due to distribution companies bankruptcy.

This chapter reviewed the Brazilian regulatory system by taking into account the main issues that influence the management accounting practices in an electricity distribution company, namely the tariff review process and the so-called core issues in the regulatory accounting (regulatory asset base determination; separation of activities; depreciation; and related-party transactions and transfer pricing). As a consequence, this chapter provides the macro environment (the economic and political level in this thesis theoretical framework) description that supports the analysis of management accounting change in the case study organisation. The next chapter provides the foundation to understand the process of change by explaining the meso and micro levels of the case company, that is, the organisational field level and the intra-organisational level of the framework adopted in this thesis.

Chapter Six: The Case Study Company and Management Accounting System before Privatisation

6.1 Introduction

Having presented and explained the case study organisation's macro environment (the economic and political level of the thesis framework), this chapter presents the meso (organisational field level) and the micro (intra-organisational level) levels by providing an overview of Electra (the case study company), the holding company and the main associations of the Brazilian electricity company that have some kind of influence on Electra's management accounting systems. The main objective of this chapter is to present and explore Electra's history and organisational structure, as well as Electra's management accounting systems before the privatisation by commenting and discussing the management accounting practices before the privatisation and the process of preparation for the privatisation.

6.2 The Case Study Company - Electra

The name of the case study organisation cannot be disclosed for reasons of confidentiality. As a consequence the name of the company has been modified to Electra. The company is a Brazilian electricity distribution company which was created in the 1960s when two electricity companies were merged to form a state-owned organisation controlled by the company's state government. It is important to highlight that in terms of the Brazilian electricity industry a distribution company has two activities: network function and supply function. Therefore, the Brazilian model is different from some countries, such as the UK where these two activities (distribution and supply) are performed by different organisations.

The case study organisation was privatised in 2000. Electra was acquired by a pool of three organisations: two Brazilian companies and a foreign organisation. This holding company had taken over two other Brazilian electricity distribution companies before purchasing the case study company. At the time of privatisation, the case study organisation had more than 1.8 million consumers, production of about 7 Gwh, and more than 3,000 employees.

The case study organisation is part of a group of companies which operates in the Brazilian electricity sector. This group of companies is formed by three electricity distribution companies (including Electra) and nine generation and transmission organisations. In addition, this group of organisations is among the fifth largest private sector groups in the Brazilian electricity sector when ranked by total energy sales.

Table 6.1 provides information regarding the performance of this company in 2007 in order to give an overview of this organisation.

Indicator	Approximated Value (for confidentiality reasons)
Turnover	£ 900 million
Electricity sales (Mwh)	> 7.5 million
No. of consumers	> 2.5 million
No. of employees	> 1,500

Table 6.1 – Case Study Company Key Information

This section is structured as follows. First, an overview of the case study company before privatisation is presented. This provides information about the strategy adopted by Electra and the management style, as well as the organisation structure of the company. Subsequently, the changes in the Electra's structure after the privatisation are described. Finally, the next subsection deals with the process of restructuring that took place in 2004.

6.2.1 Electra before Privatisation

Electra was a state distribution company. As a result, the strategic decisions followed the main policies established by the governor of Electra's State. In the context of Brazil, the governor had a mandate of 4 years with no possibility of re-election[1]. As a result, Electra's management systems were modified by each new governor or

[1] The Brazilian legislation changed in 1998 and a State governor can be re-elected.

political group that took over. This led to the introduction of several systems of control and management, which were not connected to the previous systems. This situation generated among the employees a sense of discontinuity, because they knew that the present management system will be replaced or modified by the next political group. The Electra's head of the supply department explained this problem of discontinuity:

> *"During the state control ownership, we had a huge political interference. We had from time to time new initiatives. We had administrations that were concerned with results, targets and improving company's performance, but these administrations were not successful, because of the political interference. Therefore, projects were started, but they were not finished, there were no continuity. When you are talking about quality, quality is something that we have in our culture. The left-wing won the right-wing, so a new culture was introduced into the organisation. Then, you forgot everything and started again. So, we had sporadic initiatives."*

In addition, the last governor before the privatisation (from 1995 to 1998) had the expansion of the distribution network in the State's rural areas[2] as one of his main priorities of office. Therefore, the focus of the company was on the expansion of the network (universal service) during this period. A document prepared by Electra to evaluate the company's management from 1995 to 1998 explains the firm's strategy during this phase. The strategy comprised five basic points: (a) focus on the electricity system: installation and expansion; (b) business view based on the distribution activity with minor concerns about the supplying activity; (c) market view based on the demand expansion to support capital/investment decisions; (d) focus on the service rendered, but no focus on client satisfaction; and (e) economic and finance management based largely on liquidity. A manager of the planning and control department commented about Electra's strategy before privatisation:

> *"When state company, we had the conscience that the company was not to make profit, the company did not have the objective of making profit. The organisation had as strategy to follow the main policies established by the state governor. Therefore, the company had great social concern; the state electricity system was very under-developed (...) So, I am going to put in this way: the company's administration was focus on to achieve the state policies and objectives."*

[2] The rural electrification was the governor main promise during the election campaign.

The Brazilian electricity sector reform started in 1995 and the first distribution company was privatised in 1996. This new environment and the eminent perspective of privatisation caused a range of measures adopted by Electra to cope with this new situation. One point that should be highlighted among these measures was the reduction in the number of employees (see table 6.2). This number dropped sharply from 5,648 in 1990 to 2,577 in April 2000 (2 months after privatisation). This was a consequence of a voluntary layoff program carried out in the organisation, in particular after 1995. Electra's management report from 1995 to 1998 (p. 35) pointed out:

> "Because of this macro context which is characterised by uncertainties, the company's board of directors decided to decelerate the company's activities and prepare the organisation for re-evaluate the future line of work development by taking into consideration the macro environment which involves the company's privatisation. This will require new action measures which include the reduction of the number of employees in order to cope with this new reality".

Year	*No. of Employees*
1990	5,648
1991	5,506
1992	5,340
1993	4.915
1994	4,640
1995	4,552
1996	4,419
1997	3,970
1998	3,219
1999	3,078
April 2000	2,577

Table 6.2 – Electra's Number of Employees from 1990 to 2000
Source: First workshop of the managers of Electra (24th May 2000)

This human resource policy carried out in Electra caused some problems for the organisation, in particular regarding the employees' ageing as the last admission process was conducted in 1986. In addition, the perspective of privatisation also impacted in the employees' training programme. Electra's head of the receivables recoveries department commented about this situation:

"Electra had 5,500 employees in 1989. From 1989 to January 2000, the company did not hire anybody. This created an aging gap in the organisation. The last admission process was carried out in 1986. From 1987 to 2000 many employees left the organisation because they would not have the required characteristics to work on a new private business model which will be introduced after the privatisation."

Following the tendency of reducing the number of employees, Electra's board of directors decided to carry out a process of restructuring in 1998. As a result, a new organisational structure was implemented (see figure 6.1). As can be observed the company was divided into four boards of directors: (a) electrical system; (b) economic, finance and commercial; (c) management; and (d) executive administration. These boards of directors were divided into 11 superintendencies and below these superintendencies there were 40 departments/districts. Finally, the departments were split up into 91 divisions and 52 offices.

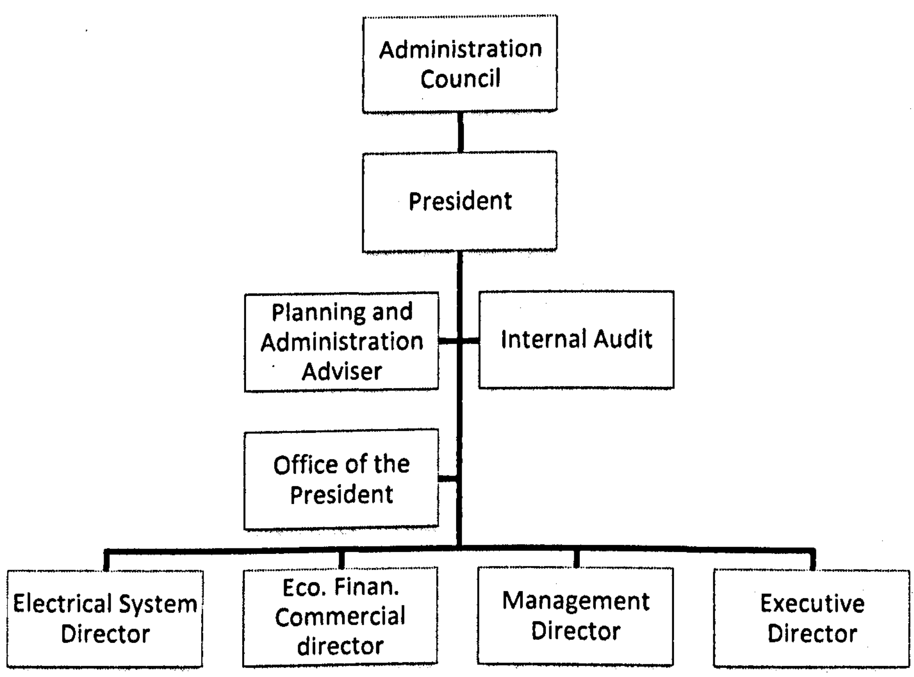


Figure 6.1 – Electra's Organisational Chart in 1998

In terms of the management accounting function, the management accounting information was generated by two organisational entities: the planning and administration adviser; and the economic, finance and commercial director (see figure 6.2). According to Electra's management report from 1995 to 1998 (p. 47), the planning and administration adviser had the following objectives: "propose the company's strategy; organise the planning system and integrate this into the organisation; coordinate the preparation of plans, programmes and projects; and advise on new business projects".

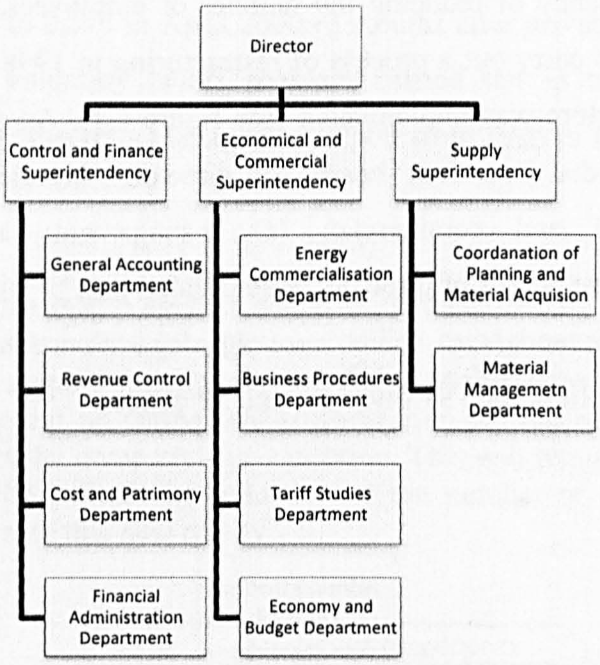


Figure 6.2 – Electra's Economic, Finance and Commercial board of director in 1998

The economic, finance and commercial board of directors was divided into three superintendencies. In terms of management accounting the control and finance superintendency played an important role. According to Electra's management report from 1995 to 1998 (p. 47), the basic aim of this superintendency was: "proceed the company's accounting and finance management by standardising and book keeping the accounting events and procedures; appropriate the company's costs by service, department and function; and control the inflows and outflows in the firm's cash flow". The accounting department was subordinate to the control and finance superintendency and its main objectives were: "Standardise and book keeping the accounting information and practices; plan and execution of the taxation requirements; and disclose the accounting information to the external users in accordance with the legal requirements". Finally, another important department that played a significant role in Electra's management accounting system was the economic and budgeting department. The main goal of this department was to "prepare and control the company's budget; and analyse and forecast the budget tendency to support the firm's economic management". As can be observed these objectives did not emphasise the aim of accounting in providing information to the internal users to the decision making process. This issue will be dealt in the next section of this thesis.

6.2.2 Electra after Privatisation (2000-2004)

As mentioned before, Electra was privatised in 2000 and the group that took over is composed by three organisations: two Brazilian financial institutions and an international electricity company (for reasons of confidentiality the name of this international company was modified to "Energia"). After the privatisation, the first step to change Electra's management style was the organisational restructuring based on the management by objectives (MBO) principles in accordance to Energia's standard management model form for electricity distribution companies. The former superintendent of engineering explained this process:

> *"In the private environment, since the company was privatised, the organisation's operator was Energia which is a European electricity company. Then, there was a kind of internalisation of Energia's culture which comprised: massive investments; reduction of the operational expenses; reduction of the labour force; outsourcing; reduction of the hierarchical levels in the company. Therefore, these were the measures that were implemented in the organisation after the process of privatisation"*

The former director of planning and control also explained the initial objectives after the process of privatisation:

> *"Just after the privatisation, the company's strategy was a kind of survival strategy which tried to minimise all the problems that Electra had by being a state company. These actions aimed to deal with: technological issues; human research issues; costs and expenses control; and the regulatory issues"*

Electra adopted Energia's management model which was used by the other distribution companies throughout the world. Electra's 2000 annual report (p. 35) explains that this management model is based on:

> "The management by objectives methodology, which is adopted in all companies of the Energia group, integrates in organised and coherent way the strategies and the management in broaden and participative sense. The alignment between the different targets of the company's areas and the global objectives of the company is done trough: a five-years business plan, which is revised every year; direction plans and specific plans; management contract (the annual performance measure target for each area of the company); and annual budget"

In order to consolidate this management model in the organisation a document called "Company Project" was published. This document defined Electra's strategy by discussing the company's mission and views. In addition, this document established the set of values, principles, policies and strategic objectives which supports the employees' behaviour and actions in the organisation. Therefore, this document defined the desired profile for Electra based on the new owner's perspective. Among this new set of values three aspects were emphasised: the importance of the company's profitability in the short and long term; increasing the productivity working force; and expansion and quality of the electricity system.

Despite of this process of changing the principles and values of the organisation, the majority of the interviewees highlighted that this process was gradual and did not generate resistance among Electra's employees. The basic reason for this is that the holding company, in the first years after privatisation, replaced only the board of directors and retained the majority of the middle-managers and other employees. This created a sense of continuity among the organisational actors. In addition, the new objectives of the company, in particular in the first and second years after privatisation, were congruent with Electra's main objectives before privatisation, as during these first years after privatisation the focus was on electrical system modernisation, system reliability and network expansion. Therefore, in this period, the company paid more attention on the technical aspect of the business instead of the financial return on investment. The head of the internal audit department explained:

"With the Energia administration there was no management clash between the previous state-owned model and the Energia's model. The company focused on improving the technical aspects of the electricity system. Before the privatisation, the company's aim was the network expansion, in this way, everybody who progressed in the carrier was working in this area. As a consequence, nobody took into account important issues, such as profit and the losses index. Energia continued the same business philosophy, but with focus on the electricity system modernisation and there was no great focus on financial indicators"

The new organisational structure after privatisation (see figure 6.3) reflects the intention of modernising and adapting Electra to the new private environment created after the process of privatisation, by reducing the number of hierarchal levels and departments in the organisation. The new organisational chart was introduced into the organisation just after the privatisation. As can be seen from figure 6.3, the company had one president (CEO) and six directors: (a) director of territorial coordination; (b) director of economic, finance and investor relation; (c) director of human resource; (d) director of asset management; (f) commercial director; (g) director of sharing services. The board of directors were divided into 29 departments and the departments were split up into 154 units which were the smallest management level in the organisation. The Head of the Corporative Consumers department explained the introduction of this new organisational structure:

"The first major impact was the cultural impact. The operator that came here is a European electricity company which had its own culture, the organisational chart model, labour division. There was an important reform in the way of working. Then, departments were created based on processes. The departments which were more functional disappeared and the company started to work based on processes"

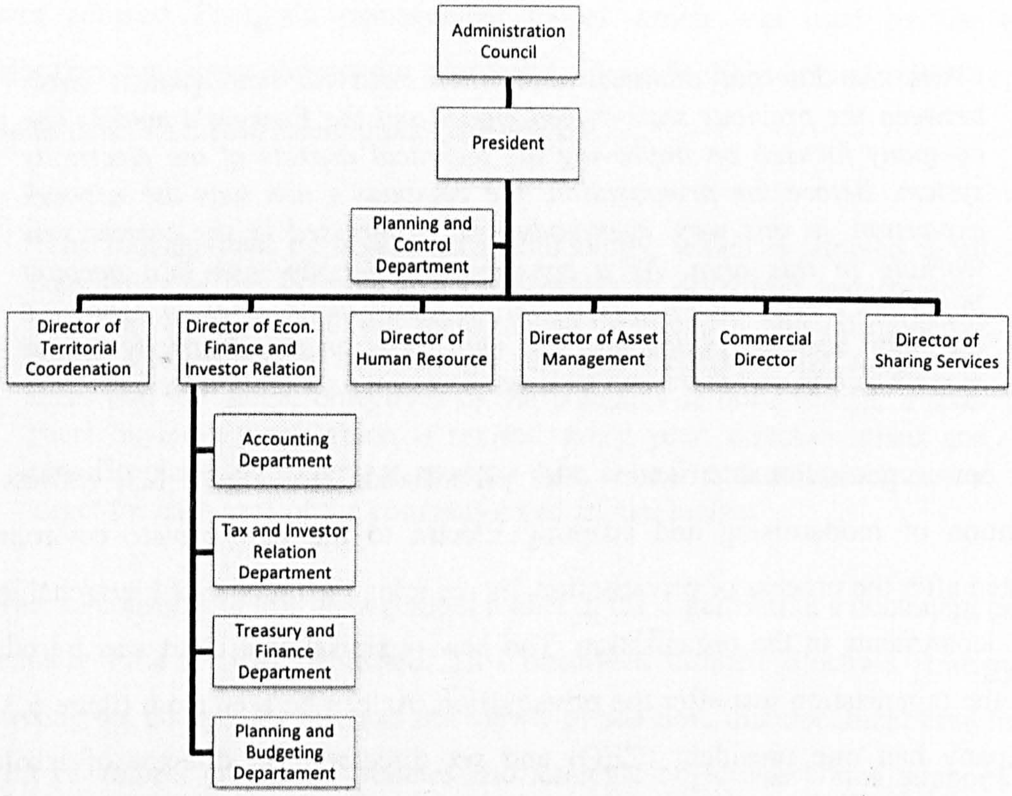


Figure 6.3 – Partial Representation of Electra's Organisational Chart in 2000

The management accounting information was produced mainly by two organisational entities: the planning and control department; and the director of economic, finance and investor relation. The first entity was a staff department which is defined by Buchanan and Huczynski (2004, p. 474) as a department that exists "to aid the line managers in achieving their departmental objectives". Therefore, it is a department formed by workers who are in advisory positions and who use their specialised expertise to support the efforts of line departments. In contrast, Buchanan and Huczynski (2004, p. 472) point out that "the line relationship in an organization are depicted vertically, and connect the positions at each level with those above and below it. It is this set manager-subordinate relationships that are collectively referred to as the organization's chain of command". In the case of Electra, the main aim of Electra's planning and control department was to support the board of directors in preparing and defining the company's performance measures based on the strategic parameters established by the administration council and holding company (Organisational Manual, 2000). This department was divided into four units: (a) management control unit; (b) strategic planning unit; (c) process quality unit; and (d) performance measures control unit. Therefore, this department was responsible for the company's performance measurement system and part of the management accounting reporting system.

The director of economic, finance and investor relation was responsible for the company's economic and finance management, as well as for providing information to support the internal decision making process (Electra's Annual Report in 2000). This board of director was divided into four departments: (a) accounting department; (b) tax and investor relation department; (c) treasury and finance department; and (d) planning and budgeting department. In terms of management accounting, the accounting department and the planning and budgeting department played an important role. According to the organisational manual in 2002, the main mission of the accounting department was "to register company's economic events with safety and reliability in order to comply with the legal requirements and to provide useful information to the internal accounting users, in particular by preparing the company's accounting statements". The planning and budgeting department had the following objectives: "prepare the budget proposal based on the economic and financial projections for the short and long terms by adjusting the budget in accordance to the 'Business Plan', which was prepared at the privatisation time". Moreover, this department was responsible to control the company's operational and capital expense monthly. As can be observed, the function of this board of director includes providing information to the internal users. Before the privatisation this aspect was not clearly stated in the company's documents (this issue will be deeply discussed in the following chapters of this thesis).

6.2.3 Electra's Restructuring

In mid 2004, there was a restructuring in the group and the operation and management of Electra was no longer a responsibility of Energia (the international company which is part of the holding company). The basic reason for the restructuring lies on the fact that the financial performance of the group was much below than predicted during the process of acquisition. Therefore, in order to change the company's strategy and create alignment between this strategy and the strategic objectives of improving company's financial performance and profitability, as well as preparing the company for expansion, the first measures were implemented which comprised: hired professionals from the Brazilian electricity market to compose the holding company's new board of directors; introduction of a new organisational structure; and improvement of the internal control system and corporate governance system (Holding company's annual report in 2004, p. 19). The Electra's former superintendent of engineering explained this process of change in control and operator:

> *"The model designated Energia as the company's operator. Therefore, Energia effectively managed all there distribution companies and the Energia's bias is a technical one, let me put in this way. Energia is an electricity company which has a technical DNA. Energia was a distant holding company, it was not an operative holding company. So, there were similar objectives from this time and the state-owned period. What happened in the second moment with the restructuring was the fact that the new holding company is an operative holding company and it has a more aggressive mission and vision based on economic and finance performance"*

As can be observed, there was a profound shift in terms of strategic objectives caused by the change in ownership (control), that is, the company's focus moved from technical issues and network modernisation and expansion to financial performance. This can be observed in the statement made by the holding company's CEO: "the priorities now are: to restore the financial equilibrium, to improve the operational margin and the net profit, and to introduce new corporate governance practices" (Electra's newsletter in September 2004). Another important aim of this process of restructuring was the standardisation of management practices among the group's distribution companies (total of 3 distribution organisations). The holding company's CEO pointed out "the restructuring of the group will facilitate the standardisation of the same business model for all companies which are part of our group based on the best management practices available on the market" (Electra's newsletter in August 2004). Electra's superintendent of operation explained this change in the company's focus and he compared the present focus to his previous works in other Brazilian distributions companies:

"There was a predominance of the European company in the control of the holding company and the performance of the group was under the expectations and as a consequence, there was the restructuring of the holding company (...) and the present board of directors was hired and the performance of the group improved. The focus on finance performance in the organisation is maybe one of the highest if I compare with the other Brazilian electricity companies that I have worked"

Figure 6.4 shows the present organisational chart of the case study organisation. As can be seen from this chart, the organisation has one director-president who is responsible for the performance of the company and four directors: human resources, finance and investor relations, planning and control, and regulation and tariffs. This board of directors structure is the same for all the three distribution companies of the group. In addition, the case study company is organised into seven main superintendencies (human resources, finance and investor relations, operations, engineering, marketing and commercial, planning and control, and regulation and tariffs). Moreover, in the micro-level, these seven superintendencies are divided into 27 departments which constituting 114 units.

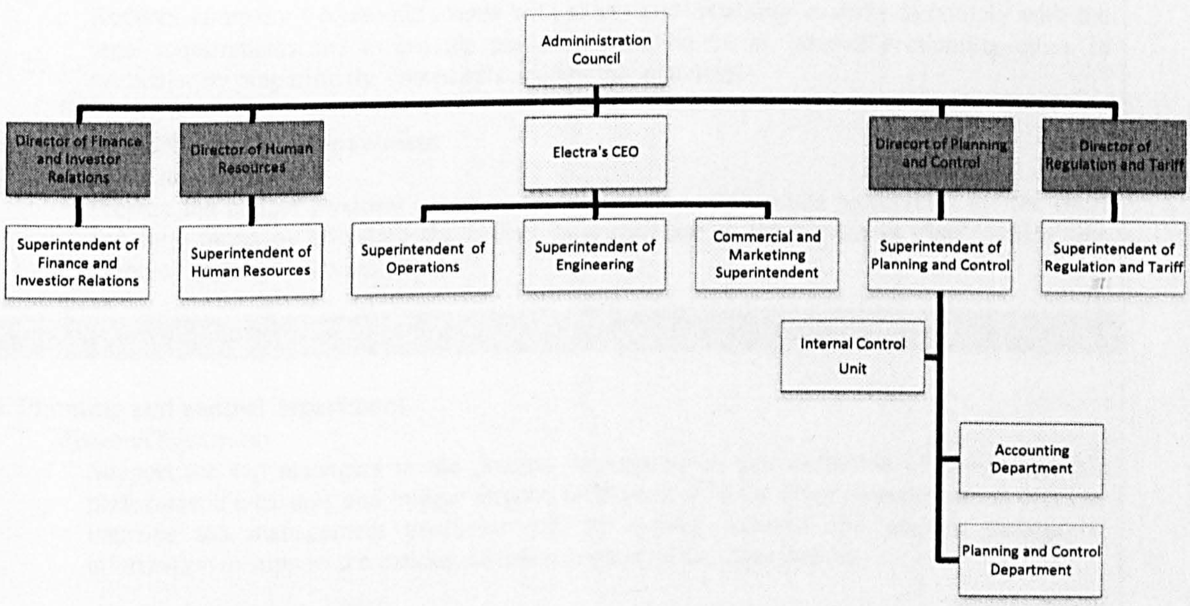


Figure 6.4 – Electra's Organisational Chart in Mid 2004

In terms of management accounting, the accounting department and the planning and control department are mainly responsible for generating the management accounting information. These two departments are subordinate to the superintendent of planning and control (see figure 6.4). The accounting department has five units and 33 employees. The main responsibilities of this department are to prepare and analyse the accounting statements and reports that will be used in the decision making process. The planning and control department is divided into three units: strategic planning and management control unit; economic and finance planning unit; and budgeting unit. This department has the following responsibilities: (a) to prepare the annual budget; (b) to control and manage the performance measurement system of the organisation; and (c) to prepare management accounting forecasts. According to the organisational manual in 2007 (p. 102), the mission of the planning and control department is "to support the top managers in the process of preparation and definition of the company's performance measures and budget targets; to interact with the other departments in order to improve the management practices; and to control, analyse and prepare managerial information to support the making decision process in the organisation".

Table 6.3 provides a summary of the departments of Electra that were responsible for preparing the management accounting information in the three different phases of the company. This table provides the objectives/mission of each department.

Phase – Before Privatisation
a. The planning and administration adviser Mission/Objectives: Propose the company's strategy; organise the planning system and integrate this into the organisation; coordinate the preparation of plans, programmes and projects; and advise on new business projects. **b. Accounting department** Mission/Objectives: Standardise and book keeping the accounting information and practices; plan and execution of the taxation requirements; and disclose the accounting information to the external users in accordance with the legal requirements. **c. Economic and budgeting department** Mission/Objectives: Prepare and control the company's budget; and analyse and forecast the budget tendency to support the firm's economic management.
Phase – After Privatisation from 2000 to 2004
a. Planning and control department (*Staff department*) Mission/Objectives: This department was divided into four units: (a) management control unit; (b) strategic planning unit; (c) process quality unit; and (d) performance measures control unit. Therefore, this department was responsible for the company's performance measurement system and part of the management accounting reporting system. **b. Accounting department** Mission/Objectives: Register company's economic events with safety and reliability in order to comply with the legal requirements and to provide useful information to the internal accounting users, in particular by preparing the company's accounting statements. **c. Planning and budgeting department** Mission/Objectives: Prepare the budget proposal based on the economic and financial projections for the short and long terms by adjusting the budget in accordance to the 'Business Plan', which was prepared at the privatisation time.
Phase – After Restructuring from 2004 to present
a. Planning and control department Mission/Objectives: Support the top managers in the process of preparation and definition of the company's performance measures and budget targets; to interact with the other departments in order to improve the management practices; and to control, analyse and prepare managerial information to support the making decision process in the organisation. **b. Accounting department** Mission/Objectives: The main responsibilities of this department are to prepare and analyse the accounting statements and reports that will be used in the decision making process.

Table 6.3 – Management Accounting Departments' mission and objectives in the Electra's Historical Phases

6.3 The Holding Company

The holding company is one of the largest groups of the Brazilian electricity sector, operating in the entire energy production chain, with businesses in the areas of generation, transmission, distribution and commercialisation. The holding company was created in 1997 and it is formed by three companies: a Brazilian pension fund that has 49% of the ordinary shares; a Brazilian bank which holds 12% of the shares; and an international electricity company which has 39% of the ordinary shares. The holding company was created with the objective of investing in the Brazilian electricity sector areas: generation, transmission, distribution and commercialisation. The holding company acquired the first two distribution companies of the group in 1997 and Electra in 2000. These companies operate in the same Brazilian region; this can facilitate the management and the utilisation of material resources. In 2007, the holding company controlled: three distribution companies which were responsible for about 60% of this Brazilian region market share and about 8% of the Brazilian electricity distribution market share; nine generation and transmission companies and one commercialisation company.

In 2004, there was a restructuring in the holding company (this issue was discussed in the previous section of this chapter) which introduced a new management model in this group of organisations. As a consequence of this model, the group started to operate with a single directive board, almost all the companies of the group started to be administered by one same administrative council and monitoring committees were put in place to help the council in the decision making process. In order to highlight this change, a new brand and visual identity were adopted for the holding company. Figure 6.5 shows the present organisation chart of the holding company which was implemented in 2004.

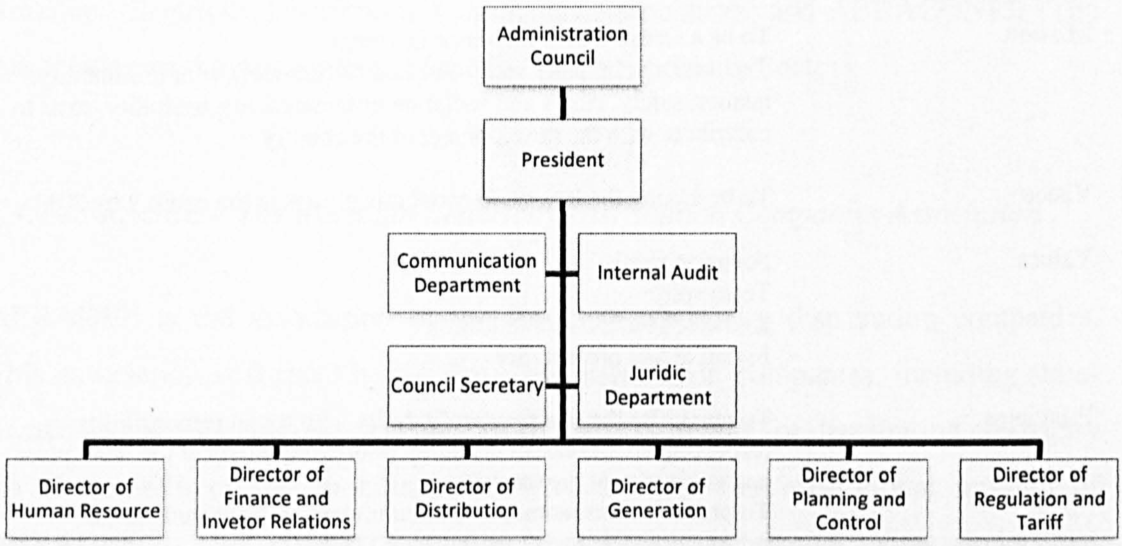


Figure 6.5 – Holding company's Organisational Chart in 2004

This change was communicated to employees through internal news bulletins and newsletters, and presentations to employees. In 2006, the holding company published the ethics code of the organisation to consolidate the principal and values of the organisation (see table 6.3). It was also highlighted in many documents and presentations, the importance of integrating and standardising the procedures and practices among the companies of the group. The director of distribution stated in the internal newsletter that the standardisation of the practices among the companies of the group was a key aspect of this new management model. He pointed out "we have to create the convergence of practices between the three distribution companies of the group as soon as possible by taking into the consideration the best practices that has been already developed in these organisations". As a result of this model, the holding company's CEO stated that the strategy of the business is "focused on operational efficiency, on efficient financial management, on consumer's satisfaction and on the development of our employees. We seek profitability in a sustainable way, with safety, ethics and social-environmental responsibility" (holding company's website).

Mission	To be a Group that is reference in energy The holding company seeks constant commitment with profitability, quality, safety, ethics and social-environmental responsibility, so as to contribute with the development of the country
Vision	To be among the largest 40 economic groups in the country by 2011
Values	Focus on result Team spirit Knowledge and communication Initiative and pro-activity
Principles	To maximise the business profitability with social responsibility by respecting all stakeholders and by prioritising safety at the work place and environment preservation To promote transparency and commitment with the truth of the information disclosed by the organisation To satisfy the consumers needs in a competitive environment with adequate quality and low costs

Table 6.3 – Mission, vision, values and principles of the Electra's holding company
Source: Holding company's ethics code

As a consequence of this new business model, the holding company put a lot of effort on the internal control system and corporate governance. According to the 2nd quarter financial report of the holding company, the holding company "has been undertaking a process of strengthening its general structure of internal controls in line with Section 404 of the Sarbanes-Oxley Act". In 2006, the group constituted the Sarbanes-Oxley committee to supervise the implementation of this control system by prioritising action plans and ensuring the necessary involvement of management of the areas required to comply with the agreed actions.

6.4 Associations in the Brazilian Electricity Sector

The Brazilian electricity distribution sector is a regulated industry that can be considered as a natural monopoly sector. As a consequence, this sector has many associations and organisations to represent and deal with the external agents, such as regulator and consumers. In terms of this research which aims to understand the process of management accounting change, two associations have an important role in this process. This subsection describes these associations: ABRADEE (the

Brazilian Electricity Distribution Companies Association) and ABRACONEE (The Association of the Accountants of the Brazilian Electricity Sector).

6.4.1 ABRADEE – The Brazilian Electricity Distribution Companies Association

ABRADEE is the association of the Brazilian electricity distribution companies. This association is formed by 48 Brazilian distribution companies, including state-owned and private companies. These firms are responsible for distributing electricity for about 99% of the Brazilian electricity market. The institutional mission of ABRADEE is "to contribute to the distribution companies' operational and economic-financial management systems with focus on consumers' satisfaction" (ABRADEE, 2009).

The main objectives of ABRADEE are:

- To represent and support the distribution companies in legal disputes;
- To support the companies in the following areas: technical, commercial, economic, finance, legal, politic and institutional;
- To foment the interaction and exchange of information between the Brazilian electricity distribution companies;
- To promote and do studies and research in the electricity distribution area;
- To set operational cooperative partnerships and to enhance information exchange between national and international entities and the Brazilian distribution companies; and
- To promote and perform courses, seminars and conferences, as well as publish written material to support companies' activities.

Among the main activities performed by ABRADEE three of them have relation to the management accounting system of a distribution company. They are:

- To organise the annual ABRADEE award for the best Brazilian distribution companies;

- To prepare and keep up-to-date the collection of performance indicators for the Brazilian electricity distribution sector; and
- To develop a benchmarking programme to disseminate the best practices among the Brazilian electricity distribution companies.

The ABRADEE award is rewarded annually since 1999 and from 2003 this award has been part of the ABRADEE's benchmarking programme. According to ABRADEE (2008) the vision of the ABRADEE award is to improve the management systems of the distributions companies in order to improve the performance of the electricity sector as whole, and as a consequence, provide a better service to the Brazilian population. The objectives of this award comprises (ABRADEE, 2008, p. 5-6):

- To create a tool to influence and promote improvements in the distribution companies' management systems in accordance to the ABRADEE's policies for the development of the electricity sector;
- To strengthen the association image in the Brazilian electricity sector;
- To guide and improve the distribution companies' quality systems; and
- To encourage the development and practice of the culture of quality and social responsibility in the Brazilian distribution companies;

The ABRADEE award takes into consideration five categories to evaluate the performance of a distribution company. They are: (a) consumer's satisfaction which is based on a survey carried out among the urban residential consumers; (b) operational management which evaluates the company performance by taking into account indicators regarding the quality of the service and technique and commercial aspects of the business; (c) economic and financial management which comprises six performance indicators to evaluate the financial situation of the companies; (d) quality management, in this category the companies are evaluated based on eight excellence criteria established by the National Quality Foundation (FNQ). These eight criteria are: leadership, policy and strategies, consumers, society, information and knowledge, human resources, processes and results; and (e) social responsibility which is mainly based on a survey conducted by ABRADEE. As can be observed, the ABRADEE award has strong roots with Total Quality Management (TQM), as the main grounds of this award are based on the ideas and publications by the National Quality Foundation (FNQ) which has similar aims of the British Quality Foundation and the European Foundation for Quality Management. In addition, the majority of the concepts and ideas behind the National Quality Foundation (FNQ) came from the well-known USA Malcom Baldrige National Quality Award. The president's adviser of ABRADEE commented:

> *"The ABRADEE award and the benchmarking programme are helping the distribution companies improving their management systems (...) there are regular benchmarking meeting where the managers of the electricity companies from every part of Brazil discuss the problem and exchange information in order to improve the company's management and operational system."*

ABRADEE also organises a collection of performance measures to support the Brazilian distribution companies. ABRADEE receives performance information from the distribution companies and consolidates indicators, making them available for the companies to compare their performance. This system is known as SIG (Management Information System). A manager of the planning and control department commented about this collection of performance indicators:

> *"This system standardises the performance measures, the information and the procedures to calculate and determine the technical and commercial information. This helps the distribution companies, because this can provide a set of standards to determine this information which can help in the process of benchmarking."*

Finally, ABRADEE has a programme of benchmarking to disseminate the best practices among the distribution companies. This programme started in 2005 and the main aim of this programme is to create a base of practices for the electricity distribution sector in order to facilitate the exchange of information among the distribution companies. The Balanced Scorecard methodology was chosen to support the development of this benchmarking process. This approach was used because the companies had already some familiarity of the Balanced Scorecard concepts and approach (ABRADEE, 2007). To date this programme has paid more attention to improve operational excellence among the companies by dealing with issues relate to commercial management and operational management.

The Brazilian electricity distribution sector can be considered as a very open sector in terms of accessing and exchanging information about the performance of the distribution companies. This is possible because the companies operate in a regime of concessions by regions which can be seen as a sort of private monopolies. As a consequence, the ABRADEE work is facilitated by this reality in Brazil and this association is able to collect and consolidate a range of information that can be used by the companies to improve their management accounting information by comparing their performances. The head of the planning and control department commented:

> *"ABRADEE helps, because it has the best practices base and the management information system. The electricity sector is very open, we can visit other companies to see what they are using and doing (...) We use the ABRADEE data base and we also visit other companies to see what is going on. We also use the performance indicators to compare our performance. So, the electricity sector is extremely open."*

6.4.2 ABRACONEE – The Association of the Accountants of the Brazilian Electricity Sector

ABRACONEE is the association of the accountants of the Brazilian Electricity Sector. This association was created in 1986 and its main aim is to promote the qualification and integration (network) among the accountants of the Brazilian electricity sector. As a consequence, this association has a limited impact on the day-to-day activities of the distribution companies, as this association does not establish accounting norms and principals. The basic idea of this association is to create a communication channel between the electricity sector accountants in order to exchange information and knowledge about themes related to accounting, in particular issues of financial accounting.

This association has organised an annual conference since 1985. This conference is the major event in the accounting area for the Brazilian electricity sector. This conference tends to focus on financial accounting issues and how to deal with the regulator's requirements. ABRACONEE also has an award for the best accounting statement disclosure. The aim of this award is to evaluate the level of accounting transparency of the Brazilian electricity companies. In the 2007 edition of this award, 78 companies were evaluated. In this award the following categories are evaluated: (a) general information; (b) non-financial information; (c) operational cycle information; (d) investment information; (e) risk and capital structure information; (f) performance information; (g) optional information; and (h) socio-environmental information.

6.5 Management Accounting before Privatisation

It could be advocated that the maturity of the management accounting system in a company is a function of the organisation culture embedded into the organisation. As a consequence, the Electra's management and control systems were not developing and there was a sense among the employees, in particular among the engineers, that these systems were not important to the company. So, financial aspects, such as generating positive cash flow or profit, as well as management questions, such as the control system, were not a priority to Electra. This period before the privatisation can be characterised by engineering dominance, when the operational and technical aspects were the only things that mattered in the case study organisation.

Despite the lack of continuity in the Electra's management and control systems, one aspect was highlighted by the interviewees which is the fact that Electra always had a strategic plan. The planning process in Electra was considered by the interviewees as a reference among the other Brazilian distribution companies. Planning is always an important aspect to distribution companies, because the sector needs intensive investment and the long term planning is primordial to meet the future demand for electricity. The former administrative director explained:

> *"The company's strategic planning process was consolidated and the company developed some projects with consultants in this area. Therefore, there was this planning tradition in Electra which was not a common characteristic among the other state-owned companies. I*

> *believe that is a characteristic of the electricity sector, because this is one sector that you need to plan in advance. I think that Electra had a good planning routine. The company had an annual plan, three-year plan and even ten-year plan."*

Electra's strategic plans and objectives were dependent on state policies. As a result, the strategic plan was established by administrative council which was formed by representatives indicated by the company's state governor. The former head of the accounting department explained the strategic planning process:

> *"The strategic plan was prepared by the company's president (CEO) and the administrative council. The operational plan was prepared by the company's board of directors. In order to prepare this plan, the managers spent two or three days in an isolated place to define and discuss the future project of the company. The length of this plan was always four years which was the governor mandate. The short term had never been based on budget (...) the company was not managed by using budget, the company was managed by isolated projects."*

Although planning was common practice in Electra, this process was restricted to the board of directors, as members of the lower levels of the organisation did not have access to this kind of information. Therefore, the middle managers and shop floor employees did not know about the long term plan of the company, as a result, their decision making process was based on day-to-day demands (ad-hoc decisions). In addition, even among the high level managers, the strategic planning process was perceived as not useful to help the management process of the company and the main focus of the strategic planning was on operational aspects of the business. Therefore, the financial issues, such as profit and cash flow, were neglected. The former head of the accounting department points out:

> *"It was very painful taking part in the strategic planning meetings, because people did not think that they need this plan to perform their activities (...) the main focus of the strategic plan was on operational issues, such as network expansion and commercial and operational losses. People did not talk about profit or cash flow. This kind of discussion did not happen before the privatisation."*

An annual corporate budget was prepared each year for Electra. This budget was linked to the state government budget. However, the budget could not be considered as an effective instrument of control in Electra because it was excessively flexible. Managers could extrapolate the limits established by the annual budget without any kind of problems. The Electra's head of the accounting department stated:

> *"There was budget in the state-owned period, but it was a fiction, the budgetary control was too loose, if you followed or not the budget, there was no punishment. You prepared the budget to show that the company had one."*

The head of the network expansion department pointed out:

> *"Before the privatisation, we did not follow and use the budget. Budget was a piece of fiction (...) I had a close relationship with the manager who was responsible for the company's budget, because he was my friend. I teased him about the budget by saying that the budget was useless and everyday he came out with different figures."*

In the same vein, the manager of the planning and investment department explained:

> *"During the state ownership, there was no concern about achieving targets. There was no concern about budgetary control. We prepared the budget with an X value and there was no concern about following the budgetary limits. There is no control at all."*

The head of the internal audit department also stated:

> *"Before the privatisation, nobody followed the budget limits and everybody extrapolated the budget values. Budget was a piece of fiction"*

Electra's managers were only concerning with the total amount of money stipulated by the whole company. It did not matter if the budget was executed completely different as long as the total expended in the year was below the planning forecast. The superintendent of engineering pointed out:

> *"The company's managers did not use to talk about budget. The budgetary control was concerned with the macro figures. There was no analysis about the sub-levels of the budgeted expenses. The most important thing was to stay below the total amount budgeted for the company"*

From the analysis of interviews it can be stated that the budget was produced annually, but only in a ceremonial way, because the budget was not used as a management and control tool. Budget information was restricted to the financial and accounting department. As a consequence, the other managers, in particular from operational areas of the company did not perceive the budget as a useful instrument of control and they did not use the budgetary information in day-to-day decisions. A number of interviewees pointed out that Electra's budget was a fiction, reinforcing the view that budget was prepared to justify the firm's costs to the shareholders and state government, but not used as an instrument of control.

