The uses (and non-usage) of the Balanced Scorecard: the case of EDP Produção

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Dissertation

Master in Management

Bibliographic note

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After short-term professional experiences with a technological start-up and a human resources consulting firm, Carla started an internship in the Management Control department of EDP Produção in mid-2015, where her master's dissertation took form. Finally, Carla initiated her professional career with Treasury at EDP Valor, after moving to Lisbon in August 2016.

Acknowledgments

I would like to express my gratitude to everyone who, directly or indirectly, contributed to the completion of the chapter that is being closed today.

To my family, who allowed me to become the person who I am today. I thank them for educating me, advising me and supporting me in the process of turning my dreams into reality.

To my friends, for their unconditional friendship. For spending time with me, be it celebrating victories or helping me recover after setbacks.

To all my professors, for their accessibility, guidance and instruction. Specially, to my supervisor Professor João Oliveira, for all of the support and motivation that he has given me throughout this journey.

To all the professionals that I met at EDP Produção, who found the time and will to make a contribution to the work included in my dissertation. A special thanks to the supervisors of my internship in this company, for acting as a bridge between myself and organizational members.

Abstract

When implemented in an organization, a Balanced Scorecard (BSC) may be used individually by managers for different purposes, which are not necessarily equal to its designers' objectives. In addition, some managers may not use it at all.

The aim of this study is to understand the different uses that can be given to a Balanced Scorecard and what drives managers to those uses. This will be done through a case analysis involving EDP Produção (EDPP). Furthermore, the purpose of this dissertation is also to understand what can lead to the non-use, in practice, of officially adopted management control systems.

From a theoretical perspective, this study fills an existing research gap regarding BSC non-usage by managers in firms which have adopted the BSC. Moreover, this study adds empirical evidence from one of the biggest companies in Portugal to the literature about the different uses (and non-usage) of BSCs.

From a practical perspective, this is an examination relevant for the case study company at the moment (EDPP), since the implementation of the BSC was done recently. It is important for EDPP to understand the existing divergences in order to improve the actual usage of the BSC, in an aligned way across the organization.

Key-words: Balanced Scorecard, Management Control, Strategy

JEL-Codes: L10, L21, M10, M49

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List of Abbreviations

AM   Asset Management

BSC   Balanced Scorecard

EB   Executive Board

EDPP   EDP Produção

KPI   Key Performance Indicator

MC   Management Control

SPI   Studies, Projects and Investment

1. Introduction

When implemented in an organization, a Balanced Scorecard (BSC) may be used individually by managers for different purposes, which are not necessarily equal to its designers' objectives. For that reason, its use may differ across the organization or it may not even be used at all by some managers.

The literature has suggested that the effects of particular techniques may be determined more by their actual usage(s) than merely by their formal adoption or their intrinsic characteristics as a theoretical construct. Additionally, in the company where I did an internship (EDP Produção – EDPP), there was preliminary evidence that the BSC was not being used consistently across the company, and, in some cases, that it was even not used at all by managers. Therefore, both these factors were drivers of the discussion on this subject.

From a theoretical perspective, this study fills an existing research gap regarding BSC non-usage by managers in firms which have adopted a BSC. Moreover, this study contributes to the literature about the different uses (and non-usage) of BSCs, with empirical evidence from one of the largest companies in Portugal.

From a practical perspective, this examination is relevant to the case study company at the moment. The implementation of a BSC was done recently: it is important and timely for EDPP to understand the existing divergences in order to improve the actual usage of the BSC, in a consistent way across the organization.

The aim of this study is to understand the different uses that can be given to a Balanced Scorecard and what leads managers to those uses, through the analysis of the case of EDPP. Furthermore, the purpose is also to understand what can lead to the non-use, in practice, of the BSC, a management control system officially adopted in this organization. Systematically, the main research questions that this study intends to answer are:

- Why may some managers use the BSC in different ways?

- Why may some managers not use the BSC in practice?

Data was collected from interviews with the BSC users. I interviewed the managers of the majority of the sub-units of EDPP which have a BSC, two members of the Executive

Board and the designers of this tool (employees from the Management Control department). In addition, documents that supported the design of the BSCs and direct observation during my daily work in the Management Control Department also contributed to the collection of information. Further details are explained in the chapter on methodology.

In addition to this section, this report is structured as follows. In the next chapter, a literature review of the topic is carried out. In chapter 3, I explain the methodological aspects of this study. In chapter 4, I do an analysis of the empirical results and in chapter 5 I discuss the empirical evidence under the theories and studies reviewed. Then, in chapter 6, I finalize this dissertation with this study's conclusions, contributions and limitations, as well as the indication of potential future research topics.

2. Literature Review

This chapter presents the main concepts, theories and studies relevant to achieve the purpose of the research in this dissertation. First, in section 2.1, I present the concept of the Balanced Scorecard and the gradual change of emphasis from one type of its usefulness (performance measurement) to another (strategic management), since it may shed light on the origin of potential divergences in its usage. Secondly, in section 2.2, its usage impact in the performance of a company is reviewed. Thirdly, in section 2.3, I define the different types of uses given to control systems in general, and to the BSC in particular. Subsequently, in section 2.4, an explanation of the BSC problems is set out in order to understand potential causes for its non-usage and the existence of different uses. Then, in section 2.5, similar studies and their main conclusions are presented, as well as their relevance for this study. Finally, in section 2.6, I critically analyze the literature review made in this essay.

2.1. Balanced Scorecard: an introduction

The Balanced Scorecard was first introduced by Robert Kaplan and David Norton in 1992, who argued that managers should not only focus on financial measures but also on non-financial ones (Kaplan and Norton, 1992). By integrating both types of measures in a "scorecard", the authors had defined a comprehensive view of a business into four interconnected perspectives: financial, customer, internal-business-process and learning and growth perspective (Kaplan and Norton, 1992). In the first version, the authors defined the BSC as a performance measurement system, and only later, in 1996, highlighted how important its use as a strategic management system was, since it was able to translate the organizational strategy into concrete objectives and measures (Kaplan and Norton, 1996). Thereafter, these authors' work has been focused on strategy execution (Kaplan, 2012). In 2001, Kaplan and Norton explained this change of emphasis for the BSC, and defined five principles to keep strategy the focus when managing the processes of an organization (Kaplan and Norton, 2001):

1) *Translate the strategy into operational terms;*
2) *Align the organization to the strategy;*

3) *Make strategy everyone's everyday job;*

4) *Make strategy a continual process;*

5) *Mobilize change through executive leadership.*

In their subsequent books, Kaplan and Norton went into more depth in these principles. In 2004, in *Strategy Maps,* the authors explained the first principle, showing how to customize strategy maps and BSCs according to the strategy of different organizations (Kaplan and Norton, 2004). Then, in 2006, in *Alignment*, they described how to take advantage of vertical and horizontal alignment between sub-units to create or capture existing corporate synergies (Kaplan and Norton, 2006). This book also addressed the third principle, according to which employees should be motivated to execute strategy in their daily work. Finally, their last book, *The Execution Premium* (Kaplan and Norton, 2008), integrates not only an articulation of the fourth and fifth principle but also synthesizes all their prior work and includes other important and well-known management tools.

The concept of the BSC has therefore been gradually developed from an all-inclusive performance management system to a tool of strategy implementation that simplifies and controls performance measurement and management. This gradual change of emphasis of the BSC usefulness is a factor that may explain some of the differences in the interpretation of this tool's purpose and in its type of usage in practice by companies and their managers.

2.2. BSC and Performance

Several researchers addressed the influence that the usage of the BSC has in organizational performance. For instance, Davis and Albright (2004) found evidence suggesting a positive relationship between BSC usage and improved organizational performance, which is coherent with the findings of some other authors (e.g. Hoque and James, 2000; Banker *et al.*, 2000; Braam and Nijssen, 2004). In contrast, Ittner *et al.* (2003) found a negative relationship between the extensive use of the BSC and Return on Assets, the chosen financial performance indicator in their study. Other studies that tried to relate the focus on non-financial measures with an improved financial performance

presented mixed results, which may be possibly explained by a lack of coherence of the emphasis put on each measure (Davis and Albright, 2004).