Regarding Electra's performance measurement system, it can be stated that there was a performance management system in Electra, but this system was dispersed and not interconnected. Each main area of the company had its own set of key performance indicators (KPIs) and they were not interconnected. As a consequence, each area of the company was a small island with no specific target for the company as whole. The manager of the commercial department commented:

> *"The performance was measured in an informal way and the methodology was depended on the department manager."*

The former administrative director pointed out:

> *"There was a performance measurement system in the organisation that was used to evaluate the company's performance with operational and financial indicators. However this system was dispersed and it varied in accordance to the present political group in the organisation."*

In addition, the performance measurement system was not linked with the reward scheme, that is, if one area of the company or a group of employees had a poor performance or a very good performance, they received the same salary with no bonuses for their performance. This caused motivational problems among the employees because the scheme of promotion was not linked to their performance but was depended on the political nomination of the governor. A manager of the planning and investment department explained:

> *"There was no formal evaluation of the employees' performance, when there were bonuses, they were giving in a linear manner among the employees with bad or good performance. There was no distinction."*

As a consequence of the business objectives of the company before privatisation, that is, the expansion of the network system and operational quality of the system; the performance measurement system was largely based on non-financial indicators related to the above objectives. As a result, the financial performance measures, such as profit and operational costs, were not spread across the organisation. These performance measures were calculated, but this information was restricted to the financial and accounting department and the board of directors. Therefore, the non-financial areas of the organisation did not have access to this kind of financial measures which implies that the decisions made by these managers were based on operational information generated by their own department. The head of the consumers relation department commented:

> *"There was a performance measurement and control system in the organisation before the privatisation, but this was not reliable (...) This system was more operational. The majority of the employees did not know about profit and EBTIDA, the majority did not know. The company's focus was on building assets and network expansion."*

The management accounting reports and information were basically based on the financial accounting system. The reports presented the traditional set of information which included: the balance sheet, income statement, cash flow statement, and financial ratios. These reports normally presented the past performance of the company with a lag of about 2 months. There was another management accounting report prepared by the tariff study department which presented information about company's expenses, costs, revenue/tariff and market. This report compared the actual performance of the company with the budgeted figures, but there was little analysis and comments about the variations, as it was more of a descriptive report. The head of the electric system engineering maintenance department commented:

> *"The information was poor, to give you the picture of this we did not have the SAP system, the computational systems were weak with few resources and normally, we received out of date reports, when we received reports. These reports did not have any kind of analysis, they were very descriptive."*

A manager of the planning and control department also pointed out:

> *"Before the privatisation, there were management accounting reports, but these reports did not provide any kind of analysis. They just compared the budged figures with the actual performance without any kind of analysis."*

The main users of these management accounting reports and information were the board of directors and managers of the accounting and finance departments of the company. Therefore, the management accounting information was not spread to other areas of the company. One manager of the planning and control department explained:

> *"The management accounting information was not disseminated in the organisation. Before the privatisation, I was not a manager, so I did not have access to this kind of information. This information was produced in a centralised way in the planning areas of the company and only the board of directors had access to this information."*

Even the board of directors, in particular the operational areas, did not use the management accounting information to make decisions. This demonstrates that the management accounting information did not influence the work of the majority of the managers and employees of the organisation. The basic reason for this is the rationale of Electra which was the concern about the operational aspects of the business. The head of the accounting department commented:

> *"The main objective of the company was the network expansion, the universal service. The financial objectives were restricted to the accounting and financial areas of the company (...) The other managers received management accounting reports, but they did not pay attention to this kind of information (...) In 1999, we stopped to send the management accounting reports by mistake for 3 months and no one mentioned or complained about this."*

The former head of the accounting department also pointed out:

> *"I prepared the management accounting reports and I sent to the superintendents and board of directors. They did not use this information at all, nothing; they did not use to make decisions."*

In the same vein, the head of the corporative consumers department stated:

> *"The management accounting information was not internalised in the organisation. We normally received the management accounting reports, but these were not internalised, these did not generate interest among the managers and people did not understand this information. It looked like that this information was prepared by one department of the company, because the company was obliged to have this kind of information to comply with legal requirements, but the employees did not understand the importance of this information in the their day-to-day activities."*

In summary, as the main objective of the company was the expansion of the distribution network and the financial performance was not essential for the company, the management and control systems were not a priority to Electra's managers. This reflected on the management accounting system which was used in a ceremonial way. Moreover, the management accounting information was restricted to the accounting and finance staff of the company. As a consequence, management accounting was perceived by the employees as a secondary set of information for the decision making process and this information only mattered for the accounting and finance areas of the company. Therefore, management accounting played a secondary role in the organisation before the privatisation and management accountants were disregarded in the organisation by the managers from the other areas of the company, in particular those from the operational parts of this company. The following quote provides a view of the importance of the management accountants in the organisation. The head of the network expansion and network department stated:

> *"Before the privatisation, the image of the controller was a folkloric one, because people did not use the information and they did not respect the budget. So, why did the company need a management accountant/controller? There was a controller in the company, because the organisation was obliged to have one."*

6.6 The Process of Preparation for Privatisation

In December 1997, the House of Representatives authorised Electra's state governor to sell the stock control of Electra with repurchase rights. The state government contracted the BNDES (The Brazilian Development Bank) to administer the company's privatisation, but broke the agreement in November 1998, claiming that the bank had not fulfilled its promise to free funds to the order of R$ 700 million as an advance on the privatisation revenue. Negotiations with the BNDES were resumed in January 1999, at the beginning of the mandate of the new state governor.

In April 1999, the state government reached an agreement with the Centrais Elétricas Brasileiras – ELETROBRÁS (Federal holding of the Brazilian electricity sector). The main objective of this contract was to increase the value of the company by preparing the organisation for the privatisation process. In this deal the state government received R$ 100 million (Brazilian Real) as an advance on the privatisation revenue and Eletrobrás became responsible for Electra's management. Eletrobrás appointed a new CEO and the finance director for Electra. The main actions of this new board of directors were: (a) to improve the Electra's cash flow situation; (b) to consolidate the corporative systems, such as the corporative budget, stock control, payables, accounting, costs, and human research management; (c) to reduce company's expenditures; (d) to improve the consumers data bank; (e) to reduce the commercial loss; and (f) renegotiation of debt with public organisations. As we can see from these actions, the main aim of the company had shifted from the expansion of the network to improve the financial situation and the corporative systems of the company. As mentioned before, the main aim behind this new view was to improve the value of the company for the privatisation process by presenting Electra as a well-established company with a strong financial performance and integrated and modern corporative systems. The former head of the accounting department commented:

"The CEO and finance director was nominated by Eletrobrás. The main aim of this new board of director was to increase the company's share value. Then, this new board of directors wanted to improve company's profit and financial situation (...) this changed company's focus. Electra was not concerned anymore with rural electrification, increasing the number of consumers and following the state government special programmes. So, the aim of this new administration was to increase the value of the company, because the company will be sold in accordance to the future cash flows."

Electra's new strategy had an impact on the company's management accounting systems. According to Electra's annual report in 1999, the implementation of the new budgetary system was the main project and the greatest challenge faced by the Electra's board of directors and managers in 1999. This new budgetary system aimed to improve the financial control in order to reduce the operational expenditures. Electra's managers recognised that Electra's budgetary system was excessively flexible and, as a consequence, people did not follow the budgetary limits. So, the new budgetary system tried to tighten the control over the operational and capital expenditures by making the department responsible for the expenditures and by ensuring that the departments of the company had to follow the budgetary limits. However, this was a short period of time to change people's behaviour towards budget as the head of the receivables recoveries department stated:

"In this year before privatisation, Electra management systems improved, but not significantly. Until the year of privatisation, Electra still almost the same, I did not feel great changes."

In order to improve the management systems of the organisation a consulting firm was hired during a period of seven months before the company's privatisation. This consulting firm implemented the Japanese methodology so-called *Hoshin Kanri*. This term has various translations which include: policy deployment, policy control and management by policy (Tennant and Roberts, 2001a). This study uses the term 'management by policy' to explain the *Hoshin Kanri* approach, as this term was used by the consultants in Electra.

According to Witcher (2003, p. 83), management by policy is "a top-level management system for mobilizing a company-wide effort for realizing strategy". This methodology was originally developed in Japan in the 1960s and was first introduced to the Western audience in the early 1990s. The management by policy approach and the Total Quality Management (TQM) have a very strong relationship, as Tennant and Roberts (2001a, p. 263) point out *Hoshin Kanri* is "one of the pillars of Total Quality Management (TQM) in Japan, sometimes referred to as the glue which pulled TQM into a complete methodology rather than a collection of quality tools". In the same vein, Tennant and Roberts (2001b) state that management by policy has been extensively applied for integrating strategy and Total Quality Management (TQM).

The management by policy is concerned with the following four primary tasks: (1) to provide a focus on corporate direction by setting, annually, a few strategic priorities; (2) to align the strategic priorities with the local plans and programmes; (3) to integrate the strategic priorities with daily management; and (4) to provide a structured review of the progress of the strategic priorities (Tennant and Roberts, 2001b). A number of people believe that management by policy has the same aims of the management by objective (MbO) methodology. However, they have different concepts, as Tennant and Roberts (2001a, p. 265) explain "hoshin kanri differs from other techniques of business renewal due to its bottom-up nature, and ability to enable managers to measure the right things building a basis for evaluation, as well as quick regular reviews". The authors also provide a comparative table between management by policy and management by objectives (see table 6.4).

Element	Management by Policy	Management by objectives
Vision	Long term	Short term
Focus	Processes	Targets
Implementation	Prioritize	Troubleshoot
Measures	Realistic	Incentives
Review	Improvement	Failure
Communication	Deployment of targets	Job Evaluation
Feedback	Top-down and bottom-up	Top-down

Table 6.4 – Comparison between management by policy and management by objectives

Source: Tennant and Roberts (2001a, p. 265)

As a consequence of this new model, a new performance measurement model was introduced. The new performance measurement system was based on the management by policy model. This system established KPIs (key performance indicators) for each area of the company and it tried to link performance measures to the corporate indicators, in particular those related with the financial performance of the company and the quality indicators. The head of the corporative consumers department explained:

> *"The company made an important effort during the last years before the privatisation (...) for example; the company implemented quality tools and improved the organisation's routines management in order to prepare the company for the future environment after the process of privatisation (...) the company contracted a consulting firm that worked here for almost one year to implement quality tools and a new performance measurement system with graphic information."*

The aim of this new system was to create synergy among the members of the company by showing that each area of the company was responsible for the organisational performance. However, this system had the same problem of the previous one which was the fact that the performance measurement system was not linked to the reward system of the company. As a consequence, the employees did not pursue these objectives which made the institutionalisation of such a system in the organisation difficult. But, this attempt was considered an important change towards a more proactive management accounting system in the organisation. A manager of the planning and control department explained:

> *"Before the privatisation in 1999, there was a very important project in this organisation which was the implementation of the management by policy by a consulting firm that spent seven months here. This project created the culture in the organisation of disclosing performance measures throughout the organisation (...) So, this performance measurement system was implemented and after the privatisation it was improved and consolidated in the company."*

To summarise, this period before the privatisation can be characterised by Electra's attempt to improve its financial situation, as well as the management and control systems to look more attractive to the potential buyer of the company. Therefore, the main strategic aim was no longer the expansion of the distribution network. As the financial performance became the main priority of the company, the management accounting system started to become more important to Electra's managers and this period of one year before the privatisation can be considered as the starting point of a new era for the management accounting in Electra.

6.7 Conclusion and Summary

This chapter has aimed to present and discuss the background of the case study company and its management accounting system before privatisation. First, this chapter has presented an overview of the case study company by providing some indicators. After that, the evolution of the management style and structure of Electra was discussed. This evolution was divided into three phases: (a) Electra before privatisation; (b) Electra after privatisation form 2000 to 2004; and (c) Electra's restructuring after 2004.

In this first phase when Electra was a state owned company, the management priorities and strategies were established by the state governor. Therefore, this phase was characterised by political interference in Electra's management system. As a result, the main focus of this phase was the expansion of the distribution network system, that is, the major emphasis was on the operational aspect of the business (engineering dominance). Another characteristic of this phase was the fact that many initiatives were implemented in the organisation to improve the management system, but they tended to fade away, because a new political group took over with a different management view. As a consequence, there was a sense of discontinuity in this organisation before the privatisation.

In the second phase of Electra's evolution from 2000 to 2004, the company was managed based on the business model of a European electricity company (Energia which is part of the holding company). This model was based on the well-known Management by Objectives (MbO) methodology. In this phase, great emphasis was put on the modernisation of the Electra's network system and computational systems, such as an ERP system and a commercial system. However, Electra did not have good financial performance in this period, especially because of the Brazil electrical crisis in 2001. As a consequence, there was a restructuring in the group and the new board of directors implemented a range of measures to improve the financial performance of the organisation. This third phase of Electra's evolution can be characterised by the importance of the management control systems in the organisation in order to improve the company's financial performance indicators.

Regarding the management accounting system before the privatisation, it can be stated that this system was used in a ceremonial way and the information was restricted to the board of directors and the staff of the accounting and finance areas of the organisation. Therefore, the management accounting systems and the management accountants were disregarded in the company by the manager from the other areas of the organisation, especially those from the operational areas of the organisation. One year before the privatisation, there was one attempt to prepare the company for privatisation. The aim of this preparation was to increase the value of the company by looking more attractive for the company's potential buyers. As a consequence of this process, the management accounting systems were modified and management accounting information was prioritised, but this was a short period of time to try to institutionalise this new set of practices.

This chapter and the chapter five present and discuss the organisational field level and the economic and political level of the thesis theoretical framework model, respectively. As a result, the main aim of these chapters was to support the analysis of the process of management accounting change that took place in Electra after the process of privatisation. The next chapter explores and describes the changes in the Electra's management accounting system, as well as the changes in other management systems that somehow influenced the process of management accounting change.

Chapter Seven: Changes in Organisational and Management Accounting Systems

7.1 Introduction

Chapter 5 presented the economic and political environment of Electra by discussing the Brazilian Electricity sector reforms and the Brazilian regulatory system, specially the issues regarding the regulatory accounting and the tariff review process. Chapter 6 dealt with the organisational field by presenting the Brazilian electricity industry, in particular, by explaining the main characteristics of the Electra's holding company and the Brazilian electricity sector associations. In addition, chapter 6 provided an overview of evolution of the case study company (Electra) and the management accounting systems before its privatisation.

Chapter 7 moves to discuss the intra-organisational aspects that had an impact on the process of management accounting change in Electra. As a consequence, this chapter aims to present and explore the changes in the management accounting systems of Electra after the process of privatisation. In order to achieve this aim, this chapter explains the management and cultural changes in the organisation (intra-organisational level) after privatisation. This analysis is important because there is a very strong connection between the management accounting systems and the management systems and cultural background of the organisation. Figure 7.1 shows the organisational and cultural changes in the organisation and the changes in management accounting after privatisation in 2000. In addition, this chapter also aims to provide an overview of the management accounting practices that have been used in the company, in particular, regarding the budgetary system, performance measurement system and the management accounting report system. In doing so, chapter 7 in conjunction with chapters 5 and 6 set the foundation for chapter 8 which aims to explain the process of management accounting change in Electra by using the proposed theoretical framework (see chapter 3). As a consequence, it is chapter 8 that will address the main objective of this thesis which is to explain how management accounting was shaped by the intra and inter organisational factors after privatisation.

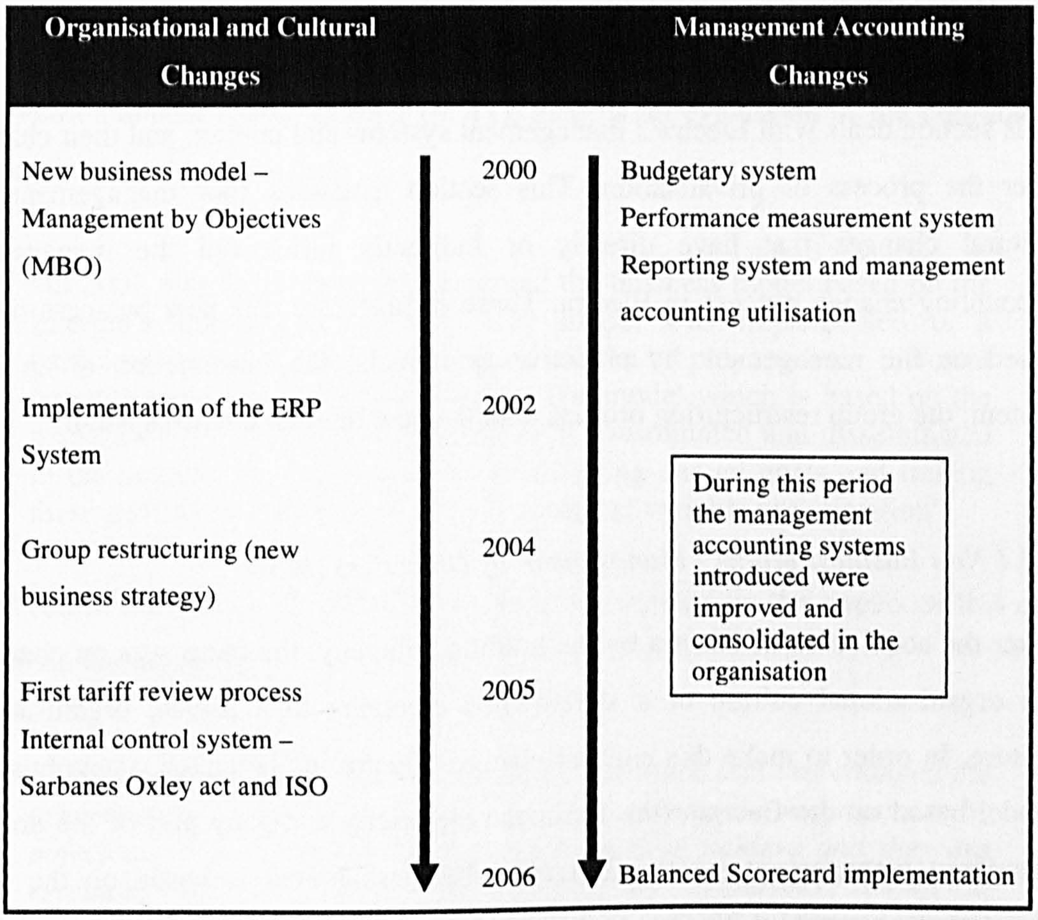


Figure 7.1 Organisational and management accounting changes after privatisation

This chapter is divided into four sections. The first section provides an overview of the changes in the management style of the organisation. This section has four sub-sections which are: the new business model; ERP system; group restructuring; and the control system. The next section introduces the relationship between management accounting and the regulatory framework by providing a brief discussion about the role of regulation in the management accounting change process in Electra. The third section deals with the process of management accounting change by taking into consideration the budgetary system; the performance measurement system and the Balanced Scorecard (BSC); and the reporting system and the management accounting utilisation. After that, these management accounting changes are classified in accordance with the typology proposed by Sulaiman and Mitchell (2005) and dichotomies presented by Burns and Scapens (2000). Finally, the conclusion and summary of the chapter are presented.

7.2 Management and Cultural Changes

This section deals with Electra's management systems and culture, and their changes after the process of privatisation. This section discusses four management and cultural changes that have directly or indirectly influenced the management accounting change process in Electra. These changes are: the new business model based on the management by objectives principals; the introduction of an ERP system; the group restructuring process; and the new internal control system.

7.2.1 New Business Model - Management by Objectives (MBO)

After the acquisition of Electra by the holding company, the focus was on changing the organisational culture of a state-owned company to a private organisational culture. In order to make this cultural change, Electra implemented a new business model based on the Energia (the European electricity company part of the holding company) management system. Energia's business model is based on the well-known management by Objectives (MBO) approach.

Management by Objectives (MBO) was first introduced to businesses in the 1950s as a system called 'management by objectives and self control' (Drucker, 1955). Antoni (2005) points out that MBO is an approach to motivate managers and to integrate their efforts by setting goals for the organisation as whole. These objectives are then cascaded down through each management level, to ensure that goals are possible to be achieved. Therefore the essence of MBO is goal setting, choosing course of action and decision making. An important part of the MBO is the measurement and the comparison of the employee's actual performance with the standards set.

According to Dinesh and Palmer (1998, p. 364), the commonly agreed elements of an MBO system are:

- Objectives established for all jobs in the firm;
- Use of joint objective setting;
- Linking of objectives to strategy;
- Emphasis on measurement and control; and

- Establishment of a review and recycle system.

In Electra's annual report in 2001 (p. 11), there is an evaluation of the corporative management and it states that:

> "In 2001 was definitively implemented the business model based on the Energia's management system. The model was implemented in a participative way with the support of all the employees from different organisational levels in the company. The model which is based on the management by objectives approach was consolidated and disseminated in the company's departments by establishing annual goals and linking these goals with the employees and managers' variable remuneration"

The head of the system operation department commented on the impact of this new model on the employees:

> *"The results started to be monitored and controlled and this changed the organisation, specially, because of the new system, the management by objectives in which the employees have goals to achieve and they are evaluated by their performance. Then, the employees started to understand that their remuneration and employability depend on the achievement of the company's targets and the company started to be more rigorous in the control of the company's targets."*

This management style was disseminated in the organisation through a set of measures which included a massive communication programme with seminars and workshops. In addition the company published a series of newsletters and documents, such as the so-called 'company project' which presented the new values, principles, policies and objectives of the organisation. Moreover, a new ethics code was published in 2002 to serve as a reference for the employees' actions and behaviour. However, this communication programme was only part of the company's strategy to disseminate the new organisational culture. There were two major components to the organisational change that took place within Electra in order to introduce the new business model. The first component was redesigning the company's management accounting systems, that is, the budgeting system, the performance measurement system and the reporting system. The second was the introduction of corporative computational systems, such as the ERP (Enterprise Resource Planning) system and a new commercial system.

The former heard of the accounting department pointed out:

> *"At the time of the transition, the main focus was on changing the state-owned culture to a private company culture. The cultural change was possible by implementing the necessary corporative systems. The most important systems were the commercial system to manage the consumers, therefore, the focus move on consumer's satisfaction instead of the state-government priorities. Moreover, the company needed control systems to manage the business, that is, a budgeting system. Then the company could make its strategic plan by projecting its cash flows in a period of 30 years which is the concession period."*

The next subsection deals with the implementation of the ERP system in the organisation, as this system has a strong connection to management accounting. The commercial system introduction is not dealt in this section because it does not have a huge influence on the management accounting system.

7.2.2 ERP System

Electra implemented in April 2002 an ERP system in the organisation, more specifically, the ERP system developed by the software company SAP (Systems, Applications and Product). This software is called the SAP/R3 system. The Enterprise Resource Planning (ERP) system is a commercial software package designed to integrate an organisation business information systems (Andon, et al., 2007). The ERP system can be defined as "packages of computer applications that support many, even most aspect of company's ... information needs" (Davenport, 2000, p. 2). These systems span most functional areas such as accounting, operations and logistics, human resources, sales and marketing. Therefore, they promise the seamless integration of all information throughout a company. They use integrated client-server technology and draw on a single database, which integrates underlying relational databases across all business functions, where all data are entered only once, typically where data originate (Davenport, 2000).

Dillard and Yuthas (2006) point out that reengineering business processes goes hand-in-hand with the implementation of an ERP system. One of the alleged primary benefits of ERP systems is the standardisation of the processes across the organisation providing centralisation of such processes (Dillard and Yuthas, 2006). In general, when organisations implement ERP systems, current practices must give way to those designed into the system (Scapens and Jazayeri, 2003). The implementing firm replaces existing processes with the 'best practice" processes that are embedded in the system software. These 'best practices' are purported to represent the industry standard for the most rational and progressive business processes available (Dillard and Yuthas, 2006).

According to Scapens and Jazayeri (2003), the implementation of ERP is not just a technical IT exercise, it involves major business redesign issues. Changes in organisational structure and human capital are necessary to facilitate productivity gains in conjunction with information technology investments. Dillard and Yuthas (2006) point out that high-level corporate strategy is also interlinked with the system implementation choices. In the case of Electra, this seems true, as the implementation of the SAP/R3 facilitated Electra's strategy of changing the state-owned culture to implement the new operational processes based on the Energia's management model.

Electra's annual report in 2002 (p. 10) explains the SAP/R3 implementation:

> "Electra concluded in April the project to implement the SAP/R3 system which substituted sixteen different computational systems in the organisation. This implementation is part of the modernisation plan design for Electra. The SAP/R3 comprises the following modules: budgeting and costing, accounting, materials, maintenance, projects (constructions), human resources and non-operational revenues ... the customisation and implementation of the SAP/R3 in Electra was based on the previous implementations in Electra's parent companies."

Therefore, the customisation and design of the SAP/R3 in Electra was based on the previous implementation of this system in Electra's parent companies (the other distribution companies from the group which were privatised before). The head of the accounting department, who was one of the managers of the SAP/R3 implementation project, commented:

> *"The other companies from the group, which had been privatised before, had been using the SAP/R3 system. Then, we had to implement the*

SAP/R3 system to have a similar management model of the parent companies. The SAP/R3 system was based on the assumptions of the previous implementations of the Electra's parent companies."

In the same vein, the former head of the accounting department stated:

"Energia had already implemented the SAP/R3 system in all of its companies and the SAP/R3 was also implemented in the Electra's parent companies. So, the managers and employees of these two companies helped in the implementation of SAP/R3 in Electra in order to import the same culture from their companies to Electra."

The project to implement SAP/R3 system in Electra was conducted by a team formed by 104 members. The personnel of Electra accounted for 70 employees. In addition, 15 people were employees of the Electra's parent companies and 19 consultants who worked in a large consulting firm contracted to implement this system (see table 7.1).

Function	*Electra*	*Parent Companies*	*Consulting Firm*	*Total*
Directors	2	2	3	7
Functional Team	21	13	12	46
Programmers	-	-	4	4
Trainees	10	-	-	10
Secretary	1	-	-	1
Disseminators	36	-	-	36
Total	**70**	**15**	**19**	**104**

Table 7.1 – SAP/R3 implementation team

Source: Electra SAP implementation presentation in 2003

The implementation of the SAP/R3 was conducted in approximately 10 months (see figure 7.2) and the investment in this project was about 6 million of Brazilian Reais (approximately £ 2 million). In general, from the interview and documents analysis, the implementation of SAP/R3 in Electra was considered very successful and with no major problems. The main reason for this is because the project was based on the previous implementations on the parent companies. As a result, the system had been already developed to be used in these companies; therefore the SAP/R3 implementation in Electra was a matter of replicating the system in accordance to Electra's processes. The manager of the SAP/R3 project pointed out in the Electra's internal newsletter that "The process of implementing the SAP/R3 system is going very well. We knew that at the beginning we will have some difficulties to overcome, but the transition has been done without any problems".

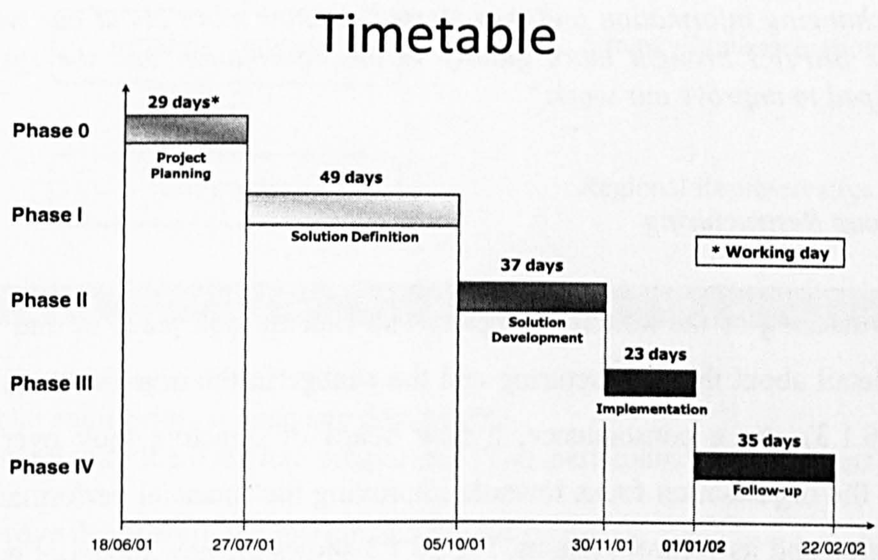


Figure 7.2 – SAP/R3 implementation timetable
Source: Electra SAP implementation presentation in 2003

The head of the accounting department commented that the implementation of the SAP/R3 system was the fastest among the Brazilian electricity companies:

> *"The SAP/R3 system implementation took place without any major problems. The process of implementing was the fastest among the Brazilian electricity companies at that time. The process took less than one year to be completed."*

The head of the accounting department also stated the motivation and benefits of implementing the SAP/R3:

> *"The motivation of the holding company with the SAP/R3 was to introduce a new management model that had already being in using in the subsidiary companies... Moreover, the SAP/R3 improved the speed of the information by integrating different systems in only one system and the most important thing is that we can access the information on-line any time."*

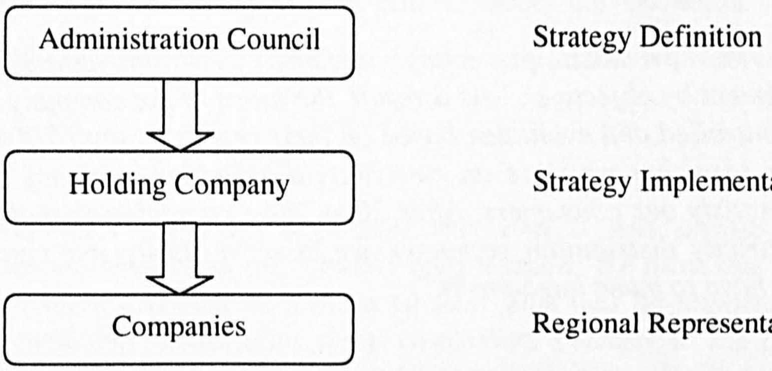
One manager of the planning and control department commented on the impact of SAP/R3 on the organisation and his work:

> *"People did not know about our work. The SAP/R3 facilitated exchanging information and they started to know more about our work. The SAP/R3 brought more quality to the information and the system helped to improve our work."*

7.2.3 Group Restructuring

The restructuring of the holding company and Electra took place in mid 2004 (for further detail about this restructuring and the change in the organisational chart see section 6.1.3). As a consequence, a new board of directors took over and this changed the organisation focus towards improving the financial performance of the organisation and its control systems. Figure 7.3 shows the new model of governance and management, the objectives of this new model and the holding company's strategy after the restructuring process.

New Model of Governance and Management



Objectives and Strategies

1. To restore the financial equilibrium
   - Financial equilibrium – adequate debt profile
   - Agreement with the Brazilian programme "Luz para todos" (subventions)

2. To improve the operational margin and the net profit
   - To proceed with the tariff review process
   - Reduce the losses and the level of default
   - Reduce the controllable expenditures
   - Ensure the gas supply to the thermal plants

3. To introduce new corporate governance practices
   - Implement a new corporate structure
   - Review the company's policies, norms, processes and internal controls
   - Transparency

Figure 7.3 – New Management Model and its Objectives
Source: Holding Company's Presentation in 2004

The restructuring of the group consolidated the transition from a state-owned company to a private organisation, as the focus clearly moved toward improving the financial performance of the organisation. The former superintendent of engineering commented:

> *"The holding company became an operative holding and its mission and vision were more aggressive in order to achieve economic and finance results. On the other hand, it had less aggressive aims in terms of the operational issues… After the restructuring, the discussion was mainly on financial issues. For example, in a game of 90 minutes, 80 minutes were economic and financial discussion and 10 minutes for the other aspects of the business."*

The head of the system operation department also stated:

> *"Since the privatisation, many systems were implemented, the management by objective ... As a result, the areas of the company started to be controlled and evaluated based on their results ... until 2004, there was the idea that we were an electricity distribution company and we had to satisfy our consumers. After 2004, the assumption is that we are an electricity distribution company, we have to satisfy our consumers and we have to make huge profit."*

This restructuring process is considered by some employees as the greatest shift in the company's management style. Head of the receivables recoveries department pointed out:

> *"I always say that Electra had two privatisations. It had the privatisation in 2000 and the restructuring of the group with the change in the focus and with the new board of directors hired from the electricity sector market. Therefore, this changed the company's philosophy, the company focused more on results and there was a redesign of the company's organisational structure."*

The restructuring process of the company also changed the perception of the importance of the regulatory system on the company's activities. A new area was created in the organisation (superintendency of regulation and tariff). According to the management report to the ABRADEE's annual award in 2006 (p. 2), the main aims of superintendency of regulation are:

> "deal with the regulatory issues in the electricity sector by interacting directly with the regulator (ANEEL). The objective of this superintendency is to follow and understand the decisions made by the regulator to be able to communicate these issues through the organisation in order to improve the decision making process and control of the regulatory demands. As a consequence, the final aim is to minimise the regulatory risk."

The holding company aimed with the creation of this regulation area in the organisation to spread the view/culture that the regulator is a key stakeholder and the success of the organisation depends on the balance between the financial performance and the regulator demands. This is present in the strategies and objectives of Electra in 2005. The Electra's annual report in 2004 (p. 53) stated: "It is part of the strategy of the company to meet the regulator's demands and requirements in the electricity sector and to seek the economic and financial equilibrium of the business". The head of the corporative consumers department commented:

> *"The regulator plays an important role and it will always be the principal stakeholder in this kind of organisation. We have one specific superintendency to deal with the regulator. This was an important area created with this model after the privatisation, because in the past this relation was conducted by different areas of the organisation and now this was consolidated in one area of the company with the status of superintendency with specialised departments."*

The creation of this area in the organisation was also motivated by two factors. First, the publication of a new regulatory framework (March 2004) that created a new regulatory system in Brazil (for further details see chapter 5). Second, the first tariff review process of the organisation that took place in 2005. The tariff review process demanded a range of information that created pressure (this issue will be discussed in the next chapter of this thesis) to modify the management and control system of the organisation. As a consequence, the regulation area of the organisation played a key role in the process of cultural change in Electra, by disseminating the regulatory culture, that is, the view that the company operates in a regulated industry and the success of the company depends of the balance between the regulator's requirements and the financial performance of the organisation. The company's concern to disseminate this regulatory culture is present on the superintendency of regulation mission which is "to ensure the regulation compliance to seek fair tariffs that provides the economic and financial equilibrium of the concession" and one of its aims "to facilitate the understanding and compliance of the regulatory requirements by all areas of the organisation by disseminating the regulatory culture" (Organisational Manual in 2007, p. 111).

Another cultural change in the organisation introduced in the restructuring process was the idea that the company is part of a group of organisations which are controlled by the holding company; therefore, the managers of Electra have limited power to introduce or implement new management systems in the company. The holding company emphasised the need to standardise the management practices among the three distribution companies of the group. The head of the planning and control department commented:

> *"We do not have too much freedom to implement new practices... the view is that the company is part of group that has standard practices. The company's CEO has powers, but his power is not like the power of a conventional CEO, He has a group, he has the holding board of directors above him. "*

The strategy of standardising the practices among the companies was implemented in the organisation through changes in the Electra's control system and the emphasis on corporate governance. This issue will be considered in the next subsection.

7.2.4 Internal Control System

After the process of privatisation, especially after Electra's restructuring in 2004, the company improved the internal control system. Internal control can be defined as "the process effected by an entity's board of directors, management and other personnel designed to provide reasonable assurance regarding the achievement of objectives" (Konrath, 1996, p. 220) in three categories: (a) operational controls which are related to the effective and efficient use of the company's resources; (b) financial reporting controls which are related to the preparation of reliable published financial statements; and (c) compliance controls which are related to the company's compliance with applicable laws and regulations (Konrath, 1996).

In 2004, Electra started a project in conjunction with the holding company to implement management practices to improve the internal control system, in particular, regarding to economic and financial activities of the organisation. A new organisation unit (the internal control unit) was created to ensure the implementation and effectiveness of this initiative. This unit was responsible to implement and ensure the internal control system and the risk management system of the company's processes. The holding company's director of planning and control commented on the motivation to tighten Electra's control system:

"Culture, I think that the new board of director and the CEO has the culture of control. Then, a new area of control was created, a specific area responsible for planning and controlling the company's activities. I think that it is because the culture, the shareholders culture. The shareholders transferred this culture to the CEO and the CEO transferred and disseminated this control culture to the company."

In order to consolidate the internal control system, a new computational system was acquired to manage Electra's internal procedures (or rule according to Burns and Scapens (2000) definition). Until 2006, the standard activities were communicated through norms and operational procedures which were available on the company's intranet for all the managers and employees. In 2006, the company acquired a new computational system which is called 'Normative Management System' (SGN). The aim of this system was to improve the process of preparation, approval, and disclosure of the normative instruments (guidelines, norms and procedures), as well as, to innovate the IT platform, as after this system the managers and employees could access this system on the Internet, as well as on the company's intranet (the management report to the ABRADEE's annual award in 2007, p. 6). The SGN system was operated by Electra internal control unit and it comprised of about 1,080 internal procedures. The manager of the internal control unit commented:

"The Normative Management system was implemented at the end of 2006, before this system there was another one, but it was not integrated into the SAP/R3 system. Moreover, all the employees can access this system through the Internet, as well as the company intranet."

Despite the fact that Electra is not operating on the US stock market, the company decided to comply with the Sarbanes-Oxley Act (SOX). On July 30, 2002, President George W. Bush signed the Public Accounting Reform and Investor Protection Act (the Sarbanes–Oxley Act) into law. SOX establishes a series of changes in corporate financial reporting and corporate governance for public companies. SOX was passed in response to several high-profile financial scandals in corporate America (e.g. Enron), which resulted in billions of dollars of losses for investors (Engel, et al., 2007). SOX has 11 titles that describe specific mandates and requirements for financial reporting. Each title consists of several sections.

Electra complies partially with the SOX. The company is introducing the controls and requirements established in section 302 (Corporate Responsibility for Financial Reports) and section 404 (Management Assessment of Internal Controls). The Electra Social Report in 2007 (p. 29) explains the SOX implementation:

> "In 2005, Electra implemented the procedures required by the USA law Sarbanes-Oxley to prepare its financial reports and statements and to evaluate its operational and management processes (...). In 2006, the SOX implementation was intensified and there were weekly meetings to deal and improve the internal controls based on the SOX requirements".

The Electra annual report in 2007 also commented: "In 2007, we had already eight operational cycles based on the SOX requirement, they are: revenue, expenses, payroll, treasury, information technology, accounting statements, and taxation".

The management report to the ABRADEE's annual award in 2007 (p. 60) explains the SOX importance and implementation:

> "The economical sustainability of Electra business is based on two pillars: economic and financial management and the internal control practices implemented in 2005 and improved by the Sarbanes-Oxley practices (...). The implementation of the Sarbanes-Oxley was based on a broad identification of the business risks which was conducted by all areas of the company with the support of a large consulting firm. The identification of the risks and control gaps enabled the preparation of action plans which was scrutinised by internal and external auditors".

The manager of the internal control unit also commented on the Sarbanes-Oxley implementation:

> *"The SOX is in process of implementation (...).To identify the need to improve the internal controls we prepare a risk map which is pre-prepared by the consulting firm that is implementing the SOX here."*

The holding company's director of planning and control stated about the motivation to implement the SOX:

> *"Electra and the group decided to comply with SOX, because this is the natural path for large organisations and the main Brazilian distribution companies are complying with the Sarbanes-Oxley act."*

The SOX implementation was also an attempt to improve the company's image in order to reduce the cost of borrowing money. The head of the internal audit department pointed out:

> *"The motivation was to improve company's image in the market in order to comply with the market requisites to make large bond offers (...) SOX is a tool to reduce the cost of debt."*

Electra also certificated with the ISO 9000:2000 the following activities of the company: billing and receivables recoveries; legal support; automation and telecommunication; accounting and tax planning; internal control, treasury and investors relation; electricity generation; contracts management; receivables management; connection; business planning and control; investment planning; system operation; and billing. The regulator (ANEEL) requires the ISO certification for operational procedures to calculate and control the two main quality performance measures, which are: equivalent length of electricity interruption per consumer (DEC, in Portuguese) and equivalent frequency of electricity interruption per consumer (FEC, in Portuguese), but the regulator does not oblige distribution companies to certificate management procedures.

The ISO 9000 series of standards first emerged in 1987, and is a significant worldwide phenomenon given the quite impressive growth and diffusion (Sampaio, et al., 2009). According to International Organization for Standardization (ISO), at the end of 2006 there were 897,866 certified companies in the world (170 different countries) (Martínez-Costa, et al., 2009). The ISO 9000:2000 has four major sections; each of these four sections is represented by four constructs: (a) management responsibility; (b) resource management; (c) product and service realisation; and (4) measurement, analysis and improvement. According to Martínez-Costa, et al. (2009) the ISO 9000:2000 adopts some of the concepts postulated by the Total Quality Control (TQM) approach.

The main requirements in ISO 9001 are (Aldowaisan and Youssef, 2006):

- a set of procedures that covers all key processes in the business;
- monitoring processes to ensure they are effective;
- keeping adequate records;
- checking output for defects, with appropriate and corrective action where necessary;
- regularly reviewing individual processes and the quality system itself for effectiveness; and
- facilitating continual improvement

An organization that has been independently audited and certified to be in conformance with ISO 9001 may publicly state that it is "ISO 9001 certified". However, certification to an ISO 9000 standard does not guarantee any quality of products and services; rather, it certifies that formalized business processes are being applied. In some cases companies use the ISO 9001 certification as a marketing tool (Aggelogiannopoulos, et al., 2007).

In the case of Electra, the implementation of the ISO certification followed a independent path from the other distribution companies of the group. The holding company did not have a specific regulation about the ISO adoption. As a consequence, the decision of implementing ISO was made by the Electra's board of directors. Electra traditionally had a strong quality root, in particular, in the operational areas of the organisation since the 1990s with the total quality management (TQM) movement that took place in this period. A manager of the planning and control department commented:

> *"The engineering areas of the company had already had the ISO culture before the privatisation and ISO was implemented in other areas because the former planning and control superintendent decided that this could be a good system to improve the company's control system (...). Then, the superintendent decided to certify six management processes and after that all the planning and control area is certified and this process is expanding in the company and about 40% of the operational area is certified now."*

The holding company director of planning and control explained the ISO implementation in Electra:

> *"Each company decided about the ISO utilisation. We don't have a specific policy regarding the utilisation of ISO in our group (...). I think that the group has not reached an agreement of the benefit of ISO on our business (...). Electra is very strong regarding ISO, but the other two distribution company do not use the ISO certification."*

Finally, the former superintendent of planning and control concluded on the evolution of Electra's internal control system:

> *"The main emphasis was on the internal control at the beginning. Beside, budget, we really improved our internal control system, firstly through the implementation of the ISO 9000. Then, we developed a very good normative system with clear norms. We identified the normative gaps and many norms were written with continues update of these norms, that is, a range of controls, audit reports, follow up reports of the actions to avoid the internal control gaps were developed during this period."*

7.3 Management Accounting and the Regulatory Framework

Management accounting can be seen as socially and politically constructed phenomena. In order to enable us to interpret and understand management accounting as a social practice, it is necessary to locate the current management accounting practices and the process of management accounting change in their historical, economic, social and organisational context. In doing so, it is important to state that Electra operates in a regulated industry. As a consequence, the regulator and the Brazilian regulatory model had a huge influence on management accounting information system of Electra. Therefore, the regulatory framework played a significant role in the process of management accounting change that took place in Electra after the process of privatisation.

The regulator defined the economic environment to some extent, by imposing the price-cap and imposing the standards of service which the industry had to meet, thus reducing management's autonomy in decision-making. The environment facing a regulated industry is much more complex than that facing an ordinary company in the private sector. Conflicts exist in the objectives of regulators and shareholders, which in turn create conflicts for management in trying to satisfy the requirements of both. As a result, Electra's management model is designed to reach a balance between the financial performance and the regulator's requirements.

Normally in a private organisation the main stakeholders are the shareholders and the clients. However, in Electra and in the other private Brazilian electricity distribution companies, the principal stakeholders are the shareholders and the regulator. In Electra, there is a view that the "real" client is the regulator, because the latter defines the company's revenue (tariff) and the standards of service. The former superintendent of planning and control states "the regulator is our clients, because it established our revenue". To illustrate the importance of the regulator to decision-making process, the holding company created a new area of regulation and tariff in 2004. The director of regulation and tariff is responsible for translating the regulator's requirements to the members of the company with the objective of improving the relationship between the company and the regulator.

Although the electricity distribution and trading industries were privatised in Brazil, they can be considered as private monopolies, because these companies have captive consumers[3], who are not free to choose their electricity suppliers. As a consequence, there is no direct competition among the Brazilian distribution companies and trading organisations. This means that in the Brazilian electricity distribution sector the level of competition is extremely low with no pressure to increase market share as the demand for electricity depends on macro factors out of the company control. This environment reinforces the view that the success of Electra depends on the balance between the financial performance and the regulator's requirements.

Having discussed the importance of the regulator to Electra's strategy, it is important to explain the impact of this management model on management accounting. From the field research, it was noticed that there is a strong similarity between financial

[3] In the Brazilian electricity sector, only large consumers can choose their electricity provider. They are called free consumers. In the Electra's state, the free consumers represent small percentage of the electricity consumption.

accounting and management accounting in Electra. Financial accounting is concerned with the provision of information to external parties outside the organisation. In the Electra's case, the main external user of the financial accounting information is ANEEL (the regulator). On the other hand, management accounting is concerned with the provision of information to people within the organisation to help them to make decisions. As the regulator's requirements have a strong influence on the Electra decision-making process, the management accounting systems use the "regulator language" in their outputs. For instance, the accounting statements requested by the regulator are the same used by Electra's managers to make decisions. Another example is the corporate budget which is prepared in accordance to the Accounting Manual for Electric Power Utility Companies, which was introduced by the ANEEL Resolution no. 444/2001. Finally, to illustrate this similarity, the holding company's director of planning and control is quoted:

> *"Once, I thought about implementing the ABC (Activity Based Costing) system, but I didn't see the will to use the ABC among the managers. They preferred to use the regulator's methodology".*

This section aimed to provide a brief overview of the relationship between regulation and management accounting change in Electra. At this point, it is possible to state that the two main factors that shaped management accounting practices in Electra were the new ownership and the regulatory system introduced after the privatisation. As a consequence, the regulator as a source of coercive isomorphism (DiMaggio and Powell, 1983; 1991), played an important role in the process of change. The next chapter will explore this theme by explaining the regulator as one of the main drivers of management accounting change; how the regulatory system and other intra and inter factors shaped management accounting practices in Electra; the "war" between regulator and company, in particular, regarding the tariff review process influenced the process of change and the role of management accounting in Electra; and the dissemination of the regulatory culture in the company, and the consequences for the management accounting practices and management accountants in the organisation.

7.4 Management Accounting Changes and Practices

This section discusses and presents the management accounting changes that took place in Electra after the privatisation. This discussion concentrates on four themes: (1) the budgetary system; (2) the performance measurement system; (3) the introduction of the Balanced Scorecard; and (4) the management accounting report system and the management accounting utilisation. In addition, this section presents and comments on the present management accounting practices that are being used in Electra which are outcomes of the budgetary system, performance measurement system and the management accounting report system.

7.4.1 Budgetary System

After the process of privatisation, budgetary control became an important part of the new management model which was introduced into the company based on the management by objectives (MBO) principals. As discussed in the previous chapter, the budget was used in Electra before the privatisation, but it was extremely flexible and the managers did not respect the budgetary limits. After privatisation, Electra improved the budgetary system by tightening the level of control and by spreading the view that the budget is an important system to the company and all members of the organisation have an obligation to achieve budgetary targets. One aspect that was essential to improving the budgeting process was the implementation of an ERP (Enterprise Resource Planning) system. In the case of Electra, the SAP system was implemented in 2002 and the integration of the company's different computer systems facilitated the access to the information to prepare and control the budget. The implementation of the SAP system was the perfect time to spread the budgetary culture among the managers and employees, because new processes were created and all the employees were mobilised to introduce and accept new control systems, including the budgetary system. One manager of the planning and control department who is responsible for the company's budget commented:

> *"In 2002, the company implemented the SAP system. This changed dramatically the organisation. The SAP implementation was a chance to disseminate the budgetary culture in the company and to train the employees how to prepare and use the budget. Therefore, I think that 2002 was the milestone in the budgetary system development."*

A number of workshops and meetings were carried out to demonstrate the importance of the budget and to teach people how to use this new budgetary system. The head of the corporative consumers department explained:

> *"There were courses about budgeting and the company hired a consulting firm to train the employees with basic skills on budgeting. Then, there is a good level of understanding about budget among the employees. Moreover, we talk every day about budget, therefore the employees have to know how to prepare and use the budget."*

The corporate budget became even more important after the process of Electra's restructuring which took place in mid 2004. As a result of this new management style, the financial performance of the organisation, in particular the reduction of operational expenditures and the maximisation of the indicator EBITDA (Earnings before Income Tax, Depreciation and Amortisation), became top priority to the holding company. In addition, the budgetary control was emphasised even more with the introduction of a specific SAP module (FM – Funds Management) in 2006. This module controls the budget by blocking expenditures over the budgetary limits. Another aspect that changed in the budgeting process was the fact that the approach to developing the budget became more top-down. This means that the budget is prepared by top management (holding company) and imposed on the lower layers of the organisation. This approach clearly expresses the performance goals and expectations of top management.

From the interviews and document analysis carried out, it is clear that the budgetary practices were institutionalised in Electra. Electra's managers of all departments participate in the preparation of budgets and all the employees have to take into consideration the budget to execute their day-to-day activities. The Electra's CEO commented on the importance of budget:

"Budget is the most important management tool that the company uses to manage and control the company's activities. All the decisions are made based on the budget. The preparation of the budget is the most important event in the company. There is culture in the group and in Electra that the budget has to be prepared very carefully, because the budget should reflect the company's activities and the manager cannot change the budget after it had been approved by the administrative council."

7.4.1.1The Budgeting Process

There are two types of budget in Electra: the long-term budget which is known as 'Economic Planning Model' (MPE, in Portuguese); and the annual budget. The MPE forecasts the financial and economic situation of the company until the end of the concession period, that is, from 2000 to 2030, while the annual budget projects the company's performance for a period of one year; as a consequence the annual budget is more accurate. The MPE and the annual budget present the following information: the basic accounting statements, such as balance sheet, income statement and cash flow; forecasted revenue; revenue collection; expenditures, capital investment, loans and credits.

The Economic and Planning Model (MPE) was created and developed in 2003 by the holding company in conjunction with the group distribution companies and the MPE was officially adopted in 2004. The MPE is regarded as the main instrument of long term strategy of the company, because it forecasts the financial and economic performance of the company during the concession period. The main objective of this model is to ensure the adequate return on the investment to the shareholders in accordance with the original business plan prepared by the holding company during the process of acquisition of Electra, which set the future cash flows of the company to obtain a desired return on the investment. Therefore, the MPE, which is prepared in the Microsoft Excel programme, is the main instrument of economic and financial control used by the holding company. The manager of the planning and control department, who is responsible for the MPE, commented:

"My unit is responsible for the strategic planning, that is, the economic strategic plan of Energia (one of the companies part of the holding company). We control the general budget of the company, which

includes the company's revenue, costs and investments (...). We are responsible for the macro budget of the company in terms of income statement and cash flow. Moreover, we compare the actual result with the budget result to indentify the relevant deviations. The analysis provides indications of the future performance of the company and enables actions towards improving the company's performance measures."

The budgeting process is based on the company's internal norms and ANEEL's Accounting Manual for Electric Power Utility Company. Electra's budgeting process starts with the disclosure of the budgetary premises by the holding company. These premises comprise the macro-economic factors; the holding strategy, including the dividends policy; human resource policy; and operational expenditures and capital expenditures limits (Management Report to the ABRADEE's annual award in 2007). The budget is coordinated by the holding company and prepared by the planning and control department with the support of the company's managers. The manager of the planning and control department, who is responsible for the annual budget, explained:

"The holding company establishes the macro limits. For example, the holding company establishes the total value of the operational expenditures and the desired net profit. So, the holding company provides the 'rules of the game'. The role of our department is to coordinate the allocation of the resources in the company."

In 2002, it was stipulated that each department of the company should nominate an employee to be a budget coordinator who has the responsibility of preparing and controlling the department's budget. The manager responsible for the annual budget commented:

"We have a network of people to help during the budgeting process, they are called budget coordinators. They are employees who were nominated by the managers of the company's departments to prepare and control the departments' budget. We try to keep the budget coordinators up-to-date and trained about the budgeting process."

The annual budget is divided into two: the operational budget and the capital budget. The operational budget establishes the financial resources to perform the operational activities of the company, while the capital budget determines the investments that should be carried out in the company in order to expand, improve and modernise the electric system, as well as to acquire new machines and equipments. The definition of what constitutes a capital investment is based on the ANEEL's Accounting Manual for Electric Power Utility Company (ANEEL's Resolution no. 444 from 26/10/2001).

The investment planning department, which is part of the engineering superintendency, is responsible for identifying the investment needed by the other areas of the company by taking into consideration the contractual and regulatory factors. Then, this department consolidates these needs in order to prepare an investment plan. This investment plan will be scrutinised by the holding company and the investments limits will be determined by the holding company. As mentioned before, the planning and control department organises and consolidates the operational budget based on the budgetary premises stipulated by the holding company. According to the management report to the ABRADEE's annual award in 2008, the operational expenditures (OPEX) and capital expenditures (CAPEX) limits are determined to ensure the adequate return on investment rate by comparing the amount of resources budgeted with the amount established by the regulator, which is based on the reference utility approach (for further details about this methodology see chapter 5). One manager of the planning control department commented:

> *"Every year, we compare our budget with the expenditures of the reference utility stipulated by the regulator in order to find out that the company's budget is smaller than the reference utility. Therefore, there is the conception that the company should spend less than the utility company. Otherwise, the excessive expenditure will not be remunerated in the tariff. So, the utility company is a benchmark for our budgeting process."*

The premises, limits, budgetary rules and other information are disclosed to the company through the budget manual and meeting with managers and budget coordinators. The budget manual describes the objectives and procedures involved in the budgeting process and provides a useful reference source for managers responsible for budget preparation. Moreover, the budget manual presents a timetable specifying the order in which the budget should be prepared and dates when they should be presented and approved. Table 7.2 shows the budget timetable for 2007.

Stage	Description	Responsible	Deadline
1	Budget meeting with the CEO, superintendents and managers	CEO and Planning and Control Superintendency	03/July
2	Instructions meeting	Planning and control department	04-11/July
3	Codification of the new processes map based on the cost centre structure for 2007	Planning and control department	03-14/July
4	To prepare the information about market, investments, human resource, cash flow, regulatory issues and other	Superintendencies	14/July – 02/August
5	To prepare proposed budget	All company's departments	10-21/August
6	To consolidate departments' proposals	Planning and control department	21-28/August
7	To prepare the economic and financial projections and the accounting statements and reports	Planning and control department	31/July – 04/August
8	To prepare the proposed corporative objectives for 2007	Planning and control department	04/August
9	Presentation of the budget and corporative objectives for 2007	Planning and Control Superintendency	07-14/August
10	Amendments	Superintendencies	07-14/August
11	Budget approval by the company	CEO and Planning and Control Superintendency	14/August
12	Delivery of the first version of the budget to the holding company	Planning and Control Superintendency	15/August
13	Amendments	Planning and control department	15/August – 15/September
14	Delivery of the second version of the budget to the holding company	Planning and Control Superintendency	15/September

Table 7.2 – Electra's Budget Timetable for 2007

Source: Electra's Internal Rule to Prepare the Annual Budget

The budget is prepared to show the expenditures by departments, processes and activities and it is introduced in the SAP system in the CO module (this module is responsible for controlling the operational expenditures of each department of the company). The annual budget is also part of the MPE (Economic and Planning Model), which comprises the forecast for the demand and supply of electricity, electricity distribution costs, operational expenditures, capital investments, financial results, cash flows, loans and taxes. Each area of the company is responsible for projecting the resources necessary to perform its activities; for example the commercial area projects the consumption of electricity, the human resource area forecast the labour cost, and regulatory area predicts the electricity tariff. The planning and control department consolidates the projections from the other departments to prepare the company's budget. Then, this department projects the long term budget until the end of the concession (2030).

The total amount of operational expenditures (OPEX) and capital expenditures (CAPEX) are analysed and discussed in meetings which are organised by the planning and control department with the CEO and superintendents. The aim of these meetings is to adjust the budget in accordance with the project sales volume and revenue. After the presentation and acceptance of the budget by the board of directors and administration council, the approved budget is disclosed in the company and the areas of the organisation which control the budget utilisation. Monthly, the planning and control department compares the actual results with the budgeted results and based on these deviations this department projects the tendency for the year. The relevant deviations are presented in monthly meetings to superintendents and managers, where they discuss the causes of the deviations and they propose corrective measures to improve the company's performance.

The budgetary system provides the following reports to monitor the economic and financial performance of the company: budget control report; managerial budget control report; expenses summary; and budget reports available from the SAP system. These reports will be dealt in the section 7.4.3 of this thesis.

7.4.2 Performance Measurement System (PMS) and the Balanced Scorecard (BSC)

After privatisation, Electra implemented a new performance management system based on the management by objectives (MBO) principals. The MBO establishes that the specific performance measures (objectives) are jointly determined by subordinates and their superiors, progress towards objectives is periodically reviewed, and results are evaluated and rewards are allocated on the basis of this progress. Therefore, the main difference between the previous PMS and the PMS developed after privatisation is the fact that the latter connects the company's performance with the employees' remuneration through a new bonus scheme which was introduced into the organisation after the privatisation process. As a consequence, part of the employees' remuneration depends on the company's performance.

Electra's PMS is designed in the following way. Firstly, the holding company in conjunction with Electra's CEO and superintendents establish 10 KPIs (key performance indicators) to the company with specific targets for a period of one year. These performance measures are financial and non-financial indicators and each measure has a different level of importance to the remuneration scheme of the company. Then, each superintendency of Electra (in total of 7) sets 10 KPIs which are cascading from the Electra's 10 KPIs. The superintendency's indicators also include financial and non-financial measures. Finally, between 5 and 10 KPIs are stipulated to each department of the company (see figure 7.6). These KPIs and targets are linked to the company's KPIs and the superintendency's KPIs. Therefore, the variable remuneration of an Electra manager or employee depends on the performance of the company as whole (40%), the superintendency's performance (30%) and the department's performance (30%). As happened in the budgetary system, Electra's PMS was institutionalised in the organisation and the members of the organisation recognised this system as an essential source of information to the decision making process. The head of the planning and control department stated:

> *"One of the major virtues of the company is to work to achieve objectives. The company has 10 corporate objectives that are established every year. These 10 indicators are monitored by all the employees and they are very important for the company and the employees use the information about these objectives in day-to-day basis, because this has an impact on the variable remuneration of all the company's employees."*

The former superintendent of engineering commented:

> *"The new performance measurement system was internalised in the organisation. We visited remote places in the countryside and the employees had targets and they monitored their performance."*

In order to improve the performance measurement system, Electra tried to implement the Balanced Scorecard (BSC) system in 2005. The BSC is a popular performance measurement system which combines the use of financial and non-financial indicators. BSC proponents believe that its implementation reinforces the organisation's strategy and aligns resources with strategic objectives. Management's strategic intent is communicated through the organisation via the BSC, thus helping to align resources with the strategies (Crabtree and DeBusk, 2008).

A typical BSC includes key measures relating to organisational performance and planned targets. Kaplan and Norton (1996; 2001) prescribe a BSC that organises indicators into four categories or perspectives: (a) financial, (b) customer, (c) internal business process and (d) learning and growth (see figure 7.4). Based on the organization's vision and strategy, objectives, performance measures are established for each of these four perspectives. In corporate terms, the financial perspective identifies how a company wishes to be viewed by its shareholders. The customer perspective reflects how it wishes to be viewed by the customers. The internal business process perspective indicates the areas where the company has to be particularly adept in order to satisfy its customers and shareholders. The learning and growth perspective involves the improving developments that the company needs to realise if the strategy and vision are to be achieved (Norreklit and Mitchell, 2007). Therefore, the performance measures should represent a balance between external performance measures concerned with shareholders and clients, and the internal measures of the critical process of business, innovation, learning and growth. Kaplan and Norton (2001) advocate that the BSC is a system responsible for managing the execution of a company's strategy. As a consequence, the BSC should be defined as a strategy management system (Kaplan and Norton, 2006).

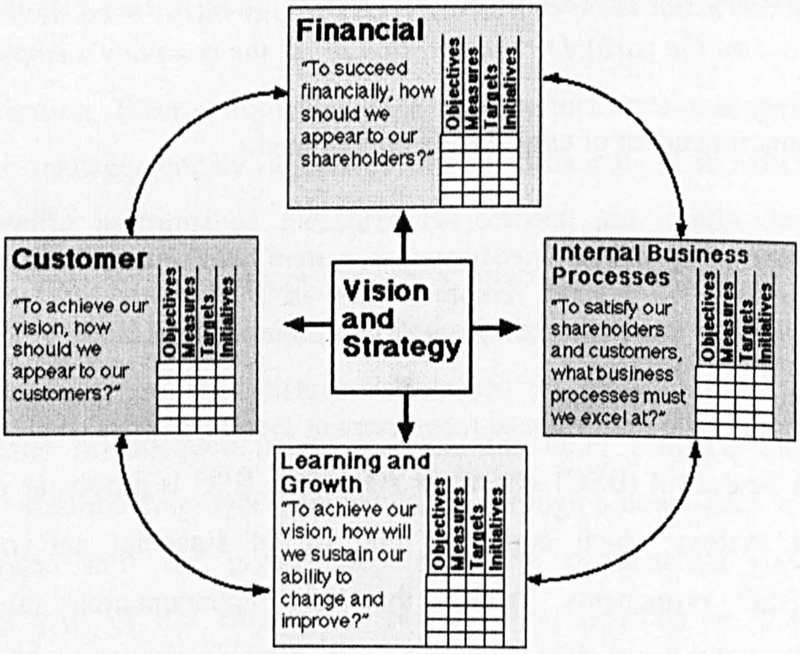


Figure 7.4 – The Balanced Scorecard Framework
Source: (Kaplan and Norton, 1996, p. 9)

The BSC implementation started in 2005 when the holding company decided that all the organisations of the group had to adopt the BSC as a performance measurement system. The BSC system was firstly implemented in another distribution company, which is part of the group of companies with Electra. The utilisation of the BSC in this organisation was perceived as an important management tool by the holding company's director of planning and control. After the process of restructuring which took place in mid 2004, the holding company established that the management and control systems should be standardised among the different companies of the group. As a consequence, some of the management and control systems, including the BSC, were imported from this distribution company, because the management and control systems of this company were more developed than the Electra's systems. The reason for this is the fact that this organisation is bigger and was privatised earlier than Electra.

From the interviews and observations carried out in Electra, it can be stated that the BSC was not able to replace the budgetary control system and performance measurement system (10 key performance indicators, which as implemented after the privatisation). Therefore, the BSC practices were not institutionalised in the organisation. The BSC practices became decoupled from the managers and employees' day-to-day activities. The former superintendent of planning and control commented:

> *"The management and control of the company's performance on day-to-day basis is based on the 10 key performance indicators, instead of the balanced scorecard. The balanced scorecard culture was not disseminated (...) the idea of consider the BSC as management tool is in progress in the organisation."*

One manager of the planning and control department also pointed out:

> *"The 10 key performance indicators are more important for the company. The balanced scorecard is used to formulate the company's strategy every 5 years and to review the company's strategy every year."*

The former superintendent of engineering concluded:

"The management by objectives was internalised in the organisation (...). Then, the company tried to use the balanced scorecard to link the company's strategy to the management by objectives system. However, the employees and manager did not talk about balanced scorecard. They used the 10 key performance indicators to make decisions."

7.4.2.1 Performance Measurement Process

The performance measures are established by taking into consideration the strategies and the needs of the company's departments. Some of the performance indicators are established by the electricity sector regulator (ANEEL), in particular, regarding the quality of service and system. The other performance measures are established by the holding company with the support of the Electra's CEO and superintendents. The performance measures of the company, specially the long term indicators, are calculated and determined based on the business plan prepared by the holding company during the privatisation process with a horizon of 30 years. As a result of this process, 10 key performance indicators (see figure 7.5) are set as the corporate objectives of the company, which accounts for 40% of the remuneration scheme of each manager and employee of the organisation. Electra uses a system based on points from 0 to 1,000 to establish the variable remuneration. Then, the company determines different weight for each indicator based on its importance for the organisation's strategy. The performance measures are evaluated in scale of 5 criteria: excellent (> 875 points); very good (> 725 points); good (> 550 points); sufficient /insufficient (< 549 points). In order to classify a performance measure in this scale, the company compares the actual performance with the budgeted value. For example, the net profit indicator is considered excellent, when it is 5% above the budgeted value, very good, when it is 2.5% above the budgeted value.

CORPORATIVE OBJECTIVES DECEMBER 2007		Indicator	Weighted	Evaluation	Points
Economic and Financial	Increase the net profit – Increment percentage over the budgeted value	ALL	150	👍	150
	Increase the EBTIDA – Increment percentage over the budgeted value	EBITDA	150	☺	112.5
	Reduce the operational expenditures – Reduction percentage over the budgeted value	DOG	100	👍	100
	Optimise the capital investment plan – Deviation percentage of the investment plan	PDI	100	👍	100
Customer	Optimise the purchase and supplying of electricity – Avoid economic losses or energetic balance deficit	PBE	50	👍	50
Internal Process	Revenue collecting index	IAR	100	👍	100
	Reduce losses index – Percentage of electricity used	IPE	150	👍	150
	General index of electricity system continuity	IGC	50	😐	25
	Reduce the frequency of serious accidents and occupational diseases	NST	100	👍	100
Learning Growth	Achieve the adequate level of employees' satisfaction measured by a organisational survey	CO	50	☹	12.5
👍 Excellent ☺ Very Good 😐 Good ☹ Sufficient 💣 Insufficient				TOTAL	900

Electra Status = EXCELLENT

Excellent (>875) Very Good (>725) Good (>550) Sufficient/Insufficient (<549)

Figure 7.5 – Corporate Objectives in December 2007
Source: Electra Internal Newsletter in January 2008

Some of the interviewees highlighted that this process of setting the company's performance measures and specific targets has been based on a top-down approach with limited scope for negotiation and discussion, in particular, the corporate objectives and the superintendencies objectives. Some of the interviewees also pointed out that some of the performance measures are the same for all the areas of the organisation, specially the financial indicators, such as EBITDA, net profit, and operational expenditures. The reason for this approach is the new strategy adopted by the holding company after the process of restructuring, when the main focus of the organisation moved toward the profitability of the company and the return of the investment. The head of the supply department commented:

"There are performance measures that are the same of the corporate objectives and they are linked to the company's result. There are some indicators that we have a certain level of control. Then, we can discuss about these indicators that we have control. However, sometimes, even these indicators are established by the holding company and we do not have autonomy to challenge these targets."

The commercial and market superintendent also stated:

"The holding company stipulates similar objectives for the Electra's areas. In my area, only 2 out of my 10 objectives I can control (...). For example the net profit, I can help to improve this indicator but it is not only my responsibility. It is worse in other areas because they do not know how to support the company to achieve the desired net profit."

Another important change in the performance measurement system after the privatisation was the fact that the corporate objectives are cascaded to the superintendencies, departments, units and individuals. The cascading process (see figure 7.6) starts at the superintendency level. In this first stage, the targets are set by the holding company and Electra's CEO and these targets are discussed in meeting with the director of the holding company, Electra's CEO and the seven Electra's superintendents. After that, Electra departments' targets are determined based on the targets established for the respective superintendency. At the operational level the targets are cascaded to the units and this process takes into account the set of targets established for each department of the company. Finally, the individual targets are set, but the individual performance does not count in the remuneration scheme of the organisation. According to Electra's manual of the performance measurement system in 2006, the aim of this cascading process is to align the corporate objectives with the unit and individuals objectives in order to ensure their congruence.

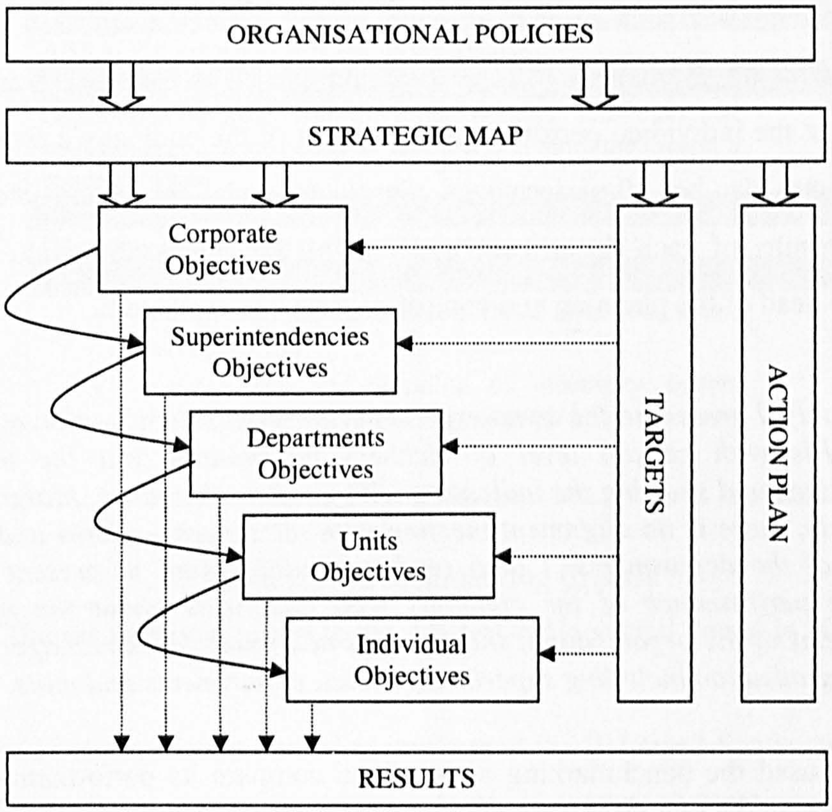


Figure 7.6 – Performance Measures Cascading Process
Source: The management report to the ABRADEE's annual award in 2008 (p. 18)

This performance measurement system based on 10 KPIs is widely spread in the organisation. There are weekly meetings with the Electra's CEO and superintendents to analyse and discuss the performance of the company. At the departmental level, the planning and control department organises meetings with the departments that are performing under what is expected. This practice was established in the organisation in 2004 (The management report to the ABRADEE's annual award in 2008). In addition, the planning and control department presents monthly the evaluation of the corporate objectives of the company to all superintendents and head of departments.

The performance of all levels of the organisation is controlled by the planning and control department which has the mission of consolidating this information in order to disclose the performance of each department and unit on a monthly basis. This information is provided in paper format to be disclosed in each area of the organisation in a visible place, such as notice boards. Moreover, the information is available in a computational system developed to support the performance measurement system. This system is called GPO (Management by Objectives System). As mentioned before, in 2006 the employees' performance started to be evaluated, but the individual performance is not part of the company's remuneration scheme. Electra also has 40 performance coordinators who are responsible to insert the actual results of each department and unit of the organisation into the GPO system. The head of the planning and control department explained:

> *"Monthly, I present to the company's superintendents the situation of the 10 KPIs with certain level of richness by pointing out the main deviations and showing the indicators with good performance. Moreover, monthly, there is an alignment meeting with all superintendents and all head of the departments. I also send a monthly email to present the actual performance of the company with comments about the main problems of the organisation; this email is addressed to all managers of the organisation including superintendencies, departments and units."*

Electra also used the benchmarking approach to compare its performance to other Brazilian electricity companies with similar characteristics. Donthu et al. (2005, p. 1474) define benchmarking as: "the process of evaluating and emulating the products, services, and processes of best performing organizations". The benchmarking approach has been used since 2005. The planning and control department selects the benchmark companies based on a set of criteria which are depicted below (see table 7.3). The main source of information on performance for the process of benchmarking in Electra is the ABRADEE's management system (so-called SIG). This system provides information about the performance of 48 Brazilian electricity distribution companies. In addition, Electra uses other sources of data, such as the regulator's webpage and information from the Brazilian Securities Commission.

POPULATION
ABRADEE associate distribution companies
SAMPLE
Distribution company with more than 400,000 consumers and with a concession area equal or less than 1.5 times the Electra's concession area
BENCHMARKING CRITERION
Company with the best performance among the sample
CRITERIA TO SELECT A COMPANY
• Human Development Index (HDI) less the Brazil average (0.766) • Average rate of utilisation of electricity system (USEE) above 80% and companies from the same Electra's region.

Table 7.3 – Benchmarking Criteria

Source: The management report to the ABRADEE's annual award in 2008 (p. 11)

As discussed before, Electra started to implement the Balanced Scorecard in 2005 to improve the performance measurement system. However, as mentioned before, the utilisation of the Balanced Scorecard is limited on a day-to-day basis and the Balanced Scorecard methodology is restricted to the top level of the organisation. The Balanced Scorecard seems to be greater utilised in the process of planning. The management report to the ABRADEE's annual award in 2008 (p. 15) explains:

> "Taking into account the mission and vision established and the other strategic and budgetary policies of the holding company with the support of the external and internal environment analysis and the needs of the stakeholders, the strategic planning committee (so-called SIG) prepares a proposal of the Electra's strategy map, in which the strategic objectives are presented in accordance with the four perspectives of the Balanced Scorecard: financial; customer; internal process; and learning and growth."

Figure 7.7 depicts the Electra's strategy map in 2007 based on the Balanced Scorecard. It is important to highlight that the utilisation of the Balanced Scorecard on a day-to-day basis was limited, but the Balanced Scorecard was part of the formal system of the company and figure 7.7 reflects the formal system of the organisation (this can be considered as a rule not as a routine in terms of Burns and Scapens (2000) definition of rules and routines).

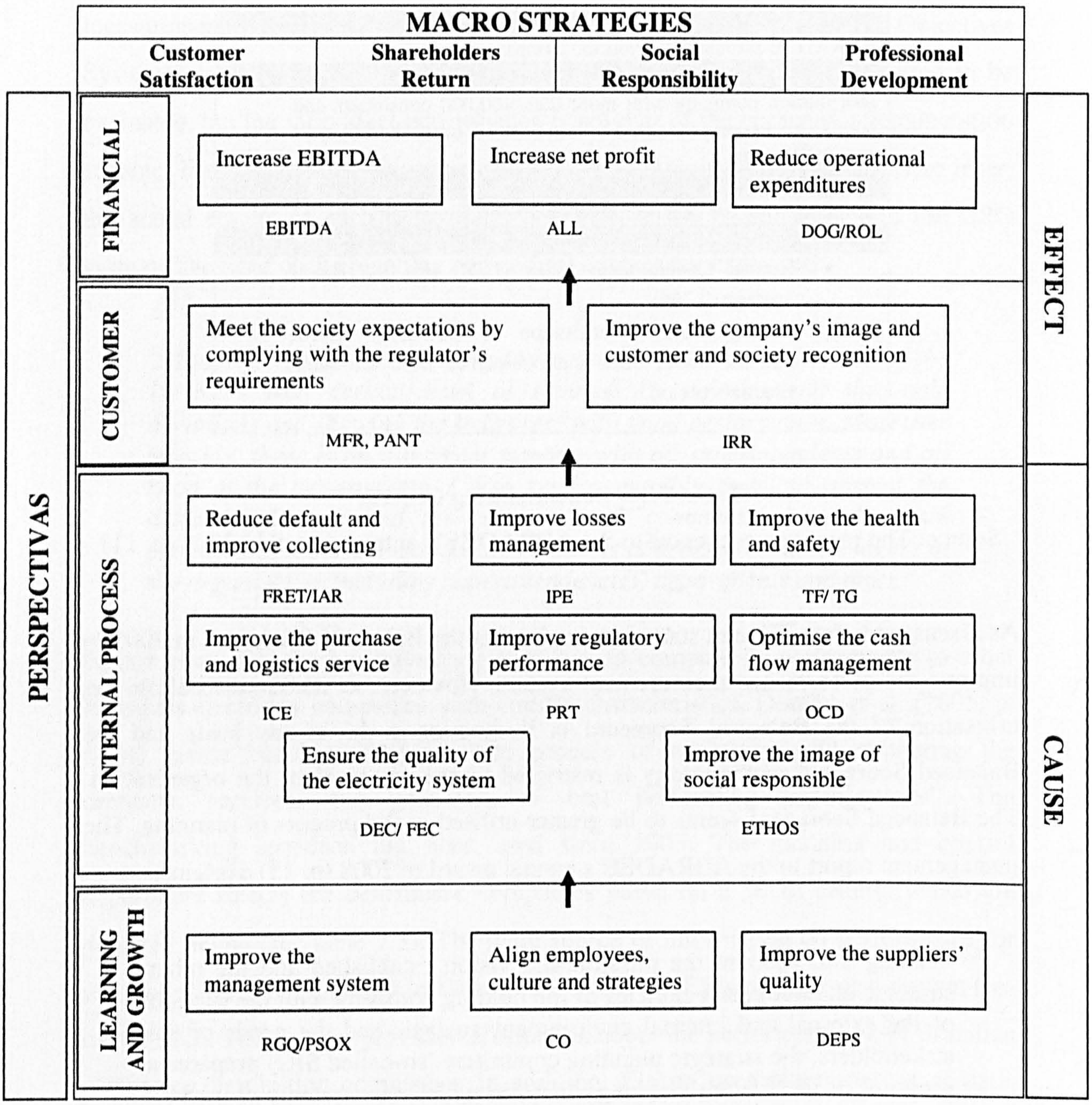


Figure 7.7 – Electra's Strategy Map in 2007
Source: The management report to the ABRADEE's annual award in 2008 (p. 16)

Table 7.4 presents the Electra's strategic objectives with the respective performance measures in 2007:

STRATEGIC OBJECTIVES	PERFORMANCE MEASURES		TARGET
	NAME	DESCRIPTION	
Increase the EBTIDA	EBTIDA	Increase the EBITDA	XX
Increase the net profit	ALL	Increase the net profit	XX
Reduce the operational expenditures	DOG/ROL	Reduce the operational expenditures	XX
Meet the society expectations by complying with the regulator requirements	PANT	Achieve the plan for the appropriate electricity tension level	XX
Improve the company's image and customer and society recognition	IRR	Reduce the complains index	XX
Reduce default and improve collecting	FRET	Improve the quality of reading and collecting	XX
	IRR	Improve the collecting system	XX
Improve losses management	IPE	Reduce losses index	XX
Improve the health and safety issues in the company	TG	Reduce the rate of serious accidents in the labour force	XX
	TF	Reduce the frequency rate of the labour force	XX
Improve the purchase and logistics services	ICE	Reduce the level of stocks	XX
Improve the regulatory performance	PRT	Achieve the tariff review plan	XX
Optimise the cash flow management	OCD	Reduce the weighted average cost of debt	XX
Ensure the quality of the electricity system	DEC	Equivalent length of electricity interruption per consumer	XX
	FEC	Equivalent frequency of electricity interruption per consumer	XX
Improve the performance of the company as a social responsible organisation	ETHOS	Better position in the ETHOS/ABRADEE ranking of companies	XX
	USEE	Average rate of utilisation of electricity system	XX
Improve the management system	RGQ	Result in the ABRADEE award	XX
	PSOX	Implement the internal control project (SOX)	XX
Align employees, culture and strategies	CO	Survey of the employees' satisfaction	XX
Improve the suppliers' quality	DEPS	Implement the system to evaluate the suppliers' quality	XX

Table 7.4 – Electra's Strategic Objectives in 2007

Source: The management report to the ABRADEE's annual award in 2008 (p. 18)

The introduction of the Balanced Scorecard in Electra did not practically change the performance measurement system which was implemented after the process of privatisation. The Balanced Scorecard was mainly used to classify the performance measures into the BSC's four perspectives, but the BSC was not used in the whole organisation on a day-to-day basis by taking into consideration the cause and effect relationship between the four perspectives and the company's performance measures. In addition, after the process of restructuring the organisation the financial perspective was considered the main focus of the organisation. As a consequence, this created an unbalanced relation among the four perspectives and the non-financial and financial performance measures. Another aspect highlighted by some interviewees is the fact that the company operated in a regulated industry in a form of private monopoly. As a result, the scope to create new strategy is narrow and the organisation tends to use the same set of performance measures throughout the years.

Therefore, there is a perception that the Balanced Scorecard is not necessary in Electra. The superintendent of engineering commented:

> *"The company's activity is a natural monopoly and its activities are very well defined. As a result, we do not have great challenges at the strategic level every year (...). We do not change our strategy; it is rare to change any aspect of our strategy (...). We conceptually work with 10 performance measures at the corporate level. There are 13 or 14 indicators and every year we choose 10 indicators, but these 13 or 14 represent effectively the company's result as whole. We do not have too much scope to imagine that the company will implement a new strategy and this new strategy will create 4 new performance indicators. This is very complicated in this kind of business."*

7.4.3 Reporting System and Management Accounting Utilisation

As discussed in the previous chapter, management accounting information was restricted to Electra's board of directors and the accounting and finance staff of the company before privatisation. One aspect that changed in the company was the fact that the management accounting information can be accessed by all managers and middle employees, especially information regarding budget and performance measures. The implementation of the SAP system facilitated this change in the way that people used the management accounting information.

The utilisation of the performance measurement system (PMS) information and the budgetary information is spread across the whole organisation and the employees started to talk the "accounting language", in particular the performance measures that have impact in the remuneration system, such as EBITDA and operational expenditures. The head of the corporative consumers department commented:

> *"As managers, we had to add value to the company and the board of directors supported the utilisation and dissemination of the economic and financial concepts in the organisation. Therefore, nowadays talking about net profit, EBITDA, income statement, budget, operational costs and capital investment is the day-to-day language in the organisation. So, in terms of the economic and financial language, the managers use these terms to deal with the company's problems."*

The head of the accounting department also pointed out:

> *"Electra is eminently an engineering company and this present organisational culture took a considerable amount of time to be achieved. The majority of the engineers wanted only build and expand the electricity system. They did not pay attention to the financial indicators, such as profit, EBITDA, and revenue. Nowadays, these financial indicators have an impact on the employees' remuneration. As a result, the engineers ask about the profit and the EBITDA. So, everybody is speaking the economic and financial language now."*

The importance of Electra's management accounting area, that is, the accounting department and the planning and control department, changed after the process of privatisation. The attributions and the role of the management accountants were expanded, and as a consequence the management accountants had to interact with the other departments of the company. The management accounting area started to be perceived by the other managers as an important source of information to the decision making process. The change in management accounting importance has two main reasons: (1) the company has a strong focus on financial performance and the members of Electra are rewarded in accordance with this financial performance. As a consequence, the information about budget and the performance measures are key to the company's employees; (2) the regulatory requirements, in particular the tariff review process, forced the interaction between the operational departments and the management accounting departments. The tariff review process is critical to a distribution company, because it determines the future revenue which remunerates the shareholders capital invested in the company. The former head of the accounting department commented:

> *"The new regulatory system, in particular, the tariff review process, stimulated the expansion of the planning and control area of the company, because this area started to control and calculate the company's operational expenditures, the losses index, the level of default (...). Therefore, there was a considerable improvement in terms of economic and financial controls. The accounting information started to be a very important source of information in the organisation, especially during the period of the tariff review process."*

The Electra's CEO also pointed out:

"The planning and control area was expanded and gained more importance in the last years; as a consequence of the new company's philosophy. We have to have profit; we have to have good results. So that, we need controls and we have to plan; as a result the planning and control area plays an important role in the organisation (...). If you want good results, you need to identify what kind of results you want and what are your goals. In addition, you need controls to achieve these goals."

7.4.3.1 Electra's Management Accounting Reports

The Electra management accounting report system produces a range of management accounting reports to the internal users of the organisation. These reports are:

a. Management Budget Report (monthly);
b. Budget Control Report (monthly);
c. Expenses Summary (monthly);
d. Management Report (monthly); and
e. Accounting Statements (quarterly).

The first three reports are outputs of the Electra budgetary system. The Management Budget Report is produced by the Electra accounting department and this report should be ready to disclose on the third working day of every month. This report is available for the holding company directors, Electra superintendents and the head of the company's department. This report presents the income statement of the company with the analysis of the actual performance and the budgeted figures. This report also presents 19 financial ratios to analyse the company's performance. The report provides explanations about the variances identified in the month with comments produced by the accounting department. This report is prepared in the Microsoft PowerPoint format and has approximately 40 slides including the income statement and the deviation comments. Figure 7.8 shows the income statement which is the main part of this report.

Description	Up to September			
	Actual	Budget	Variance R$	%
Gross Revenue	2,228,866	2,376,306	-147,440	-6.20%
Deductions	-718,339	-767,238	48,899	-6.37%
Net Revenue	**1,510,527**	**1,609,068**	**-98,541**	**-6.12%**
Cost of Services	-743,835	-777,634	33,799	-4.35%
Gross Profit	**766,692**	**831,434**	**-64,742**	**-7.79%**
Operational Expenditures	-469,071	-536,741	67,670	-12.61%
Operational Profit	**297,621**	**294,692**	**2,929**	**0.99%**
EBITDA	**368,285**	**374,978**	**-6,693**	**-1.78%**
Interest	-44,228	-50,512	6,284	-12.44%
Equity Capital Interest	-47,400	-51,203	3,803	-7.43%
Non-operatinal Result	-2,655	-1,953	-702	35.92%
Profit before Interest and Taxation	**-2,655**	**-1,953**	**-702**	**35.92%**
Taxes	-56,336	-64,930	8,594	-13.24%
Enquity Capital Return	47,400	51,203	-3,803	-7.43%
Net (Loss) Profit	**-11,591**	**-15,680**	**4,089**	**-26.08%**

Figure 7.8 – Income Statement of the Management Budget Report 2006

The second report is the Budget Control Report which is prepared by the Electra planning and control department. This report has a similar aim of the previous report, that is, to compare the actual performance of the company with the budgeted figures. The main difference between these reports is the fact that the Budget Control Report presents information about the financial and non-financial performance of the organisation. The Management Budget Report presents only the income statement, while the Budget Control Report provides the variance analysis of the income statement, cash flow, and other financial and non-financial performance indicators, such as the system quality indicators (DEC - Equivalent length of electricity interruption per consumer and FEC - Equivalent Frequency of electricity interruption per consumer). The main users of this report are: the holding company and the managerial staff of the organisation. One manager of the planning and control department commented:

> *"The Budget Control Report is addressed basically to the holding company and the Electra's manager can access this information (...) there is a presentation of this report to the CEO, the administrative council and the planning and control superintendent (...) this report compares the actual and budgeted figures in terms of financial and operational performance. This report shows the profit, EBITIDA, cash flow, the electricity distributed, and the quality of the system. So, there is economic and financial information, as well as operational information."*

Figure 7.9 shows the Electra cash flow which is part of the Budget Control Report.

CASH FLOW						
	Month			**Accumulated**		
	Actual	**Budget**	**Var. (%)**	**Actual**	**Budget**	**Var. (%)**
Cash Received from Consumers	xx	xx	xx	xx	xx	xx
(=) Cash flow from operational activities	xx	xx	xx	xx	xx	xx
... ...						
(=) Cash flow from financing activities	xx	xx	xx	xx	xx	xx
... ...						
(=) Cash flow from investing activities	xx	xx	xx	xx	xx	xx
(+/-) Others	xx	xx	xx	xx	xx	xx
(=) Net increase (decrease) in cash flow	xx	xx	xx	xx	xx	xx
(+) Cash at the beginning	xx	xx	xx	xx	xx	xx
(=) Cash the end of the reporting period	xx	xx	xx	xx	xx	Xx

Figure 7.9 – Cash Flow Statement of the Budget Control Report

The third budgetary report is the Expense Summary. This is a short report with three pages. The main aim of this report is to present the company's operational expenditures by comparing the actual and budgeted figures. This report provides two types of analysis. The first analysis is done by expenditures items, that is, labour expenditures; material expenditures; outsource expenditures; and other expenditures. The second analysis provides the comparison between the actual performance and the budget figures of each superintendency of Electra. It is important to highlight that this sort of information can be accessed through the SAP system and as a consequence, many of the interviewed managers pointed out that they prefer to use the SAP system report about the operational expenditures, because it is more up-to-date and they can access it anytime with no need to wait for the planning and control department to produce this report. The head of the corporative consumers department commented:

"I use the SAP system when I want to control the financial information at real time, such as the operational costs or the capital investment costs (...) we have weekly meeting to evaluate the financial performance of my department and I use a lot the SAP reports which provide the budgetary performance of my department. They are standard reports that we can read in different ways, but the most important information is the budget value, the actual figure and the tendency for the remaining months of the year."

Figure 7.10 provides an example of a comparative chart of the actual and budgeted figure of each area of the organisation.