In fact, using a balanced scorecard does not automatically imply an improvement in the firm's performance. It will depend on the extent to which its use is linked to the strategy (Braam and Nijssen, 2004). For example, a mechanistic use (measurement-focused use) of the BSC may lead to a negative impact on performance (Braam and Nijssen, 2004), and complementing the BSC with the use of other management control systems may strengthen, neutralize or work against each other in terms of performance (Braam and Nijssen, 2004).

2.3. Different uses of control systems and of the BSC

In 1995, Simons proposed four Levers of Control, which must be properly combined by managers when designing their management control systems in order to ensure their effectiveness in the implementation and control of the strategy (Simons, 1995). These four Levers of Control are systems that control four key concepts for the management of the strategy. Among the four types of control systems identified by Simons (1995) we have diagnostic control systems and interactive control systems[1]. The purpose of the diagnostic control systems is to "coordinate and monitor the implementation of intended strategies" (Oriot and Misiaszek, 2004, p. 267), while the purpose of the interactive control system is to "facilitate and guide emerging strategies" (Oriot and Misiaszek, 2004, p. 267). All in all, the diagnostic controls follow a top-down approach in strategy implementation, while the interactive controls aim to involve several players from the organization in the identification of strategic opportunities through their regular interactions and organizational training.

The definitions of these levers may be somehow ambiguous and vague, especially in the case of interactive controls (Tessier and Otley, 2012). According to Bisbe *et al.* (2007), interactive controls have to include five components to be under the interactive label. Among these components are included the intensity of use by senior managers and the

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[1] The other two levers proposed by Simons (1995) are "beliefs systems" and "boundary systems". These levers are not further analyzed in the literature review due to their lower relevance to this study.

intensity of use by operating managers (Bisbe *et al*., 2007), i.e., how much attention they pay to controls and how involved they get with their subordinates' activities by using these systems. Additionally, face-to-face meetings between both sides of management must be regular and frequent to debate and challenge important assumptions or implemented action plans (Bisbe *et al*., 2007). This is because the content and nature of this communication is also relevant, and it should be focused on the strategic uncertainties of the business (Bisbe *et al*., 2007). Finally, the fifth component involves "non-invasive, facilitating and inspirational involvement" (Bisbe *et al*., 2007).

In a revised levers of control framework proposed by Tessier and Otley (2012), diagnostic and interactive controls are defined as how controls can be used, instead of control systems *per se*, as had been suggested in the original version of the Levers of Control. Additionally, the authors propose a less inclusive definition of interactive controls compared with the one suggested by Bisbe *et al.* (2007). Tessier and Otley (2012) divided the interactive control concept in two components, as had been suggested by Ferreira and Otley (2009): the "strategic validity controls", used to manage strategic uncertainty and adequacy of the strategy; and the "interactive use of controls", related to how intensively controls are used by managers. According to Ferreira and Otley (2009), it could be confusing to associate both of these components with the "interactive use" component, leaving it to a higher intensiveness of use, which is supposed to promote and facilitate communication (Adler and Chen, 2011; Tessier and Otley, 2012), and learning (Ferreira and Otley, 2009; Tessier and Otley, 2012). Diagnostic use refers to a less intensive use of controls, i.e., if the controls are only looked at when there are discrepancies with the targets (Tessier and Otley, 2002). All in all, Tessier and Otley's (2012) distinction between interactive and diagnostic usage focus on the intensity of the use of controls, which seems to be consistent with Simons (1995), who classified the interactive and diagnostic controls as patterns of attention given to performance measurement systems.

According to Ferreira (2002), a control system does not have to be part of exclusively one lever. This may be explained by the fact that to each control mechanism may be given different emphases in its use (Ferreira and Otley, 2009). In the case of the BSC, both diagnostic and interactive uses were found (Tuomela, 2005). In Tuomela's case study (2005), more than thirty measures were reported and reviewed on a regular basis (without much discussion) with relation to the BSC, which allowed people to be aware of the

deviancy from the goals and indicates diagnostic control. The interactive use of the BSC was represented by the meetings that took place at the measurement team, management and sub-unit level to discuss and question the strategy that was translated in the BSC, which promotes learning and may lead to a reshape of the current strategy.

In any case, several authors questioned whether the BSC was a diagnostic or an interactive control system. Due to its top-down approach, many of them consider the BSC a diagnostic system, including Simons (1995). In fact, Kaplan and Norton (1992, 1996) focused mainly in the diagnostic character of the tool, and it was only in their second book (2001) that they started to highlight the ability of the BSC to work as an interactive control system as well (Kaplan and Norton, 2001).

Another categorization used by researchers to differentiate the BSC types of usage is related to how users classify BSCs as a control system. Those that see the BSC as a performance measurement system (Kaplan and Norton's original idea) use the BSC operationally, i.e. to evaluate and control their performance as well as to manage operational activities in general (see Malmi, 2001; Speckbacher *et al.* 2003; Witcher and Chau, 2008). When they classify BSCs as a strategic management system, they use it to implement, manage and control the strategy of the firm (see Malmi, 2001; Speckbacher *et al.* 2003; Witcher and Chau, 2008; Chenhall, 2005), which is in line with Kaplan and Norton's proposition in 1996.

Ferreira (2002) found evidence from case studies which suggests that the effects of some control information may be more determined by the type of use given to it than the formal characteristic of the control system (Ferreira and Otley, 2009). The case study of Braam and Nijssen (2004) also suggested that the use and interpretation of a BSC matters for the success of its implementation. It reveals itself important to understand those uses and their causes, in order to make BSC implementation successful and relevant for organizations.

2.4. BSC problems

Once the BSC is introduced in an organization, there are several factors that may work against or disturb its acceptance and use. The fact that a system usage is mandatory does not imply uniformity in the intensiveness of individual usage (Hartwick and Barki, 1994). According to Gallivan (2001), most of the problematic issues arise after the adoption of an innovation. Those issues may lead to diverging uses of the new management system, of the intensiveness of its use or even to its non-usage.

Several researchers addressed the problems that may arise in the implementation of the BSC. Drawing upon a categorization of these problems suggested by Madsen and Stenheim (2014), we can say that they may be conceptual, technical, social or political. The following table presents a framework of the issues associated with BSCs, adapted and extended from Madsen and Stenheim (2014)[2]. The remainder of this section is structured based on this table.

[2] In the "Issue Type" column, the categorization proposed by Madsen and Stenheim (2014) was fully respected. In the column "Problem", some topics (identified with asterisk [*]) suggested by other authors (cited in the table footnotes) were added to those proposed by Madsen and Stenheim (2014).

Table 1. Categories of problems associated with BSC (adapted and extended from Madsen and Stenheim, 2014)

Issue Type	Problem	Explanation
Conceptual issues	Contextualization	Difficulties on the customization of the BSC to the organizations' specifications.
	Causal relationships	The definition of a clear link between cause and effect may be challenging.
	Strategy maps	Difficulties on the implementation and understanding of strategy maps.
	Evolution *[1]	The necessity of voluntarily adjust the BSC to changes on strategy
Technical issues	Technical Infrastructure	Problems on getting good infrastructures that support the BSC.
	Software	Available software packages for purchase are too focused on technical aspects of BSC.
	Too much focus on measurement	Too much focus on measurement and little focus on strategic issues.
	Timeliness *[2]	Time demands, inaccurate information systems and manual work may affect the timeliness of the BSC.
	Competing tools *[3]	Other formal (or informal) management control tools may be preferred.
Social issues	Organizational culture	Incompatibility between the BSC and the culture of the organization.
	Scrutiny	Low willingness to cooperate in the implementation due to closer monitoring and higher scrutiny.
	Not-invented here *[4]	Low receptivity to the implementation of novelties proposed by someone else.
	Controllability *[5]	Violation of the controllability principle, i.e., only holding one accountable for what one is able to control.
	Commitment	Lack of commitment from important agents in the organization (e.g. top manager or BSC project team).
Political issues	Time and resources	The BSC implementation and use is highly time and resources-consuming.
	Concept champion	Loss of the most important player of the BSC project (e.g. project manager or consultant).
	Continuity	Turnover or external factors such as economic decline may threat the continuity of the BSC.
	Resistance	Organizational members may offer resistance to the BSC implementation.
	Power games *[6]	Conflicts between different professional groups within the organization (e.g. engineering and finance).

*These problems were analyzed by: [1] Mendoza and Zrihen (1999); [2] Ittner *et al*. (1997), Kasurinen (2002), Oriot and Misiaszek (2004); [3] Mendoza and Bescos (2001), Malmi and Brown (2008); [4] Kasurinen (2002); [5] Jakobsen and Lueg (2014); [6] Wickramasinghe *et al*. (2007)

2.4.1. Conceptual issues

The BSC proposed by Kaplan and Norton (1992) is a "general model" divided into four perspectives, each one containing some key performance indicators that are linked to the strategy of the firm. The problem with such a scorecard is that it is necessary to make several adjustments in order to fit the model to match each firm's characteristics, a task that may be very challenging in some organizations (Madsen and Stenheim, 2014). In the study of Madsen and Stenheim (2014) it was found that the BSC is susceptible of various interpretations and that the concept was difficult to understand in practical terms. Several researchers also criticized the BSC concept, arguing that it has several pitfalls implicit in its design. Nørreklit *et al.* (2008), for instance, said that the BSC oversimplifies the complexity of the organizations and that the use of a large amount of indicators leads to the existence of trade-offs and clashes. If the relative importance of each indicator is not explicit, their multiplicity may be confusing and drive frustration among BSC users instead of focus and confidence (Banker *et al.*, 2004; Nørreklit *et al.*, 2008).

In spite of the importance given by Kaplan and Norton to the development and test of causal relationships between measures, and the argument made by Nørreklit *et al.* (2008) for the fact that these links have to be carefully defined in order to ensure validity of the BSC system (see Albuquerque, 2015), these relationships are still sometimes neglected or not identified as a priority by managers (Madsen and Stenheim, 2014). Moreover, Nørreklit *et al.* (2008) added that there are timing difficulties related to these causal relationships, since there is a time lag between the cause and its effect. Nevertheless, this time dimension is not explicitly a part of the BSC. This fact can also lead, over the time, to the loss of understanding regarding the reasons explaining why things happen in the organization (Nørreklit *et al.*, 2008).

Speckbacher *et al.* (2003) found that less than 10% of the examined firms in their study had strategy maps, though these were defined by Kaplan and Norton (1996) as part of the BSC. Evidence shows that there is a measurement focus instead of a strategic one (Speckbacher *et al.*, 2003), but, according to Lucianetti (2010), companies that use strategy maps perform better than those who do not. Actually, the non-existence of strategy maps makes the scorecard a simple aggregation of key performance indicators (KPIs) that lack a connection to strategy (Wilkes, 2005).

The BSC should be sufficiently flexible and dynamic in order to be able to evolve with strategy when it changes. Nevertheless, it remains to be explained how that evolution should be managed, since the BSC does not provide the means to evaluate its relevance or need to change (Mendoza and Zrihen, 1999). Since the BSC is not a self-evolving tool, it is always needed to regularly look at the strategy to check whether it has changed or not and, in case of change, adapt the BSC to the new one.

2.4.2. Technical issues

An ordinary technical problem is the difficulty in acquiring good IT infrastructure to support the BSC (Madsen and Stenheim, 2014). Some companies prepare their own Excel-BSC-sheet, while some others purchase software packages, potentially incurring in the contextualization problem (Madsen and Stenheim, 2014).

Another problem identified by Madsen and Stenheim (2014) was that there is a tendency to focus on the technical and measurement issues instead of concentrating on the conceptual, organizational and strategic ones. According to Braam *et al.* (2002) this is even more noticeable among employees with an accounting/finance background, but in Kasurinen's (2002) case study, the author found that the engineering culture also "tended to weaken the role of strategies and strengthen the role of diagnostic measurement" (p. 337).

Some other technical issues in the implementation of the BSC were found in a field study of the U.S. retail banking operations, developed by Ittner *et al.* (1997). These were related with time demands, since it was necessary to review and correct numbers with other intermediates, to carry out meetings, write narratives and so on. Apart from this issue, there were complaints about the existing management information systems. The interviewees demonstrated distrust in the accuracy of some information provided by these systems and stated that there were also delays in the information disclosure, which led to a lack of the BSC's timeliness.

Problems in data collection and processing were also pointed out by some researchers, (see Ittner *et al.*, 1997; Kasurinen, 2002; Oriot and Misiaszek, 2004). Their findings show that sometimes the information systems are not completely automated and a lot of manual

work is still needed. Therefore, this may also work as a "delayer" of the BSC (Kasurinen, 2002) and contribute to a lack of timeliness.

As we have seen from the two paragraphs above, there are several factors that may call the timeliness of the information into question, a key factor for managers. The sooner they are informed, the better. This sometimes makes them willing to accelerate it themselves, developing their own ways of getting the information they need in a quicker way, through, for instance, observations, personal contacts and informal reports (Mendoza and Bescos, 2001).

Companies may have a "management control systems package" (Malmi and Brown, 2008), i.e., a collection of controls and control systems, and an often raised question is how specific controls relate to each other and whether they operate as substitutes and complements (e.g. Abernethy and Chua, 1996; Chenhall, 2003; cited in Malmi and Brown, 2008). According to Kaplan and Norton (1996), the BSC was not a substitute for a day-to-day measurement system of a company. Plus, in Kaplan and Norton (1992), they had argued that BSCs would need to be complemented by information systems in order to disaggregate the summarized data provided by the BSC and therefore be able to identify the particular causes of those results. But, seeing the BSC as a tool from this "package", its compatibility with the existing instruments must be assessed before its implementation, since superimposing tools risks overloading managers with information (Mendoza and Bescos, 2001). In their study, Mendoza and Bescos (2001) found that more than 90% of the interviewees said to be faced with redundant information provided by different tools, which leads them to disregard or only quickly assess parts of them, focusing only on a few key indicators and reading them more carefully just in case anomalies arise.

2.4.3. Social issues

The BSC may simply not be compatible with the organizational culture. Oriot and Misiaszek (2004), for instance, found a lot of resistance in the implementation of the BSC in an organization dominated by engineering professionals due to its culture, which is characterized by a greater focus on the technical and mechanistic aspects of the BSC than

on management ones. On the other hand, Madsen and Stenheim (2014) found empirical evidence where a culture dominated by financial numbers also led to resistance to a multi-dimensional measurement system, since it took into account other aspects than just finance.

Another cultural factor that can determinate whether people accept a new management system or not is the level of innovation in the organization. For example, Baird *et al.* (2004) found a positive relation between the adoption of activity management practices and an innovative organizational culture. On the other hand, some researchers directed attention at the possibility of the BSC to become a "straight jacket", hindering innovation and creativity (Voelpel *et al.*, 2006) and interaction and organizational learning (Antonsen, 2014). This way, the implementation of the BSC may not only be affected by culture, but also influence it. Changing the way performance measurement is done may modify the context of where the change is implemented (Andon *et al.*, 2005). For instance, an organization dominated by engineering professionals could change its focus to a more business-orientated one, as Dent (1991, cited in Andon *et al.*, 2005) found in his study of a British rail organization's case about the adoption of a profit-base performance measurement.