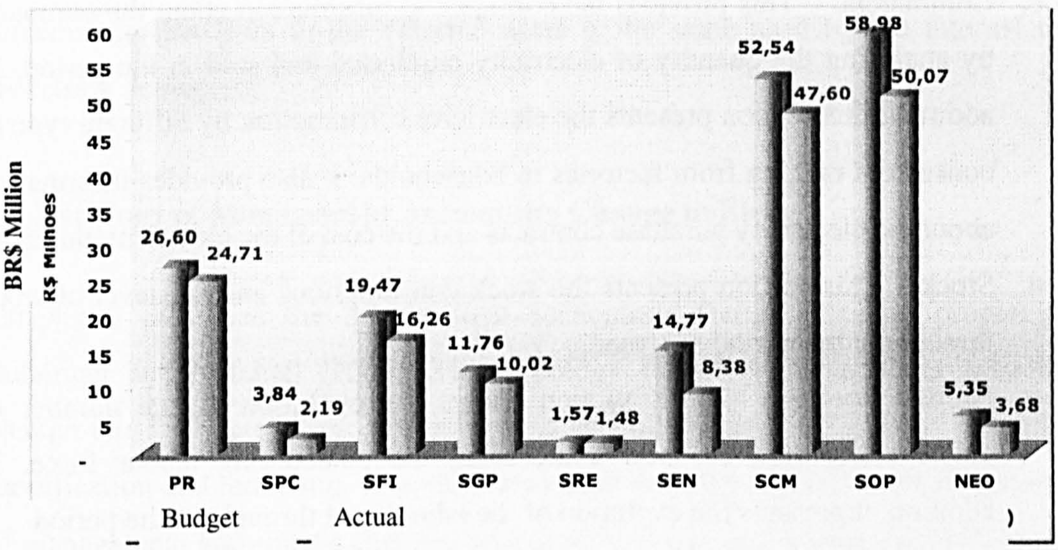


Figure 7.10 – Comparative Chart of the Company's Operational Expenditures by Areas
Source: Electra Expense Summary Report in July 2007

The main report produced by the management accounting area of the organisation is the Management Report. According to Electra's management control procedures, this report aims to provide information about the performance of the company to the managers by comparing actual and budgeted figures. This information includes the following areas: economic and financial performance, market/service performance, and quality indicators. This management report is divided into 8 sections:

a. Executive Summary – This section is the introduction of this report and it highlights the macro business environment; the main economic and financial results of the company in the report period; and the main aspects in terms of market, consumers and operational performance;

b. Economic and Financial results – This section presents Electra's income statement, balance sheet and cash flow. It compares the actual performance with the budgeted figures of the company. This section also provides an analysis of some indicators that are presented in the income statement, such as the EBITDA and the cost of electricity distribution. In addition, this section shows the present debt situation of the company and the capital investment expenditures.
c. Commercial – This provides the commercial information about the company by analysing the quantity of electricity purchased and sold in the period. In addition, this section presents the electricity consumption by different type of consumers ranging from factories to households. It also provides information about the electricity purchase contracts and the cost of the electricity purchase.
d. Stock – This section presents the stock consumptions and the level of stock throughout the period analysed.
e. Human Resource – This section shows the evolution of the number of employees during the period including the outsourcing labour force. In addition, it presents the evolution of the labour cost throughout the period.
f. Tendency – This section provides the forecasted income statement and cash flow for the end of the year of the management report based on the actual performance of the company.
g. Corporate objectives – This section shows the status of the 10 KPIs of Electra by comparing the actual performance of the indicators and the budgeted figure. In addition, this section shows the projection of the value of these 10 KPIs for the end of the year based on the company's present performance.
h. Relevant facts – This section presents the main factors that happened in the period, such as changes in the regulation, awards received and organisational structure changes.
i. Appendix (Performance Indicators) – This section shows the evaluation of 22 performance measures in a graphic format by comparing the actual performance of each indicator with the actual performance last year and the budgeted value of the performance indicator. These 22 indicators are non-financial measures, such as those relate to the quality of the electricity system

(DEC - Equivalent length of electricity interruption per consumer and FEC - Equivalent frequency of electricity interruption per consumer); and financial indicators, such as net profit and EBITDA.

The accounting department produces the company's financial statements on a quarterly basis, which comprise basically: the balance sheet, income statement and cash flow statement. The accounting statements have to comply with the ANEEL's (regulator) accounting manual for electric power utility companies and the CVM (Brazilian Securities Commission) regulations. As a consequence, the accounting information that goes to the external users is the same used by the internal users (Electra's managers).

7.4 Typology of Management Accounting Change in Electra

Chapter 2 presented the management accounting change typology proposed by Sulaiman and Mitchell (2005). This typology classifies management accounting change into five categories: addition; replacement; output modification; operational modification and reduction. Chapter 2 also dealt with the discussion about the nature of management accounting changed proposed by Burns and Scapens (2000). In order to evaluate the nature of change in management accounting, Burns and Scapens (2000) propose four dichotomies: formal/informal change; revolutionary /evolutionary change; and progressive/regressive change. Briefly, formal change refers to conscious, directed, and more easily observed kinds of design, whereas informal change refers to the more or less tacit and unintentional aspects of organisational actions. The opposite of revolutionary change is evolutionary change: incremental change with minor disruption of existing routines. The dichotomy between regressive and progressive change captures the nature of change from the perspective of whether it is predominantly ceremonial, pre-serving existing power structures and restricting institutional change, or instrumental (progressive), implying that previously dominant values and practices are questioned and more fundamentally transformed.

To evaluate the nature and the process of management accounting change in Electra, these classifications can enable a distinction to be made between different types of change processes, and can facilitate analyses of change based on the proposed theoretical framework (see chapter 3). However, following Soin, et al (2002), it is suggested that although a change does not necessarily fall into such clear opposites, the dichotomies of change nevertheless provide useful sensitising devices.

This thesis aims to explain the process of management accounting change in Electra by analysing four themes, namely: budgetary system; performance measurement system; reporting system and management accounting utilisation; and the Balanced Scorecard. It is important to highlight that, as discussed before; the Balanced Scorecard was not institutionalised in the organisation and some people could argue that it cannot be considered as a change. However, the introduction of the Balanced Scorecard is a case of unsuccessful change (see the definition of unsuccessful change in Burns, et al.(2003)). As a consequence, this thesis can consider the introduction of the balanced scorecard as a management accounting change. In addition, by considering cases of successful and unsuccessful changes, the analysis and conclusions of this thesis will be enhanced.

Table 7.5 provides the classification of these four management accounting changes according to the typology proposed by Sulaiman and Mitchell (2005) and the Burns and Scapens (2000) discussion about the nature of the management accounting change.

Management Accounting Changes	Sulaiman and Mitchell (2005) Typology	Burns and Scapens (2000)		
		Formal vs Informal	Revolutionary vs Evolutionary	Regressive vs Progressive
Budgetary System	Addition	Formal	Revolutionary	Progressive
Performance Measurement System	Replacement	Formal	Revolutionary	Progressive
Reporting System and Management Accounting Utilisation	Addition and Replacement	Formal	Revolutionary	Progressive
Balanced Scorecard	Addition	Formal	Evolutionary	Regressive

Table 7.5 – Typology of change in Electra

As can be seen from table 7.5, the four changes can be classified according to the Sulaiman and Mitchell (2005) typology into two types: addition or replacement. The former represents the introduction of new techniques as extensions of an existing management accounting system and the latter reflects the introduction of new techniques as replacements for an existing part of a management accounting system. In this case, the budgetary system can be considered as an addition type of change, because there was a budgetary system before the privatisation and this system was expanded after the privatisation with the implementation of the SAP/R3 system. The performance measurement system is classified as a replacement type of change, because this was a new system introduced into the organisation based on the management by objectives principles. The management report system is a type of change that had both aspects of addition and replacement, because some reports were created after the privatisation and others were only improved and modified. Finally, the Balanced Scorecard is classified as an addition type of change, because it intended to extend the existing performance measurement system.

In terms of the Burns and Scapens (2000) dichotomies, table 7.5 shows that the four management accounting changes are formal changes, that is, there were managed changes in the sense that they were consciously planned and rationally executed, because they were premeditated by the organisational members. In the case of

Electra, these changes were strongly supported by the top-management of the organisation. Table 7.5 also presents that the three management accounting changes introduced just after the privatisation (budgetary system; performance measurement system; and the management report system) are classified as revolutionary changes. The reason for this is that the changes challenged the previous institutions (take-for-granted values and believes) of a state company in which the financial performance was not considered a key aspect in the organisation. On the other hand, the Balanced Scorecard was an evolutionary change, because it did not challenge the take-for-granted assumption of the organisation, that is, the previous set of rules and routines.

Regarding the dichotomy progressive versus regressive, the three management accounting changes introduced just after the privatisation (see table 7.5) were progressive changes. This is because they had an instrumental characteristic in the sense that the main objective of these changes was to improve the organisational system of control and decision making. In contrast, the implementation of the Balanced Scorecard can be classified as regressive change, because the choice of the Balanced Scorecard could be explained as being based on a symbolic embrace of the latest management accounting technology in order to increase the company external legitimacy. As a result, the Balanced Scorecard introduction can be interpreted as ceremonial rather than instrumental change.

In chapter 2, it was also presented and discussed the Busco, et al.(2007b) reflection about the nature of management accounting change that comprises four key dimensions: the agents and object of change; the forms and ratio of change; the space and time of change; and the interplay between change and stability. These dimensions are addressed in the next chapter of this thesis by taking into consideration the following questions proposed by Busco, et al.(2007b) to study management accounting change which are: (a) what and who makes change happen?; (b) how and why change happens?; (c) when and where change happens?; and (d) What was the interplay between change and stability in the case organisation?

7.5 Conclusion and Summary

This chapter has aimed to present and discuss the organisational and management accounting changes that took place in Electra after privatisation. In addition, this chapter presented the management accounting practices and reports that has been used in Electra, in particular, those concerning the budgetary system, performance measurement system, and the management accounting report system.

First, this chapter has presented the organisational changes in term of management and cultural changes. The organisational changes explained in this chapter had to some extent impact on the management accounting system of Electra. These changes were: a new management model based on the management by objectives (MBO); the implementation of the ERP system; the group restructuring with financial focus; and the implementation of a new internal control system. After that, it was briefly explained the relationship between management accounting and the regulatory framework in Brazil. It was stated that the changes in regulation combined with the new ownership were the main drivers of management accounting changes in Electra. As a consequence, the regulatory system played a significant role in the process of change in Electra (this influence will be dealt in detail next chapter of this thesis).

The core part of this chapter was concerned with the management accounting changes and practices in Electra. This thesis focuses on four management accounting changes: budgetary system; performance measurement system; management accounting report system; and the implementation of the Balanced Scorecard. The first three changes were implemented just after privatisation and they were institutionalised in the organisation in an instrumental way. On the other hand, the Balanced Scorecard was introduced some years after privatisation and this system was a case of an unsuccessful change, as it was not institutionalised in the organisation. The Balanced Scorecard was part of the formal system of the organisation, but on a day-to-day basis the Balanced Scorecard was not used by the managers in the decision making process. As a consequence, the Balanced Scorecard was used in a ceremonial way to give external legitimacy. This chapter also used the typology of change proposed by Sulaiman and Mitchell (2005) and the management accounting change dichotomies proposed by Burns and Scapens (2000) to classify these four management accounting changes in Electra (see table 7.5 above).

To conclude, the discussion and analysis in this chapter are basically related to understand 'what' had changed in the Electra management accounting system after the privatisation. In order to achieve this, organisational changes and intra-organisational factors that influenced these changes were addressed. Chapter 5, 6 and 7 set the foundation for chapter 8 of this thesis, as these chapters explained Electra's macro and micro environments, that is, the economic and political level, the organisational field level, and the intra-organisational level. Chapter 8 aims basically to explain 'how' and 'why' management accounting changes happened in Electra after the privatisation. In order to achieve this, the theoretical framework proposed in chapter 3 will be applied.

Chapter Eight: Explaining the Process of Management Accounting Change – Theoretical Framework Model

8.1 Introduction

This chapter deals with the main purpose of this study which is to explain how Electra's management accounting system was shaped by both inter and intra organisational factors after the process of privatisation. In addition, this chapter answers two specific research questions which are: (a) How did new management accounting practices become accepted and take root as values and beliefs in the organisation?; and (b) When, why and how did organisational actors decide to enact changes in management accounting systems? In order to achieve that aim and provide answers to the research questions, the theoretical framework proposed in chapter 3 is applied. The previous chapters of this thesis, in particular chapters 5, 6 and 7, had set the foundation for the analysis about the process of management accounting change in Electra by presenting and describing Electra's macro and micro environment, as well as Electra's management accounting practises and the changes in the organisational and management accounting systems after privatisation.

As presented in chapter 3, the theoretical framework model combines three established frameworks, namely: Dillard et. al. (2004), Burns and Scapens (2000) and Seo and Creed (2002). As a result, the thesis theoretical framework is grounded on the ideas and concepts from institutional theory (NIS – new institutional sociology and OIE – old institutional economics), Giddens' structuration theory (Giddens, 1979; 1984b), and the dialectical perspective (Benson, 1977). The theoretical framework model (see figure 8.1) is divided into three levels of analysis: economic and political level; organisational field level and intra-organisational level. This division into three levels facilitates the understanding of the process of management accounting change by taking into account inter and intra organisational dynamics of the process of change (for further details about the theoretical framework model see chapter 3).

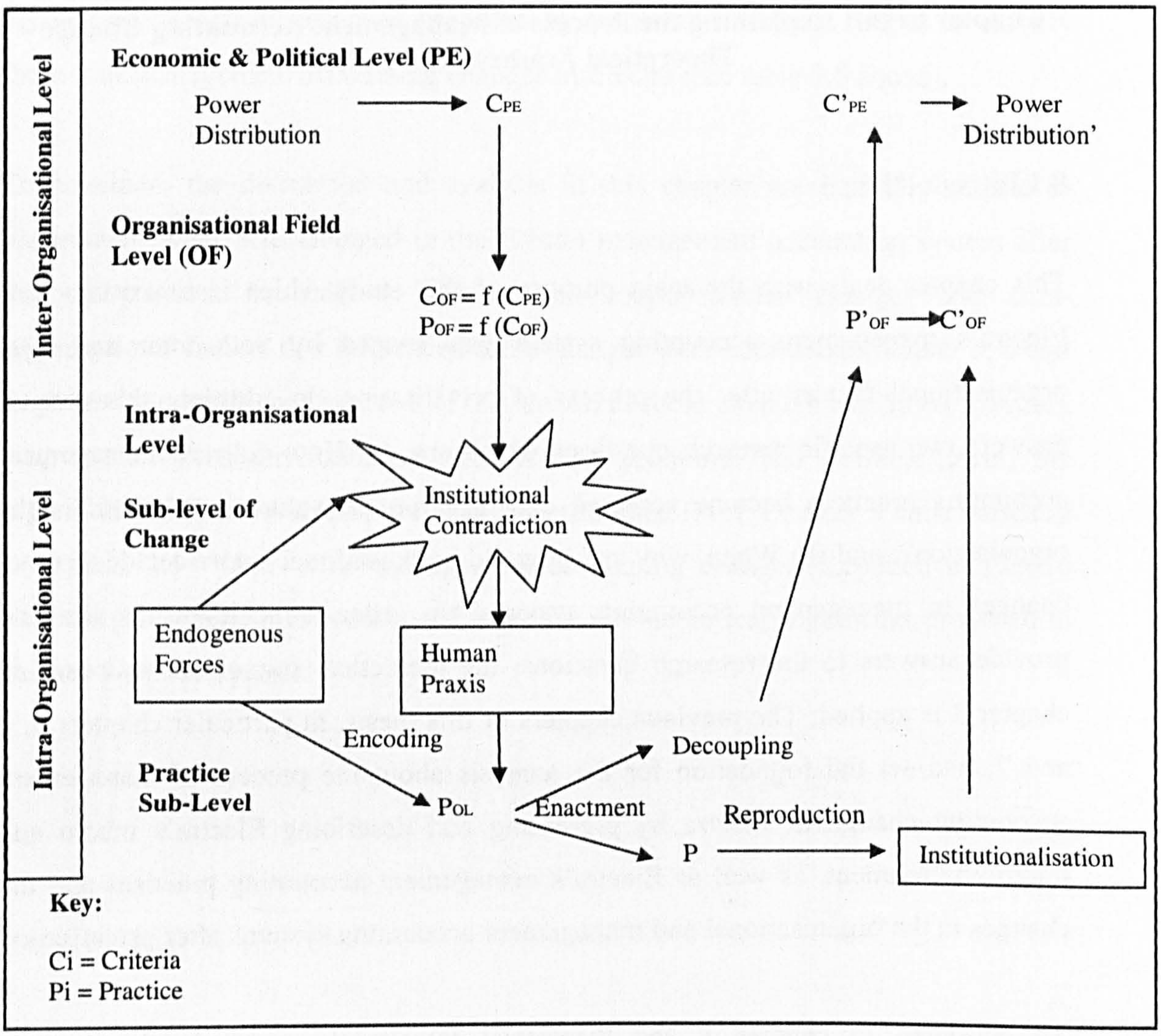


Figure 8.1 – Theoretical Framework Model

This chapter is divided into four sections. The first section provides the analysis of the political and social dynamics of management accounting change in Electra by applying the same constructs used by Dillard et al. (2004), that is, Weber's 'axes of tension' and structuration theory concepts of signification, legitimation, and domination. The next section aims to explain and understand the process of management accounting change by applying the thesis theoretical framework (Figure 8.1). This section has two subsections: the drivers of changes: regulation, managerial pressures, electricity industry and associations, and public opinion; and the process of management accounting change, in particular, at the intra-organisational level. After that, the next section explains the importance of the thesis theoretical framework in explaining the process of management accounting change in Electra. Finally, the conclusion and summary are presented.

8.2 Political and Social Dynamics of Management Accounting Change

This section aims to apply the proposed framework to understanding the process of management accounting change in Electra by using the same constructs (Weber's 'axes of tension' and structuration theory) used by Dillard et al. (2004) to understand the political and social dynamics at the three levels of analysis (economic and political; organisational field; and intra-organisational). By doing that, this study explains the inter and intra organisational structures (rules and resources) that governed Electra before and after privatisation. As a result, this section articulates the institutional dynamics indicating how criteria and practice are linked over three levels of social systems. After that analysis, the next section provides a more comprehensive analysis of the process of management accounting change at the intra-organisational level and it explains how social dynamics influenced the management accounting practices in Electra after the process of privatisation.

Dillard et al. (2004) draws on Weber's 'axes of tension' (representation; rationality; and power) to understand how criteria and practices are linked over the three social systems (economic and political level, organisational field level, and organisational level). Dillard et al. (2004, p. 517) state that "the domain content of the institutional analysis can be described, at least partially, using Weber's notions of rationality and power and the social constructionists' conception of representation". Dillard et al. (2004) advocate that Giddens' structuration theory contains three different structural types: signification, legitimation and domination and these three structural types coincide with the three axes of tension: the signification structures as analogous to the representational axis; legitimation structures as representing the rationality axis; and the domination structures as representing the power axis. Legitimation structures consist of normative rules and moral obligations of a social system. Signification structures have to do with symbolic representations that provide meaning and facilitate communication. Finally, the domination structures relate to power as it concerns the ability to control and mobilise resources (for further discussion about these concepts see chapter 3). Dillard et al. (2004, p. 522) conclude: "Weber's ideas are used to articulate the historical, socio-economic and political environment within which the institutionalisation process occurs in western industrial societies and provides a theoretical link to structuration theory through the core dimensions of social systems".

Dillard et al. (2004) point out that the structuration theory framework postulates a dynamic inter-relationship between structure and agency whereby changes in social structures and systems take place as a result of human actions, which is both enabled and constrained by the structure. As a consequence, Dillard et al. (2004) incorporated the structuration theory into their framework to address change at the societal level, organisational field level and the organisation level. Dillard et al. (2004, p. 520) conclude that the study of the dynamics of the process of organisational change should incorporate the analysis based on the three dimensions of the structuration theory because; "structuration theory provides a theoretical representation of the primary dynamics of institutional theory and that it not only describes the primary context dimension but also provides the dynamics for institutional change".

This section provides an explanation of the primary dynamics of institutionalisation of the management accounting change in Electra by using the structuration theory concepts of legitimation, signification and domination. This constitutes the first step to apply the thesis theoretical framework as this explanation shows the link between the three social levels of analysis (economic and political level, organisational field level, and organisation level). The analysis is carried out on these three social levels by comparing the structures in two different periods: pre-privatisation and post-privatisation. Table 8.1 provides the summary of the analysis based on the structuration theory.

Political and Economic Level	Pre-Privatisation	Post-Privatisation
Legitimation Structures	Interventionist State; State's development; Affordable tariff	Neo-liberal paradigm; Efficiency and Competition; Electricity sector expansion
Signification Structures	Political priorities; Technical language	Price-cap regulation
Domination Structures	Federal government State government	Federal government; Private Investors
Organisational Field Level	**Pre-Privatisation**	**Post-Privatisation**
Legitimation Structures	Expansion of the distribution system; Affordable tariff; Universal service	Equilibrium between regulation and companies' return; Society Image
Signification Structures	Technical language	Regulator language; Quality improvement
Domination Structures	Federal government State government	Private investors; Regulator
Intra-Organisational Level	**Pre-Privatisation**	**Post-Privatisation**
Legitimation Structures	Universal service; Expansion of the distribution system	Regulatory demands; Financial performance
Signification Structures	Language of public service; Engineering ethos; Non-Accounting style	Profit-oriented; Cost-conscious; Regulator language
Domination Structures	State government; Engineers	Shareholders; Regulator

Table 8.1 – Social Structures pre and Post Privatisation

8.2.1 Pre-Privatisation

This sub-section presents and discusses the social dynamics in terms of the three structures of analysis, namely: legitimation, signification, and domination before the process of privatisation at the three levels of analyses proposed in the theoretical framework: economic and political level, organisational field level and intra-organisation level.

8.2.1.1 Economic and Political Level

The legitimation structures were based on the view that the state (the federal and state governments) should provide the basic services to the population. The view of the Keynesian state was dominant during the period before privatisation and the state was considered as the provider of the so-called public services, such as electricity and water. At the international level, which had an impact on the Brazilian electricity sector, during World War II, Keynes had played an important role in influencing government policy, emphasising the importance of fiscal and monetary policy as tools of the Government for managing the economy. Nationalisation was therefore to some extent a continuance of the idea of economic planning which had been essential to the world's war effort, and which had led to the belief that public allocation of resources was preferable to market allocation. As a consequence, the public began to expect more of Government after the war, and the belief grew that everyone had the right to basic services, some of which were considered so essential that they should not be provided on the basis of profit and individual ability to pay.

The norms and values of the socio-political and economic context were codified in laws and regulation and provided the legitimating grounds for action under the idea of the Interventionist State. This implied that the Federal Government and the Brazilian states governments were responsible for the development of Brazil and the Brazilian states, respectively. In terms of the Brazilian electricity sector, the government decided to adopt the policy of the expansion of the offer of electricity by expanding the generation capacity with the construction of large hydro plants and by expanding the transmission and distribution grid. Another point that was important to the government was to guarantee affordable electricity tariffs to the consumers in the different regions of Brazil. In order to achieve this aim the government implemented the tariff equalisation system (the same electricity tariff for all Brazilian states) in 1974, therefore the electricity tariff was equalised over the country. The purpose of the equalisation was to create incentives to industrial investment in less-developed states and regions. In addition, this measure aimed to control the electricity tariff as the low-cost utilities transferred their surplus to the equalisation fund, and this resource was transferred to high-cost companies.

The signification structures operating at the political and economic level before privatisation reflected the legitimation structures (explained above). As a consequence, the political aspect of the electricity sector was emphasised and measures to increase the number of connection and the expansion of the electrical network were the key measures. As a consequence, the technical aspect of the system was another legitimation structure in order to ensure the expansion of the system. In this respect, technical language was more important than the financial viability of the electricity system. This can be seen in the tariff equalisation system adopted in Brazil in this period which led the distribution companies to face financial difficulty in the 1980s, which put pressure on the Brazilian Electricity sector to introduce changes in the industry. The ANEEL Superintendent of Economic Regulation commented:

> *"Previously, all the distribution companies had the same tariff in Brazil. The methodology to establish the tariff was based on costs (...) the government set the reference price which was the maximum price in accordance with the power purchase necessity and services and projects to achieve the public policies established to Brazil (...) the distribution companies did not have concerns about their financial performance, because there was a mechanism of intra-sector compensation. If one company had loss and another company had profit. The profitable company transferred part of their profit to support the non-profitable company. Therefore, this system did not support competition and efficiency in the Brazilian electricity sector."*

The domination structures refer to the institutions that control and allocate resources (Dillard, et al., 2004). In the Brazilian electricity sector, the federal government centralised generation and transmission, the task of distribution was decentralised into the hands of the states (a reflection of the shared power in the Brazilian federal system). The central government's aim was to create a federally controlled enterprise (Eletrobras) that generated and transmitted power to state-owned regional distribution companies (Oliveira, 2007). The federal government eventually dominated the power business through Eletrobras control of low-cost financing and the requirements of a coordinated, interconnected national grid. Therefore, the economic and political system was dominated by the federal government and state government. The former was responsible for the macro policies and decisions regarding the electricity sector, while the latter was responsible for the control and allocation of the resources at the state level based on the Electra's state priorities in terms of social and economic development.

8.2.1.2 Organisational Field Level

The organisational field is made up of the group of organisations involved in the generation, transportation and commercialisation of electricity as well as related trade associations and industrial experts (Dillard, et al., 2004). The signification, legitimation and domination elements of the political and economic level provide the context within which the organisational field is constituted. As a consequence, the legitimation structures at the organisational field reflected the aims of the economic and political level. The legitimation structures comprised: (a) expansion of the distribution system to support the country and state's development; (b) affordable tariff; and (c) universal service, especially by increasing the number of connection in rural areas.

To support the structures of the political and economic level as well as the legitimation structures at the organisational field level, the signification structures were based on technical language. As a result, the focus was on the engineering aspect of the sector and little attention was paid on the financial issues. This was a consequence of the equalisation system that subsidised the companies' with poor financial and operational performance. Therefore, the representation scheme was based exclusively on engineering and operating demands and notions of public service. The Electra's Engineering Superintendent commented:

> *"The previous model in the Brazilian electricity sector emphasised the operational issues regarding engineering as the key aspects for the success of the distribution companies. Therefore, the companies' profitability was secondary in the context of the electricity sector before privatisation."*

In terms of the domination structures, the organisational field level was dominated by two entities the federal government and the Brazilian states government. The federal government played a more important role in the organisational field level, because the Eletrobras (federal holding company of the electricity sector) was responsible for controlling and planning the expansion and development of the Brazilian electricity sector. Therefore, Eletrobras was a key institution in the organisational field that control and allocate resources. Before privatisation, the industry associations, such as ABRADEE (The Brazilian Electricity Distribution Companies Association), did not play a significant role in terms of a dominant structure. In addition, private entities were not significant in this industry before privatisation as they accounted for about 5% of the electricity sector (Oliveira, 2007).

8.2.1.3 Intra-Organisational Level

The signification structure during the pre-privatisation era was based on the public service principles of the nationalised industries. As a consequence, the language of public service was the underpinning signification structure of the pre-privatisation period. Therefore, the public service language constituted the dominant meaning system for action and interaction in Electra. The signification structures are strongly linked to structure of legitimation (Conrad, 2005), and the language used to debate and discuss organisational purpose was shaped by actors' understanding of the appropriate attributes of a public service organisation. As a result, an engineering ethos was considered essential for fulfilment of the public service obligation (in the case of Electra the expansion of the system – universal service).

The public sector culture revolved around engineering and operating imperatives with a strong emphasis on maintaining the appropriate standards of service provision to the consumers and expansion of the electricity system. As a consequence, another key signification structure was the language of engineering. Top management were engineers, and universal service with safety and security of supply were the key concerns in terms of investment, planning, etc. As a result, management understood the organisational purpose primarily in terms of an engineering discourse, and believed excellent engineering to be the key to achieving, the public service objectives.

Therefore, the pre-privatisation era in Electra is characterised by the engineers' dominance, and an illustration of this was a lack of attention to financial constraints, resulting in what can be characterised as a non-accounting style (Hopwood, 1983) in Electra. As a consequence, the management accounting system before privatisation was used in a ceremonial way as the decision-making process was based on the engineering ethos. The Head of the Receivables Recoveries Department pointed out:

> *"Before the privatisation the company's president was an engineer, the head of the maintenance department was an engineer, the financial director was an engineer and the construction of new distribution lines, as an engineering company, was very important. The constructions were more important than the financial results, that is, if the company had to build a new distribution line, the company will build that line with or without respect the budgetary limit for that year."*

In terms of legitimation structures, the principles of universal service which implies the expansion of the distribution grid, provided the moral undercarriage and helped the interpretation of the macro social system in Electra. Acceptance of the state government's moral obligation and objective to provide basic essential services by ensuring the minimal standard of quality and expanding the distribution system, as well as the rights of citizens to receive these services, legitimated the work and the management systems in Electra. Top management, drawing on the signification structures of public service, used the language of engineering to legitimate their policies, particularly the need for a safe, secure supply to ensure universal service.

The interaction of structures of signification and legitimation is clear, as it can be seen through the inter-relationship of the language used to describe and debate organisational purpose and actors' understanding of the organisation's aims and objectives. Management were convinced that the engineering discourse was a legitimate one, and that they were acting in the interests of the public as a whole. However, the management accounting information was used as an interpretative scheme to legitimate the pursuit of their own agenda. The Head of the Electric System Engineering and Maintenance Department commented:

> *"Before the privatisation the focus was on the engineering side of the business with minor concerns about the financial aspect. Actually, the political aspect of the expansion of the distribution system was very important. Engineering always had the cost and benefits, but the benefit was in political terms instead of the financial benefit. We did not calculate the return on investment of a new project."*

The head of Internal Audit Department also pointed out:

"The great emphasis was on the capacity of undertaking social projects in order to develop the State. The rural electrification was always a priority to the state government (...) the company did not seek for profit or dividends."

An examination of domination structures requires considerations of the relationships and ordering of dependence and autonomy within the organisation (Conrad, 2005). Resources, both allocative and authoritative, are the media through which power is exercised, and structures of domination reproduced. The command of the allocative authoritative resources was conducted by the state government, which nominated the top management team of Electra in order to ensure the achievement of the state government policies regarding the electricity sector. As discussed before, the basic aim of the state government was the expansion of the offer of electricity, in particular in the remote areas of the state. This domination structure ensured that most decisions regarding the direction that company would take were essentially engineering rather than financial decisions, with the accounting function subservient to the engineering function. It was a command and control culture dominanted by engineers.

A strong link between structures of signification and domination can been seen with the language of engineering being the language of dominant senior management, ensured that their understanding of organisational purpose prevailed. Being structured as a monopoly obviously facilitated such an approach, since commercial constraints were largely absent and the company did not seek for improving its financial performance. To conclude, the Manager of the Supply Department stated:

"When Electra was a state-owned company, our basic concern was about the operational issues (...) we did not have the financial and control culture. We wanted to improve the company's operation, such as performance indicators like DEC and FEC. Therefore, we sought to improve the operational performance and sometimes we did not take into account the control system and the financial performance."

8.2.2 *Post-Privatisation*

Having discussed the social dynamics in terms of the three structures before privatisation, this sub-section presents and discusses the legitimation, signification, and domination structures after privatisation at the three levels of analyses proposed in the theoretical framework: economic and political level, organisational field level and intra-organisation level.

8.2.2.1 Economic and Political Level

As discussed in chapter 5, the rationale of the privatisation came from the neo-liberal paradigm and these ideas were spread in the world by international agencies, such as the World Bank and IMF (International Monetary Fund), which put pressure on countries, especially, developing countries to privatise their utilities companies. In Latin America, Chile and Argentina were the first countries to privatise the electricity sector. In the 1980s, the combination of the debt and fiscal crisis and doubts about hyperinflation encouraged the Brazilian government to adopt a set of neo-liberal policies, one of them was privatisation. The neoliberal paradigm replaced a previous economic paradigm that had been in place in Brazil since the 1930s. The previous paradigm was based more on inward orientation and the greater intervention of the state in economic matters (Gwynne and Kay, 2004).

Multilateral organisations exerted significant influence in the search for the way out of the debt crisis. The IMF and the World Bank became the main source of new funds for the debt-laden of Latin America (Gwynne and Kay, 2004). These organisations had the leverage to release funds on condition that the government implemented basic reforms. The emphasis of these conditions was on achieving export-led growth (through trade liberalization and exchange rate action), improved domestic capital formation (through tax and financial reforms) and a reduction in government intervention in the economy (Tsamenyi, et al., 2008). These ideas were summarised in the so-called Washington consensus which has three main ideological thrusts in terms of economic policy (Harvey, 2005):

1. The opening up of markets to the world economy through trade liberalisation and easier foreign direct investment.
2. Reduction of direct government intervention in the economy through privatisation, as well as increasing the technocratic role of economic ministries – through imposing fiscal discipline, balanced budget and tax reform.
3. Increasing the significance of the market in the allocation of resources and making the private sector the main instrument of economic growth – through deregulation, secure property rights and financial liberalisation.

Therefore, the international financial institutions such as the World Bank and IMF had a deep commitment to the transfer of public assets to the private sector, perhaps part ideological and part practical, as the income generated helped service their loans. In addition, their loans frequently have conditionality clauses that require privatisation. The main lines of this policy regarding the electricity sector can be summarised as follows: the privatisation of state-owned companies (whether strategic or not); the end of government monopolies; the electricity sector viewed as a mere producer of a simple commodity; and eliminating its strategic character from discussion (Thomas, 2006).

As a consequence of the neo-liberal paradigm and based on a belief that management of public sector organisations was complacent and inefficient due to the lack of market pressures to improve performance, the other two legitimation structures at the political and economic level are: efficiency and competition principles and the expansion of the electricity sector through private investments. In 1995, the Brazilian government launched a project for restructuring the power sector, which is known as RE-SEB. The original idea was to privatise all of distribution, transmission and generation, with exception of nuclear plants and the Brazilian half of Itaipu (this is the world's largest hydro-plant and it was built by Brazil and Paraguay at the frontier of both countries), and to introduce competition. To this purpose it commanded a study to a consortium led by Coopers and Lybrand, which delivered its report in July 1996 (Araujo, 2006). The main objective of this market-oriented reform in the electricity sector was to increase the investment rate by attracting private capital. This policy was in line with the recommendations of the International Monetary

Fund (IMF) and the World Bank that aimed at changing the role of the State in the economy (Almeida and Pinto, 2005). Another objective of this reform was to diversify the energy matrix by inducing investments in gas-based thermal generation (Almeida and Pinto, 2005). As a result, the basic aim of this reform was a desire to transform the electricity industry from a monopoly into a competitive market so that the electricity could be bought and sold like other commodities and products. Therefore, the main goals for this change in the electricity sector were to inject competition into the generation and supply links of the sector's production chain and to reduce public debt via privatisation of state-owned utilities that dominated the pre-reform sector (Bajay, 2006).

The signification structure is associated with the political and economic systems, as well as the legitimation structures. In the context of the economic and political level, the price cap regulation is the signification structure, as the price cap regulation provides a symbolic representation that gives meaning and facilitates communication among the different agents in the social dynamics of change. There are two main approaches to preventing monopolistic infrastructure firms from charging excessively high prices: price cap regulation and rate-of-return regulation (Alexander and Irwin, 1996) (for further details see chapter 5). The price cap approach was selected by the Brazilian government, because it is thought to give firms stronger incentives to be efficient. Under this approach, the regulated price is adjusted each year by the rate of inflation plus or minus some predetermined amount and without regard to changes in the firm's profits. The primary means of regulation was to be by the setting of a price formula, of the form RPI – X, which limited price increases that the industry could impose and thus forced it to improve efficiency of operations. The ANEEL's Superintendent of Economic and Financial Oversight pointed out:

> *"Brazil adopts the price cap regulation, which is the regulation by incentives (...) the motivation behind the regulation by incentives is that the companies have an economic sign, a motivation, to seek improve their operational efficiency; every time more efficient between the tariff review periods, because the company capture the gain of efficiency between the tariff review process. Then, in the next tariff review process the operational gain will use to reduce the consumers' tariff."*

As mentioned before, the domination structures refer to the institutions that control and allocate resources. The domination structures before the privatisation were the federal (Brazilian) government and the states government. However, after the privatisation the domination structures consisted of the federal government and the private agents. The federal government is mainly represented by the regulator (ANEEL) which was created at the end of 1996 (Law 9,427). According to ANEEL (2009), ANEEL powers and responsibilities are:

> "to regulate and supervise the generation, transmission, distribution and commercialization of electric power, addressing fairly the complaints from agents and consumers, for the benefit of society; to mediate conflicting interests among agents of the electrical sector and between these agents and consumers; to grant, permit and authorize electric-power facilities and services; to warrant fair electricity rates; to attend to the quality of services; to enforce investment by the regulated entities; to encourage competition among the operators and to ensure universal access to services."

Another domination structure that emerged after the privatisation was the figure of the private investors, as before the privatisation the private sector only accounted for about 5% of the electricity sector. After privatisation, the private participation in the electricity sector increased dramatically. Private companies represented about 70% of the electricity distribution sector after the privatisation process. In addition, the private investors are the main agents responsible for the expansion of the generation capacity in Brazil, in particular, with the institutionalisation of the so-called Independent Power Producers (IPPs).

8.2.2.2 Organisational Field Level

As stated previously, the organisational field is formed by the group of companies involved in the generation, transportation and commercialisation of electricity, as well as related associations and industrial experts. The Brazilian electricity sector has a number of associations to represent the electricity companies, as well as large groups that have different companies in the generation, transmission, distribution and commercialisation activities. In terms of the Brazilian electricity distribution industry, ABRADEE (The Brazilian Electricity Distribution Companies Association) plays the major role as the link between the distribution company and the regulator (ANEEL).

Dillard et al. (2004, p. 530) pointed out that "the signification, legitimation and domination elements of the political and economic level provide the context within which the organisational field is constituted". Therefore, the societal conditions provide the context and infrastructure for the organisational field. As discussed above, the privatisation created a new distribution electricity sector which is formed by private companies (70% of the market) and a state-owned company with a strong regulatory system based on the price-cap regulation. As a result of this change, the legitimation structures changed from the expansion of the distribution system/universal service before privatisation to the equilibrium between regulation and companies' financial performance and society image after privatisation.

In the organisation field level, the basic legitimating criteria is the conciliation between the price-cap regulation and the expected return of the investment, especially, because the regulation by incentives introduced in Brazil has some characteristics of the British model and other Latin America countries, but the regulatory system in Brazil is unique in order to accommodate the country's peculiarities, such as the country geographic dimension and the electric power matrix based on hydro plants. In addition, the regulatory system in Brazil was based on ad hoc decisions (see chapter 5 for further details) which increased the regulatory risks in the sector and as a consequence one of the main concerns at the organisational field level was to mitigate this risk and ensure the fair economic and financial performance of the distribution companies. Another legitimation structure is the society image, this structure is important to legitimate the privatisation by showing that the private companies are more efficient and can provide a better service than the state-owned companies. These legitimation structures can be observed in the institutional mission of ABRADEE, which is "to contribute to the distribution companies' operational and economic-financial management systems and performance with focus on consumers' satisfaction" (ABRADEE, 2009).

The signification structures reflect the practices related to structural properties arising from organisational actions, as well as political and economic criteria translated into the industry context. Therefore, before privatisation the signification structure was based on the technical language, as the main aim of the electricity industry was to provide universal service; and after privatisation the regulator language constitutes the main signification structure. This is because the regulator required, especially during the first years of the regulatory system, a great deal of information to support the new regulatory framework based on the price-cap regulation. The electricity sector as a regulated industry found itself facing huge demands for information and sometimes facing ad hoc requirements for additional information, such as during the 2001 crisis and the new regulatory framework model introduced in 2004. As a consequence, the regulator language constitutes the main representational scheme at the organisational field level. Another signification structure is quality improvement. This structure is strongly connected to the society image (legitimation structure), because the industry sought to improve quality indicators, such as DEC and FEC, to legitimate privatisation by presenting the companies as more efficient and able to provide a better service with high standards of quality. The Electra's Head Planning and Control Department pointed out:

> *"Generally speaking, the level of competition in the Brazilian distribution electricity sector is low, but there is the pressure from the society and the pressure from the regulator, obviously they are monitoring the distribution companies' performance and efficiency (...) Although, the distribution sector is a natural monopoly, the distribution companies are investing massively in new systems and technologies to improve the service, because of the pressures from the regulator and society in general."*

The ANEEL's Superintendent of Economic Regulation also commented:

> *"Since some years ago, the Brazilian distribution companies have been seeking to improve their efficiency, because of the new regulatory framework (regulation by incentives), as well as because of demands from the society. Actually, the synergy between regulator and society has been creating pressure on the distribution companies. The laws and regulation are designed to satisfy the regulator's aims and society needs. Therefore, the companies seek to improve their operational and management performance in order to meet the demands from the regulator and society."*

The domination structures represent the institutions within the organisational field level that control and allocate resources. As a consequence of privatisation, 70% of the Brazilian distribution sector is dominated by private companies. Therefore, the domination structures are represented basically by the private group of companies and the ABRADEE as the association that combines the main private organisations in the distribution sector. The regulator is also a domination structure, as the entity is responsible for legislate about the issues related to the operational and economic-financial performance of the distribution sector.

8.2.2.3 Intra-Organisational Level

The state-owned distribution companies were privatised in an effort to introduce more financial discipline and to improve the quality of the system, with new domination structures as accountability to the sector regulator (ANEEL) and shareholders replaced the state government dominance. Thus new signification structures based primarily on financial measures and a profit-conscious style (Hopwood, 1983) emerged, with related legitimation structures as management found themselves encouraged to pursue financial success, albeit within the constraint of price cap regulation, given that the new organisational form was in fact a privatised monopoly.

In terms of the signification structures, the rationale of privatisation sought to replace the perceived inefficiencies by changing the earlier ethos of public service to one focused on financial discipline encouraged by the new ownership style and regulatory system. Therefore, accountability shifted to shareholders and the industry regulator, and new emphasis was placed on the language of financial success represented by financial measures, such as profit, reduction in the operational expenditures and rate of return on capital. However, these financial indicators were constrained by the price cap regulation.

The engineering language, which was a signification structure before the privatisation, was gradually superseded by the regulatory demands and the financial performance measures. Similar situations took place in the cases presented by

Conrad (2005) and Coad and Herbert (2009). For example, Conrad (2005) investigated the consequences of regulation for management control and organisational change in privatised gas industry in the UK. She had identified similar changes in the signification structures of British Gas from the pre-privatisation period to the pos-privatisation period, where the engineering language was supplanted by the regulatory and financial measures. Therefore, there was a change in the importance attributed to the management accounting information in Electra, in particular, regarding those performance measures that were part of the variable remuneration scheme of Electra. Engineers were provided with their local financial and accounting information and the support of management accounting staff. As a result, the engineers had to learn some of the management accounting terminologies and how to interpret this information to make decisions and control their activities. The Head of the Electric System Engineering and Maintenance Department commented:

> *"We control closely the corporative objectives of the company, especially, profit and EBITDA. These indicators are really important. Before the privatisation, we did not use or understand these indicators, but nowadays we have familiarity with these accounting terminologies (...) We learnt how to interpret this information, because we are evaluated by this performance and we need to know how we can contribute to improve these indicators."*

The regulator plays an important role in Electra and the regulatory demands shaped the day-to-day activities of the organisation. Therefore, the regulator language is another signification structure in Electra, as a Manager of the Planning and Control Department pointed out:

> *"There are performance measures, such as the system quality indicators DEC and FEC. There is information that the holding company established as the standard set of information. This information is present in the company's reports of the all companies of the group. Some the information is part of the reports, because it is a demand from the regulator and therefore we need to control the indicators and information which are demanded by the regulator."*

Legitimation structures consist of the normative rules and moral obligation of a social system. According to Macintosh (1994), the legitimation structures constitute the shared set of values and ideals about what is important and should happen in social settings. In the case of Electra, before privatisation, the legitimation structures were: to provide universal service and to expand the distribution system. Then, after the privatisation, the legitimating grounds were related to the regulatory demands, in particular, regarding the tariff review process and control over the quality of the service; and to provide the expected return to the shareholders by improving the company's financial performance.

As discussed in chapter 7, Electra operates in a regulated industry. As a consequence, the regulator and the Brazilian regulatory model had a huge influence on Electra's management values, principles and systems. It also stated that the main stakeholders are the shareholders and the regulator for the Brazilian distribution companies, as the regulator has the power over the companies in terms of setting the tariff and standard of quality, as well as the regulator defending the rights of the consumers. Therefore, these legitimation structures reinforce the view that the success of Electra depends on the balance between the financial performance and the regulator's requirements. The Holding Company Director of Planning and Control commented:

> *"The electricity sector is a regulated sector (...) we have to take into account the regulation, because the regulation impacts on the financial performance of the company; the regulator also establishes the level of quality (DEC and FEC). Then, when we prepare the budget, the balanced scorecard or the process map, what is my objective? The minimum is to comply with the regulation and the maximum is to be perfect. We cannot be below the minimum level stipulated by the regulator. We should be in this range between the minimum and maximum. Therefore, the regulation is the minimum point and my budget is based on that and everything that I do is based on the regulation."*

After privatisation, the control of the company moved from the state government to the private group. As a consequence, the domination structures changed, as the domination structures represent the intra-organisational mechanisms for controlling and allocating resources. Therefore, the shareholders are a domination structure in Electra. The power of the shareholders are materialised through the holding company management style, principles and policies. One of the instruments used by the holding company to control Electra is the management accounting systems, especially the budgeting and the performance measurement systems. In addition, the holding company decides the future of Electra in terms of capital investment and implementation of new management systems. The Superintendent of Planning and Control commented:

> *"The holding company establishes the management practices in the company. Electra can suggest changes in the management practices, but the holding company makes the final decision of implementing new systems and these should be introduced in all companies in the group (...) nowadays our main concern is with the financial results of the company, that is, the shareholders return, what the shareholders will approve, what it is good for the company's image and not to the state government image."*

With the creation of the new regulatory body, ANEEL, the regulation provided a new language of accountability which defined the rights and duties of regulator and regulated company, and instituted a new domination order by giving the regulator the right to hold the industry to account and the necessary allocative and authoritative resources of domination. The first regulator's duties to the public interest included a primary duty of ensuring universal service while also ensuring that the distribution companies remained financially solvent, and a secondary duty in relation to consumer protection. In addition, the regulator's duties included setting and reviewing the price cap and the industry's compliance with it. Therefore, at some extent, the regulator defines the economic environment by imposing the price-cap and imposing standards of service which the company had to meet, thus reducing management's autonomy in decision-making. The importance of the regulator in this kind of industry is high and this creates a perception that the regulator is the client of the company, as the regulator sets the revenues of the organisation. The former Superintendent of Planning and Control pointed out:

> *"Those companies that operate as private monopoly utility companies which their revenue depends on the regulator, the consumers are not so important in the companies' strategy. The consumers want low tariffs and they will have a good product, but they do not establish the company's revenue (...) the regulator sets the company's tariff, and therefore I believe that the regulator is more important than the consumers to the financial success of the organisation."*

To conclude, the environment facing a regulated company (in this case Electra) is more complex than that facing an ordinary organisation in the private sector.

Conflicts exist in the objectives of regulator and shareholders, which in turn create conflicts for management in trying to satisfy the requirements of both. Prior to privatisation the division was between public and private sector organisations.

This section used the ideas presented by Dillard et al. (2004) on how to articulate the institutional dynamics in the three levels of analysis, that is, from the macro level which comprises the economic and political set of criteria to the micro level which comprises the set of rule and routines at the intra-organisational level. This analysis was based on Giddens' structuration theory. As a result, this section has set a foundation to section 8.3 which aims to understand the process of management accounting change in Electra. Section 8.2 shows how the economic and political level and organisation field level influenced the structures at the intra-organisational level, which lead to changes in management accounting in Electra. The next section presents a comprehensive analysis of the process of management accounting change in Electra by focusing on the intra-organisation level.

8.3 Understand the process of Management Accounting Change

The aim of this section is to understand and explain how Electra's management accounting system was shaped by the inter and intra organisational factors after the process of privatisation by applying the proposed theoretical framework. First of all, based on the analysis provided in the previous section it can be stated that the changes in management accounting were initiated and sustained by simultaneous changes in the legitimating grounds, signification structures and domination perspectives and cannot be adequately understood without considering these three inter-related dimensions as well as the influences from the organisational field and societal levels. The legitimating grounds at the intra-organisational level moved away from engineering values based on the concept of providing universal service toward financial norms and values, that is, improving company's financial performance by taking into consideration the regulatory demands. The signification structures reflected the financial discourse and were based on the concepts of profit improvement, cost reduction and the regulator language. After the privatisation, the domination structures at the intra-organisational level were represented by the shareholders (holding company) and the regulator. These entities were the main drivers shaping the process of management accounting change in Electra after the privatisation.

The signification, legitimation and domination structures at the political and economic level, instantiated by agents acting in time and space, provided the social, political and economic context that reflected the primacy of the new environment in the Brazilian electricity sector based on the neo-liberal paradigm. This paradigm postulates that the State should not be the provider of the so-called public services, but the State should be the regulator in order to introduce competition and improve the quality of service which should be provided by the private sector. The criteria and practices at the political and economic level were reflected in the legitimating grounds, representational schemes and the domination perspectives at the organisational field level providing the context for the criteria and practices. As a consequence, the legitimating grounds were based on the view that the sector should seek equilibrium between regulation and distribution companies' financial return.

The organisational field practices and criteria provide the context for action at the intra-organisational level. Therefore, the main objective of the case study company after privatisation was to achieve a fair return on investment, that is, financial performance constrained by the Brazilian regulatory framework. As a consequence, Electra's management accounting system was shaped by this new rationale created after privatisation.

Figure 8.2 summarises the inter and intra organisational factors that had influenced the process of management accounting change in Electra. Figure 8.2 also depicts the interconnection between the different entities that shaped the process of change by classifying those agents into the three levels of analysis: the economic and political level; organisational field level; and intra-organisational level. The research was bottom-up, being focused on Electra, but many explanations lay externally. Explaining why and how Electra changed its management accounting system unravelled a complex set of pressure involving: regulator, associations, other companies, public opinion (society), the parent company and internal organisational dynamics.

In addition, figure 8.2 provides an overview of the process of management accounting change in Electra based on the thesis theoretical framework, which was portrayed in figure 3.5 and figure 8.1, by incorporating the Dillard et al. (2004) view that the process of institutionalisation or deinstitutionalisation is normally a top-down process, that is, the process of change starts or has its seeds at the economic and political levels and the set of criteria and practices at this level will influence the introduction of new set of criteria and practices at the organisational field level, as well as at the intra-organisational level. This top-down process of organisational change was explained in section 3.6.4 which dealt with the thesis theoretical framework model. Therefore, figure 8.2 is the application of the thesis framework model in the context of the process of management accounting change in Electra, but this figure explains the dynamics of management accounting change in a macro manner, as the discussion at the intra-organisational level of analysis is portrayed in section 8.3.2 of this thesis.

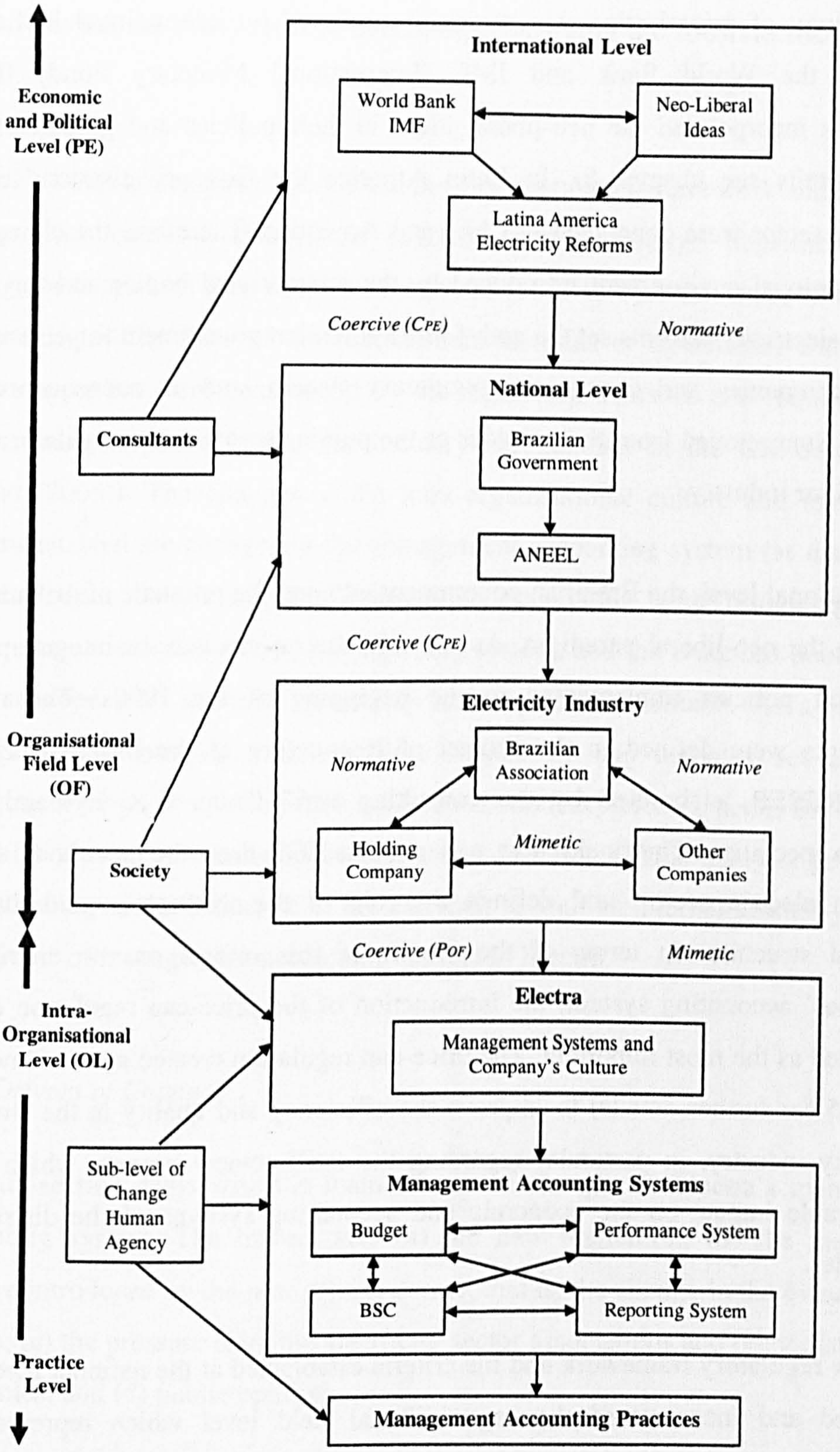


Figure 8.2 – Inter and Intra Organisational Dynamics of the Process of Change

As can be observed on figure 8.2, the ideological and policy shifts at the international level influenced the Brazilian government to introduce a new regulatory framework which was implemented and developed by a new regulator (ANEEL).

The ideology of privatisation was strongly supported by international bodies, in particular the World Bank and IMF (International Monetary Fund). These institutions incorporated the neo-liberal ideas in their policies and guidelines (for further details see chapter 5). In Latin America the first privatisations in the electricity sector were conducted in Chile and Argentina. Therefore, the changes in the international environment introduced by the international bodies and the Latin America electricity reforms set the path for the Brazilian government to privatise the utilities companies and change the regulatory system, and as consequence, the Brazilian State moved from the provider of the public service to the regulator of the power sector industry.

At the national level, the Brazilian government adopted the rationale of privatisation based on the neo-liberal paradigm. As a result, the reform was an integral part of pro-market policies implemented in the beginning of the 1990s. The reform frameworks were defined in the Project of Restructure of the Brazilian Electric Sector, RESEB, elaborated by the consulting firm, Coopers & Lybrand, with Brazilian specialists. The final report, presented in 1997, drew the new model for the Brazilian electric sector, and defined the role of the institutions and the new industrial structure. In terms of the impact of this reform on the distribution companies' accounting system, the introduction of the price-cap regulation can be considered as the most important. The price-cap regulation created a set of laws (see chapter 5 for further details) to improve the efficiency and quality in the Brazilian electricity industry, in particular regarding the tariff review process which had a considerable impact on the economic and accounting systems of the distribution companies.

The new regulatory framework and the criteria established at the national level were translated and incorporated the organisational field level which represents the electricity industry formed by the ABRADEE (the distribution companies' association) and other associations; other distribution companies (private and state-owned organisations); and the holding company. The society (public opinion) also had an impact on the electricity industry as it demanded a better service and efficient companies in order to fully accept the privatisation ideology and the considerable increase in the electricity tariff in Brazil, especially after the 2001 electricity crisis in Brazil.

Electra's holding company assimilated the new regulatory framework and demanded to introduce coercive changes in Electra's culture through implementing new management systems (see chapter 7), such as the ERP system. These new systems accommodated the aims of the shareholders in terms of operational and financial performance, but were constrained by the regulatory demands and requirements (a similar case happened in the gas industry deregulation in the UK described by Conrad (2005)). The changes at the intra-organisational culture and management systems enabled the changes in the management accounting system (as discussed in chapter 7, four main changes in management accounting were: Budgeting system; performance measurement system; reporting system; and the Balanced Scorecard) in order to cope with the new ownership and regulator's demand. As a result, the management accounting practices were shaped by this complex set of factors involving a range of entities. The next sub-section explores in detail the so-called drivers of change in management accounting in Electra. This analysis permits the understanding of the influence of the external, as well as internal agents/systems in the process of management accounting change in Electra.

8.3.1 Drivers of Changes

This sub-section deals with the main drivers of changes in Electra's management accounting system. The drivers are: (a) the new regulation; (b) the managerial pressure introduced by the new private owner, that is, the change in the ownership of Electra; (c) the pressure from the electricity sector associations and other distribution companies; and (d) public opinion.

8.3.1.1 Regulation

Chapter 5 presented and discussed the Brazilian electricity sector reforms by taking into consideration the issues regarding the tariff review process and regulatory accounting. Chapter 7 provided an overview of the relationship between regulation and management accounting change in Electra by discussing the potential conflicts between the shareholders' expectations and regulator's demands, as well as the view that the regulator is the "real" client in this type of industry, because it sets the company's revenue and operational quality standards. By taking into account this previous discussion, the aim of this sub-section is to present the changes in the Brazilian regulatory framework that had a considerable impact on the process of management accounting change in Electra after the process of privatisation. Then, the next section (8.3.2) provides the explanation of how this new regulatory framework and the other factors, which are presented below, shaped management accounting practices in Electra after privatisation.

This section presents and discusses Electra's management accounting change drivers that came from the regulation. These drivers are: (a) the increasing demand for information (operational and financial); and (b) the introduction of the price-cap regulation, that is, the new tariff review process, in particular the concepts of operating expenditures (Opex) based on the Reference Utility methodology, and determination of the regulatory asset base (RAB). Figure 8.3 depicts these drivers of management accounting change in Electra.

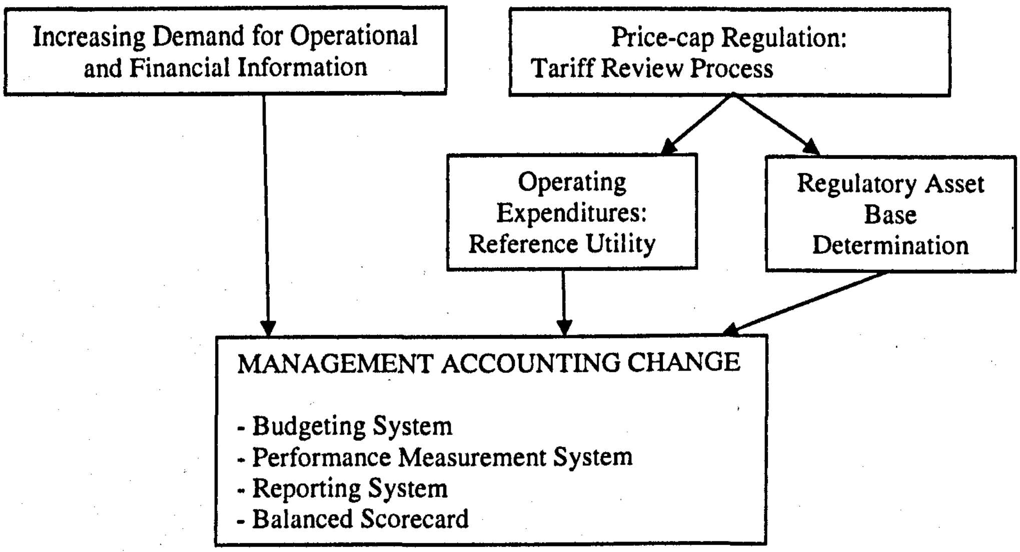


Figure 8.3 – Drivers of Management Accounting Change from Regulation

The Brazilian electricity sector became tightly regulated after the reforms and privatisation of the majority of the state owned utilities. From the mid 1990's, the Brazilian government and the electricity industry regulator (ANEEL) has passed numerous laws and guidelines to regulate the new electricity market which is formed by private and state owned companies with different objectives. Before the privatisations and reforms there was a department of the Brazilian government (DNAEE - Department of Waters and Electric Energy) that controlled the utilities, but its power and attributions were limited as the majority of the organisations were state owned companies and Eletrobras (the Federal holding company) played an important role in the electricity sector management.

This new regulatory system increased drastically the demand for information that the company have to control and provide to the regulator (InstitutoAscendeBrazil, 2007). This information is concerned with the operational and financial performance of the organisation. As a result, this put pressure on the company's management and accounting systems to control and report the operational and economic and financial performance of the organisation. There are key operational performance measures that are tightly controlled by the regulator that reflect the quality of the service. An electricity distribution company have to monitor these quality indicators, because if the company has quality indicators below the targets set by the regulator the company will be penalised by paying fines and in severe cases the company can lose the concession (de Barros Filho, et al., 2009). The Electra's concession contract signed after the privatisation established the quality indicators that have to be reported and controlled by Electra:

> "The following performance indicators will be controlled and they are subject of penalties when the company do not achieve the minimum standard established by ANEEL: DEC (Equivalent length of electricity interruption per consumer); FEC (Equivalent frequency of electricity interruption per consumer); DIC (Length of electricity interruption per consumer); FIC (frequency of electricity interruption per consumer); TMA (Average time to deal with consumers' inquiries); Commercial indicators; and Electricity tension level. The indicators that will be controlled but not subject of penalties are: Public opinion survey; Security and losses of electric power. Quality control and development; the procedures to collect, calculate and send the information about the indicators to ANEEL, as well as the penalties regarding the non-achievement of the minimum standards will be established by laws and regulations prepared by ANEEL (Electra's Concession Contract, p. 35)."

As discussed in chapter 5, financial data is an essential source of information to the regulator in order to perform its duties and objectives of sustainability, allocative efficiency, productive efficiency, and equity. This financial information supports the regulatory accounting system (see chapter 5 for the discussion about regulatory accounting in Brazil) which has the aim of supporting the regulator in the process of assessing the financial health of the utility company in order to promote tariff moderateness in defence of the public interest and economic and financial balance of agents which provide energy service. In the context of Electra, its concession contract set the obligation of providing financial information on a regular basis. The regulator also uses the accounting information to inspect the company's activities. ANEEL also requires from Electra three accounting periodic reports. As it can be observed, the range of information required by the regulator is broad and includes financial and non-financial information. These requirements put a lot of pressure on the Electra's accounting system in order to cope with that demand for information. As a consequence, this demand forced the company to change the accounting and management accounting systems.

The price-cap regulation (the Brazilian new regulatory system) introduced after the reforms in the Brazilian electricity sector can be considered as the main driver of management accounting change in Electra that came from the Brazilian government (political and economic level). As discussed in the chapter 5, the tariff methodology applicable to distribution organisations in Brazil is a hybrid system, which encompasses the concept of "service cost" for the cost items of the so-called part A (non-manageable costs), and the price-cap approach for the other cost and capital items of the so-called part B (manageable costs).

The primary objective of economic regulation is to introduce in the performance of a regulated company the effects of competitive pressures (actual and potential) that are typical in competitive markets (Sioshansi and Pfaffenberger, 2006). Consistent with this objective, the current Brazilian regulatory framework establishes a tariff system for the part B of the tariff based on the price-cap regime, under which services are regulated by price according to economic rules. The objective of this methodology is remodelling public utility services based on the characteristics of private sector activities, which include two principles: efficient service and tariff reasonableness (de Souza and Legey, 2008).

As presented in chapter 5, according to the Brazilian regulation, there are three types of tariff review processes: (a) the periodic tariff review process (4 years in the case of Electra); (b) the annual tariff adjustment; and (c) the extraordinary tariff review. In terms of the process of organisational and management accounting change in Electra after privatisation, the periodic tariff review process is the one that had impact in these systems. The periodic tariff review is considered the most relevant event in Electra, as during this process the revenue, and as a consequence the profit of the company, is set for a period of 4 years (the price-cap settlement period) (Rocha, et al., 2007). The periodic review process is applicable to part B of the tariff and it is conducted in two stages: (a) tariff repositioning, which establishes the level of efficient operation costs and the return on capital; and (b) the determination of the X factor. In terms of management accounting change, the first stage is the most important to be dealt as a driver of change. As stated before, the tariff repositioning calculation adjusts the part B of the company's revenue, which is formed by the controllable costs which are those under the distribution company's control and encompass:

- *Operating expenditures* (OPEX), which involve the management, commercial, operating and maintenance expenditures which an efficient distributor should incur to supply the market;
- *Return on capital*, which results from multiplying: (a) the net regulatory asset base (NBRA) by; (b) the opportunity cost to develop the distribution activity in Brazil; and
- *Depreciation.* The regulatory depreciation is the value to be annually recovered to replace the assets at the end of their operational life, and it is obtained by multiplying: (a) gross regulatory asset base by; (b) the annual depreciation rate.

From the above elements that formed the part B of the tariff, only two items can be influenced by Electra in order to improve company's profit, that is, there are only two items that the company should concentrate its efforts to try to maximise its tariff/revenue in according to the regulation. These two items are: (1) the operating expenditures (OPEX); and (2) the regulatory asset base (RAB). Electra does not have any scope to influence or control the other elements of the calculation of part B of the tariff, as the cost of capital is determined by the regulator; and the annual depreciation rate is also set by the regulator based on the straight-line approach. Therefore, the key elements to Electra in the periodic review process are: the operating expenditures and the regulatory asset base.

The operating expenditures (Opex) are established by the regulator by applying the Reference Utility (or Model utility) methodology (see chapter 5 for further details). By applying the Reference Utility methodology, the Regulator seeks to design a model company which the actual utility (in our case Electra) to compare its performance. As a consequence, this creates an incentive to Electra to operate at lower costs than the standards set by the regulator (Sioshansi and Pfaffenberger, 2006), as the improvements on the actual costs of the company can be reversed directly to the company's profit during the settlement period. Therefore, this approach sets a benchmark with which Electra will compete, and as a result this methodology creates an incentive to keep costs within recognised limits in order to attain or surpass the expected profitability (Tozzini, 2008).

The electricity distribution industry can be characterised by being a capital intensive activity (Alexander and Harris, 2005), as a result, the remuneration of Electra's investments is a major determinant of the electricity tariff, which accounted for about two thirds of Electra's total costs. Therefore, the regulatory asset base determination is a key aspect for Electra's management system, as Electra should have management and control systems that are able to obtain the maximum value for the regulatory asset base. The regulator determines and approves the composition and value of the regulatory asset base. In this process two key aspects are essential: (a) determine which types and amount of investments can be included in the regulatory asset base; and (b) how to value these investments for regulatory purpose. For the first point, that is, the establishment of which investments made by the company should be included in the regulatory asset base, ANEEL performed a qualitative analysis of each asset of Electra based on the efficiency and prudent criteria. ANEEL Regulation 234/2006 (item 2.3 of Appendix IV) established that:

> The assets entailed in the concession of the public service of electricity distribution are eligible to be included in the regulatory asset base when they are effectively used in the public service of electricity distribution (...)
> To apply the eligibility criteria to include the assets in the remuneration base it is necessary to conduct a qualitative analysis of the asset utilisation by differentiating convenience from necessity in the utilisation of the asset on concession activity of electricity distribution.

The criteria adopted by ANEEL to determine the regulatory asset base was largely discussed in chapter 5, but in short the procedures adopted by Electra in its tariff review process conducted in 2005 (the first tariff review of the company) was based on the ANEEL resolution no. 493/2002 and ANEEL technical note no. 178/2003 which established four stages in the asset determination process:

(1) Perform the physical inventory/count of all Electra's fixed assets and then, perform a reconciliation between the physical inventory result and the assets register from the accounting system;
(2) Measurement of the assets' price by using the replacement cost;
(3) Reduction of the asset base by the accumulated depreciation which is calculated according to the regulatory depreciation rate; and
(4) Deduction of part of the asset value by applying the utilisation rate which reflects the level of usage of a specific asset of the company.

In terms of management accounting change, the first stage was a significant source of pressure to introduce changes in the organisation and its management accounting system. This is because the reconciliation between the physical inventory and the accounting system information introduced the need to improve the control system of the company, in particular, the budgetary and the performance measurement systems, as well as the reporting system of the organisation. In addition, the determination of the regulatory asset base created the necessity to exchange information between the accounting areas and the engineering areas of the company in order to perform the conciliation between the physical information from the engineering departments and the accounting information. The Manager of the planning and investment department commented:

> *"Now, there is an intensive exchange of information due to the budgeting process and because of the tariff review process. Before, I did not know who the accountant of the company was. Nowadays, the engineers and the accountants have to talk and exchange information for the tariff review process, especially, to determine the regulatory asset base."*

The former head of the accounting department also commented about the importance of the determination of the regulatory asset base for the planning and control systems of Electra:

> *"The tariff review process strongly stimulated the planning and control area of the company, because this area started to control and calculated the operating and maintenance costs; what the levels of loss and default are; and control the company's assets. Nowadays, people talk about asset management which we would not image to discuss a few years ago. Before this regulatory system, the asset control was the accountant's problem, nowadays it is a problem of the CEO and the administration council, because the dividends are linked to the regulatory asset base."*

From the above discussion, it can be observed that these two concepts: the management of the operating expenditures based on the Reference utility approach; and the determination of the regulatory asset base, are essential for the success of the organisation in terms of profitability. This situation goes in line with the study conducted by Pardina et al. (2008) which identified that the determination of the regulatory asset base is one key factor to success of an electricity distribution company, as the fixed assets account for about two thirds of its total assets. The director of planning and control of the holding company also acknowledged the importance of these items for the company's financial success. He stated:

> *"We are focused on knowing how to make profit. How do we make profit? We make profit by managing the remuneration base (regulatory asset base) and the Reference Utility, that is, we have to have a very good control of our costs and we have to know how to invest and register this investment."*

To summarise, the price-cap regulation introduced in Brazil was an important driver of management accounting change in Electra, because the tariff review process constituted the principal event in the organisation when the company's revenue is set for a period of 4 years, and as the company operates in private monopoly, where the company does not need to fight for market share, the profit of the company is also determined in this process. Therefore, this change in regulation put pressure on Electra to improve their management accounting systems, in particular, the budgetary and performance measurement systems. In addition, this new regulation forced the operational areas of the company to exchange information with the accounting areas. As a consequence, the importance of the management accounting area increased and the utilisation of management accounting was also affected, as the engineers perceived that the integration of the management accounting information with the operational information was essential to improve the company's performance.

8.3.1.2 Managerial Pressures

Electra was also subject to managerial pressures to improve its management accounting systems. Electra was a state-owned and largely bureaucratic company. It had to produce budgets and various reports for both the directors of the company and state. But the systems it used were not integrated into its management process, as before the privatisation, the structures of legitimation and signification (see section 8.2) were concerned with the engineering aspects of the business. The privatisation of Electra represented the change from a stated owned management style to a private management style with a different set of legitimation and signification structures. As discussed in section 8.2, after privatisation the legitimation and signification structures were set mainly to achieve the adequate financial performance in a regulated environment, by being profit oriented and cost conscious.

As a consequence of this shift in the legitimation and signification structures, the new owners of Electra introduced changes in the management accounting system of the organisation in order to improve the quality of the management process. The aim of this change was to create a management accounting system capable of providing information to help the decision making process and controlling the company's activities by providing financial information, as well as being capable of communicating the company's goals to the departments and employees. This situation is similar to the conclusion provided by Jones (1985) in his study about the role of management accounting systems following takeover or merge. Jones (1985, p. 197) states:

> "Management accounting systems form an integral part of an organisation's structure and processes to effect control. Their importance stems from the ability to facilitate organisational integration, to motivate, to assist decision-making, and to provide measurements of performance through enabling characteristics such as the delegation of authority, communication of objectives, participation, and informational feedback. The delicate balance of the framework of organisational control is likely to be disturbed by acquisition and the restoration of equilibrium makes new demands upon MAS as facilitators of integration and motivation."

Chapter 6 (section 6.2) and chapter 7 (section 7.2) discussed the evolution of Electra's structure and management style; and Electra's culture and management systems and their changes after privatisation, respectively. The managerial drivers of management accounting change came basically from: (a) the introduction of a new business model based on Energia's (the European electricity company part of the holding company) management system, which is based on the Management by Objectives approach. The introduction of this new business model was facilitated by the implantation of an ERP system which also influenced the process of management accounting change; and (b) the restructuring of Electra with increasing focus on financial performance in terms of profitability and cost reduction. This new approach emphasised the control and standardisation of the company's activities. As a result, the internal control system was developed and the company introduced the concepts of ISO and TQM (Total Quality Control) and the Sarbanes-Oxley act (SOX) procedures. Figure 8.4 depicts these managerial drivers of change.

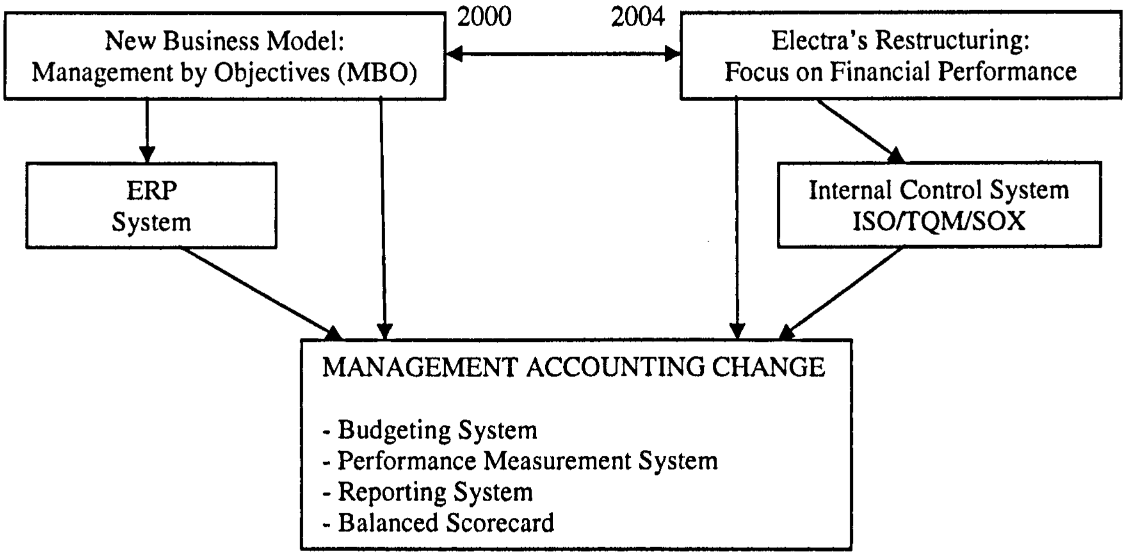


Figure 8.4 – Managerial drivers of Management Accounting Change

These drivers were explained in chapters 6 and 7, but it is important to summarise in this section why these factors influenced the process of management accounting change in Electra. As stated before, the change in the ownership created pressures on management accounting to change, as the new owner (a group of three private companies) demanded more information to the decision making process, as well as, a system that was able to control the company's operation. This new management style that emerged after privatisation was based on the Management by Objectives principles. As a result, the company started to set targets and objectives for all the departments of Electra and the company needed to control these targets as well. In order to operate this new management system, Electra developed a strategy with two main pillars.

First, the implantation of two new corporate computational systems: the ERP system and the commercial system. The ERP system also had an impact on the process of management accounting change, because this system facilitated the communication between the different areas of the company which had a major impact on the budgeting and performance measurement systems of the organisation (Kholeif, et al., 2007). Moreover, the management accounting systems had to be compatible with the ERP system principles, which were created and developed by the holding company in the other two distribution companies of the group. The second pillar of the introduction of the new business model was the change in the management accounting system in itself. That is, the company decided to redesign the management accounting system (budgeting system; performance measuring system and reporting system) in order to be able to use the new business model, as the company needed a management accounting system capable of providing the necessary information to the process of management based on this new private perspective.

As a consequence of the poor economic and financial performance of Electra between 2000 and 2004, there was a group restructuring. As a result, the new board of director took over and this changed the organisation focus even more towards improving the financial performance of the organisation. This new management team kept the same principles of the previous business model based on the Management by Objective approach, but their focus was on achieving the economic and financial targets of the organisation. This new strategy was translated in terms of numbers (accounting figures). A similar approach was used by General Electric in the case of the Nuovo Pignone acquisition described by Busco, et al. (2005). As a consequence, the management accounting system was driven to introduce changes in order to cope with this new demand, in particular the budgeting system was the one that gained the status of the most important system in term of management and control in the organisation after the restructuring process. In the same vein, the company introduced a range of initiatives to improve the internal control system, especially with the implantation of the ISO/TQM and the Sarbanes Oxley act procedures. These measures also helped to shape the management accounting system in Electra, because the effort to modify the internal control systems and standardise company's procedures forced changes in management accounting in order to adapt to this new requirements.

8.3.1.3 Electricity Industry and Associations

Having discussed the two major drivers of management accounting change in Electra, this section explores the influence of the electricity sector associations and other distribution companies on Electra, after the process of privatisation. The influence of those entities was not as broad as the influence of the regulator had on shaping management accounting systems in Electra, as those entities did not have the coercive power that the regulator had over Electra. However, the electricity associations and other distributions companies had to some extent influenced the process of management accounting change in Electra, but this influence can be considered small, especially compared with the regulator pressures.

The Brazilian electricity distribution sector can be considered as an open sector in terms of accessing and exchanging information regarding the performance and management practices of the distribution utilities. This is possible, because the companies operate in a regime of concessions by regions with captive consumers which can be seen as a sort of private monopoly. This peculiarity of the Brazilian electricity distribution sector facilitated the process of isomorphism (DiMaggio and Powell, 1983; 1991), which refers to the adaptation of an institutional practice by an organisation. Therefore, the openness of the sector can facilitate the advent of mimetic isomorphism which occurs when an organisation imitates certain practices of other organisations which it perceives to be more successful. Dillard, et al. (2004) also talk about this mimetic process, they state that there are two types of organisations the innovators or late adopters. Innovators are those organisations developing new organisational practices, while late adopters are those companies that adopt the practices of innovator organisations. As the Brazilian electricity distribution sector is a natural monopoly, the communication between innovator organisations and late adopters are facilitated and enhanced. In the case of Electra, this exchange of information is illustrated by the statement made by Electra's CEO regarding visiting and exchanging knowledge with another distribution company in Brazil:

> *"We have decided to upgrade your ERP system and we want to add other modules in that system, as well (...). Two months ago, we went to CEMIG (another Brazilian company) to see its ERP systems and the modules that we want to buy. We talked to the CEMIG managers about the benefits of the system and the process of implementation (...). The sector is really open and we can exchange experiences with other companies. We do not need to reinvent the wheel."*

Another important entity in the process of management accounting change in Electra was ABRADEE (The Brazilian Electricity Distribution Companies Association). Section 6.4.1 dealt with the ABRADEE's aims, as well as, the programmes developed by this association. In terms of management accounting change, two programmes had to some extent influenced the management accounting practices in Electra after the privatisation. These two initiatives are: (a) the annual ABRADEE reward; and (b) ABRADEE benchmark programmes (for further details about these programmes see section 6.4.1). These two programmes aim to influence the distribution companies' management systems in accordance to the ABRADEE's policies for the development of the electricity sector by providing studies, guidelines and evaluating the companies' management systems. In terms of the isomorphism concept (DiMaggio and Powell, 1983; 1991), this kind of influence can be considered as a source of normative isomorphism (Dacin, 1997) which stems from pressures form professional groups and associations. The Head of the Planning and Control Department commented about ABRADEE's influence:

> *"ABRADEE helps, because it has the best practices base and the management information system. The electricity sector is very open, we can visit other companies to see what they are using and doing (...) We use the ABRADEE data base and we also visit other companies to see what is going on. We also use the performance indicators to compare our performance. So, the electricity sector is extremely open."*

One Manager of the Planning and Control Department pointed out that the company used the information provided by ABRADEE award evaluation report to improve the management systems of the company:

> *"The company uses the ABRADEE model as a reference for the management of the company (...). We also use the ABRADEE award evaluation report to identify our problem and improve the management systems. This report also helps our strategic planning process (...). In terms of management, the company participates in the ABRADEE's benchmarking committee, where the best practices used by the Brazilian distribution companies are discussed."*

From the discussion above, it can be observed that the other distribution companies' practices and the work of the ABRADEE influenced the evolution of the management accounting systems in Electra after the privatisation, but it is important to highlight that this influence was indirect and much less strong than the influence of the regulation in process of management accounting change.

8.3.1.4 Public Opinion

Since the beginning of the discussion about the process of privatisation of the Brazilian electricity utilities, the issue was very controversial in Brazil, which led to conflicts between different entities of the society and political parties in Brazil (Mota, 2003). The neo-liberal ideas introduced by the Fernando Henrique Cardoso government (1995-2002) were very controversial because it was a profound shift on the Brazilian economic development model, which was based on government interventions and investments. In addition, the privatisation of the Brazilian distribution companies were characterised by regional political interests, as each Brazilian state had different political background and priorities (Araujo, 2006; Araujo and Oliveira, 2005). This environment caused among some segments of the society and consumers scepticism about the importance and benefits of the privatisation in terms of the quality and expansion of the electricity service, as well as the tariff affordability. As a result, those agents put pressure on the privatised companies to improve the electric and management systems.

This pressure on the recent privatised companies increased due to the 2001 electricity crisis, when the consumers were obliged to reduce the consumption in about 20% for a period of about 1 year. Another huge problem of the Brazilian electricity sector for the society and consumers was the fact that the electricity tariff has increased considerably after the start of the privatisation process in Brazil (Araujo, et al., 2008a). The electricity tariff has risen faster than inflation, especially after 1999. Figure 8.5 presents the comparison between the increase of the electricity tariff and the inflation measured by the Brazilian index IPCA (Ample Consumer Price Index).

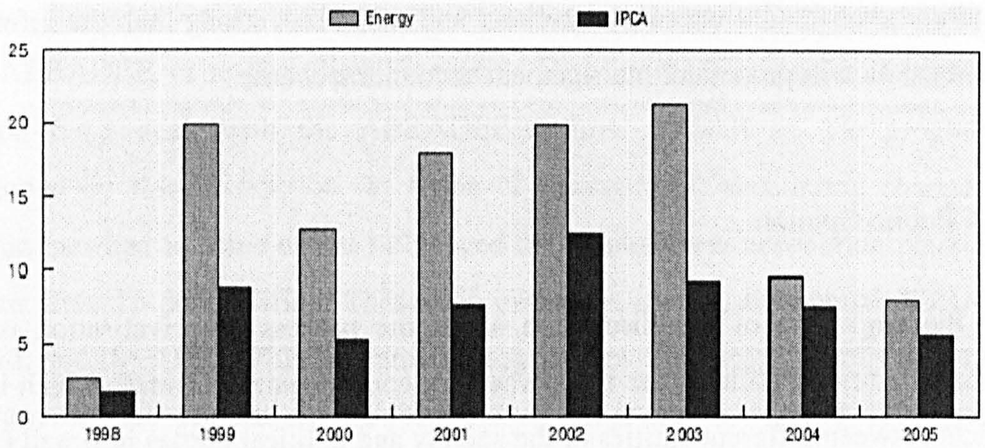


Figure 8.5 – Electricity Tariff Increases Compared with the Inflation Rate, 1998-2005
Source: (OECD, 2008, p. 92)

Therefore, there was a problem concerning consumer tariff readjustments. However, during the first years of the privatisation process, the tariffs were stable. The problem started after the 1999 Real (Brazilian currency) devaluation. As a consequence, the electricity tariff started to grow much faster than the consumer price index, leading to discontentment, pressures on the budget of poorer households, and an increase in defaulting and other commercial losses (Araujo, et al., 2008b). Figure 8.6 depicts the accumulated comparison (from 1994 to 2007) between the electricity tariff evolution and the evolution of two Brazilian inflation indexes IGP-M (Brazilian General Market Price Index) and IPCA. As it can be observed from figure 8.6, the electricity tariff increased 398% from 1994 to 2007, while the IGP-M and IPCA indexes increased 236% and 164%, respectively.

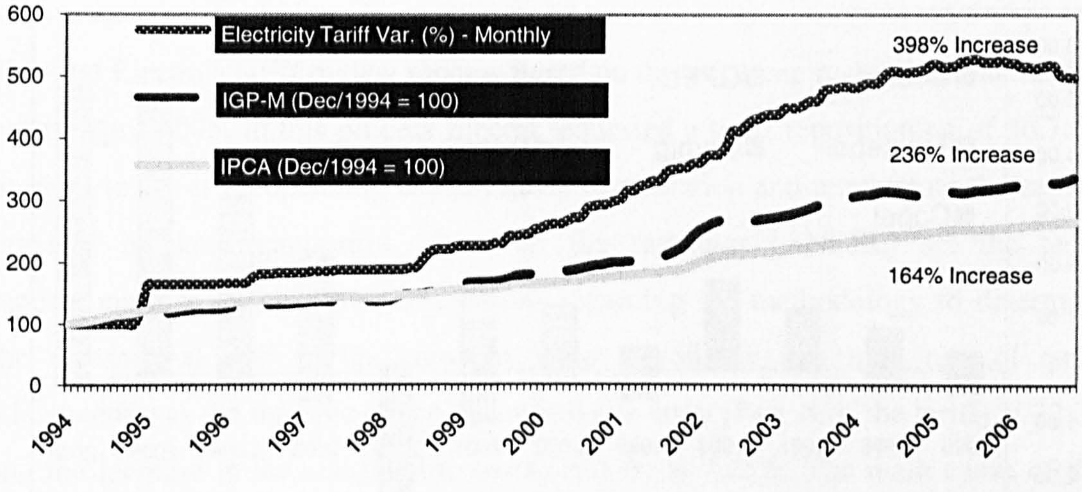


Figure 8.6 – Accumulated Electricity Tariff Increases Compared with the Inflation Rates, 1994-2007
Source: (Santos, et al., 2008, p. 439)

In addition to the increase in the consumers' tariff, the profit of the electricity companies in Brazil increased considerably in order to remunerate the new private owners. According to Santos, et al. (2008), the electricity tariff increased five times after privatisation and the dividends of the electricity companies rose at that same proportion after privatisation. Figure 8.7 depicts the profit evolution (in Brazilian currency in billions) of the six largest distribution companies and the largest private generation company (Tractebel) in Brazil from 1995 to 2006. As can be observed, the companies' profit increased considerably, especially after 2002 when the majority of the company had losses because of the effects of the 2001 crisis in the sector. In 2006, the profits of these companies accounted for about R$ 5.3 billion (Santos, et al., 2008).