Managers may also feel threatened by the closer monitoring and higher scrutiny of their activities, leading to low willingness to cooperate with the new management control system development (Vaivio 1999; Braam and Nijssen, 2004; Madsen and Stenheim, 2014).

The lack of motivation to implement a novelty in an organization (or of a group of people within an organization) which was proposed by another player – the "not invented here" phenomenon – was also found to be an obstacle of the success of the BSC in Kasurinen's (2002) case study.

To strengthen the receptiveness of the organization to a new system such as the BSC, it is crucial that the project manager puts effort into selling the instrument and the concept (Dutton *et al.,* 2001). When firms feel that the BSC is beneficial to the organization, they should try to influence managers' preferences through, for example, training (Wiersma, 2009). Involving them in the definition of new control systems is another way of getting their commitment and leading to a better understanding and acceptance (Nørreklit, 2000).

The design of the BSC may violate the principle of controllability (Jakobsen and Lueg, 2014), whose usual interpretation is that one should only be held accountable for what one is able to influence or control. Jakobsen and Lueg (2014) found that the BSC may cause "unintended breaches" of this principle at the middle managers' level, since these managers' performance is dependent of external factors, decisions taken by others, by superiors or taken by themselves earlier. These authors also proposed that dysfunctional applications and failed implementations may arise from this problem. If the performance evaluation and respective compensation is linked to the BSC, the situation can be worsened, leading not only to sub-optimization but also to stress and dissatisfaction among BSC users (Giraud *et al*., 2008, cited in Jakobsen and Lueg, 2014).

Finally, when the top-management or project team is not committed to or strongly interested in the concept, it is very difficult to successfully adopt the new management system (Oriot and Misiaszek, 2004; Wickramasinghe *et al*., 2007), because the low interest in the BSC will be spread to the rest of the organization's members (Madsen and Stenheim, 2014).

2.4.4. Political issues

The BSC project requires a huge amount of time and resources (Madsen and Stenheim, 2014), not only to implement it but also to assimilate the concept in people's minds. Sometimes not everyone in the organizations is willing to invest the time and resources required in the development and implementation of the BSC (Kasurinen, 2002), and there is the possibility that the benefits do not compensate the costs involved (Papalexandris *et al*., 2004). This is also related to top-managers' lack of commitment explored in the previous section (Madsen and Stenheim, 2014). If the managers do not define the BSC project as a priority, they are not expected to invest a lot of time and resources on it.

If the project manager or consultant responsible for the BSC implementation leaves the organization during or right after the completion of this process, the organization is said to lose its "champion" (Chakrabarti, 1974, cited in Madsen and Stenheim, 2014) or "soul-of-fire" (Stjernberg and Philips, 1993, cited in Madsen and Stenheim, 2014), and for that reason the survival of the BSC may become in danger.

The continuity of the BSC project in an organization after its implementation may be not only affected by the loss of the "champion", but also by other factors such as a high turnover, many new hires, or external factors like an economic recession (Madsen and Stenheim, 2014).

The skepticism of organizational members regarding the capability of the BSC to serve them can lead them to create some resistance against the BSC. This skepticism may arise due to previous failed experiences in implementing other innovative concepts in the organization, becoming this way immune to "fashionable ideas" (Røvik, 2011) in general. Moreover, as explored in the previous section, if a particular concept is not compatible with the organizational culture, it is more likely to see resistance to its implementation (Madsen and Stenheim, 2014). According to Rogers and Shoemaker (1971, cited in Wiersma, 2009), the receptiveness of people to innovative ideas may be influenced by their innovativeness personality trait. Actually, a higher receptiveness to new types of information systems was found to positively influence the level of BSC usage (Wiersma, 2009).

Finally, according to Wickramasinghe *et al.* (2007), there is also the possibility of the emergence of power games between finance and non-finance personnel during the implementation of the BSC, that hamper the success of the process. This can be explained by the fact that non-finance people start to be asked to provide some (non-financial) information that was not providing before, which implies extra effort from them (Wickramasinghe *et al.*, 2007). This is another reason why it is necessary to "sell" the BSC concept to non-finance people, in order to motivate them to cooperate.

2.5. Similar studies

This section will report the main conclusions from some empirical studies related to the different uses and of the BSC and problems of this tool. There is a significant number of studies regarding the diversity of uses, but little literature regarding the BSC non-usage.

As previously suggested, studies that addressed the uses of the BSC in particular, in different contexts, divided the uses according to the way users classify this tool as a control system. This is somehow related with the fact that the BSC concept has suffered

a change of focus since its introduction by Kaplan and Norton (1992), moving from a performance measurement system to a strategic management system (Kaplan and Norton, 1996). This change of emphasis led to some differences in the interpretation of the BSC and therefore to different type of uses.

Malmi's (2001) study intended to understand how the examined companies applied the BSC. For some of the studied companies, the BSC was a tool of management making use of objectives where financial and non-financial targets co-existed. This type of use is close to the argument of Kaplan and Norton (1996), according to which the BSC is a strategic management system. On the other hand, other companies used the BSC as an information system, i.e., a tool which managers could check in order to understand where they are performing better and worse, therefore knowing where improvements are necessary.

Speckbacher *et al.* (2003) defined three types of BSC usage that correspond to the sequential developments of the BSC concept made by Kaplan and Norton over time, and that can be interpreted as the three phases through which the BSC passes during its implementation process. Their aim was to investigate the benefits of the different types of BSC as well as the problems that may arise in each of the phases.

Witcher and Chau (2008) analyzed case studies at two UK companies (EDF and Tesco), distinguishing their BSCs as strategic (which is related to the vision of the firm, that stimulates learning) and operational (which is based on diagnostic objectives), respectively. They relate these differences with the progressive change of focus of Kaplan and Norton's view of the BSC's purpose since the first introduction of the concept (Witcher and Chau, 2008).

Chenhall (2005) addressed the way managers use "integrated" strategic performance measurement systems, such as the BSC, i.e., those that link operations and strategy through cause-and-effect relationships between measures related to financial, customers, business processes and long-term innovation areas. According to Chenhall (2005), managers use BSCs to assess the coherence of their decisions with the strategy of the firm. The information that this system provides helps them to understand whether the current strategy is effective or if there is room for improvements. Managers also take advantage of the BSC using it to communicate information and therefore align decisions

of managers across functions (horizontally and vertically) (Chenhall, 2005). Finally, the author also highlights the capacity of the BSC to integrate the complexity inherent to the business environmental changes.

Wiersma (2009) analyzed for which purposes managers use BSCs, and what drivers of BSC usage led them to those purposes. The author found that managers used this tool in order to make and rationalize their decisions, to coordinate activities and to monitor themselves. First, for decision-making and decision-rationalizing the drivers were found to be the degree of action controls used and the receptiveness of managers to new information types. Second, the drivers of BSC usage for coordination were the emphasis placed on evaluation and the receptiveness to new types of information. Finally, what drove self-monitoring purposes was the emphasis placed on evaluation (Wiersma, 2009).

The situation of non-use of the BSC after its formal implementation has not been directly addressed in previous studies, which seems to leave a gap in the literature regarding this issue. Nevertheless, several problems related to the design and implementation of the BSC have been explored in some studies. Since problems that arise in the adoption phase, or that are inherent in the design of the tool, may remain after the implementation, they are potential factors to explain a situation of non-usage, and even to explain divergences between individual uses. Therefore, a presentation of some of the most relevant studies regarding BSC problems follows.

Once again, I just refer back to Madsen and Stenheim (2014), who did a qualitative study in Scandinavia that identified problems related to the implementation of the BSC in organizations and divided them into conceptual, technical, social and political issues.