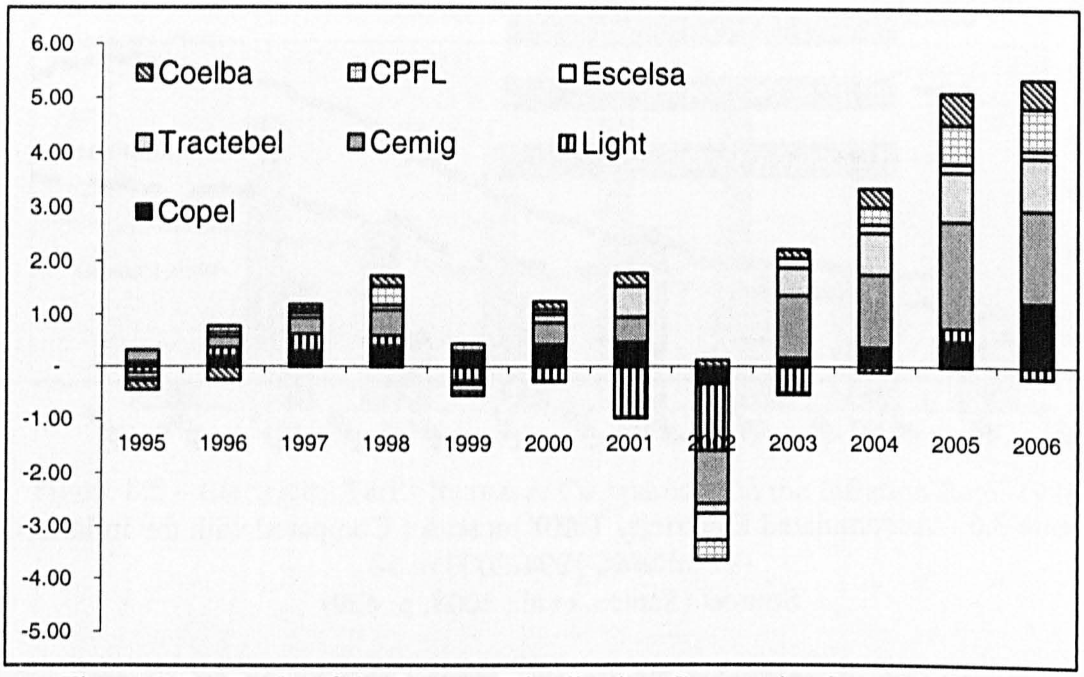


Figure 8.7 – Profit of the Largest Distribution Companies from 1995 to 2006
Source: (Santos, et al., 2008, p. 448)

In the context of the case study company (Electra), the profit of the organisation rose considerably since the privatisation, in particular after 2005 which was the year that the first tariff review was carried out in Electra (see figure 8.8). The first tariff review in Electra was very controversial and to some extant damaged the image of the company and increased the pressure over Electra to provide better services.

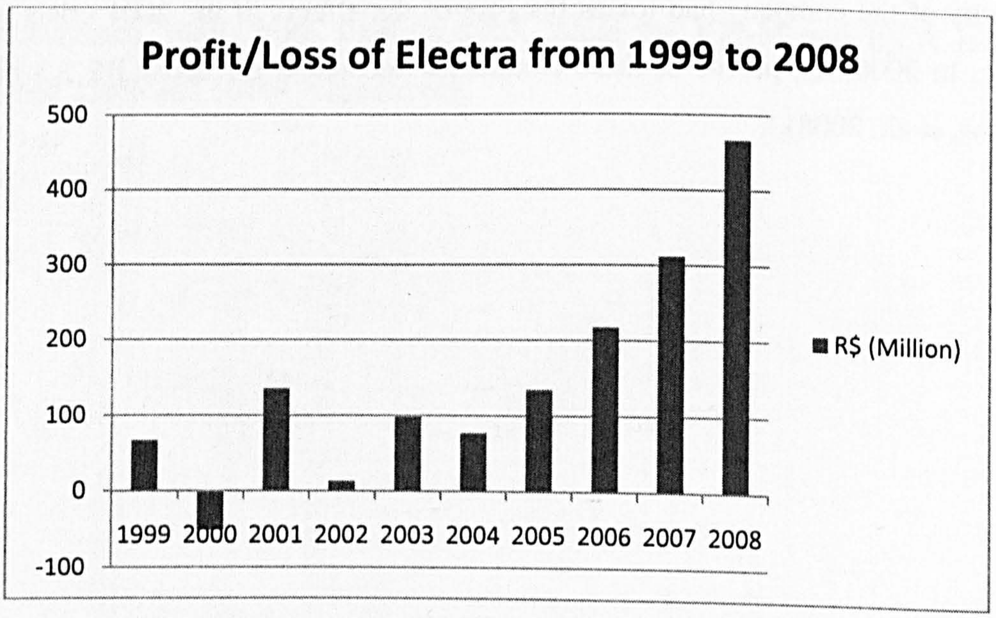


Figure 8.8 – Profit/Loss of Electra from 1999 to 2006
Source: Electra's Accounting Statements

The first Electra's tariff review process based on the price-cap regulation was carried out in April 2005. In this process Electra requested a tariff repositioning of 56.78% in order to cover its operating expenditures, depreciation and remunerate the capital invested in the organisation. However, the regulator (ANEEL) set the tariff repositioning at 32.54% after discussions regarding the methodology to determine the commercial loss of the company. The reason for this high rate of tariff adjustment was the increase of the uncontrollable costs (Part A of the tariff) at 32.32% and the increase in the controllable costs (Part B) at 7.25%. The main cause of the variation on the part A (uncontrollable costs) was due to the 54.67% increase on the energy purchase costs. This increase accounted for 21.03% of the total change in the tariff repositioning in Electra (32.54%).

The increase on the energy purchase costs was basically caused by a related party transaction between Electra and a generation company from Electra's economic group, this kind of transaction is known as self-dealing transaction. This contract started in 2004 and this generation company provided thermal power which is more expensive than the old contracts based on hydro power. As a consequence, there was a huge difference between the cost of hydro power contracts, which was around R$/MWh 60.00-70.00, and the cost of this new contract, which was about R$/MWh 136.00 (see table 8.2). This self-dealing transaction generated a lot of controversy during the first tariff review process in 2005, because Electra was accused of inflating the costs of energy in order to generate more profit to the Electra's economic group and as a consequence, this led to higher consumers' tariff. This situation generated a wave of public interest litigation, which led to a federal judge ordering Brazilian regulator ANEEL to reduce the tariff repositioning to 7.4%. However, this decision was cancelled by the Brazilian Supreme Court, which decided to maintain the 32.54% tariff repositioning, previously set by the regulator ANEEL. This tariff review was so problematic that a legislative investigation was launched in 2007 to investigate this process. As a consequence, there was an increasing pressure from the Electra's State media over the procedures adopted by Electra during this tariff adjustment. As a consequence, the consumers' satisfaction index decreased from 82.9% in 2006 to 69.7% in 2007.

CONTRACTS	POWER PURCHASE (MWh)	%	VALUE (R$/MWh)
Old Contracts	1,829,851	19.36	63.47
Third Party Contracts	1,840,264	18.46	73.65
Auctions	2,758,504	27.67	59.79
Related Party (Self-dealing)	3,438,594	34,50	136.71
Total	**9.967.213**	**100**	**89.63**

Table 8.2 – Energy Purchases considered in the First Tariff Review Process

Source: Electra Management Report in 2007

From the discussion above, it can be observed that the Brazilian distribution companies have been facing an increasing pressure from the society and public opinion to overcome the flaws and problems of the Brazilian Electricity sector, which was developed on ad hoc decisions (Araujo, 2006). It can be summarised that the sources of pressure from the public opinion came from the following issues: (a) the ideological opposition to privatisation from some segments of the society and political parties; (b) the 2001 electricity crisis that exposed the flaws of the Brazilian electricity model created after the privatisation; (c) The increase in the electricity tariff; and (d) the increase in the distribution companies' profitability, especially after 2002.

The Brazilian distribution companies tried to justify the increase in the tariffs and privatisation by pointing out the quality of the service is better and that more people have access to electricity, after privatisation. Figure 8.9 shows the evolution of the two main quality indicators DEC (Equivalent length of electricity interruption per consumer) and FEC (Equivalent frequency of electricity interruption per consumer) from 1997 to 2007. As it can be observed, these indicators improved by about 40% in this period. The percentage of the Brazilian population with the electricity service also increased from 93.3% in 1997 to 97.7% in 2007. In addition, the distribution companies tried to show that the companies are better manage after privatisation, as they are adopting a range of management tools, such as the Balanced Scorecard and ISO certification (ABRADEE, 2009). Moreover, the distribution companies tried to portray that their companies are more accountable with the introduction of strong regulatory framework, corporate governance principles and corporate social responsibility (CSR) models (ABRADEE, 2007; 2008).

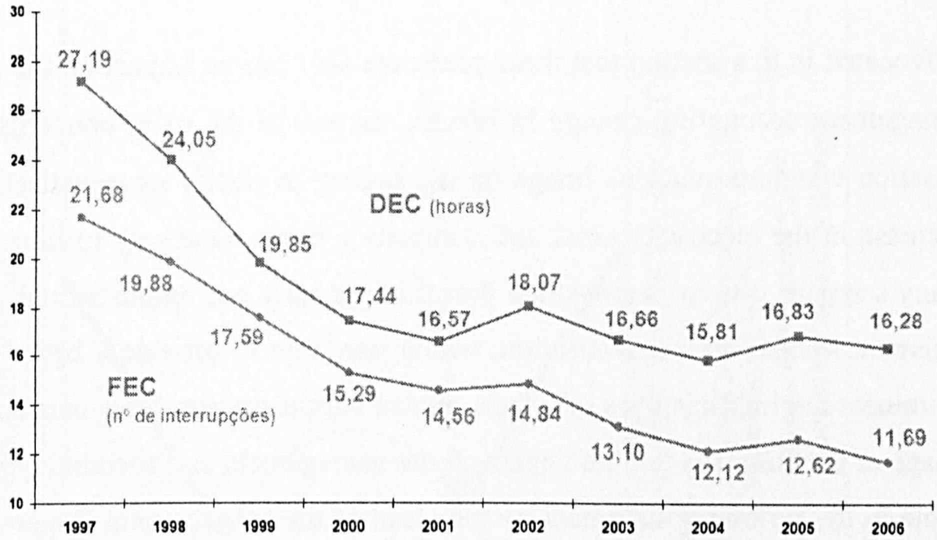


Figure 8.9 – Brazilian Electricity Distribution Sector DEC and FEC 1997-2007
Source: (ABRADEE, 2008)

In the context of Electra, the company suffered the same pressure from the public opinion and society that other distribution companies suffered. However, in the case of Electra these pressures were enhanced by the problematic tariff review process, when some of consumers and media believed that the company used unfair mechanisms to improve the company's profit. Electra used the same rhetoric of the other distribution companies to justify the privatisation by pointing out the quality gains (see figure 8.10) after the privatisation and the expansion of the system that is universal since the end of 2008. The company also engaged a range of corporate social responsibility initiatives, in particular, regarding the impact of its business on the environment.

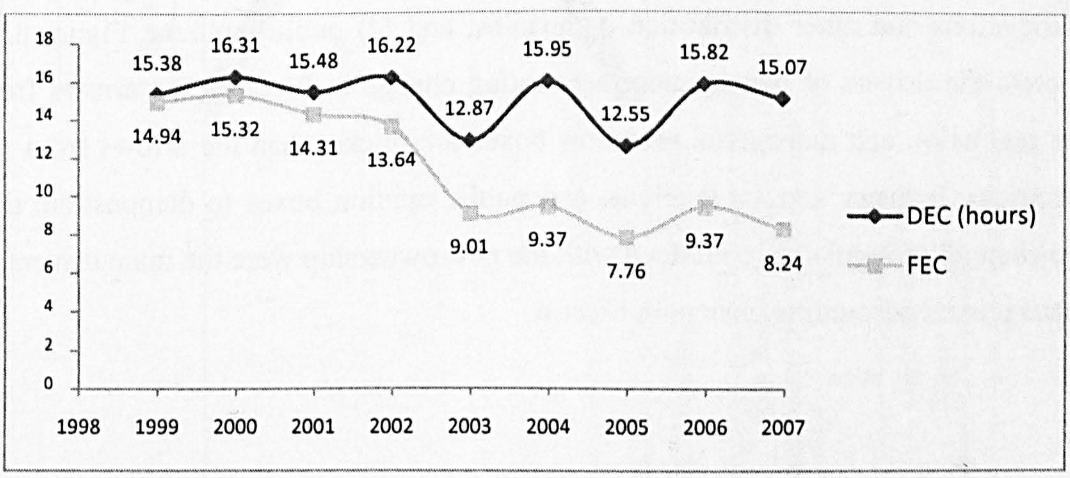


Figure 8.10 – Electra's Indicators of DEC and FEC 1999-2007
Source: Electra's Management Reports

It is advocated in this section that these pressures also had an impact on the process of management accounting change in Electra, as one of the main concerns of the organisation was improving its image on the society to justify its privatisation and the increase in the electricity tariff and company's profit. One way to improve the company's image was to demonstrate that the company had implemented a better management system after privatisation, which was able to provide a better service and eliminate the inefficiencies of a state-owned administration. This concern about the image of the company and its impact on the management and accounting systems is visible in the following statement by the Head of the Management Department of Electra:

> *"Actually, we need (...) it is a popular saying 'we do not need to be honest, we should show that we are honest'. So, nowadays, there are a range of instruments and systems that we should show that we are using to get recognition from the market and society. It is crucial to improve the company's image (...). So, it is important to demonstrate to our employees and the society that Electra has a modern business model and we have been gotten good results, because the company is going in the right direction with the adequate management systems and tools."*

8.3.1.5 Summary of the Drivers of Change

This section dealt with the main drivers of changes in Electra's management accounting system, they are: (a) the new regulation; (b) the managerial pressure introduced by the new private owner; (c) the pressure from the electricity sector associations and other distribution companies; and (d) public opinion. Figure 8.11 depicts the drivers of management accounting change in Electra. The arrows from the regulation and managerial pressures boxes are thicker than the arrows from the electricity industry and associations, and public opinion boxes to demonstrate that the changes in regulation combined with the new ownership were the main drivers of management accounting change in Electra.

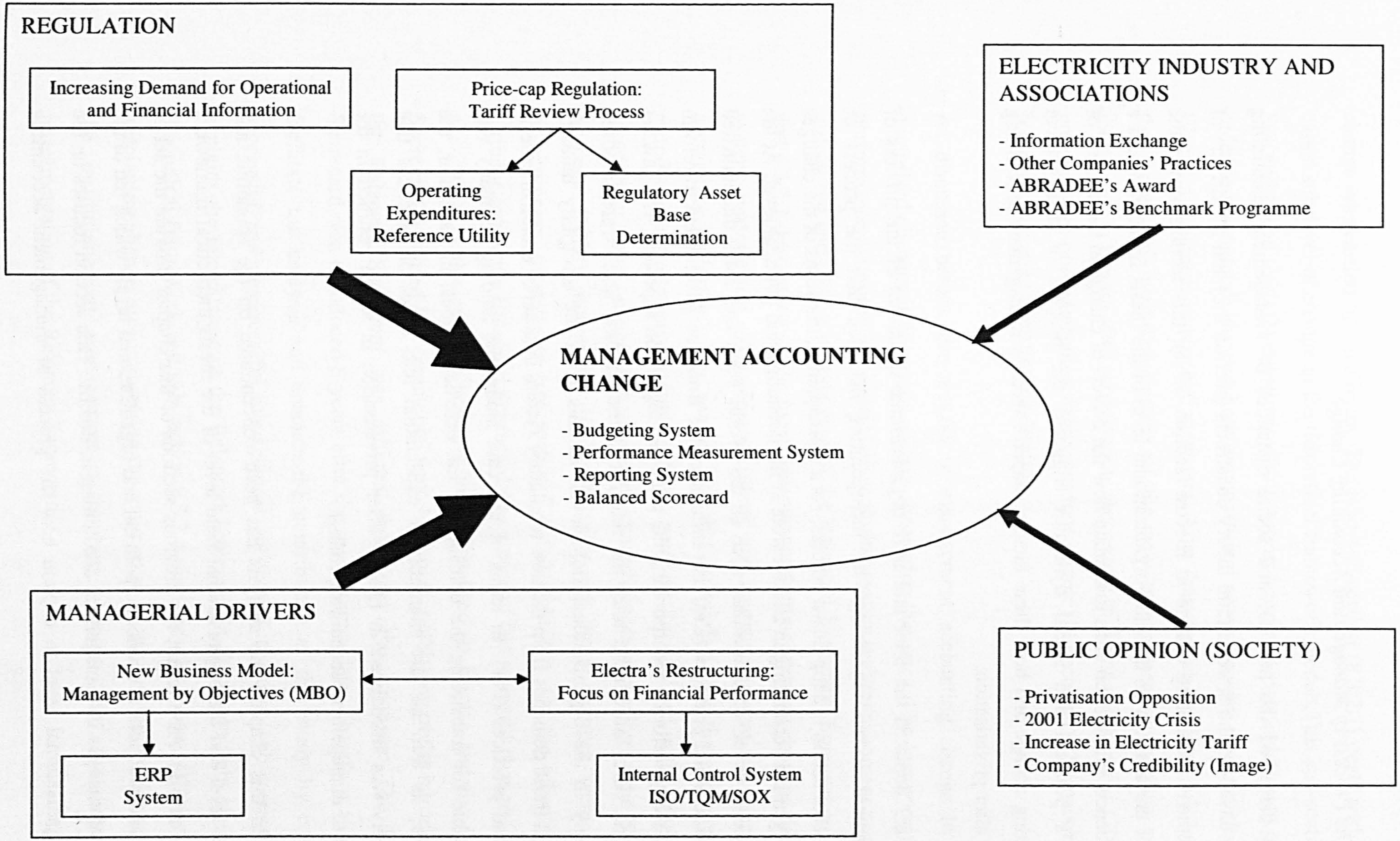


Figure 8.11 – Electra's Drivers of Management Accounting Change

8.3.2 The Process of Management Accounting Change

Having discussed the political and social dynamics of management accounting change based on the structuration theory constructs (section 8.2) and the drivers of management accounting change in Electra (section 8.3.1), this section moves the focus of the analysis on the intra-organisational level of the thesis framework. As a consequence, this section aims to explain how the drivers of change in the context of Electra's political and social dynamics triggered the process of management accounting change and how these factors shaped Electra's management accounting system after privatisation.

Figure 8.2 depicted the inter and intra organisational dynamics of the process of management accounting change by incorporating the idea that the process of institutionalisation is a top-down process. As a consequence, the seeds of the changes in management accounting in Electra were at the economic and political level. At the international level, organisations, such as the World Bank and IMF, disseminated general ideas and principal (CPE) that influenced the Brazilian government to reform the electricity sector by incorporating the price-cap regulation approach. The new set of criteria (CPE) introduced after the reforms at the national level were imposed coercively in the organisational field level. At this level the electricity industry absorbed those demands from the new regulatory system in order to establish criteria (COF) and practices (POF). In terms of this case study, the holding company was responsible for translating the demands of the external entities, in particular, the regulator, as well as, the shareholders expectation into a set of practices that coercively was introduced in Electra after privatisation in which resulted in the process of management accounting change.

So far in this chapter, the analysis has been concentrated on the economic and political level and the organisational field level of the thesis theoretical framework (see figure 8.1). As a result, the previous sections of this chapter provide the set of criteria and practices at economic/political and organisational levels which led to the drivers of changes in management accounting in Electra. This section focuses on the intra-organisational level to explain how the process of management accounting change was carried out in Electra. The next sub-section (8.3.2.1) deals with the so-called sub-level of change in the theoretical framework model. This sub-section uses Seo and Creed's (2002) constructs of institutional contradiction and human praxis in order to understand why and how organisational actors decided to enact changes in Electra's management accounting system. After that, the sub-section 8.3.2.2 explains the process of institutionalisation of the new management accounting practices introduced in Electra after privatisation. According to Burns and Scapens (2000), the process of institutionalisation comprises four stages: (1) encoding; (2) enactment; (3) reproduction; and (4) institutionalisation.

As discussed before, the process of management accounting change in Electra comprised changes in four management accounting themes: (a) budgetary system; (b) performance measurement system; (c) reporting system and management accounting utilisation; and (d) the introduction of the Balanced Scorecard. Sub-sections 8.3.2.1 and 8.3.2.2 deal only with the three first management accounting changes (budgetary system; performance measurement system; and reporting system and management accounting utilisation). The reasons for that is the fact that these changes were introduced just after privatisation and they were institutionalised in the organisation. In addition, these changes have the same characteristics according to the Burns and Scapens (2000) dichotomy of change, that is, these changes were: formal, revolutionary, progressive (see section 7.4 and table 7.5). On the other hand, the introduction of the Balanced Scorecard was a case of unsuccessful change (Burns, et al., 2003), as this practice was not institutionalised in Electra and the Balanced Scorecard was used in a ceremonial way. Moreover, the timing of the introduction of the Balanced Scorecard was different from the other changes. The Balanced Scorecard was introduced 5 years after the privatisation date. Therefore, in order to facilitate the analysis and enhance the contribution of this study by comparing successful and unsuccessful management accounting changes, sub-section 8.3.2.3 explains the introduction of the Balanced Scorecard in Electra in light of the thesis theoretical framework and sub-section 8.3.2.4 discusses the process of management accounting change by summarising the main point of this section and by comparing the institutionalised management accounting changes with the unsuccessful implementation of the Balanced Scorecards.

8.3.2.1 Sub-Level of Change – Contradictions and Human Praxis

This sub-section deals with the sub-level of change in the theoretical framework model. The sub-level of change was introduced into the thesis theoretical framework in order to discuss the role of human agency in the process of organisational change. The previous organisational change models based on institutional theory, in particular, Burns and Scapens (2000) framework, have been criticised, because they were unable to deal with the institutional embeddedness of interest and agency, and therefore, they are not able to answer the following question: how can actors change institutions if their actions, intentions, and rationality are all conditioned by the very institution they wish to change?

Therefore, this sub-section aims to understand and explain why and how organisational actors decided to enact changes in Electra's management accounting system. In order to answer this question, the thesis theoretical framework model uses Seo and Creed's (2002) (the Seo and Creed (2002) ideas were discussed in section 3.5.3) constructs which are based on the dialectical approach. This approach to investigating the process of institutional change provides insights into two important analytical concepts that the institutional approach has overlooked in explaining change, i.e. contradiction and praxis. Therefore, the main pillar of the Seo and Creed (2002) framework is the view that institutional change should be analysed as an outcome of the dynamic interactions between institutional contradictions and human praxis.

The concepts of institutional contradictions and human praxis, as well as, the links between these concepts were discussed in section 3.5.3, but it is important to revisit these concepts in order to contextualise the process of management accounting change in Electra at the intra-organisational level. The notion of contradiction is the foundation of the dialectical perspective. The principle of contradiction implies that ruptures and inconsistencies among smaller parts typify organisational totality, not an integrated and unified system serving a functional purpose (Benson, 1977). Therefore, contradictions can be understood as inherent inconsistencies within institutional arrangements that are internal and external to operation of the organisation. The concept of contradiction is key in the Seo and Creed (2002) framework, because institutional contradictions generate organisational tensions and conflicts, which are crucial to actors' consciousness and their sense of reality; thereby constituting possibilities for institutional reproduction and change. In the organisational field, Seo and Creed (2002) identified four sources of institutional contradictions: (a) technical inefficiency; (b) nonadaptability; (c) institutional incompatibilities; and (d) misaligned interests (for the discussing regarding these sources of contradictions see section 3.5.3).

According to Seo and Creed (2002), human praxis is a necessary mediating mechanism between institutional contradictions and institutional change, as institutional contradictions are the essential driving forces of institutional change, but their effects depends on the extent to which they are 'absorbed' by human actors. The concept of praxis denotes the act of translating an idea into action. Seo and Creed (2002) also state that praxis has three component parts: (1) actors' self-awareness (reflective shift in consciousness); (2) actors' mobilisation; and (3) collective action (for further discussion see section 3.5.3).

Seo and Creed (2002) propose four concrete and predictable ways in which institutional contradictions may trigger and enable praxis for institutional change (see section 3.6.3). The authors highlight that it is an attempt to illustrate several conceptually important relationships among particular types of institutional contradictions and particular components of praxis. In the case of the process of management accounting change in Electra the third proposition of the Seo and Creed (2002) framework is the most adequate to explain how the institutional contradictions enabled human praxis to introduce institutional changes in Electra, because this proposition alike the others stressed the importance of an institutional crisis caused by external forces. The third of proposition of Seo and Creed (2002, p. 236) is presented below:

> Proposition 3: Under conditions of strong nonadaptability, efficiency gaps and inter-institutional incompatibility, mediated by institutional crisis, promote praxis for institutional change by creating the conditions for the revolutionary breakdown of institutional inertia;

The process of management accounting change in Electra can be explained based on Seo and Creed's (2002) proposition that praxis can be promoted by revolutionary disruptions from outside, which is the case of Electra. As discussed in the section about the drivers of change, the changes in regulation and the change in the ownership from a state-owned company to private company constituted a profound shift in the institution (structures) of Electra after privatisation. This shift can be considered a revolutionary disruption from outside, because the modification in the ownership and regulation were introduced in a relative short period of time and they challenged the previous institutions that existed before privatisation in Electra (see table 8.1). Therefore, the changes in regulation and ownership were driving forces that generated institutional contradictions, and as a consequence, an institutional crisis erupted and allowed a shift in actors' collective consciousness to introduce change. Seo and Creed (2002) state that from a dialectical perspective, the most common way in which institutional contradictions facilitate shifts in actors' collective consciousness is by causing an abrupt disruption of the existing social order through institutional crisis, which seems to be the case of the process of management change in Electra. By adopting this approach, this thesis views the institutional crisis in Electra as a systematic outcome of institutional contradictions rather than as an idiosyncratic event. Figure 8.12 depicts the link between institutional contradictions and praxis in the process of management accounting change in Electra in accordance with Seo and Creed's (2002) third proposition.

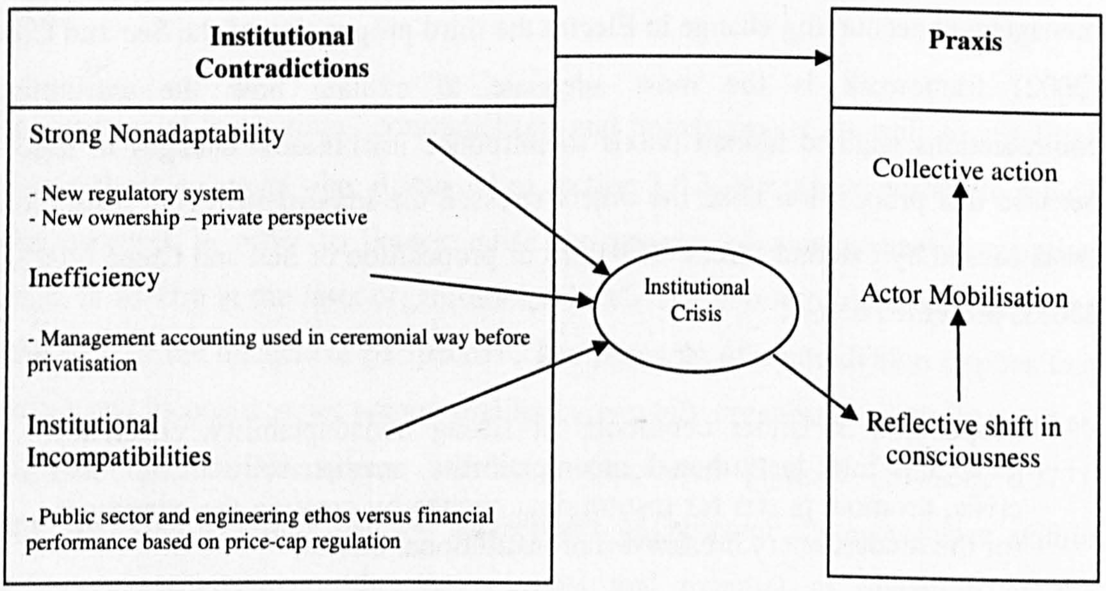


Figure 8.12 – Institutional Contradictions and Praxis in Electra

In Seo and Creed's (2002) third proposition, the strong nonadaptability contradiction plays a significant role to generate the sense of institutional crisis that enables human praxis to introduce changes. Seo and Creed (2002 p. 235) state that "strong nonadaptability renders institutional arrangements increasingly vulnerable to external shocks by insulating the participants from critical information that exists beyond the institutional boundary or by making them less motivated to actively respond to it". In the case of Electra, a strong nonadaptability to the external environment modified after the process of privatisation was observed. The intra-organisation institutional arrangements in Electra were based on an environment dominated by state-owned companies which had the main objective to promote the policies established by the Brazilian government. As a consequence, the main concern of the company was related to the expansion of the distribution system and operational issues; the financial performance of the company was neglected in this period (see section 8.2 for further discussion). The new regulatory system and the new private ownership completely challenged the previous institutions that existed before privatisation. This is because the new environment demanded profound changes in the management accounting systems to cope with the new legitimation, signification and domination structures based on private perspective of business operating on a recently introduced regulatory regime based on the price-cap regulation.

The Electra case is similar to the Nuovo Pignone (NP) case described by Busco, et al. (2005). As part of the Italian government's wide-scale program of privatisation in the early 1990's, General Electric Inc (GE) acquired more than 80% of NP equity share in 1994 (Busco, et al., 2005). In the case of NP, the nonadaptability was strong, as the NP management style was largely bureaucratic based on the public principles of management and by contrast the GE management style was based on a private perspective which relied extensively on measurement system. This nonadaptability was the contradiction force to introduce changes in NP, as Busco, et al. (2005, p. 286) state "It was immediately clear to everybody at NP that the company was undergoing a two-fold cultural change: not only from an Italian to an American company (...), but also from a bureaucratic state-owned company to one of the most intense, business-oriented corporations in the world".

As happened in Nuovo Pignone, the Electra's employees and managers also recognised that changes were unavoidable, because of the strong nonadaptability faced by the company after the process of privatisation. Seo and Creed (2002) support this view by explaining that in the context of a strong nonadaptability the company is vulnerable to external shocks by making the organisational actors less motivated to actively respond to the external events (resistance to change). This seems the case of Electra, as the issue of resistance to change is absent from the process of management accounting change in Electra introduced after the privatisation. The former Electra's CEO commented:

> *"I would say that changes in Electra at that time were easy to be absorbed by the company, because, physiologically, the company had that moment of change in ownership from a state-owned company to a private owned company with an international holding company. People were ready to accept and help the process of change, because in this environment of transformation, where there was a natural reduction of the number of employees. A person who does not accept the change is automatically out of the company."*

The inefficiency contradictions involve the catching-up of underlying technical inefficiencies that have been masked over the years by virtue of conforming to the prevailing institutional arrangements at a particular time and space (Burns and Baldvinsdottir, 2005) (in the case of Electra the period before privatisation). Seo and Creed (2002, p. 235) point out that "the accumulated efficiency gap stemming from conformity to suboptimal arrangements may create institutional crisis". They also suggest that institutional crisis is more likely when the accumulation of intuitionally rooted inefficiencies reaches the point where decoupling the technical core from institutional practices becomes an inadequate or infeasible response. This seems the case of the process of management accounting change in Electra after privatisation.

As discussed in section 6.5 concerning the management accounting before privatisation, management accounting systems were used in a ceremonial way (Burns, et al., 2003) and the accounting information was restricted to the board of directors and the staff of the accounting and finance departments of the company. After privatisation, the managerial demands for management accounting information increased dramatically (see section 8.3.1.2). In addition, the pressures from the new regulatory system to obtain accounting information (see section 8.3.1.1), as well as, the pressures from the electricity industry (section 8.3.1.3) and society (8.3.1.4) made the previous management accounting inadequate to support the signification and legitimation structures at the intra-organisational level after privatisation, which are based on improving financial performance in accordance with the regulatory demands of the price-cap regulation.

Institutional contradiction is related to intra-institutional conformity that creates inter-institutional incompatibilities. Burns and Baldvinsdottir (2005) comment that institutional contradictions can arise due to the multiplicity and complexity infuse in, and across, institutional arrangements at different levels and impacting different parts of society. As a consequence, an agent who conforms to particular embedded institutional arrangements may be incongruent to other institutional settings. In the case of Electra, institutional incompatibilities arose from the difference between the intra-organisation institutions based on the public sector and engineering ethos and the new view introduced by the holding company which focused on profitability and financial performance in accordance with the regulatory demands. It was clear in Electra that the focus and systems had to change completely after privatisation and the period of engineering dominance was over, as the expansion of the distribution system was no longer the main priority for the Electra's owners. Therefore, it was evident that the management accounting systems had to change to become useful to the manager, including engineers. In addition, the engineers' perception and understanding about management accounting had to change to cope with the new rationale of the business introduced after privatisation, which is based on a private view of profit-oriented decision making process. The Head of the Accounting Department commented about this issue:

> *"Electra is eminently an engineering company (...). The majority of the engineers wanted only build and expand the electricity system. They did not pay attention to the financial indicators, such as profit, EBITDA, and revenue. Nowadays, these financial indicators have an impact on the employees' remuneration. As a result, the engineers ask about the profit and the EBITDA. So, everybody is speaking the economic and financial language now."*

Therefore, as predicted by Seo and Creed (2002), strong nonadaptability encompassed with inefficiency gaps in management accounting and institutional incompatibility brought institutional crisis which triggered praxis (changes) in Electra. Seo and Creed (2002) points out that institutional crisis breaks down the institutional embeddedness, making the institutional system highly unstable, and allowing a radical shift in actors' collective consciousness. In the case of Electra, institutional crisis was observed in respect to fundamental challenges and questions being asked of the pre-privatisation taken-for-granted practices (institutions) when the new private ownership and the new regulatory framework were introduced after privatisation. As a consequence, an opening was carved out for 'revolutionary break' in the same way that Burns and Scapens (2000) referred to "revolutionary change" as being that which fundamental shifts occurring at the institutional realm.

The conclusion above is in line with the Greenwood and Hinings (1996, p. 1030) hypothesis that "radical change in tightly coupled institutional fields will be unusual, but when it occurs, it will be revolutionary". In the same vein, Seo and Creed (2002) comment on the study of Hoffman (1999) by saying that disruptive events and crises at the inter-organisational level play an important role in driving institutional change by thrusting social actors into periods of upheaval and bringing sudden end the practices that had been locked in by institutional inertia.

The Electra case of management accounting change, which was caused by institutional contradictions triggered by revolutionary disruption from the outside (exogenous forces), is presented in the Greenwood and Suddaby (2006) paper. They state that exogenous events take the form of social upheaval, technological disruption, competitive discontinuity, and regulatory change. These events precipitate the entry of new players (in the case of Electra the holding company and the new regulator) into the organisational field, support the ascendance of existing actors and change the intellectual climate of ideals (this is a similar concept of reflective shift in consciousness from the Seo and Creed (2002) framework). Greenwood and Suddaby (2006) conclude that the effect of the exogenous events is to disturb organisational consensus by raising awareness of extant and alternative logics, and thus enabling the possibility of change.

As discussed before, in Electra, the institutional contradictions generated an institutional crisis which triggered institutional change. This process did not face resistance to change, as the organisational actors were vulnerable to changes introduced by the holding company. Similarly, Davis and Thompson (1994) argue that a takeover wave in the 1980s disrupted the long-standing managerialist status quo by putting the discrepancies between the interests of managers and shareholders in new light, thus giving rise to the shareholder rights movement and ultimately enabling radical changes.

From the accounting literature, the case of Nuovo Pignone (Busco, et al., 2005; Busco, et al., 2006) has many similarities with the Electra case. In Nuovo Pignone (NP), there was a massive external impetus for change, in the form of the acquisition of NP by GE (General Electric), and this led everyone in the organisation to see change inevitable. In the same direction, when Electra was privatised, it was clear to everyone in the company that there were going to be major changes and there would be revolutionary changes. In the Electra case, there was widespread recognition within the company that following privatisation things were going to be very different. It was accepted that the existing ways of doing and thinking in the organisation were going to have to change. It was recognised that prevailing institutions (the taken-for-granted ways of thinking) would not be acceptable to the new private owner. Therefore, there was a collective mindset that change would take place. As such, although everyone was very anxious, they recognised that change was inevitable and they looked for ways of coping with it. This discussion leads to the next section that explains the process of institutionalisation of the management accounting changes introduced in Electra after privatisation.

8.3.2.2 The process of institutionalisation

This subsection deals with the process of institutionalisation of the management accounting changes introduced in Electra after privatisation, which comprises changes in the budgetary system, performance measurement system, and reporting system. This analysis uses Burns and Scapens (2000) to explain the process of institutionalisation and represents the link between the sublevel of change and the practice sublevel in the thesis theoretical framework model (figure 8.1). Burns and Scapens (2000, p. 5) point out that "by institutionalized, we mean that management accounting can, over time, come to underpin the 'taken-for-granted' ways of thinking and doing in a particular organisation". Therefore, institutionalisation in management accounting occurs when habits and routines of management accounting are converted into institutions (taken-for-granted ways of doing and thinking). According to Guerreiro et al. (2006, p. 217-218), a management accounting practice is institutionalised when:

- It has been structured on the basis of habits and routines that are taken for granted;
- It can be characterised as something that is stable, and which prevails and continues;
- It realises forms of thinking and acting that are held in common by a group of persons;
- It gives social meaning to persons and allows for their integration in the group;
- It is a natural product of social needs and pressures and defines standards of behaviour; and
- It is realised in the form of an organisation's actual artefacts and rules.

These elements are taken into consideration to analyse the institutionalisation process in Electra. Guerreiro et al. (2006) also explain that when an intentional change is initiated, it is guided by a set of idealised principles that are present in the minds of the organisational actors who are responsible for the process of change. The aim of these actors is to institutionalise those principles by incorporating and disseminating new rules and routines inside the company. In the case of Electra, the process of change started with the holding company that imposed the changes in the management accounting systems based on the following principles (for further discussion see sections 6.2.2; 6.2.3; and 8.2.2.3):

- Profit-oriented and cost-conscious based on the regulatory demands;
- Improvement in organisation control;
- Standardisation of the management accounting practices among companies of the group;

- Management accounting as a source of economic and financial information to the make decision process.

Section 7.4 showed the management accounting practices that reflect those idealised principles in Electra. The institutionalisation analysis of management accounting of Electra follows the four stages proposed by Burns and Scapens (2000): encoding; enactment; reproduction; institutionalisation.

8.3.2.2.1 Encoding

This process entails the encoding of the idealised institutional principles (see above) into routines and rules. The encoding process is driven by the design of a set of desired principles, concepts, and artefact, but it can be shaped by the existing routines and rules (Guerreiro, et al., 2006). Although the encoding process involves all the dimensions of structure, it generally relies upon the employment of specific resources of the power drawn from the institutionalised structures of domination (Burns and Scapens, 2000). Therefore, Electra's holding company played a primordial role in the encoding process of the new principles into the new management accounting rules and routines.

The management accounting change at Electra was an intended and conscious change. The new desired institutional principles were defined by the holding company and the new management accounting routines followed the institutional principles. The designing of these new routines were based on the previous implementations of management accounting change in the other two distribution companies of the Electra's economic group that were privatised before Electra. As the standardisation of the management accounting practices among the companies of the group was one of the pillars of the process of management accounting change in Electra. A Manager of the Planning and Control Department commented:

> *"The group acquired three distribution companies. The holding company needed to manage these companies. It had to control these companies. We have a business model based on the experience of the European company that is part of the holding company (...). This model is based on the management by objectives principles and it was first implemented in*

the other two distribution companies that were privatised before Electra. So, the holding company developed the management accounting systems in these two companies and then these practices were implemented in Electra in order to create standard practices among the companies which facilitated the management and control of the activities of the companies."

As portrayed in the institutional theory literature, an institution is a natural product of social needs and pressures, and defines standards of behaviour (Dacin, et al., 2002; Scott, 2001). In this context, management accounting system, as an institution, did result from the needs and pressures of the context (see section 8.3.1 about the drivers of change). Therefore, this institution was designed, introduced (and maintained) to comply with the company's legitimation structures that imply the balance of the company's finance performance and the regulator's demand.

An important element in the encoding process is related to hierarchical position and the mission of the management accounting area in Electra (see figure 6.3 for the evolution of the management accounting area in Electra). The management accounting function in Electra before privatisation were performed by two departments: the planning and administrative adviser, and economic, finance and commercial director. At this period, there was not a clear concept of which department was primarily responsible for providing economic and financial information to the managers of the organisation. After privatisation, especially with the restructuring of Electra, a new area responsible for generating management accounting information was created at the highest hierarchical level in the organisation. This area was known as the planning and control superintendency. From the case study analysis, it can be observed that this area was responsible for the encoding of the new principles into the set of management accounting rules and routines. In addition, this area was responsible for management accounting achieving 'social recognition', supporting managers in their task of profit seeking and cost reduction. Electra's CEO commented:

"The importance of the planning and control area increased considerably in the last years, as consequence of the holding company's work philosophy. The company have to generate profit; then, in order to achieve that, the company has to control and plan. So, how can we control and evaluate performance without the planning and control area?

(...) We have to have numbers to control and know that our performance is good or bad."

Another element of the changes that put pressure on the managers was the impact of performance measures on variable remuneration. Therefore, the principle of a variable remuneration connected with the company's performance was incorporated into the management accounting systems, in particular, the performance measurement system of the company. As discussed in section 7.4.2, the variable remuneration of an Electra's manager or employee depends on the performance of the organisation as whole (40%); the superintendency's performance (30%); and the department's performance (30%). The variable remuneration linked to the performance was pointed out by a number of interviewees as one of the main facilitators of the acceptance of the management accounting changes introduced in Electra. This contradicts Oliver (1997) observation that institutionalised practices are actions that tend to be long-lasting, socially accepted, resistant to change and not directly dependent on rewards or monitoring of their performance. Electra's former CEO commented about the variable remuneration system:

"One thing, in terms of management system, that facilitated the transformation process was the performance measurement system based on variable remuneration linked to the company's targets. This methodology was very important to support the process of change and it was rapidly incorporated into the organisation."

Institutional theory postulates that an institution is structured on the basis of taken-for-granted habits and routines. In Electra, the management accounting system was encoded on the basis of a set of routines involving new budgetary system; new performance measurement system; and new reporting system (see section 7.4). The thesis moves on to explain the enactment process of the management accounting changes in Electra.

8.3.2.2.1 Enactment

The second stage of the process of institutionalisation involves the actors enacting the routines and rules that encode the desired institutional principles. This process of enactment might involve conscious choice, but it usually results from reflexive monitoring and the application of tacit knowledge (Guerreiro, et al., 2006). Burns and Scapens (2000) state that the enactment of routines and rules can be subject to resistance, especially if the new routines and rules challenge existing meanings and values, and if the actors have sufficient power to intervene in this process.

In the case of Electra, the new management accounting routines and rules challenged the pre-privatisation meanings and values, but the organisational actors did not have power to intervene in the process of change, as management accounting changes were imposed by the holding company. As discussed in subsection 8.3.2.1, the issue of resistance to change is absent from the process of management accounting change in Electra. Most of the interviewees who were involved with the privatisation claimed that the privatisation and implementation processes were relatively smooth and did not produce tensions and disruptions normally associated with change.

The enactment process is generally the outcome of reflexive monitoring driven by tacit knowledge of the individual, and it is due to the need for ontological security which characterise the agents' unconsciousness (Busco, 2003). Giddens (1984b) and Schein (2004) comment that in order to cope with the anxiety which may arise within the complex and uncertain realm of organisational interaction, individuals are constantly looking for a certain degree of psychological safety. In particular, emerging through a process of social validation based on behaviour routinisation, a sense of ontological security is often researched to explain the nature and the type of phenomena which make up the organisational reality. Thus, besides the explicit rationalisation of action through the employment of what Giddens (1979) called discursive consciousness, individuals tend to reinforce unconsciously the legitimity of their patterns of interaction.

In the context of Electra, the potential for corporate leaders to rely on such a need for ontological security in promoting employees identification with the values and strategies of the new owner was based on the principle that "If you don't want to change, don't be privatised". This consolidated the view that the enactment of the new management accounting rules and routines were unavoidable in the organisation. In addition, the psychological safety in Electra was enhanced by the holding company, because it decided to replace only the board of directors and retained the majority of the middle-managers and other employees in the first years after privatisation. Therefore, despite the intense process of organisational change, there was a sense of job security among the managers and employees of Electra.

The process of enactment of the new management accounting practices was a top-down process, that is, the process started with the holding company and then Electra's board of directors was responsible for the implementation. As discussed previously, the process of management accounting change was mainly a response from the regulatory demands and the new needs of the private owner. As a consequence, the process of enactment was strongly supported from the beginning by Electra's and the holding company's board of directors. The board of directors had a consensus about the importance of enacting the new management accounting systems (budgetary system; performance measurement system; and reporting system) in Electra. The management accounting systems were used in Electra to improve the management process of the company, as well as, an instrument to communicate the company's new strategy in terms of Management by Objectives, profit-orientation, and cost reduction.

The support of top managers facilitated management accounting practices implementation in Electra. However, Electra adopted an autocratic management style to enact the changes in management. This approach was similar to the Omega's case presented by Yazdifar, et al. (2008). In this case, the adoption of autocratic management style was used to justify the need for change and to break established frames of meanings in Omega and implement its own systems. Jones (1992) points out that the explanation and justification of the change programme before it is imposed has a major impact on the successful imposition of the change programme in M&A (merger and acquisition) and management buyout. He also comments that at time of crisis such as under M&A and privatisation, a more assertive style of management is perceived as relevant to the management of crisis and can lead to a successful change programme.