Kasurinen (2002) developed a longitudinal case study that specified the possible barriers that could hinder, delay or prevent the management accounting change process. The author divided the barriers, naming them as "confusers", "frustators" and "delayers". The "confusers" were associated with the complexity of the context and the confusion of BSC objectives. The "frustators" were related to the engineering culture and to the existence of other reporting systems, both seeming to suppress the change. Finally, the "delayers" were associated with the inadequacy of the information systems and the lack of clear-cut strategies.

Finally, Oriot and Misiaszek (2004) studied the technical and organizational barriers to the implementation of a BSC in a European space company. The authors found that the BSC implemented was mainly a "diagnostic control system", because it followed a top-down approach, defining the BSC as a way to follow an intended strategy. They also found that some perspectives of the BSC were not sufficiently developed, discussed the impact of culture and rewards, the complexity of the definition of cause and effect relationships, the evolution of the tool, its integration into existing control systems and the importance of the participation of the players in the BSC implementation.

To conclude the analysis of the similar studies, their methodological characteristics are summarized in the following table.

Table 2. Methodological characteristics of similar studies

Subject studied	Authors (year)	Country	Sample size	Industrial sector	Method	Technique
Different uses of BSC	Malmi (2001)	Finland	17 firms	Multiple industries	Empirical study – field visits	Interviews
	Speckbacher *et al.* (2003)	Germany, Austria and Switzerland	174 firms	Multiple industries	Empirical study – quantitative	Survey
	Witcher and Chau (2008)	United Kingdom	2 firms (EDF and Tesco)	Energy and Retail	Empirical study - case study	Direct observation (EDF), Documents, Interviews (Tesco)
	Chenhall (2005)	Australia	80 Strategy Business Units	Multiple industries	Empirical study – quantitative	Survey
	Wiersma (2009)	Netherlands	19 firms	Multiple industries	Empirical study – quantitative	Survey
BSC Problems	Kasurinen (2002)	Finland	1 case study, 100h of interviews, discussions, meetings	Metallurgic	Empirical study – longitudinal case study	Interviews, Direct Observation, Documents
	Oriot and Misiaszek (2004)	European country	1 case study, research details undefined	Space	Empirical study – case study	Interviews, Direct observation, Documents
	Madsen and Stenheim (2014)	Scandinavian countries	61 interviews	Multiple industries	Empirical study - qualitative	Interviews

2.6. Critical analysis of the literature reviewed

The studies reviewed were extremely useful for mapping the argument of the importance of the BSC potential usages in a company, as well as the problems that potentially lead to a situation of different uses and/or non-usage. The reviewed studies proved to be a valuable resource to support the definition of potential uses and problems to be explored and therefore to elaborate the interviews' guidelines that I used to generate and collect information during the EDP Produção case study. In addition, the findings of these studies served as a great point of comparison for this dissertation.

Nevertheless, there are some limitations in the literature reviewed. For instance, some of the studies addressed management control systems in general and not the BSC in particular, which implies carefulness when their implications are applied to this specific system, otherwise they may lead to invalid conclusions.

Another sensible issue in the literature review, which has previously been pointed out, is the lack of studies regarding the non-usage of the BSC in the sense that I intend to study – after being officially implemented in an organization. In the concrete case of EDP Produção, BSCs have already been implemented, so studies addressing the *non-usage* with the meaning of *non-adopted/non-implemented* BSCs are not directly related to what this study pursues. Therefore, the option of reviewing studies which addressed BSC issues during its implementation phase, or inherent to its design, seemed to be the most appropriate way to capture possible explanations to a situation of the non-use, in practice, of officially adopted BSCs, as well as to explain potential divergences of uses.

3. Methodology

The method chosen for this dissertation is the case study method since it is able to satisfy the ambition of gaining an in-depth and holistic understanding of real-life events in their context (Yin, 2009). Therefore, this method allows us to have a contextual and deep understanding of a case that may result in new learning about the behavior and meaning of the real-world (Yin, 2009).

Case studies are more adequate to answer descriptive and explanatory research questions, which is the case here. This is due to the richness of the descriptions and insights of the explanations that may arise through using this method.

The desire to understand the case of EDP Produção in an in-depth way and to cover its real-life context led me to a wide range of topics to cover, which made it necessary to use multiple sources of evidence. In this case, I collected qualitative data from three different sources: interviews, documents and direct observations. The option for interviews instead of surveys was not only related to the desire of acquiring deeper insights, but also due to the sensitivity of the topic.

Three different interviews' scripts were developed, each one corresponding to the different groups of interviewees (from the sub-units, the Management Control department and the Executive Board). The interviews were semi-structured (Yin, 2009), which means they followed the scripts that were prepared but the interviewees were free to add spontaneous commentaries on issues that were not touched upon in questions. The interviews' general scripts were updated during the research process to adapt to particular managers and to incorporate on-going empirical findings and issues needing to be confirmed or further explored, and their final versions are presented in appendix.

Initially, the objective was to interview the managers responsible for the sub-units which have a BSC, as well as the BSC designers. Then, other organizational members whose views came to be considered as relevant, as the empirical study unfolded, to the initial criteria of the interviewees' selection were added. Hence, I interviewed the managers of the majority of the sub-units of EDPP which have a BSC (eight out of eleven), the designers of this tool (two people from the Management Control department) and two members of the Executive Board. The interviews were carried out between December

2015 and March 2016 and took from 27 minutes to 1 hour and 3 minutes. All of them were recorded and transcribed. The following table summarizes the interviews' details per interviewee, which are identified with an abbreviation (interviewee code) to facilitate the identification of the authors of the quotes that will be presented in the empirical analysis chapter.

Table 3. Interviews details

Department	Interviewee code	Date (day/month/year)	Duration (hours:minutes)
Asset Management (sub-units)	AM1	04/02/16	01:03
	AM2	08/02/16	00:31
	AM3	12/02/16	00:45
Studies, Projects and Investment (sub-units)	SPI1	21/12/15	00:35
	SPI2	28/01/16	01:02
	SPI3	02/02/16	00:37
	SPI4	05/02/16	00:27
	SPI5	08/02/16	00:31
Management Control	MC1 and MC2 [1]	14/03/16	00:44
Executive Board	EB1	15/03/16	00:30
	EB2	18/03/16	00:31

[1]   1 session, 2 interviewees

In addition, documents that supported the design of the BSCs (strategy maps and presentations of the BSC proposals) and direct observation during my daily work in the Management Control Department also contributed to the collection of information.

The use of different sources allowed triangulation, which means I crossed information from the different sources and analyzed whether they gave me the same results or not. Therefore, I was able to strengthen credibility and mitigate the possibility of biased results.

4. Empirical Analysis

In this chapter I present the empirical results from the investigation pursed through the interviews that were carried out, the documents reviewed and my direct observations. I start in section 4.1 by introducing the company of this case study and its structure; in section 4.2 I explain how the implementation of the BSCs were made, as well as its objectives; the paradox of the existence of different uses and non-usage of the BSC is presented in section 4.3; finally, several explanations for the paradox are given in section 4.4.

4.1. The Company

EDP Produção is one of the largest companies of the EDP Group, the leader in the energy sector in Portugal. Its role within the group is to manage energy generation of its hydro and thermal power plants installed across the Iberian Peninsula.

In Portugal, the company is divided into several departments, which can be grouped in 3 parts according to their role in the organization: Asset Management; Studies, Projects and Investments; Support Areas.

The Asset Management (AM) part comprises 5 generation centers that are responsible for managing the operations of the hydro and thermal power plants.

Studies, Projects and Investment (SPI) is divided into 6 sub-units: 3 Project Teams responsible for managing specific expansion investment projects and 3 Engineering Departments that facilitate not only the implementation of the expansion projects but also the execution of the maintenance investments made in the power plants of the generation centers, providing them specialized engineering services.

The Support Areas encompass all the other departments that provide assistance to the whole organization, such as the Management Control department (MC) and other areas related to Regulation, Sustainability, Maintenance, Administrative services, Human Resources, etc.