Another important aspect in the process of enactment was the implementation of an ERP system in the organisation. The implementation of an ERP system in the organisation helped the enactment of the new management accounting practices, because the new ERP system redesigned the company's processes and represented the rupture from the previous management system; therefore, the ERP system supported the view that management accounting system had to be changed to accommodate the new company's strategy. Electra's former CEO commented:

> *"A company that was privatised needs to implement a transformation programme in order to make quick investments on systems that can reduce the company's operational costs. What are these quick investments? First, the company needs a corporative system. There was no corporative system before the privatisation. Basically, there were isolated systems in the organisation. Therefore, it was important to implement a corporative system. Then, the decision was to adopt the SAP system."*

One Manager of the Planning and Control Department, who was responsible for the budgetary system, commented about the relationship between the ERP system implementation and changes in the budgetary system:

> *"The ERP system was implemented in the organisation and the company's process changed to accommodate this system (...). The implementation of ERP system was important, because it was the right moment to disseminate the budgetary concepts and practices. It was a good moment to train the managers and employees how to use our budgetary system. So, the implementation of the ERP supported a lot the introduction of the changes in the budgetary system."*

In this case study, the process of enacting the routines and rules of the new management accounting model was powered by the efforts of training and diffusion. It was observed from the field research that the planning and control area of the organisation was very active in training the managers in the concepts of the management accounting systems, in particular, the budgetary system and performance measurement system. For instance, the performance measurement system was disseminated in the organisation and there were 40 performance coordinators who were responsible to feed the performance measurement system with the actual results of each department and unit of the organisation. The Manager of the Planning and Investment Department commented:

> *"The diffusion of the management accounting practices in the organisation was made through meetings and presentations. The*

> *diffusion started with the managers and later the practices were disseminated to the employees."*

Institutional theory postulates that an institution gives social meaning to persons and allows for their integration in the group (Scott, 2001). In the case study, management accounting practices offered social meaning to the managers, in particular, operational managers. According to the new management model, the managers were evaluated through objectives and goals set for the company as a whole, their superintendency, and their department. As discussed before, this evaluation linked to the remuneration system supported the enacting process; and as a consequence, the level of acceptance of the new management accounting systems by the engineers and operational managers. The Head of the Accounting Department stated:

> *"These changes impacted on the most sensitive part of the human body: "the pocket". The acceptance of the new system was made by financial rewards, because the economic and financial objectives are part of the corporative objectives (...). These three financial objectives (profit, EBITDA, and reduction of the operational expenditures) are objectives of all departments and managers. So, all the managers started to control and evaluate these indicators. A numbers of engineers went in the accounting department to ask how they could improve the EBITDA and where they could act to increase the company's EBITDA. This was a dream some years ago, that is, an engineer looking for the economic and financial result of the company!"*

Guerreiro (2006) point out that an institution can be characterised as something stable that prevails and continues. The analysis of the case study reveals that the management accounting system was still being used by the company's managers seven years after its initial implementation. Barley and Tolbert (1997, p. 96) state that "institutions that have a relatively short history or that have not yet gained widespread acceptance are more vulnerable to challenge and less apt to influence actions". The next subsection provides more evidence about the process of institutionalisation of the management accounting changes introduced into Electra after privatisation. This thesis moves now to explain the third stage of the process of institutionalisation based on the Burns and Scapens (2000) framework: the reproduction stage.

8.3.2.2.1 Reproduction

The third step (reproduction) takes place as the continuous enactment of repeated patterns of behaviour leading to a social reproduction of the values embedded in these routinised activities. Thus, through a recursive process of enacting and reproduction, management accounting systems drive organisational culture's values across time and space. In other words, as stated by Burns and Scapens (2008, p. 93), the third process in the institutionalisation process "represents the reproduction of rules and routines over time, i.e., repeated use in practice". Therefore, in order to explain the process of reproduction in Electra, it is important to take into consideration the point made by Soin, et al. (2002, p. 255). They point out that "one key question in evaluating the changes revolves around the issue of reproduction (arrow c). Do the changes become incorporated into new routines and rules or are they simply 'one shot' interventions?".

Burns and Scapens (2000) highlight that the reproduction of the rules and routines may involve either conscious or unconscious changes, as rules are not always necessarily put in practice as they were originally intended (Burns and Scapens, 2008). Burns and Scapens (2000, p. 10) explain:

> "Conscious change is likely to occur only if actors are able to assemble the resources and rationales necessary to collectively question the existing rules and routines. However, unconscious (i.e. unintended) change may occur in the absence of systems to monitor the execution of the routines and where the rules and routines are not sufficiently understood and or accepted by the actors".

In the context of Electra, the idealised set of management accounting rules and routines were reproduced (put into practice) in the organisation. Therefore, the conscious and unconscious changes explained above and predicted by Burns and Scapens (2000) were not observed in Electra. The conscious change did not take place, because the actors did not have the power to question the new management accounting practices. As discussed before, the changes were imposed by the holding company and the organisation had to accept and play according to the "rules of the game". In the same vein, unintended changes did not take place, because Electra's and the holding company's managers monitored strictly the process of implementation and reproduction of the new management accounting practices, as one of the aims of the holding company was to standardise the management accounting practices among the companies of the group. As a consequence, they paid especial attention to the process of reproduction in order to harmonise the management accounting systems.

Institutional theory postulates that an institution realises forms of thinking and acting that are held in common by a group of persons (Jarvenpaa, 2009). This case study shows that the routines of management accounting are actually used and it realises forms of thinking and acting that are held in common by the managers, including engineers. Management accounting was accepted on the basis of its indicators and control mechanisms. Thus, this indicates the tendency of the managers to act according to the 'rules of the game'. The people interviewed emphasised the role of management accounting in driving performance through budgetary targets, which reinforced the view that the variable remuneration based on performance measures was an important instrument in the process of management accounting change in Electra. In the case of Polymer presented by Burns et al. (2003), management accounting was also used as an instrument to support the organisation change, as Burns et al. (2003, p. 37) state that "as the new systems were being implemented they were perceived as being part of, and essential support to, the process of cultural change". The following quote from the Head of the Planning and Control department illustrates the level of management accounting utilisation in Electra:

> *"I believe that we achieved our objective, because the managers use the information and reports prepared by our department. The corporate objectives impacts on the variable remuneration; therefore, the managers are using the information to evaluate their performance (...). The managers' activities are monitored based on management accounting information. So, they understand more the information than us, they know that any problem that we do not know will impact on the company's financial results (...). I will test, I will ask everybody about the performance measurement system and what are their objectives. Everybody knows and will answer that question. From the Company's CEO to the shop floor, everybody knows the company's objectives."*

During the interview process, the interviewer asked all the interviewees one question about the utilisation of management accounting, as well as asking for the interviewees to explain how the management accounting system operates in Electra. From the answers of these questions, it can be stated that the majority of the interviewees understand and use the management accounting systems, in particular the budgetary and the performance measurement accounting systems. One Manager of the Planning and Control Department commented about the importance and utilisation of the budgetary system:

> *"Budget was disseminated in the whole organisation, everybody knows and understands how to use and modify the budgetary system. The employees know that they will be evaluated in accordance with the budgetary targets (...). Achieve the budgetary targets is one objective of the company, actually, it is one objective of all employees, units, and departments. Then, there is this concern about controlling the budgetary performance (...). After the privatisation, budget is a management instrument; before the privatisation we did not have this view regarding budget."*

The monthly meeting to present the company's performance was identified as an important activity to support the reproduction process of the management accounting changes in Electra. This meeting was organised and presented by planning and control department. The main objective of this presentation is to discuss the status of the 10 key performance indicators of the organisation. This meeting of performance assessment was deeply institutionalised in Electra. The presentation of management results was based on information of management accounting to all Electra's managers. This presentation was considered as one of the most important organisational rituals introduced after privatisation. The Head of the Supply Department commented:

> *"Monthly, there is a presentation organised by the planning and control area to show the company's performance. The head of the planning and control departments presents the profit and other indicators. So, it is one day to discuss and evaluate our performance (...). I believe that this meeting supported the dissemination of the new company's culture based on management by objectives."*

The encoding routines and rules of management accounting that have been designed for the company were accepted and were enacted and reproduced as originally planned by the holding company and Electra's board of directors. This thesis now moves to explain the final stage of the process of institutionalisation based on the Burns and Scapens (2000) framework: institutionalisation in itself.

8.3.2.2.1 Institutionalisation

Burns and Scapens (2008) state that after the process of reproduction, that is, repeated use of the new management accounting systems in practice. Over a much longer period of time, the rules and routines become taken-for-granted, i.e., institutionalised. According to the authors, this final step is normally gradual and indirect. Burns and Scapens (2000, p. 11) also explain that the process of institutionalisation:

> "involves a disassociation of the patterns of behaviour from their particular historical circumstances, so that the rules and routines take on a normative and factual quality, which obscures their relationship with the interests of the different actors. In other words, the rules and routines become simply the way things are, i.e. institutions."

Busco (2006) also explains that this last step of institutionalisation involves a deep cognitive transformation of the organisational values to become the shared taken-for-granted assumptions, or institutions, which provide the unquestioned basis for social interactions. They become "so taken for granted that someone who does not hold them is viewed as a 'foreigner' or as 'crazy' and is automatically dismissed" (Schein, 2004, p. 25). The view that the four step of the process institutionalisation is gradual and indirect can be seen on the Manager of the Planning and Investment Department comment:

> *"The incorporation of the management accounting practices was gradual. The diffusion of the management accounting practices in the organisation was made through meetings and presentations. The diffusion started with the managers and later the practices were disseminated to the employees."*

As discussed previously, the utilisation of the performance measurement system (PMS) information and the budgetary information was spread across the whole organisation and the employees started to talk the "accounting language", in particular the performance measures that have impact in the remuneration system, such as EBITDA and operational expenditures. One of the major concerns during the data collection was how to evaluate that the management accounting changes were institutionalised in the organisation. In order to perform this evaluation all the interviewees were asked to explain the management accounting systems and how they used the management accounting systems. It is possible to state that the new budgetary system, the new performance measurement system, and the new reporting systems were institutionalised in the organisation based on the answers of these questions and documents analysis. However, Guerreiro, et al. (2006) point out that institutionalisation is a matter of intensity and is very difficult to know for sure that a new routine has or has not been institutionalised in the whole organisation. They commented that the degree of acceptance of new routines can vary according to different group inside the organisation. In the case of Electra, the level of institutionalisation and acceptance was different among the operational managers and the administrative managers. This can be considered normal due to the nature of the work performed by the engineers, but overall the new management accounting system can be considered institutionalised in the organisation and all the interviewed managers used to some extent the information provided by this system. The Superintendent of Engineering commented:

> *"Nowadays, the engineering area has more management tools. We receive much more information. The engineering area takes part in the discussions regarding the regulatory, financial, and commercial issues. Therefore, there was a sort of obligation for the engineering departments to take part in the commercial, financial, and economic processes in order to improve our understand about the organisation; and as a consequence, this improved our operational performance."*

Institutional theorists advocate that institutions are realised in the form of organisations' actual artefacts and rules (Scott, 1987). The analysis of this case identified concrete artefacts of the organisation, involving the performance measures systems, budget system, and the management accounting reports. These routines corresponded to formalised habits and incorporated desired behaviours and procedures guided by rules, especially in the evaluation of the company's performance. Other types of artefacts that gave form to Electra's management accounting were procedural manuals, the meetings of planning process, and the performance evaluation meetings. Scapens and Roberts (1993) point out that rules and routines are related, but in some case they can be different, that is, management accounting practices and usage might not replicate the systems described in procedural manuals. The analysis of the case reveals that the new concepts were translated into the organisational rules and routines, and that these were realised not only in the form of procedural manuals, but also in corporate software systems, indicating that the new concepts were consolidated in the organisation.

To sum up, the most important factors in the institutionalisation process of management accounting in Electra were:

- Creation of a specific area in the organisation with a clear objective/mission to provide management accounting information;
- Compatibility between company's strategy and the management accounting system implemented after privatisation;
- The formalisation of new management accounting practices into rules (as incorporated into procedural manuals);
- The incorporation of new management accounting concepts into Electra's corporate information systems;
- The association between performance measures and the managers' performance evaluation, that is, the relationship between the performance measurement system and the managers' variable remuneration; and
- The diffusion of new management accounting practices and concepts through presentations, meetings, and training.

To conclude, the process of management accounting change in Electra had the same elements of the cases of successful changes presented by Burns et al. (2003), as the process of change in Electra had powerful support for the new system, communication throughout the company, and involvement at all levels, in particular the top management team. In addition, the implementation of the changes was backed up by extensive and intensive training, as well as it was supported by adequate amount of resources.

8.3.2.3 The Balanced Scorecard (BSC)

As discussed in section 7.4.2, the BSC implementation started in 2005 when the holding company decided that all the organisations of the group had to adopt the BSC as a performance measurement system. The BSC system was firstly implemented in another distribution company of the group. After the process of restructuring which took place in mid 2004, the holding company established that the management and control systems should be standardised among the different companies of the group. As a consequence, the BSC was imported from this distribution company. However, BSC has not been capable of replacing the budgetary control system and performance measurement system implemented just after the privatisation in mid 2000. Therefore, the BSC was not institutionalised in the organisation and it became decoupled from the managers and employees' day-to-day activities.

This section explains the implementation of the Balanced Scorecard as a case of unsuccessful change (Burns, et al., 2003) by adopting the thesis theoretical framework. This model contemplates cases of unsuccessful change at the intra-organisational level. After the process of encoding of the new set of routines and rules, the new practices should be enacted in the organisation. According Burns and Scapens (2000), during the process of enactment the new practices can be accepted and reproduced on day-to-day basis; or the new practices can be subject of resistance that can lead to the end of the change initiative or the practices can be decoupled from the day-to-day activities of the company. As stated previously, in the case of Electra, the Balanced Scorecard was decoupled from the managers' day-to-day activities.

At the intra-organisational level, the thesis theoretical framework adopted the Seo and Creed (2002) view that institutional contradictions trigger human praxis to introduce change into the organisation. In the Balanced Scorecard implementation, it was observed that decision for using the BSC was not driven by any apparent source of contradiction in Electra. As discussed previously, the implementation of the BSC in Electra was due to the restructuring process of Electra, when the holding company decided to reinforce the need of harmonising the management accounting practices among the companies of the group. The BSC was implemented in Electra's parent company in 2003 and the holding company decided to adopt the BSC in the other organisations in 2005. The Manager of the Planning and Control of Electra's parent company explained:

> *"The BSC started to be implemented in the company in 2003. The company's CEO was a foreigner manager and he spent some time on the holding company's headquarter in Europe, where he had contact of this toll. After this visit, he decided to implement the BSC in the organisation with the support of the planning and control department. After that, the BSC project was presented to the holding company and holding company decided that all companies should adopt the BSC methodology."*

From the interviews and document analysis, it is not clear the specific reason to adopt the Balanced Scorecard in Electra. The Director of Planning and Control of the Holding Company reinforced this perception by commenting:

> *"There is no specific reason to use the Balanced Scorecard methodology. One manager in one company of the group did a dissertation about the Balanced Scorecard in our group and I liked the idea and I decided that the other companies should use the same methodology. That was the reason."*

The decision to implement the Balanced Scorecard was not driven by the needs of business, such as the need of a balanced approach to address the growing complexity of business and business environment. It seems that the implementation of the Balanced Scorecard was somehow connected to the concept of fads and fashion on the diffusion of management practices (Abrahamson, 1991; Ax and Bjornenak, 2007; Ax and Bjørnenak, 2005; Malmi, 2001; Perera, et al., 2003). Perera, et al. (2003, p. 149) explain that: "Fashion, in adoption of innovation, occurs when an organization mimics the 'best practice' technologies of another organization or organization sector with the objective of signalling to stakeholders its consistency with those practices". Regarding the implementation of the Balanced Scorecard, the study of Malmi (2001) on the adoption of the BSC in Finish companies, which was based on 17 organisations, identified that a high number of interviewees mentioned motives which relate to managerial fads and fashion to implement the BSC. In the same vein, the study of Ax and Bjørnenak (2005, p. 16) in the Swedish context found out that: "The communication structure of the BSC in Sweden exhibits obvious features of the fashion-setting process described by Abrahamson". Abrahamson (1996, p. 257) defines fashion-setting processes as: "the process by which management fashion setters continuously redefine both theirs and fashion followers' collective beliefs about which management techniques lead rational management progress". In the context of Electra, the issue of fad and fashion on the diffusion of management accounting practice can be seen on the comment provided by the former Electra's CEO. He pointed out:

> *"The implementation of the Balanced Scorecard was the next stage in the process of Electra's modernisation. Electra's parent company was the pioneer in the development of the Balanced Scorecard in the group. Then, I would say that after some years after the privatisation, it was the time to refine the management and planning systems in accordance with the fashion management theories of the time. These management tools have a strong relationship with fashion."*

From the analysis of this statement, it is possible to state that while there some technical justifications for BSC adoption in Electra, the specific choice was also largely influenced by the legitimacy of the BSC established by the disseminators of the BSC, industry associations and public opinion. Positive feelings about the legitimacy the organisation can obtain from having implemented BSC helped secure an initial support for BSC from the Electra and holding company's top managers. A number of organisational actors believed that BSC could help Electra create a 'modern' image and gain legitimacy from the public opinion. However, this is not to suggest that the organisation was simply forced by external institutional pressures to adopt the BSC for legitimacy purpose. In general, it is not possible to reach a clear decision as to whether the adoption of a particular management model was for technical or legitimacy reasons. It is recognised that some accounting scholars have attempted to identify whether the motive for the adoption or imitation of a new management model is based on technical, rational consideration of efficiency, or driven by the desire for legitimacy and based on fad and fashion (Hussain and Hoque, 2002; Malmi, 1999; Tsamenyi, et al., 2006). However, findings from these studies suggest that efficiency and legitimacy forces were intertwined (see Powell, 1991), and it is difficult, if not impossible, to identify which force was stronger. However, in the case of Electra, it is possible to state that the search for external legitimacy played an important role in the BSC implementation. This statement is supported by the following quote from the Manager of the Planning and Control Department:

> *"The Balanced Scorecard is a management tool that everybody knows. I think that it is a positive system for the company. For example, the utilisation of Balanced Scorecard is positive, because the quality auditors, when they come to evaluate our management system, they recognise the BSC as a modern management tool (...) The Balanced Scorecard is also important to the ABRADEE's award, because we score more point with the utilisation of the Balanced Scorecard. Besides, the use of the BSC is also recommended by ABRADEE and National Quality Foundation (FNQ)."*

Nørreklit (2003) provides a rhetorical analysis of the Balanced Scorecard. She explains that the so-called management 'guru concepts' have become very popular and that academically more tenable theories remain unnoticed. Nørreklit (2003) points out that readers are normally open to new models even though distinguishing between what is good or what is bad may be difficult. As a consequence, due to the impressionist style of the 'guru' literature, its level of acceptance tends to be high. Based on rhetorical analysis of the Balanced Scorecard, Nørreklit (2003) provides five explanations for the Balanced Scorecard popularity. The third explanation is particularly important for this research, because this goes in line with the point made previously about the utilisation of the Balanced Scorecard as a source of external legitimacy. Nørreklit (2003, p. 612-613) elucidates the third explanation about the BSC popularity:

> "A third explanation is that organisations and their employees need to show themselves and their surroundings that they are in control of the uncertainty involved in their jobs. If people or organisations are in doubt and need to handle their own uncertainty, they justify themselves to the world. They do so by becoming isomorphic relative to their surroundings and adopting the behaviour of others (...). So the motivation for acquiring new instruments of control does not lie exclusively in the wish to introduce rational processes. It also lies in the wish to have the instruments serve as representations and ceremonies leaving the managers with enhanced ethos and engendering the approval and acceptance of the social environment towards the organisation."

In the same vein Alvarez (1998, p. 22) points out that control and hierarchies:

> "may also serve as representations and ceremonies aimed at gaining the 'approval' of the social environment towards the organization, a sort of 'exorcism' intended to ward off the evils of the uncertainty brought by 'turbulent' environments, which are difficult to know, and even more difficult to predict, especially in regard to how they are going to react upon our intervention on them."

In the case of Electra, it is clear that there was pressure from the industry and especially from the public (see subsections 8.3.1.3 and 8.3.1.4) to legitimise Electra's privatisation. As discussed previously, the privatisation was severe criticised by members of the Brazilian society, especially due to the considerable increase in the electricity tariff in Brazil. As a consequence, Electra had a great concern about its image as a modern, organised, and well-managed company. The Balanced Scorecard played a role in this process of improve the company's image, as Staw and Epstein (2000) point out that companies that are associated with popular management techniques (such as the Balanced Scorecard) are more admired, perceived to be more innovative and rated higher in management quality. Staw and Epstein (2000) also show that popular management techniques are appealing to top managers, as they provide the management profession with legitimacy and further their interests as chief executives in companies associated with these techniques in that they received better pay. In the context of Electra, the relationship between the Balanced Scorecard and the company's image can be observed in the following quote from the head of management department of Electra:

> *"It is a popular saying 'we do not need to be honest, we should show that we are honest'. So, nowadays, there are a range of instruments and systems that we should show that we are using to get recognition from the market and society. It is crucial to improve the company's image (...). So, it is important to demonstrate to our employees and the society that Electra has a modern business model and we have been gotten good results, because the company is going in the right direction with the adequate management systems and tools."*

Then, instead of attempting to further identify whether the implementation of the Balanced Scorecard was the result of economic or institutional force, this study moves on to explain the process of encoding of the new principles based on the BSC, and explains why the Balanced Scorecard was not institutionalised in the organisation, and as a consequence it became decoupled from the company's day-to-day decisions.

The encoding process represents the translation of the Balanced Scorecard principles into a set of rules and routines. Electra's Balanced Scorecard team developed the performance measurement cause-and-effect matrix and the strategic map of the company based on the four perspectives of the Balanced Scorecard: learning and growth, internal process, customer, and financial (see figure 7.7). The idealised Balanced Scorecard system did not practically change the performance measurement system implemented after the privatisation, which was based on 10 KPIs. The Balanced Scorecard concepts were mainly used to classify the performance measures into the BSC's four perspective. As a consequence, the BSC was not used as a system to translate strategy into action as Kaplan and Norton (1996) suggested. In addition, the discussion about the concepts and diffusion of the Balanced Scorecard was concentrated in the planning and control department and the other managers did not take part in this process. The former Head of the Planning and Control department comment:

> *"The conceptualisation of the Balanced Scorecard was concentrated in the planning and control department. There was no interaction with the top management team and the other departments of the company to discuss the BSC (...). So, the planning and control department was the main player in the BSC conceptualisation maybe because the ideas and the strategy map were based on our parent company implementation."*

The Balanced Scorecard principles were incorporated in Electra's procedural guidelines, that it, the BSC was translated in terms of rules and routines, but during the process of enactment (Burns and Scapens, 2000), the Balanced Scorecard practices became decoupled from the day-to-day activities of the company. Decoupling refers to the situation in which the formal organizational structure or practice is separate and distinct from actual organizational practice (Meyer and Rowan, 1977). Dillard et al. (2004) conclude that when the decoupling process occurs, the practice is not integrated into the organization's managerial and operational processes. Therefore, in the case of Electra, using the above definition, the BSC practices were not integrated into the company's managerial and operational practices.

Accounting studies which have drawn on New Institutional Sociology (NIS) theory have tended to view decoupling as an organisational response to external pressure to implement new management practices (Carruthers, 1995; Cruz, 2009; Siti-Nabiha and Scapens, 2005). The view is that the company attempts to secure legitimacy from external entities by implementing the new management routines, but at the same time decouples them from day-to-day operations in order to maintain the technical efficiency of the organisation. Meyer and Rowan (1977) state that organisations tend to avoid the dysfunctions that could be generated by imposing new institutional systems that are designed to secure external legitimacy by decoupling them from internal management and operational systems. However, Siti-Nabiha and Scapens (2005, p. 48) point out that this view of decoupling is narrow and it has the following problems: "(1) the simple dichotomy between institutional and technical systems; (2) whether the technical can effectively be decoupled from the institutional; and (3) the simplistic treatment of power and politics". Taking these criticisms into account, Siti-Nabiha and Scapens (2005) conclude that decoupling can be generated by the organisational response to external pressure (which is the view of the early institutional theorists), but the decoupling process can also be the working out of a complex and dynamic process of resistance to organisational change.

In the context of Electra, a number of reasons contributed to the fall of the Balanced Scorecard project. According to many interviewees, the main reason for the unsuccessful implementation of the BSC was the management style adopted in the company after the restructuring process. This management style focused on the short-term financial performance of the organisation, that is, the top managers' (specially the holding company's CEO) inclination was to look at financial matters, rather than the BSC four perspectives, as the basis of companies success. The financial perspective was the predominant one and the top managers emphasised the short-term financial targets, such as profit, cost reduction, and EBITDA. As a consequence, the other BSC perspectives became symbols that legitimise the persistence of the financial perspective. Therefore, the Electra's BSC became unbalanced, as the top managers focused on short-term financial performance measures. An incontrovertible piece of evidence of this problem was budgeting. The BSC project has not been capable to replace the budgetary control system, and it persisted as the most important organisational management system to support the planning, controlling and motivating processes in the organisation. The Electra case is similar to the case described by Wickramasinghe, et al. (2007) about the implementation of a Balanced Scorecard project in a Sri Lanka firm. This implementation was unsuccessful due to the decline of interest on the part of the owner-management and the top management team. The Commercial and Market Superintendent commented on the importance of the BSC in Electra:

> *"The Balanced Scorecard does not have any importance for Electra, because of the company's characteristics. To be honest, the CEO of the holding company centralises the making decision process and he does not use the Balanced Scorecard, he focus his analysing on the budget of the company (...). As the CEO does not use the BSC there is no incentives to the other managers to use it (...). The company is extremely focused on financial measures. Therefore, there is no reason to use the Balanced Scorecard in Electra."*

Norreklit (2000) highlights that the Balanced Scorecard model is a hierarchical top-down model and that it is not easily rooted in a organisation. This was another problem of the Balanced Scorecard implementation in Electra. Norreklit (2000) suggests that in order to be effective the BSC has to be rooted in the management and organisation. This author states that when the scorecard fails, some of the essential barriers to it becoming a success are a lack of any firm rooting in the management and the players. The management needs to provide resources and the project needs to be rooted in the organisation if the scorecard is to be successfully implemented. Norreklit (2000, p. 79) conclude:

> "The control and implementation procedure of the balanced scorecard does not ensure this rooting. First of all, the managerial rooting may pose problems. Such rooting requires the scorecard to fit the concepts and relationships which the management use when the company formulates its strategy and vision. It has to be part of the management's language, any unilateral technical solution may mean that relevance is lost. It has to offer support to the managers when they try to understand business situations, plan or control, and when they solve problems"

Therefore, it may be difficult to get the Balanced Scorecard rooted with the employees due to hierarchical and top-down characteristics of the Balanced Scorecard (Norreklit, 2000). In the case of Electra, the lack of support of the

Balanced Scorecard among the managers and employees is evident. The managers and employees did not understand the differences between the Balanced Scorecard and the company's performance measurement system based on the Management by Objectives (MBO) principles. The main reason for this lack of support was the fact that the BSC system was not linked to any kind of personal evaluation or incentive system. Although Electra had recently adopted a performance measurement philosophy similar to that of the BSC at the employee level, that is, Electra replaced the subjective performance appraisal system based on 'trust' with a new system focusing on objectives, personal attributes, and some quantitative KPIs, Electra did not use the BSC as a basis for organisational members to develop personal scorecards.

Another factor that contributed for the lack of support of the BSC utilisation was the Electra type of business, which can be characterised as natural monopoly. Therefore, the company operated in a regulated industry as a private monopoly. As a result, the scope to create new strategy is narrow and the organisation tends to use the same set of performance measures along the years. A number of managers did not perceive the usefulness of the BSC in the Electra operations. The Former Superintendent of Planning and Control commented:

> *"When I analyse the Balanced Scorecard, I see the applicability of this system on a company that have many competitors and need to compete for market share. I understand that the BSC is appropriate for a company that is in competitive market (...). But, if you go to the company, they have everything there: the process map and the strategic map. You can find everything about the Balanced Scorecard, but the BSC did not take off, on day-to-day basis the Balanced Scorecard was not internalised. The BSC is just another term. It is not rooted on the organisation. (...). I cannot see another interpretation for the Balanced Scorecard in a regulated utility company. Those companies that operate as private monopoly utility companies which their revenue depends on the regulator, the consumers are not so important in the companies' strategy. The consumers want low tariffs and they will have a good product, but they do not establish the company's revenue (...) the regulator sets the company's tariff, and therefore I believe that the regulator is more important than the consumers to the financial success of the organisation. This confusion undermines the utilisation of the Balanced Scorecard in Electra."*

The above quote shows the view that the BSC is inappropriate for Electra. This quote represents the view of the main personnel responsible for the implementation of the

BSC in Electra. So, if the main personnel responsible for the diffusion of the BSC in the company did not believe it is important for the company, what could be expected from the other managers and employees? The result was the decoupling of the BSC from the management and operational activities of the company.

Another problem during the BSC enactment process was the overlapping of competing techniques introduced during the BSC enactment process. After the restructuring process in Electra, the company introduced a massive effort in terms of internal control systems to comply with the Sarbanes-Oxley (SOX) act (see section 7.2.4) and to certificate the company in accordance with the ISO requirement (see section 7.2.4). Electra also started to use the 6-sigma methodology to reduce costs in 2008. The Electra planning and control area was responsible for the implementation of all of those initiatives; and as expected, this area had to prioritise the project regarding the internal control system of the organisation, because it was a key objective of the board of directors that took over after the restructuring. As a consequence, the Balanced Scorecard project was relegated and the BSC momentum had passed. The former Superintendent of Planning and Control pointed out:

> *"The Balanced Scorecard is just a term in Electra and it was not internalised in the organisation. To be honest, I concentrated my efforts on improve the company's internal control system and to improve other areas of the company. I think that the BSC project was a bit relegated in this period."*

Therefore, in the process of BSC implementation in Electra there were some elements of fad and fashion as the initial initiative of implementation faded away due to lack of supporting from the top management team and holding company. In the case presented by Busco et al.(2007b) about the implementation of the Balanced Scorecard in a Middle-East Gas and Oil Company (MEGOC), the authors questioned the novelty of the Balanced Scorecard in the case company by asking whether it is the result of transitory fads and fashions or of more profound reflections on effective organisational needs for such a new system. In Electra's case, the BSC implementation was the result of transitory fads and fashion based on that view from Busco et al.(2007b). Busco et al.(2007a) explain the concept of fads and fashion on the diffusion of management accounting practices by taking into account the process of globalisation and internationalisation. They state that market globalisation has led to strategies of merger and acquisition, and has encouraged organisations to secure competitive advantage through process of standardisation and world-scale efficiency. Busco et al.(2007a) conclude that in the resulting uncertain market environment, the challenge facing a organisation is the ongoing alignment of local business processes with global corporate strategies as it continuously adapt how it does things to compete successfully.

8.3.2.4 Discussion

This subsection discusses the successful and unsuccessful cases of management accounting change in Electra by comparing the main characteristics of those changes in the light of the thesis theoretical framework. As a result, the aim of this subsection is to answer the following question: Why were the first set of management accounting changes institutionalised and the Balanced Scorecard was not?

While the first set of management accounting changes in Electra, namely: new budgetary system; new performance measurement system; and new reporting system, was introduced just after the process of privatisation in 2000, the Balanced Scorecard was implemented in 2005, that is, about 5 years from the privatisation date. This timescale represents the main reason for the difference in terms of success of these management accounting changes.

The thesis theoretical framework adopted the view from Seo and Creed (2002) that institutional contradictions contain the seeds of institutional changes, because contradictions generate conflicts inside the organisation, which create the conditions for institutional change to take place, as group or individuals recognise the need for change. In Electra's case, the level of institutional contradictions was strong after privatisation with the introduction of the new regulatory framework and the change of ownership from state-owned company to private organisation. This caused a revolutionary break on the previous institutions based on public and engineering ethos. As a consequence, management accounting changes were unavoidable due to the strong nonadaptability faced by the company. As predicted by Seo and Creed

(2002), in the case of strong nonadaptability, efficiency gaps and inter-institutional incompatibilities, mediated by institutional crisis, changes in the organisation can happen in a revolutionary manner; and therefore, these changes will not be subjected to resistance and will eventually be institutionalised in the company.

The implementation of the Balanced Scorecard in Electra was not motivated by institutional contradiction as presented by Seo and Creed (2002). As discussed previously, the introduction of the Balanced Scorecard was motivated initially by technical and legitimacy reasons. Greenwood (1984) identified three antecedent requirements that had to be simultaneously met for change to be successful. First, he identified managerial succession at the top of the organisation. The main argument is that the new senior manager will either have an agenda that s/he naturally wishes to pursue, or will feel under pressure to introduce change because those who hired him/her expect change to be made. Second, Greenwood (1984) identified the perception of a serious crisis in company performance, whether real or fabricated, that has become widely shared among members of the company. Third, Greenwood (1984) identified a 'better' accounting system as a replacement for an inferior system current in use.

In the case of the BSC implementation in Electra, these three elements were present to some extent, as the new board of directors was appointed after Electra's restructuring process; the company was facing poor financial performance due to the Brazilian electricity crisis in 2001; and the supporters of the BSC in Electra claimed that the Balanced Scorecard was superior than the performance measurement system used in the company. However, the implementation of the Balanced Scorecard was unsuccessful, as it was not institutionalised in the organisation. The BSC case in Electra is similar to the case of the EVA (Economic Value Added) implementation in RetailCo presented by Burns et al. (2003). They author argue that the three Greenwood's (1984) antecedents to change were present in RetailCo, but it was an unsuccessful change. Burns et al. (2003, p. 26) conclude that "what is missing from Greenwood's framework is sufficient attention to the alignment between the assumptions embodied in the new change initiative and the existing institutionalised rules and routines". In the same vein, the institutional theory postulates that institutionalisation is an adaptive process, once in place, institutions are likely to be both psychologically and economic locked in (Burns and Nielsen, 2006; Scott, 1987; 2001). It seems the case of the Balanced Scorecard in Electra, as the performance measurement introduced after privatisation was strongly institutionalised in the organisation; the Balanced Scorecard was not able to supplant this system. As a consequence the BSC was not accepted and did not take root as values and beliefs in the organisation. According to Seo and Creed (2002), the embedded institutions can be modified or supplanted with the accumulation of institutional contradictions that will trigger human praxis to introduce changes, that is, contradictions lead to a reflective shift in consciousness which leads to actor mobilisation which leads to collective action to introduce changes. In the BSC case in Electra, institutional contradictions were practically absent; and as a consequence human praxis was not enabled to use the BSC on day-to-day basis. Therefore, the Electra's case provides empirical evidence regarding the main point made by Seo and Creed (2002) that the accumulation of institutional contradictions is the seed to successful changes in an organisation.

Burns et al. (2003, p. 37) summarise the successful case of management accounting change in the Polymer case by stating that:

> "(...) it is important for a successful implementation to have powerful support for the new system, communication throughout the company, and involvement at all levels. It is also important for change implementation to be backed up by extensive and intensive training, as well as adequate resources for the implementation process".

In Electra's case, the first set of management accounting changes had all the above elements. The management accounting changes had powerful support from the top management team and holding company. The new systems were communicated throughout the organisation and involved all departments of Electra, including the operational areas. The changes were also backed up by a comprehensive training programme with adequate amounts of material resources. In addition, the process of management change was initiated by an institutional crisis which was caused by strong nonadaptability, inefficiency gaps, and institutional incompatibilities (Seo and Creed, 2002). Therefore these institutional contradictions enabled human praxis to introduce changes and supplant the previous institutions by generating a reflective shift in consciousness, actor mobilisation, and collective action (Seo and Creed, 2002).

On the other hand, the Balanced Scorecard did not possess the above characteristics of a successful management accounting change. The BSC initially was supported by top management team, but after some months, the BSC was not a priority in the organisation anymore; and as a consequence the BSC lost powerful support. The BSC was poorly communicated throughout the organisation, as its implementation and design was concentrated on only one unit of the company, namely: the department of planning and control. In addition, there were sporadic episodes of training about the BSC and this project did not receive enough resources, especially in terms of computational systems. Finally, as discussed previously, the BSC initiative was not motivated by institutional contradiction (Seo and Creed, 2002), as its motivation was initially based on technical reasons and lately on legitimacy reasons. As a result, the institutional contradiction did not trigger human praxis (Seo and Creed, 2002) to use the BSC on day-to-day basis. Therefore, the Balanced Scorecard was not institutionalised in the organisation, as the BSC was not able to supplant the previous performance measurement system.

The thesis moves on to explain the importance of the thesis theoretical framework in explaining the process of management accounting change in Electra. In addition, this next section summarises the process of change in the light of the theoretical framework model.

8.4 Theoretical Framework and Electra's Case

The idea of combining previous theoretical frameworks, namely Dillard et. al. (2004); Seo and Creed (2002); and Burns and Scapens (2000), was initially motivated by the paper: '*Understand management accounting practices: a personal journey*' by Scapens (2006b). This paper reviews the changes which have taken place in management accounting research over the last 35 years based on the author's personal journey. Scapens (2006b, p. 1) argues that "to make sense of diversity in management accounting practices we need to understand the complex mish-mash of inter related influences which shape practices in individual organisation". As a consequence, issues regarding the process of change, such as the interplay of external and internal institutions and the role of agency are key in order to fully understand the process of management accounting change in an organisation. Therefore, the initial conceptualisation of the thesis theoretical framework was based on the Burns and Scapens (2000) framework, as well as the issues regarding change highlighted by Scapens (2006b) as limitations and extensions of the Burns and Scapens (2000) framework, such as the interplay of internal and external institutions.

Since the beginning of this PhD project, the empirical data suggested that the process of management accounting change in Electra involved a complex set of pressure from the following entities: regulator, associations, other companies, public opinion (society), the parent company and internal organisational dynamics. As a consequence, the interplay between inter and intra organisational factors was paramount to explaining the process of management accounting change in Electra. The Burns and Scapens (2000) framework does not contemplate the interplay of internal and external institutions. In order to overcome such a limitation, the Dillard et. al. (2004) was chosen, because it provides a comprehensive analysis about the connection between economic and political criteria with the intra-organisational practices. In addition, this framework does not clash with the Burns and Scapens (2000) framework in terms of ontological and epistemological assumptions. Dillard et.al. (2004) also state that the Burns and Scapens framework could be integrated into their model at the organisational level, which was done in the thesis framework in order to explain the interplay of internal and external factors and to explain the process of institutionalisation at the intra-organisational level (for further discussion see section 3.6.4).

The integration of the Burns and Scapens (2000) and the Dillard et. al. (2004) frameworks seemed appropriate to explain the process of management accounting change in Electra, as it was able to explain the influence of external and internal dynamics on Electra's management accounting practices. In addition, this integration was able to explain the process institutionalisation by analysing its four stages: encoding, enactment, reproduction, and institutionalisation. However, both frameworks draw on institutional theory and this theory has been criticised of being unable to explain change and deal with the role of human agency in the process of change. In order to overcome this limitation the thesis framework adopted the ideas from Seo and Creed (2002), which are based on the dialectic perspective, to explain the influence of institutional contradiction and human praxis on the process of organisational change.

To sum up, by combining these three frameworks, the thesis theoretical model aimed to address the issues highlighted by Scapens (2006) as essential to explaining the process of management accounting change in an organisation. In addition, the thesis framework was designed to be able to analyse the social and political dynamics of the external environment that had an influence on Electra's management accounting practices, as well to analyse the intra-organisational dynamics involved in the process of change.

Section 8.2 and 8.3 used the thesis theoretical framework model to explain the process of management accounting change in Electra. It is important to evaluate the importance of the thesis theoretical framework in explaining the Electra case, as well as to discuss the model's limitations. Section 8.2 used the Dillard el. al. (2004) constructs to articulate the three levels of analysis: economic and political level; organisational field level; and intra-organisational level. This analysis was based on the structuration concepts of legitimation, signification, and domination. Therefore, it was possible to understand the interconnections between these levels and the impact on the intra-organisational structures that influenced the process of management accounting in Electra. After that, section 8.3.1 discussed at length the drivers of change which forced the introduction of changes in Electra.

The Seo and Creed (2002) framework was used mainly on section 8.3.2.1, that is, at the sub-level of change in the thesis theoretical framework. The Seo and Creed (2002) view that institutional contradiction is the mediate element between drivers of change and human praxis to introduce change is essential to explaining the process of change and institutionalisation. In Electra's case, successful and unsuccessful cases of management accounting change were discussed. It was identified that there were strong contradictions in the cases of successful change. These strong contradictions triggered human praxis to introduce management accounting changes which were accepted and took root as values and beliefs in the organisation. On the other hand, institutional contradiction was absence in the case of unsuccessful change (Balanced Scorecard implementation); and as a consequence, the Balanced Scorecard was not institutionalised in Electra. Therefore, the Seo and Creed (2002) framework supported the understanding of the reasons for a successful process of organisational change. Finally, section 8.3.2.2 used the Burns and Scapens (2000) framework to link the sub-level of change and practice level in the thesis theoretical framework by analysing the four steps of institutionalisation: encoding; enactment; reproduction; and institutionalisation. The Burns and Scapens framework was essential to explain how the new management accounting practices became accepted and took root as values and beliefs in Electra.

As discussed previously, the research was bottom-up, being focused on Electra, but many explanations lay externally. As a consequence, the theoretical framework was designed to take into consideration the external and internal elements that influenced the process of management change. It is advocated that this articulation between external and internal forces and how those forces shaped management accounting systems was fully explained by adopting the thesis theoretical framework and additional insights from new institutional sociology (NIS), old institutional economics (OIE), structuration theory, and dialectical perspective.

It is also important to discuss the limitations of applying the thesis framework to explain the process of management accounting change in Electra. As discussed previously, the thesis framework aims to provide a comprehensive explanation about the process organisational change by taking into consideration the interplay of external and internal institutions as well as the role of human agency in the process of change. The theoretical framework was able to theorise the interplay of external and internal forces of change in Electra. However, the theoretical framework model was not fully used to explain the role of human agency in the process of organisational change, because of the characteristics of the management accounting process in the case study company. In Electra, there was a massive external impetus for change – the acquisition of Electra by a private company as well as the new regulatory framework – and this led everyone in the organisation to see change as inevitable. Therefore, management accounting changes did not come from within the organisation. As a result, it was not necessary to explore in detail how human praxis was enabled to introduce change in the organisation; as a consequence, the human praxis phases (reflective shift in consciousness, actor mobilisation, and collective action) were dealt with superficially in this thesis. A good example of a piece of research that gives emphasis to the role of human agency at the cognitive level is Steen's (2009) paper: "The role of ambiguity and contradiction between formal rules and routines". This paper explores the introduction of new rules and their effects on existing individual routine behaviours with the purpose of studying the ways in which inertia manifests itself on an individual level in the process of management accounting change.

Another limitation identified by applying the thesis theoretical framework is that the framework can be interpreted as a linear causal model (Andon, et al., 2007; Quattrone and Hopper, 2001) which could by no means capture the complex dynamics possibly involved in the process of change. It is important to stress that the theoretical framework does not assume the process of organisational change is a transition from one well-defined point (stage A) to another (stage B). Figure 8.1 depicts the theoretical framework that can mislead readers to interpret the process of change as being linear. This figure is just a representation of the theoretical grounds to explaining the process of change to support the discussion and analysis. This thesis assumes that management accounting change is a continuous process rather than a series of discrete and identifiable events in organisational life. Therefore, there are overlaps between the events at the three levels of analysis of the thesis theoretical framework: political and economic level, organisation field level, and the intra-organisational level.

8.5 Conclusion and Summary

This chapter has addressed the main aim of this study by explaining how Electra's management accounting system was shaped by both inter and intra organisational factor after the process of privatisation. In order to support achieving this aim, the thesis theoretical framework was applied. In addition, this chapter has discussed the main drivers of change in Electra and has answered two specific research questions:

(a) How did new management accounting practices become accepted and take root as values and beliefs in the organisation?; and (b) When, why and how did organisational actors decide to enact changes in management accounting systems?

First, this chapter has discussed the political and social dynamics of management accounting change in Electra. In doing so, this section articulates the institutional dynamics indicating how criteria and practices are linked over three levels of social systems: economic and political level, organisational field level, and intra-organisational level. This analysis was based on the Dillard et al. (2004) framework by drawing on structuration theory concepts of legitimation, signification, and domination. The legitimation structures moved from engineering values based on the provision of universal service toward financial norms and values to improve Electra's financial performance constraint by regulation. The signification structures reflected the financial discourse based on the concepts of profit improvement, cost reduction and the regulator demands. Finally, the domination structures were represented by the shareholders (holding company) and the regulator after the privatisation.