All these departments have a leader, who will be referred in this study as "middle managers". Then, all of them report to and follow instructions from the Executive Board, whose members will be referred as "top managers". The organizational structure described follows in the figure below.
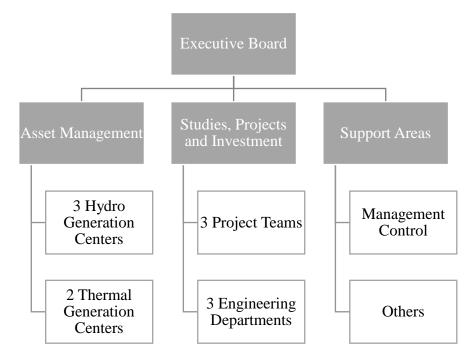
Figure 1. Organizational Structure of EDPP

4.2. The implementation of the BSC

The BSC was implemented under a project that aimed at optimizing the organization, processes and employee behavior for the execution of the strategy in its different aspects. The project included, apart from several other activities, the implementation of the BSC and the improvement of other reporting activities of the company.

Initially, in 2013, the desire was to make a first level BSC, i.e., a BSC at the company level. But, since, the beginning there was always the aspiration to, in a second moment, go down to the department level, in order to improve the reporting of the sub-units that had a major contribution to the organization and best explained the financial indicators EBITDA and CAPEX. After implementing second level BSCs, EDPP ended up removing the BSC at the company level, because it was found that it did not add a lot to the

organization, since there were already other types of information that permitted adequate monitoring of the company's performance. In contrast to this, the BSCs at the department level still exist, and these are the ones addressed in this study.

At the second level, various BSCs were implemented for the two main departmental groups: in the beginning of 2014, the BSCs for the Asset Management (AM) departments; later, in the second half of 2014, the BSCs for the Studies, Projects and Investments (SPI) areas. Each BSC was adapted from the first level version and customized to the specifications of each hydro and thermal generation center and of each Project Team and each Engineering Department. All of these BSCs had a trial period, and turned official in the beginning of 2015.

In this analysis it is important to distinguish results from the different sub-unit types (AM versus SPI), as explained by a member of the Executive Board:

> *"Between AM and SPI, the components of the BSCs themselves are different. The AM's activities are much more repetitive, much more associated with the day-to-day operations. In the SPI, the activities are not so repetitive, they manage something that has a beginning and will have an end. They have a long road to go that has moments in which they go faster and others in which they go slower." (EB1)*

Due to the differences between the scopes of the two departmental groups, the BSCs designed for AM diverge from those made for SPI. Within each one of these two groups, the BSCs conversely have more similarities, though they are not completely identical. In addition, management styles may vary if we are speaking about AM or SPI, and therefore the usefulness that the different beneficiaries find in BSCs may also diverge.

4.2.1. Characteristics and Objectives

The BSC in EDPP was defined as an instrument to support strategic management that complements financial performance indicators with operational indicators fitting in three additional perspectives – clients, internal processes and learning & organizational development – that are assumed to be the drivers of future financial performance. The integration of new perspectives pursed a balance between short, medium and long term

objectives, financial and non-financial, and between internal and external performance perspectives. To translate the relative importance of each indicator, each one is weighted. With those weights, a score per perspective and a global score are calculated.

The BSC was not supposed to present itself as a substitute for the other performance evaluation instruments that have a strong focus on the financial perspective, but as a complementing instrument.

According to the EDPP's BSC proposal made by the Management Control (MC), which was formally approved, this instrument was positioned as a strategy communication tool, and had the following objectives:

1) Translating the EDPP strategy into operational objectives and indicators, allowing better communication and understanding of the strategy;
2) Promoting better organization of the sub-units and of the employees around the execution of the defined strategy;
3) Ensuring stronger connection between the sub-units performance and their evaluation.

This view seems to be in accordance with the position indicated by the members of the Executive Board (EB) interviewed. According to them, the objectives of the BSC implementation included the communication of the strategy, financial and non-financial performance measurement, monitoring of sub-units in terms of evaluation and in terms of improvements to be made. One of the best benefits that they found in this tool is the possibility to synthesize several aspects from different perspectives, which allowed them to monitor performance through a comprehensive overview.

4.2.2. Intended Beneficiaries

When the BSC was implemented by the MC department, the objective was to make it useful to both middle managers (the directors of the sub-units) and top managers (the members of the Executive Board). This was pointed out by some of the sub-units' managers who could find it even more useful to the EB than to themselves. According to the top management, the BSCs were, or should be, designed to serve both the top and middle managers:

"I think that the BSCs have a double role: first, to provide to top managers a clear perception of the efficiency of a sub-unit in a single map; second, to allow to middle managers the assessment of their own efficiency." (EB2)

It was mentioned by a member of the EB that the use by one part leads to the use by the other, i.e., if the EB uses the BSC and monitors its subordinates through this tool, the middle managers will also look at it to control their sub-units' performance:

"It is very useful for the top management. But knowing that we use it, the middle management have to be interested in it as well because they are being monitored by us exactly through that tool." (EB1)

This was also noted by the MC department, which refers to the fact that if a top manager did not value or make use of the BSCs, his subordinates would probably not feel motivated to do it by themselves.

In this study I will focus mainly in the use given to the BSCs by middle managers, since they are those directly responsible for managing the sub-units that have BSCs.

4.2.3. Planned frequency of use

The BSCs have a quarterly periodicity, which means that at the end of each quarter the MC department joins efforts to elaborate the BSCs for all the AM and SPI areas. When they are ready, which may take around 3 weeks, they are sent to the respective sub-units' managers as well as to the top managers.

The frequency of use desired for this tool is quarterly, as well as the periodicity that most of the sub-units' directors reported to use. Nevertheless, the sub-units may always revisit this instrument every month if necessary, as some of them did, in order to inform them of how they were performing at the end of the previous quarter, keeping in mind which improvements were necessary to make to stay aligned with the objectives.

The BSCs were never supposed to be a day-to-day running tool, as described by an MC interviewee:

"Obviously, the BSC had not the objective of serving day-to-day management activities. It would be necessary to have a daily BSC, which would not make sense regarding its positioning." (MC1)

4.2.4. Clarification sessions about the BSC

The adopted approach to explain the concept of the BSC to the sub-units was to present the strategy maps to the middle managers, which showed what the strategy of the company was, and discussed how they contributed to its execution. After this first session, the MC department quickly changed its approach focus to the more practical questions, preparing the first customized BSC proposals and presenting them to the respective sub-units. There was room for suggestions and improvements, involving people in the development of the BSC during the pilot phase until reaching its final and current version.

4.2.5. Sub-units' participation and inclusion

According to the MC department, people from the sub-units were suitably included in the process of selection and in the discussions concerning the indicators. Presenting the strategy maps to the sub-units, and explaining how the model worked was a very important step not only to make them aware of the BSC concept, but also to allow the MC department to collect information about their activities, in the sense that the MC department did not know a lot about them and they needed to do it in order to suggest an appropriate BSC model. After this phase, the MC department proposed a first version of the BSCs, initiating a negotiation process with the sub-units about which indicators made sense and which ones did not.

Nevertheless, including people from the sub-units in the BSC development was considered to be difficult in some sub-units, as described by an interviewee from the MC department:

"It can be difficult to find good indicators and measures to translate a specific objective, as well as to define their weights. All these aspects may be questioned and the other part must have an open and conciliatory attitude,

otherwise it is capable of creating a lot of resistance and impeding the progression of the project." (MC1)

According to the MC department, the AM managers were more receptive and collaborative in the process, although with SPI it was more difficult to reach a consensus.

4.2.6. Connection of the BSC to the strategy

The developed BSCs were based on the defined priorities for 2013-2015, and for each priority a strategic map was created in order to describe and schematically illustrate the cause and effect relationships between the defined objectives and their respective indicators.

As previously said, strategy maps were explained to the sub-units. When interviewed, the majority of the middle managers said they were aware of this connection and valued it in the BSC.

Nevertheless, the interviewed EB members, even being aware of the efforts put on ensuring the connection of the selected indicators to the strategy, were concerned about the constant improvements that had to be made to the BSCs, not only to try to find increasingly better indicators that represent a certain objective, but also to follow the changes in strategy when they happen. Actually, the company has come to the end of a cycle: the expansion investment projects that were in progress are approaching their conclusion. This indicates a strategic shift which affects mainly SPI areas due to the scope of their activities (mostly related to investments and expansion).

4.3. The paradox: the different uses and non-usage of the BSC

The BSC proposal suggested different purposes of usage for the BSC, but did not differentiate between the degrees of use in general in any way. It was defined as a tool to communicate the strategy with the objective of creating awareness about it, promoting better organization between the sub-units and improving the execution of the strategy and therefore increasing the visibility of their activities, resulting in their accountability. Since some performance evaluation tools already existed, the MC department put an effort early

on to make it clear to its users that the BSC was not a substitute of those performance evaluation tools but a complement to them.

Nevertheless, ensuring an aligned interpretation and hence uniform use of the BSC proved to be a difficult task. Interviews revealed that, for various reasons, there were situations of different perceptions of the BSC usefulness and therefore a tendency to focus on some of the usages rather than others, as well as different levels of use in general.

We can categorize the uses of the BSC according to three different purposes: 1) Monitoring and Control; 2) Support for management; 3) Communication of strategy. All these type of uses are somehow enhanced by one of the advantages which are more frequently mentioned by the interviewees: synthesizing a wide range of aspects into a brief map.

1) **Monitoring and Control:** As previously mentioned, there are other instruments that serve the official evaluation purposes. They are composed of key performance indicators (KPIs). The BSC, in order to strengthen the connection between the performance of sub-units and their evaluation, briefly combines some of those official KPIs (used for evaluation purposes) with other KPIs used for other purposes in a single map. Hence, some of the middle managers stated to use the BSC to monitor their performance and detect where there is need for improvements. While doing this, they control how they are performing and ensure the achievement of the goals set regarding those KPIs.

2) **Support for management:** The BSC is also perceived as a very good tool to support management, in the sense that it allows managers to have a comprehensive view of their sub-units. Interviewees value the combination of quantitative and qualitative indicators from various perspectives that allows them to do an integrated analysis of the current situation and therefore make more informed decisions and plan the future.

3) **Communication of strategy:** A few managers also mentioned to value the communication power that the BSC has, not only to themselves, i.e., to align their management with the organizational strategy, but also to their subordinates. They said that with the BSC they could work in alignment with the strategy and communicate it to their teams, ensuring that everyone

understands their contribution to the achievement of the sub-units' objectives and, consequently, to the company results. In small teams, middle managers usually circulate the BSC to everyone, but in the biggest ones the middle managers said that they only share the BSC at the management level. Nevertheless, some of these mentioned that it could make sense to circulate it to everyone in order to make strategy their day-to-day job.

All these types of BSC usage are in line with the objectives of use defined when the BSC was introduced in EDPP. In spite of this, there were sub-units that were more or even exclusively focused in the two first uses indicated above, disregarding the third one. The proposed BSCs were mainly presented as communication tools that support strategic management, but in fact just a few interviewees, all of them belonging to AM, clearly demonstrated to have this mindset. Even the EB members, when asked about which purposes they used the BSC for, focused mainly on monitoring and control as well as support for management.

In terms of intensiveness of use, the perception of the MC department and of the EB members was that differences between AM and SPI areas may exist. According to them, AM is more likely to use it more often and intensively than SPI due to several reasons. This is in line with the results of the interviews to middle managers. AM managers demonstrated a stronger interest in this tool, while SPI areas in general assumed they were not that committed to the BSC.

Apart from different types and intensities of BSC usage, situations where no use is given at all to this tool may also arise. Some sub-units may feel that, for some reason, the BSC is not useful for their management and therefore completely disregard this instrument, as described by an interviewee from the Executive Board:

> "*I would say that maybe some of the sub-units do not see their BSCs as truly representative of their efficiency, and therefore they may not be using them.*"
> *(EB2)*

When asked about the potential existence of non-usage situations, the MC department and the EB members were not certain about the truthfulness of that fact, but accepted that such possibility exists, mainly in SPI areas.

Some sub-units clearly stated that they do not use the BSC for various reasons. I also classified as non-usage the "false uses", i.e., those situations in which the interviewees:

1) said that they looked at the BSC only to validate its information;
2) refer to the "use" as the provision of information required by the MC department to the elaboration of the BSC every quarter;
3) refer to the "use" of the BSC as the use of only a relatively small part of the tool.

The majority of these non-usage situations were found within the SPI group, which is in line with the perception of the MC department and the EB members.

All in all, when empirically analyzing the EDPP case, I could conclude that the existing diversity of uses was not exactly a problem in the company, since such diversity was already intended. Taking the planned usages for the BSC, which includes all the types of uses found (monitoring and control, support for management, communication of strategy) as the desirable situation, the paradox found in this case study refers to:

1) The negligence of the use of the BSC to communicate strategy;
2) The different intensities of BSC usage;
3) The BSC non-usage.

Due to the great number of interviews done at the middle management level, it was possible to understand the BSC utilization patterns, between the two groups of its beneficiaries: the AM and the SPI areas. First, the table below distinguishes which types of use were found in AM and SPI departments, respectively. Second, it compares the degree of intensiveness between the two departmental groups, as perceived from the empirical insights. Finally, the table also compares the number of non-usage situations between these two groups.

Table 4. BSC utilization patterns: AM vs SPI

	Types of use	Intensiveness of use	Number of Non-usage situations
AM	- Monitoring and control - Support for management - Communication of strategy	Higher	Lower
SPI	- Monitoring and control - Support for management	Lower	Higher

Given the qualitative approach of this research, these classifications have emerged from a qualitative comparative analysis of the various interviews, which allowed to establish a quite clear differentiation between the usages across the various groups, and significant consistency within each group.

As previously stated, we can conclude from the table above that the SPI areas lack the "communication of strategy" type of use, that they use the BSC less intensively compared with AM departments and that a higher number of BSC non-usage situations were reported in SPI areas comparatively to AM ones.

In spite of these BSC utilization patterns, situations of low intensiveness of use and non-usage of the BSC also happen within the AM departments, which suggests that there are problems related to the BSC that affect all the users in general and not only issues that are exclusively related to the SPI areas.

4.4. Explanations for the paradox

The existence of different intensities of use and of BSC non-usage situations was not predicted at the time of the BSC implementation. On the other hand, the different uses found among the BSC users correspond to those intended at the time of its implementation, except for a part of the organization (SPI) that misses one of the intended uses (communication of strategy) - interestingly, the most emphasized usage in the BSC implementation proposal. The results suggested that several factors contributed to a less intense use of the BSC that, in an extreme situation, can mean non-use of the BSC. Some of them may also explain the lower importance given to the power of the BSC to communicate the strategy. Following the structure adopted in the literature review, we can categorize these factors in conceptual, technical, social and political issues.

4.4.1. Conceptual issues

The MC department followed several steps in order to develop meaningful BSCs for the sub-units. To recap, they started by creating strategy maps for each strategic priority, illustrating the cause and effect relationships between the objectives and the respective

indicators. These maps were then presented to the middle managers, stimulating a joint debate about which indicators best represented the defined objectives and what was their relative weight. When consensus was reached, the BSCs were put into practice and tested during a trial period, after which they were officially introduced. However, it should be noted that, according to the MC department, it was much more difficult to have people from SPI areas involved in this process and it was not possible to reach total consensus between the MC department and these parties. In spite of this limitation, and in order to escape from the stand-still that the SPI's resistance was creating, a final version of the SPI's BSCs was proposed by the MC department, approved by the Executive Board and finally officially introduced.