The core part of this chapter was concerning with understanding the process of management accounting change in Electra by focusing on the intra-organisation level of the thesis theoretical framework. This analysis started with the identification of drivers of change in Electra. The drivers are: (a) the new regulatory system; (b) the managerial pressure introduced by the new private owner; (c) the pressure from the electricity sector associations and other distribution companies, and (d) public opinion. It is important to highlight that the changes in regulation combined with the new ownership were the main drivers of management accounting change in Electra.

After the discussion about the drivers of change, this chapter focused on the process of management accounting change in Electra at the intra-organisational level. The analysis was divided into two segments. The first part was concerned with the successful management accounting changes introduced straight after privatisation. These changes were: (a) the new budgetary system; (b) the new performance measurement system; and (c) the new reporting system and management accounting utilisation. This analysis used the Seo and Creed (2002) view that institutional contradictions are the seeds of the process of change and these contradictions enable human praxis to introduce changes into the organisation. In order to theorise the relationship between contradiction and human praxis, the third proposition presented by Seo and Creed (2002) was used. Subsequently, the process of institutionalisation of these management accounting changes was explained by taking into consideration its four stages: encoding, enactment, reproduction and institutionalisation (Burns and Scapens, 2000). The second part regarded the Balanced Scorecard (BSC) implementation in Electra. The BSC implementation was a case of unsuccessful change, as it was decoupled from the company's day-to-day activities and therefore it was not institutionalised in the organisation. It was advocated that the BSC was not institutionalised, because the BSC initiative was not motivated by institutional contradictions, as its motivation was initially based on technical reasons and late ron legitimacy reasons. In addition, the BSC lost importance in the organisation, as the top managers lost interest on the use of the Balanced Scorecard on the day-to-day basis.

Finally, this chapter evaluated the importance of the thesis theoretical framework in explaining the process of management accounting change in Electra. The theoretical framework was designed to address the issues pointed out by Scapens (2006b) in order to tease out the process of management accounting in an organisation, in particular the interplay of external and internal institutions and the role of agency in the process of change. The evidence from the case study also contributed to development of the thesis theoretical framework, as the data suggested a massive external pressure to introduce changes. It was advocated that the theoretical framework was able to articulate and explain the external and internal forces and how those forces shaped Electra's management accounting system after privatisation. However, two limitations to explain the Electra's case were identified. First, the process of change in Electra was driven by a massive external impetus; as a consequence, the theoretical framework was not fully used to explain the role of human agency in the process of management accounting change. Second, the theoretical framework representation seems linear, which can be misleading in the understanding of the process of management accounting change.

Chapter Nine: Conclusions

9.1 Introduction

This chapter presents the main conclusions and implications of this investigation, as well as its limitations and some recommendations for further research. It begins with an overview of the thesis by taking into consideration the main purpose and research questions of this study. After that, the main theoretical and practical contributions are discussed. The chapter ends with a presentation of the limitations of the research and suggestions of issues for further investigation.

9.2 Overview of the Study

The main purpose of this thesis was to explain how the management accounting information system was shaped by both inter and intra organisational factors, in a Brazilian electricity distribution company which was privatised. Essentially, this study has analysed the process of management accounting change in a Brazilian electricity distribution company providing an understanding of why and how such changes took place. In order to meet the research objective, the researcher adopted a case study approach which satisfies the three tenets of qualitative method; describing, understanding and explaining to provide reasonable understanding to its readers (Yin, 2003).

This study drew on old institutional economics, new institutional sociology, as well as insights from structuration theory and dialectical perspective in order to interpret the data and build an explanation for the results. Existing conceptual frameworks based on institutional theory were examined and developed as the explanation-building process progressed. As a consequence, a theoretical framework was proposed to explain the process of management accounting change in the case study company. This framework combined three existing frameworks, namely: Dillard et al. (2004), Seo and Creed (2002), and Burns and Scapens (2000).

The aim of this section is to summarise the main findings of this study. This thesis has examined the process of reforms and privatisation in the Brazilian electricity sector in an attempt to explain the process of management accounting change in a privatised Brazilian electricity company. To help the reader, the major findings are recorded around the four specific research questions and the main research question of this study. First, the overview of this study will address the four specific questions. Then, the main research question of this study will be dealt. The four specific research questions are:

(1) How was the privatisation process carried out?

This question aimed to analyse the main aspects of privatisation and the reforms in Brazil in general and the electricity sector in specific. This specific research question was dealt in chapter 5: 'Privatisation and Reforms in the Brazilian Electricity Sector'. The Brazilian government underwent a major reform in the so-called infrastructure sector, including privatisation and the creation of a new regulatory system. This process was motivated by internal pressures from a neo-liberal government, as well as pressures from external organisations, such as the World Bank and the International Monetary Fund (IMF). In the electricity sector, the market-oriented reforms started in 1996 inspired by reforms in the United Kingdom and Latin America. The new electricity sector was designed to encourage competition in generation and retailing, while transmission and distribution remained regulated activities as a kind of natural monopoly.

Brazil's electricity sector went through two major reforms. The first reform took place between 1995 and 2003. The second reform started in 2004 in order to fix the flaws from the previous reforms that culminated with the 2001 electricity crisis. The main change was the introduction of a long term market which replaced the short term market introduced in the first reform. The main feature of the Brazilian electricity sector reforms was that these reforms involved independent actions characterised by the lack of planning before privatisation and ad hoc decisions made by the Brazilian government. For example, the new regulator (ANEEL) started to operate when 10 companies had already been privatised. This approach to reform the electricity sector has been described by Araujo (2006) as a reform by trial and error.

In terms of the impact of these reforms on the case study company to introduce new management accounting practices, the change in the regulatory framework which was based on cost plus methodology to the price-cap regulation, can be highlighted as the main motivation to introduce changes in management accounting practices that came from the Brazilian Electricity sector reforms. The price-cap regulation demands a range of accounting information in order to set the company's tariff. As a consequence, the issues relate to the tariff review process and regulatory accounting started to be essential for the survival of the company; as a result accounting information was key to cope with this new methodology. It also important to state that the trial and error approach used by the Brazilian government had a significant impact on the regulatory framework adopted in Brazil. As a consequence, this also impacted on the tariff review methodology and regulatory accounting evolution as they had to cope with this macro environment and practical issues of dissemination and implementation. In terms of the case study company, these uncertainties increased the regulatory risk and demanded more flexibility from the company's management accounting system.

(2) What are the intra and inter organisational factors that shaped management accounting?

This specific research question aimed to identity the drivers of management accounting change in Electra. It was stated in chapter 1 that "the drivers of change after the process of privatisation normally come from different sources from inside and outside the organisation". However, in this case study, the pressure from the inside the organisation played an insignificant role as a driver of management accounting change in Electra, as the process of management accounting change was driven by massive pressure from outside the company. The main drivers of change were discussed in chapter 8, section 8.3.1. In this section, the drivers of change in Electra were identified as being: (a) the new regulation; (b) the managerial pressure introduced by the new private owner, that is, the change in the ownership of Electra; (c) the pressure from the electricity sector associations and other distribution companies; and (d) public opinion.

Among these drivers of change, the changes in regulation and the change in ownership from stated-owned company to a private company were the main forces to introduce management accounting changes in Electra. The regulator as source of coercive isomorphism (DiMaggio and Powell, 1991) played an important role in the process of change in Electra. The price-cap regulation introduced in Brazil was an important driver of management accounting change in Electra, because the tariff review process constituted the principal event in the organisation when the company's revenue is set for a period of 4 years. Therefore, this change in the regulatory system put pressure on Electra to improve its management accounting systems. Moreover, this new regulation forced the operational areas of the company to exchange information with the accounting areas. As a consequence, the importance of the management accounting area increased and the utilisation of management accounting was also affected, as the engineers perceived that the integration of the management accounting information with the operational information was essential to improve the company's performance.

The change in ownership was another important driver of change in Electra, as the new management accounting systems were coercively imposed by the holding company in order to improve the quality of the management process. The aim of this change was to create a management accounting system capable of providing information to support the new management style that emerged after the privatisation which was based on Management by Objective principles. Therefore, the view about the management accounting system was that this system had to support the managerial process of the organisation by helping the decision making process and controlling the company's activities. As a consequence, management accounting should provide financial information to the decision making process, as well as being capable of communicating the company's goals to the departments and employees.

(3) When, why and how did organisational actors decide to enact changes in management accounting systems?

This question aimed to understand the role of human agency in the process of management accounting change in Electra. This issues has been neglected by institutional theorists in their studies regarding organisational change (Abrahamsson and Gerdin, 2006; Burns and Baldvinsdottir, 2005; Burns and Nielsen, 2006; Scapens, 2006b). As discussed previously, the process of management accounting in Electra was driven by massive external pressures; as a consequence the process of change was not driven by internal institutions. Therefore, the management accounting changes were imposed coercively by the holding company, which had designed the management accounting system to cope with the new regulatory system and to satisfy the needs of the private shareholders.

In order to answer this question, the thesis theoretical framework drew on Seo and Creed's (2002) framework that links institutional contradictions with human praxis. The analysis carried out in chapter 8 about that issue was divided into two kinds of change: successful and unsuccessful. The successful changes comprises: (a) budgetary system; (b) performance measurement system; and (c) reporting system and management accounting utilisation. The unsuccessful change was the implementation of the Balanced Scorecard.

The successful management accounting changes started to be implemented just after the privatisation in 2000. Based on Seo and Creed (2002) constructs, it was advocated that the seeds of these changes in Electra were the accumulation of institutional contradictions which were created after privatisation. In order to explain the motivation for these changes, this study used the third proposition of the Seo and Creed (2002, p. 236) study, which is:

> Proposition 3: Under conditions of strong nonadaptability, efficiency gaps and inter-institutional incompatibility, mediated by institutional crisis, promote praxis for institutional change by creating the conditions for the revolutionary breakdown of institutional inertia;

In the case of Electra, strong nonadaptability was observed, caused by the new regulatory system introduced during the Brazilian electricity sector reforms and the new ownership with a different perspective based on economic and financial results. The efficiency gaps were also observed, as management accounting was used in a ceremonial way before privatisation. Finally, inter-institutional incompatibility was also identified, as there was a conflict between the previous values and beliefs based on public sector and engineering ethos and the new set of values and beliefs based on financial performance based on price-cap regulation. These institutional contradictions generated an institutional crisis (Seo and Creed, 2002) in Electra. This institutional crisis enabled human praxis to enact changes in Electra by promoting a reflective shift in organisation actors' consciousness, actor mobilisation and collective action to introduce changes in Electra (Seo and Creed, 2002).

In terms of the Balanced Scorecard (BSC) implementation in Electra, this implementation was initially motivated by technical reasons and lately by legitimacy reasons. The BSC was implemented in 2005, when the management accounting systems introduced in the organisation after privatisation had already been institutionalised, that is, accepted and used on day-to-day basis. As postulated by Seo and Creed (2002), in order for change to become institutionalised in the organisation, it needs to overcome the problem of embedded agency. According to Seo and Creed (2002) and the thesis theoretical framework model, this process of change is possible due to the accumulation of institutional contradiction that enables human praxis to introduce change. In the case of Electra, the implementation of the BSC was not motivated by institutional contradictions, such as nonadaptability or efficiency gaps. It is advocated the BSC implementation was unsuccessful, because this change was not enabled by the accumulation of institutional contradictions, but the BSC was motivated by legitimacy reasons. Therefore, the BSC could not supplant the previous performance measurement system which was introduced after the privatisation.

(4) How did new management accounting practices become accepted and take root as values and beliefs in the organisation?

This question aimed to describe and evaluate the process of institutionalisation of the new management accounting practices introduced into the case company after privatisation. As this question seeks to explain the process of institutionalisation, this overview of the study deals with the successful management accounting changes that went through the four steps of the institutionalisation process: encoding, enactment, reproduction, and institutionalisation (Burns and Scapens, 2000). The Balanced Scorecard did not go through these phases, as it became decoupled from the day-to-day activities during the enactment stage of the process of institutionalisation.

As discussed above, the successful management accounting changes were motivated by strong institutional contradictions, in particular, strong nonadaptability (Seo and Creed, 2002). As a consequence, Electra's employees and managers recognised that changes were unavoidable, because of the strong institutional contradictions faced by the company after the process of privatisation. The Seo and Creed (2002) view was empirically observed that in the context of strong institutional contradictions, especially strong nonadaptability, the company is vulnerable to external shocks by making the organisational actors less motivated to actively respond to the external events. Therefore, the issue of resistance was absence in the process of management accounting change in Electra. The process of change in Electra was conducted in a coercive way based on the principle that: "if you don't want change, don't be privatised".

The process of institutionalisation of the management accounting changes in Electra was dealt in chapter 8, section 8.3.2.2. This analysis was based on the four phases of institutionalisation proposed by Burns and Scapens (2000): encoding, enactment, reproduction, and institutionalisation. The encoding phase was based on the new desired institutional principles which were defined by the holding company and the new management accounting practices that followed the institutional principles based on the new structures which emerged after privatisation. The designing of these new management accounting practices were based on the previous implementations of management change in the other two distribution companies of the Electra's economic group.

The second stage of the process of institutionalisation is the enactment stage which in the case of Electra was a top-down process, as the process started with the holding company and then Electra's board of directors was responsible for the implementation. Therefore, the process of enactment was strongly supported by Electra's and the holding company's top management team. In addition the process of enactment was backed up by the implementation of an ERP system in the organisation. Moreover, the enactment process of the routines and rules of the new management model was powered by the efforts of training and organisational communication. The third phase is the reproduction; it was observed that the idealised set of management accounting rules and routines was put into practice in the organisation. As a consequence, there was a repeated use in practice of the new management accounting practices introduced after privatisation.

Finally, institutionalisation is the last stage when the new set of management rules and routines become taken-for-granted or institutionalised. In Electra's case the most important factors in the institutionalisation process of management accounting were: (a) creation of a specific area in the organisation with clear objective/mission in terms of providing management accounting information; (b) compatibility between company's strategy and the management accounting system implemented after privatisation; (c) the formalisation of new management accounting practices into rules (as incorporated into procedural manuals); (d) The incorporation of new management accounting concepts into Electra's corporate information systems; (e) the association between performance measures and the managers' performance evaluation, that is, the relationship between the performance measurement system and the managers' variable remuneration; and (f) the diffusion of new management accounting practices and concepts through presentations, meetings, and training.

Having discussed the four specific questions of this thesis, this overview of the study moves to discuss the main research question which is connected to the main objective of this study. The main research question is: "How was the distribution company's management accounting systems shaped by the intra and inter organisational factors, after the privatisation"? This research questions aims to understand and explain the process of management accounting change in Electra, after the privatisation.

This research focuses on Electra (at the intra-organisational level of change). However, many explanations of changes lay on inter organisational forces that shaped management accounting. Explaining the process of management accounting unravelled a complex set of pressure involving: regulation, associations, other companies, public opinion, the parent company and internal organisational dynamics. Figure 8.2 (chapter 8) provides a good representation of the entities and factors involved in the process of management accounting change in Electra. Due to the importance of inter organisational factors to understand the process of change in Electra, the theoretical framework put great emphasis on the economic and political level as well as the organisational field level. By incorporating the Dillard et al.

(2004) view that the process of institutionalisation is normally a top-down approach. This thesis explains that the process of management accounting change in Electra had the seeds at the economic and political level (with the introduction of a new regulation) and the set of criteria at this level influenced the introduction of new set of criteria and practices at the organisational field level. This set of practice at the organisational field level was accepted and incorporated by the holding company. Therefore, the holding company assimilated the new regulatory framework, the shareholders demands and other external entities demands to introduce coercively changes in the Electra's culture by implementing new management systems, such as an ERP system. The changes at the intra-organisational culture and management systems enabled the changes in management accounting system with the introduction of a new budgetary system, a new performance measurement system, a new reporting system, and lately the implementation of the Balanced Scorecard. Therefore, the management accounting practices were shaped by this complex set of factors involving a range of entities.

At the intra-organisational level, the accumulation of institutional contradiction triggered human practices to introduce change (as discussed above in question 3). After that, the management accounting changes went through the four steps of the process of institutionalisation (as discussed in question 4): encoding, enactment, reproduction, and institutionalisation. Chapter 9 moves now to discuss the theoretical and practical contributions of this study by linking the main findings of this thesis with the research contributions.

9.3 Theoretical and Practical Contributions

This chapter discusses the main contributions of this study. This section is divided into two parts: theoretical contributions and practical contributions.

9.3.1 Theoretical Contributions

This thesis provides empirical evidence on the impacts of privatisation on management accounting systems in developing countries using Brazil's electricity sector as a case. Since the beginning of this PhD project, the empirical data suggested that the process of management accounting change in the case study company involved a complex set of pressure from inter organisational factors, such as the new regulatory system. These inter organisational pressures in conjunction with the intra-organisational dynamics seemed the key aspect to understand and explain the process of management accounting change in Electra. This is in line with the Scapens' (2006b, p. 1) conclusion that "to make sense of diversity in management accounting practices we need to understand the complex mish-mash of inter-related influences which shape practices in individual organisations".

Scapens (2006b) reviews the achievements of the Burns and Scapens (2000) framework for studying management accounting change in organisation. He concludes that the Burns and Scapens (2000) framework has some limitations and scope for extensions, which involve issues regarding: the interplay of internal and external institutions, the importance of trust in accountants, the impact of circuits of power, and the role of agency in institutional change. Based on the Scapens' (2006) view about management accounting change and the empirical data collected on the field, it was clear that the Burns and Scapens (2000) framework alone is not able to fully explain the process of change in Electra. Therefore, the search for another framework had began, but no one single framework seemed adequate to fully explain the process of management accounting change that the case study company faced (see framework justification section 3.6.4.2).

Drawing upon the theories reviewed in chapter three and empirical patterns emerging from the analysis, a theoretical framework for management accounting change was constructed, a major contribution of this research to existing theory. The thesis theoretical framework combines three previous models for organisational change, namely: Dillard et al. (2004); Seo and Creed (2002), and Burns and Scapens (2000). As a consequence, the thesis theoretical framework was not constructed from scratch; as this model used well-known frameworks in the organisational change field that have been providing useful insights in understanding organisational change. The innovative aspect of the thesis theoretical framework was the fact that it was the first attempt to combine these three models in order to develop one framework for management accounting change. It is important to highlight that the reason for developing this new framework is that none of these frameworks alone can fully explain the complexity of accounting practices and the process of management accounting change. In addition, each framework complements the other without ontological and epistemological incompatibilities.

It is claimed that the thesis theoretical framework provides a theoretical model capable of supporting the understanding of the complex mish-mash of inter related factor in both intra and inter-organisational levels that influence management accounting practices. However, some people would argue that the thesis framework model seems somewhat over-schematised and it intends to provide a comprehensive consideration of the all factors that may be involved in a process of management accounting change, which it will be unlikely to be achieved by studying a specific organisation. It is true that Electra's case did not provide detailed evidence for all possible factors that might be involved in the process of management accounting change. For example, the issues of power, trust and resistance were marginal to understand the process of management accounting change. The role of human agency was not so relevant, as the change process in Electra was driven by external forces. However, these criticisms do not invalidate the theoretical framework model. It could be argued the opposite, as these criticisms show how flexible this model is, because this model could fully explain the process of management accounting change in Electra and if these other factors, such as power and trust, were present in the case, they would be easily accommodated as intra-organisational forces in the process of management accounting change. Therefore, this framework can be used in other cases of management accounting change in different contexts and industries.

In terms of contribution for the literature, it is intended that this study broadens the literature concerning management accounting change and the use of alternative approaches in management accounting research, both in Brazil and internationally. In Brazilian literature there are many privatisation studies (BNDES, 2002; Chan, et al., 2003; Mota, 2003; Rocha, et al., 2007), covering the effects of privatisation on the performance of those companies which were privatised, and on the improvement, or not, of services offered to consumers. However, no studies concerning the effects of privatisation on companies' accounting systems have been identified. Therefore, this study aims to reduce this gap in Brazilian accounting literature and also to present to accounting researchers the effects of privatisation on accounting in the electricity distribution sector, which in turn may increase interest in more research into other privatised sectors. Therefore, this is the first study about this issue in the context of Brazil.

For the Brazilian literature, this study has an original approach. Research carried out, though not exhaustive, has shown that in PhD theses, master's dissertations, scientific papers, and conferences in the accounting field, there are few studies involving the use of institutional theory and structuration theory (e.g. Guerreiro, et al., 2006). In addition, this study aims to contribute to the Brazilian literature by using an alternative approach based upon an interpretive case study which is not the common way of doing research in Brazil. Brazilian Accounting research is dominated by the positivist paradigm influenced by the North American accounting school. Therefore, this thesis intends to offer a different format of research and it might offer new insights and inspirations to future accounting studies which will use alternative approaches. In so doing, Brazilian accounting research will move to a more pluralistic area of studies and it will follow the present trend in accounting research, in particular in European countries, which is the utilisation of alternative approaches to study accounting phenomena.

In the international context, the impact of privatisation on the so-called public services utilities has attracted the attention of a number of scholars. However, these previous studies tend to examine the financial-macro-level privatisation impacts by analysing the effects of privatisation on the performance of those privatised companies and on the improvement, or not, of services offered to consumers (Hopper, et al., 2009; Tsamenyi, et al., 2008). As a consequence, research on privatisation and accounting is under-developed. There are a very small number of studies which deal with changes in accounting in less developed countries (Alawattage, et al., 2007; Collier, 2001; Hopper, et al., 2003; Luther and Longden, 2001). Although Luther and Longden (2001) highlight the existence of such studies in some developed countries, within developing countries the changes that have occurred in accounting are less widely known than in more developed areas of the world. Another aspect highlighted by other authors, such as Uddin and Hopper (2001) and Wickramasinghe et al. (2004), is that there are few studies concerning the effects of privatisation on accounting in developing countries. Uddin and Hopper (2003) point out that researchers are anxious to know the impact caused by the privatisation process and therefore, to understand how these organizational changes affect the companies' accounting systems. In this way, this thesis has provided a rich empirical description and analysis of how management accounting system in the case study company was shaped by internal and external institutions in order to contribute to the growing literature on this subject.

9.3.1 Practical Contributions

The special issue of the *Journal Critical Perspectives on Accounting* (issue 19; volume 6) about the future of interpretive accounting research was originally aimed to discuss the need of interpretative research to connect with practice and functionalist accounting research (Cooper, 2008). Scapens (2008) comments that interpretive accounting research has provided rich understandings of accounting practice and it can explain why organisations have the accounting systems they have. These explanations have drawn on a wide range of theories and disciplines. However, Scapens (2008, p. 916) points out that over the years, the research has tended to follow practice and although "we can now explain what is going on, the research has had only a very limited impact on what actually happens in practice". Ahrens (2008) and Ahrens and Chapman (2007) also discuss the interrelationship between theory and practice in management accounting. Ahrens and Chapman (2007, p. 24) conclude that "the key question for management control theory is not how to constrain individuals and overcome resistance. Rather, it needs to bring into focus the possibilities of management control systems as a resource for action". Taking this situation into consideration, Scapens (2006b, 28) gives a call for a change in interpretative accounting research by stating that "the challenge for the future is to use this theoretically informed understanding to provide insights which are relevant and useful for practitioners; for management accounting research to have more of *an impact* on practice".

Taking this call for change in the interpretative accounting research into account, it is important to discuss what the practical contributions of this thesis are in order to make this research useful for practitioners. In terms of practical contribution, a deeper and richer understanding of the interaction of inter-organisational and intra-organisational dynamic provided by an interpretive case study approach should allow practitioners and policy makers to be more mindful of the issues involved in changing the accounting systems. Whilst the current research advances our existing theoretical knowledge in terms of the process of change in management accounting as well as the nature of management accounting initiatives, theoretical and empirical insights from the research are also relevant to managers and practitioners. The research provides an overview of the process of management accounting change that took place in the case organisation. It takes managers away from their day-to-day implementation activities and enables them to see from a broader perspective of how the management accounting changes were operationalised within their organisation. The study makes the following contributions to practice:

First, the research confirms some of the known behavioural implications of the process of organisational change after privatisation or acquisition processes. This research confirms Davis and Thompson's (1994) conclusions that takeovers/privatisation can disrupt the long-standing managerialist status quo by putting the discrepancies between the interests of managers and shareholders in new light, thus giving rise to the new owners rights movement and ultimately enabling radical changes. Therefore, the introduction of revolutionary changes is facilitated by the physiological moment of the privatisation, when all the organisational actors accept that change is unavoidable. This took place in Electra, as just after the privatisation the new management accounting practices were introduced without resistance to these changes. However, it is important to highlight that this research also confirm Scapens' (2006b, p. 19) conclusion that there are "certain elements of stability with the process of change. (...) there can be elements of stability with change; and change may be necessary if things are to remain stable". In the case of Nuovo Pignone (Busco, 2006; Busco, et al., 2005), there was revolutionary change in the management accounting system, but within it there were also evolutionary processes building on the existing quality-oriented way of thinking. Therefore, although the changes were new to the organisation, they were expressed in terms which everyone understood. In the case of Electra, this sense of stability in the process of management accounting change was achieved by the gradual implementation of the new management accounting practices and by maintaining the same managerial team and employees from the stated-owned period. As a consequence, there was a sense of security and continuity among the organisational actors during the process of management accounting change. On the other hand, the implementation of the Balanced Scorecard was unsuccessful and one of the reasons was the timing of the BSC initiative, when the organisation was not ready for a new wave of changes in the management accounting systems.

Second, this research also confirms the literature about the process of implementation of new organisational practices. This literature has identified the key elements for a successful implementation. According to the literature (Burns, et al., 2003; Shields, 1995; Shields and Young, 1989), a successful implementation should have powerful support for the new practices, communication throughout the company, and involvement at all levels. It is also important for change implementation to be backed up by extensive and intensive training, as well as adequate resources for the implementation process. In addition, this research identified that successful changes are triggered by a set of institutional contradictions (Seo and Creed, 2002) or conflicts inside the company that enable human praxis (organisational actors) to introduce and support changes in the organisation. In the case of the Balanced Scorecard implementation in Electra (unsuccessful change), it was clear that it did not have the above elements for a successful change, especially due to the lack of support from the top management team and the lack of training and communication. Therefore, this empirical evidence provides useful lessons for managers in order to undertake successful changes in their organisations.

The third contribution of the study relates to the nature of a company that operates in a regulated industry and the design of the management accounting system. Electra operates in a regulated industry. As a result, the regulator and the regulatory framework model have a huge influence on management accounting systems. This thesis has discussed exhaustively that the regulator defines the economic environment by imposing the price-cap regulation and by imposing standards of service which the company has to meet, thus reducing management autonomy in the decision-making process. Therefore, in this kind of natural monopoly situation, the company's main stakeholders are: the shareholders and regulator. As a consequence, the signification and legitimation structures involve the needs of these two entities.

Taking this situation into consideration, the management accounting system should be designed to support the management process of the company, which is based on the needs of the shareholders and regulator. In the case of the Balanced Scorecard in Electra, it was clear that there was a confusion about the main stakeholders of the company, as the Balanced Scorecard was designed to satisfy the needs of the final consumers, instead of the needs of the regulator, as the company is actually managed to meet the demands of the regulator, many of the managers did not use or understand the Balanced Scorecard system. As a consequence, the Balanced Scorecard was not institutionalised in the organisation and one of the reasons was this confusion about the importance of the regulator. On the other hand, in the case of the successful changes, it was clear that these new management accounting practices were designed to support the decision making process based on demands from the regulator and shareholders.

Fourth, one clear message emanating from this thesis is that institutions matter at both inter (economical and political level and organisational field level) and intra (intra-organisational level) organisational levels. Drawing on the findings of the case study, it is suggested that the 'macro' level, parent companies, as one of the strongest constituencies of subsidiary companies, do have interests and influences over management accounting systems and its utilisation. Therefore, for subsidiary companies which are willing to bring changes to their organisations or which are exposed to changes imposed by their parent companies, there is a need to take into consideration the importance of this external constituency. At the intra-organisational level, institutions, taken-for-granted assumptions and the existing internal dynamics can all have a direct and important impact on the success or failure of a programme of change. Therefore, it is in the intersection and interaction of the two forces (institutional context and organisational actors) that the direction of change can be shaped.

Finally, this thesis provides evidence about the impact of regulation and other macro policies on the accounting practices and systems of an electricity distribution company. As a consequence, this thesis concentrates on the micro level of analysis of the relationship between regulation and management accounting systems. This type of research is not common in the regulatory accounting literature (Pardina, et al., 2008). Normally, the research about regulatory accounting focuses on the macro level of analysis by studying the impact of regulation on the whole electricity sector; as a result this kind of study loses the richness that can be obtained by a detailed case study in a single company. It is argued that this thesis provides useful information that can support the regulator to create new regulations or to improve the existing regulations. This evidence can also support the oversight activity performed by the regulator in order to achieve its basic objectives: sustainability, allocative efficiency, productive efficiency, and equity (Pardina, et al., 2008).

9.4 Limitations of the Research

The findings of this research study were derived from an interpretive case study conducted in a single organisation. This brings to light several limitations. The first of these relates to the extent to which it is possible to draw wider generalisations from the work. Although, this study provides rich insights into the process of organisational and management accounting change within an electricity distribution company, it is impossible to determine the extent to which such findings could be replicated elsewhere. The collection of data from a single setting provides an inevitable trade-off between the richness of findings and their potential generalisation. However, the purpose of the study was not to offer statistical generalisations, but to provide theoretical and practical insights into the phenomenon. As discussed in chapter 4, this thesis is based on an interpretive case study, as such this thesis does not seek statistical generalisation, but theoretical generalisation (Ryan, et al., 2002; Scapens, 2004) or analytical generalisation (Yin, 2003; 2009). However, the findings and contributions of the study should be read within the context of the specific company and sector in which the research was conducted. Nevertheless, such insights could also be used to further an understanding of accounting change in other organisations. In this sense, the thesis theoretical framework described in chapter 3, could contribute to an extension of the theoretical debate surrounding the explanations of institutional change and management accounting change.

Another limitation is concerning the nature of interpretive case study, in that interpretations of the data collected can never be free to the influence of the researcher. Thus, subjective interpretations of the data in the subsequent analysis were inevitable. In this thesis, theory was considered a 'way of seeing' the data. Yet the possibility of 'other ways of seeing', that is, alternative explanations, is accepted. Ultimately, the analysis and understanding of change processes in the case study company are dependent on the interpretations of the researcher.

Another limitation of the research is related to the time length of the analysis, that is, from 2000 to 2007. The process of management accounting change started just after the privatisation in 2000. As a result, this research studied the changed that took place in the past about 10 years ago; the researcher did not get into the organisation from the beginning of the process of management accounting change. Much of the data on the early stage of the process of management accounting change is based on available interviews and documents. The researcher therefore, has had to rely, to some extent, on the memories of organisational participants. In order to enhance reliability of such data, when discussing events that happened a long time ago, the researcher asked for detailed elaboration, as well as specific examples, whenever appropriate. The researcher also cross-referenced data from the interviews with data from other sources, and further examined issues if data from different sources suggested conflicting evidence. One may argue that the researcher may have missed some important events by not entering the organisation during the process of management accounting change. However, if such events are important, they will arguably leave traces in some form, and key issues or events will become apparent along the way. Even if the researcher had been in the field at all times during the process of management accounting change, this would not guarantee that the researcher would have been able to observe every relevant and important event, as important events can occur at the same time in different places.

A fourth limitation is regarding the utilisation of the thesis theoretical framework model. This framework is supported by the concept of the duality of structure (Giddens, 1976; 1979) whereby institutions are the background for action but may, in turn, be recursively modified through action of human agents. However, this study did not analyse the influence of the intra-organisational environment on the assumptions and practices of the organisational field and economic and political levels. Therefore, the thesis theoretical framework was not used in full. The reason for this is the limitation of time and resources to conduct such an investigation during the PhD project.

Finally, as was identified in chapters 2, 3 and 5, there is a lack of literature on research on privatisation and management accounting change and regulatory accounting in developing countries especially in Brazil; and as result, the literature review in these areas is predominantly based on developed countries' experiences. This could affect the results of the study in the sense that review of literature from different environments is less likely to provide an appropriate comparison to analyse the case results of the thesis as different environmental conditions may not be applicable within the context of Brazil.

9.5 Suggestions for Further Research

This section identifies some areas of interest in which future research could be undertaken. The first suggestion is regarding the application of the thesis theoretical framework in other cases of organisational and management accounting change. It would be worthwhile to see whether or not the thesis theoretical framework could be usefully applied in subsequent studies of management accounting and organisational change in different companies (private or state-owned organisations), particularly to see whether understandings of change processes can be extended. The validity of the thesis theoretical framework presented here would be greatly enhanced if supported by other studies in organisational and management accounting change.

There is a proliferation of studies that explore management accounting practices in the private and public sectors. Yet the regulated industry context remains relatively unexplored in terms of management accounting. The present study touched upon the nature of accounting in a regulated company. The second suggestion for further research concerns the investigation of other industries that, like the electricity industry, are coercively pressured by regulatory entities to comply with a set of regulations that ultimately impact on the management accounting system. It would be interesting to compare the pressures these other industries are subject to with the impositions placed on the electricity industry in Brazil and other countries. Whether these firms adopt new management accounting practices for merely institutional reasons or for both competitive and legitimacy's reasons, could be a subject for investigation. Additionally, research about management accounting change in these firms could be undertaken and compared with the process of management accounting change in Electra.

In the Electra case, there was massive external impetus for change – the privatisation of Electra and the change the Brazilian regulation – and this led everyone in the organisation to see change as inevitable. As a result, the third suggestion is regarding the role of human agency in the process of management accounting. In the Electra case, change did not come from within the organisation. Therefore, the thesis theoretical framework was not fully used to explain the importance of human praxis in the process of management accounting change. This specific suggestion is to select a case where the change came from within the organisation in order to fully theorise the influence of the external and internal institutions and human agency in the process of organisational change.

As presented in the previous section about the limitation of this study, the thesis theoretical model is a recursive model, that is, it supports the Dillard et al. (2004) view that the criteria and practices at the intra-organisational level influence the criteria and practices at the organisational field level, as well as the economic and political level. This study did not carry out this analysis due to time and financial resources constraints. Therefore, the analysis of the influence of the criteria and practices at the intra-organisational level on the practices and criteria at the organisational field level and economic and political level is the fourth suggestion for future research.

Finally, this study has focused on the micro level of analysis by studying the relationship between regulation and management accounting systems by adopting the utility company's perspective. As a result, another line of research could be based on the understanding of the relationship between regulation and management accounting systems by adopting the regulator's perspective. In doing so, this type of research will aim to investigate how and why the regulator used regulatory accounting tools to establish the regulatory framework and what the expected response from the utility companies are in order to cope with the regulation. This seems a fertile field of research, as few studies, in particular, in developing countries have tried to link regulation and accounting practices in recently privatised companies by adopting the regulator's perspective.

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Appendix I - List of Interviews

Date	Function	Organisation	Length	Status
31.03.08	Head of the accounting department	Electra	1h36m	Recorded
05.04.08	Former superintendent of planning and control	Electra	51m	Recorded
08.04.08	Head of the planning and control department	Electra	1h12m	Recorded
09.04.08	Former head of the planning and control department	Electra	51m	Recorded
11.04.08	Former superintendent of control and finance	Electra	46m	Recorded
17.04.08	Former head of the accounting department	Electra	1h	Recorded
24.04.08	Manager of the planning and control department	Electra	25m	Recorded
24.04.08	Manager of the planning and control department	Electra	1h4m	Recorded
28.04.08	Manager of the planning and control department	Electra	30m	Recorded
30.04.08	Manager of the planning and control department	Electra	42m	Recorded
14.05.08	Manager of the internal control department	Electra	1h	Not recorded
28.05.08	Head of the accounting department	Electra	1h6m	Not recorded
03.06.08	Superintendent of planning and control	Electra	1h	Not recorded
13.06.08	Manager of the commercial department	Electra	1h35m	Not recorded
16.06.08	Manager of the planning and control department	Electra	1h15m	Not recorded
16.06.08	Head of the network expansion department	Electra	50m	Recorded
17.06.08	Head of the commercial and billing department	Electra	1h	Recorded
17.06.08	Head of the recivables recoveries	Electra	1h32m	Recorded
19.06.08	Former director of operation	Electra	1h25m	Recorded
19.06.08	Superintendent of finance and investor relation	Electra	1h5m	Recorded
20.06.08	Superintendent of regulation and tariff	Electra	1h35m	Not recorded
25.06.08	Manager of the planning and control department	Parent company in another Brazilian State	3h40m	Not recorded
26.06.08	Former administrative director	Electra	1h40m	Recorded
02.07.08	Engineering superintendent	Electra	1h20m	Recorded
03.07.08	Manager of the planning and investment department	Electra	1h05m	Recorded
04.07.08	Head of internal audit department	Electra	1h45m	Recorded

Date	Function	Organisation	Length	Status
08.07.08	Head of the electric system engineering and maintenance department	Electra	50m	Recorded
08.07.08	Head of system operation department	Electra	1h	Recorded
09.07.08	Commercial and Market Superintendent	Electra	50m	Recorded
10.07.08	Head of the consumers relation department	Electra	40m	Recorded
10.07.08	Head of the Marketing department	Electra	2h20m	Recorded
15.07.08	Superitendent of economic and financial oversight	Regulator - ANEEL	1h45m	Recorded
16.07.08	Superitendent of economic regulation	Regulator - ANEEL	1h40m	Recorded
17.07.08	Member of the association of accountants of the Brazilian electricity sector	ABRACONEE the association of accountants of the Brazilian electricity sector	1h15m	Recorded
21.07.08	Head of the corporative consumers department	Electra	1h30m	Recorded
07.08.08	Director of planning and control	Holding Company	1h	Recorded
08.08.08	President of the association of accountants of the Brazilian electricity sector - ABRACONEE	ABRACONEE	1h15m	Recorded
08/08/08	Two president's advisers who were involved in the Electra's privatization	BNDES – The Brazilian Development Bank	1h30m	Not recorded
11.08.08	President's adviser	ABRADEE - the Brazilian Electricity Distribution Companies Association	1h20m	Not recorded
11.08.08	Former superintendent of engineering	Electra	1h10m	Recorded
13.08.08	Former president – CEO	Electra	1h	Recorded
13.08.08	Economic and finance director	ABRADEE	45 m	Recorded
25.08.08	Manager of the management department	Electra	1h5m	Recorded
27.08.08	Manager of the supply department	Electra	1h15m	Recorded
28.08.08	President – CEO	Electra	1h10m	Recorded
02.08.08	Superintendent of human resources	Electra	1h30m	Recorded
02.09.08	Former director of electric administration and present director of economic regulation of the State regulator	Electra and the State Regulator Agency	2h5m	Not recorded
03.09.08	Former superintendent of finance	Electra	2h30m	Not recorded
03.09.08	Head of the economic and financial regulation department	Electra	1h30m	Not recorded
05.09.08	Superintendent of operation	Electra	1h15m	Recorded
Summary	**50 interviews and 49 interviewees**	**8 organisations**	**64.08 hours of interviews**	

Appendix II - List of Documents

I – Documents from Electra

A) Analysed in the Company (During the Field Research)

1. Strategic plan from 2002 to 2006;
2. Strategic plan from 2006 to 2010;
3. Action plan from 2006 to 2010;
4. Budget manual 2008;
5. The strategic planning model report;
6. Budget report 2007-2008;
7. Management by objectives system;
8. Internal control report;
9. The normative system;
10. Booklet to present the company performance to possible investor/buyer at the time of privatisation;
11. Privatisation evaluation report commissioned by BNDES (the Brazilian Developed Bank);
12. Auction invitation;
13. Economic and financial projection and evaluation for the privatisation.

B) Collected from Electra

1. Accounting statements from 1968 to 2007;
2. Annual reports from 2001 to 2007;
3. Accounting reports to the Regulator from 2002 to 2007. These reports are: (a) the monthly preliminary balance sheet; (b) the quarterly information report; (c) the annual information report and (d) the fixed assets in using report.
4. Organisational manual and organisational chart in 2002;
5. Organisational manual and organisational chart in 2007;
6. Management report in August 2006;
7. Management report (First quarter 1999);
8. Management report (12/2000 and 07/2001);
9. Budget control report in September 2006;
10. Financial report in July 2007;
11. Expenses summary in July 2007;
12. Management report to the ABRADEE's annual award (years – 2003, 2004, 2006 and 2007);
13. Company project booklet;
14. First workshop of the managers of Electra (24th May 2000);
15. Electra's manual of the performance management programme;
16. Electra's newsletter from August 2001 to June 2008;
17. Holding company's newsletter from October 2006 to June 2008;

18. Market report (3rd quarter 2007);
19. Articles of incorporation;
20. Report of the Electra's privatisation process;
21. General information about Electra collected from the company's webpage;
22. Holding company's organisational chart;
23. Holding company's accounting statements from 2001 to 2007;
24. Holding company's annual reports from 2004 to 2006;
25. Electra's social and environmental reports from 2001 to 2007;
26. Electra's concession contract;
27. Presentation for the weekly CEO's meeting (August 2008);
28. Strategic map (Balanced Scorecard);
29. Presentation of the SAP process of implementation;
30. Electra's ethics booklet;
31. Pre-sales contract;
32. Electra's processes maps;
33. Strategic plan norms/rules;
34. Management control norms/rules;
35. Performance measurement management norms/rules;
36. Economic and financial forecast norms/rules;
37. Preparation of management accounting reports norms/rules;
38. Capital budget preparation and control norms/rules;
39. Financial accounting activities and procedures norms/rules;
40. Asset control norms/rules;
41. Cash flow management norms/rules;

II – Documents Collected from outside Electra

1. Technical Note ANEEL/SRE no. 106/2005;
2. Technical Note ANEEL/SRE no. 127/2005;
3. Technical Note ANEEL/SRE no. 144/2006;
4. ANEEL Resolution no. 642/2008;
5. ANEEL Resolution no. 63/2004;
6. Brazil Decree no. 2,335/1997;
7. Brazil Law no. 9,427/1996;
8. Brazil Decree no. 5,163/2004;
9. ANEEL Resolution no. 015/1997;
10. ANEEL Resolution no. 02/1997;
11. ANEEL Resolution no. 44/1999;
12. ANEEL Resolution no. 240/2006;
13. ANEEL Resolution no. 473/2006;
14. Brazil Law no. 10,847/2004;
15. Brazil Law no. 10,848/2004;
16. Brazil Law no. 8,987/1995;
17. Brazil Law no. 9,074/1995;
18. Technical Note ANEEL/SFF/SRE no. 183/2006;
19. Technical Note ANEEL/SFF/SRE no. 166/2006;
20. ANEEL Resolution no. 234/2006;
21. ANEEL Resolution no. 642/2008;
22. ANEEL Resolution no. 24/2000;
23. ANEEL Resolution no. 456/2000;
24. ANEEL Resolution no. 444/2001;
25. ANEEL Resolution no. 505/2001;
26. ANEEL Resolution no. 493/2002;
27. Technical Note ANEEL/SRD/SRE no. 113/2006;
28. Technical Note ANEEL/SRE no. 292/2008;
29. Technical Note ANEEL/SRD/SRE no. 293/2008;
30. Technical Note ANEEL/SRE no. 294/2008;
31. Technical Note ANEEL/SRE no. 349/2007;
32. Technical Note ANEEL/SRE no. 350/2007;
33. Technical Note ANEEL/SRE no. 351/2007;
34. Technical Note ANEEL/SRE no. 352/2007;
35. Technical Note ANEEL/SRE/SFF no. 353/2007;
36. Technical Note ANEEL/SFF no. 456/2008;
37. Technical Note ANEEL/SRE no. 060/2009;
38. Technical Note ANEEL/SRE no. 290/2008;
39. Technical Note ANEEL/SRE no. 148/2002;
40. The Accounting Manual for Electric Power Utility Companies, which was introduced by the ANEEL Resolution no. 444/2001 and modifications established by the ANEEL Resolutions no. 473/2006 and no. 219/2006, and ANEEL notes no. 657/2006, 3,033/2006 and 3,073/2006.
41. Technical Note ANEEL/SRE no. 178/2003;
42. DNAEE Resolution 815/1994;
43. ANEEL Resolution no. 334/2008;
44. Brazil law 9,648/98;