Comparing the strategy maps defined for each sub-unit, I could conclude that there was indeed a strong concern about customizing the BSCs to the reality of each sub-unit, differentiating them not only between AM and SPI areas but also within these two groups. The scope of each one is different within AM (some departments are composed by hydro power plants and others by thermal power plants) as well as within SPI (some departments are Project Teams and others are Engineering Departments) and an effort was made to capture the precise contribution of each sub-unit for the results of the company.

In general, the sub-units said to agree with the range of indicators which are currently part of their BSCs. Most of them commented that the main indicators are present and that they are enough for the brief overview that the BSC intends to provide.

In spite of this, a particular SPI member demonstrated some disagreement with the adequacy of the BSC conceptualization, questioning its fit to their context and to the company strategy, as well as arguing that it fails to define a clear link between cause and effect:

> *"The indicators are not the most adequate to our activities. There are trade-off relationships between them that are not clarified. (…) The formulas that translate the scores do not always translate the company scale of values (…), and the same happens with the weights given to the indicators." (SPI4)*

This shows that, in fact, there was not consensus about the conceptualization of the BSC, as previously stated, and that this lack of consensus still prevails. This is one of the factors

that may contribute not only to weaken the intensiveness of BSC use but also to the negligence of the use of the BSC to communicate strategy from this group of people.

The concern about the adequacy of the BSC conceptualization is also shared by the EB members. They stated that the BSCs should evolve in alignment with the strategic guidelines:

> *"The BSCs should be defined in a way that allows them to be adjusted if the strategy changes. When the critical aspects change, the BSCs have to change as well." (EB2)*

In their opinion, since the priorities defined for 2013-2015 progressively changed over time, the current BSCs already need some adjustments. In addition, they feel that there is always room for improvements, and that an effort should be made to continuously look for indicators that are more illustrative of the objectives. Indeed, if the link between the indicators and the strategy is missing, those users that value the BSC as a tool to communicate strategy will probably stop finding it useful to meet that need. Therefore, this issue weakens the use to communicate strategy by all the beneficiaries in general. Moreover, according to direct observation and analysis of the strategic shifts in EDPP, I could conclude that the change of strategy mentioned in section 4.2.6 affected mostly SPI areas due to the scope of their activities. Hence, this BSC limitation is probably affecting more the use of this tool to communicate strategy among users from SPI areas than among users from the AM departments.

4.4.2. Technical issues

The BSCs were parametrized in Excel-spreadsheets that are prepared to be fed with information quarterly and to return scores based on formulas that combine the defined weights of each indicator, the target and the real values. According to the scores obtained, red, yellow or green little circles are also presented, giving to the BSC users a clear and friendly view of the sub-unit performance.

In the opinion of the designers of this infrastructure, the Excel-spreadsheets' preparation was not a critical step of the BSC implementation. In technical terms, the problematic

question that they found is associated with the collection, processing and validation of information, as stated by a MC department interviewee:

> *"These tasks [collection, processing and validation] take time and it gets worse when some information is not supported in any system because it implies much manual work." (MC2)*

I could also conclude from both direct observation and the interview to the MC department that the quarterly process of elaborating the BSC involves interactions with several parties, mainly when dealing with non-financial issues. The collection of this information implies data requests not only to the respective sub-units but also to other departments (Support Areas). In addition, when it comes to the validation of the information, it is almost always necessary to question its provider again, in order to recheck some small details and ensure the quality of the information, as described by an interviewee from the Management Control department:

> *"Sometimes we notice that some of the information provided by third parties is not the most updated or that it doesn't meet some of the requirements, and therefore we need to question them again, in order to ensure the quality of the information. (…) Each and every quarter we have several interactions with the information providers for that reason." (MC2)*

According to the sub-units, they also experience difficulties in providing the information requested by the MC department. For the SPI areas, for instance, there are difficulties in the estimation of extra costs and of delays in the execution of the projects, as described by some of them:

> *"The question of estimating the extra costs is very complicated because a project has always a lot of associated uncertainties." (SPI3)*

> *"The only difficulty has to do with the extra cost estimation." (SPI5)*

> *"The deadlines are also very complicated variables. In the last two quarters there were things that we knew that were going to affect the dates but we didn't know how they were going to affect them. We have to make some estimations." (SPI3)*

To overcome these issues, SPI managers usually take into consideration historical information and potential future correlations in order to get the best estimation that they can. In addition, they also said that the form in which the information is requested may imply some data processing before its provision, which may delay it.

All these circumstances lead to time consumption and therefore the disclosure of the BSC in a timely manner may be put into question. To the sub-units, timing for information is a key issue. According to some of the interviewees, when the BSC is finally disclosed it is disclosed too late, and one of them even considers it "outdated", finding little usefulness on it. Some of the sub-units that reported the timing problem, presented it as the main factor that led them to a non-usage situation, or at least to a very low intense use, as demonstrated by the following quotes:

> *"The problems that BSC reports are historical problems. When they are reported, we have already become aware of them, and solved them." (SPI3)*

> *"When the BSC is disclosed we only validate the information, because we already knew it before." (AM3)*

This problem was also noted by one of the EB members, who stated that:

> *"The sub-units have a time lag between the BSC disclosure and the ideal time to correct some problems. Of course that in some situations there is no harm, because they can be corrected throughout the year. But in other situations the information is disclosed much later compared to the time in which it would be essential to take corrective actions." (EB2)*

The MC department admitted that information timing is critical for management and that the BSC is not issued as early as they would like to, which is due not only to the means they have but also due to the complexity of the adopted BSC model. One of the EB members even commented that a possible solution could be to decrease the complexity of the BSCs in a way that the timing was not questioned, and progressively increase complexity as the main variables are ensured.

Some interviewees also mentioned that a quarterly periodicity may not be appropriate for some of the indicators – those that they need to control in a daily basis. In fact, according to the MC department and the EB members, there are some indicators that need closer

monitoring and that is why they are reported by other tools, although they are also integrated in the BSC, and the MC department suggested that there may be a question of the expected positioning to the BSC:

> *"If the sub-units interpret the BSC as a tool to support current management, they will feel that the BSC is not useful. But current management is not the intended target for the BSC." (MC1)*

Another important issue that directly affects the intensity of use given to the BSC is the existence of other management control tools. The BSCs bring together several indicators that are also present in other disperse instruments, and include some new indicators, that were first introduced in the company through the BSC. They do not try to translate completely the sub-units' performance, but to give a brief view of what it is critical. As initially mentioned in the BSC proposal, they will always need to be complemented by other tools, which is in accordance with what directors from various sub-units feel. But apart from the combination of uses of different tools, since some sub-units have other management control tools, to which they have quicker access and provide them the same information or that give them a more detailed report, they tend to focus more on those rather than on the BSC, as described by some of the interviewees from the sub-units:

> *"I have to confess that the BSC is not a document to which I pay the attention that it deserves, and this is mainly due to the existence of other reporting tools." (AM1)*

> *"The BSC is a 'high-level panel', but I have to be able to know what is happening in a more detailed way (...), and for that I already had a set of indicators that I monitor in a daily basis." (AM3)*

> *"The problem is that there are a lot of similarities between the different tools, they have very close indicators. And when people have too many tools, which provide them repeated information, it is possible that some people do not focus so much on the BSC." (SPI4)*

In addition, in SPI areas they have their own documents to control and manage their operations, because they have their own management control section that produces these type of tools. They therefore may tend to use those other tools more frequently, disregarding the BSC. It should be noted that these management control tools, in contrast

to the BSCs, do not support the strategy communication usage, which proves that these areas do not see this usage as indispensable.

4.4.3. Social issues

According to the MC department, the fact that engineering professionals dominate the company may result in a greater focus on technical aspects to the detriment of other aspects that the BSCs include. Moreover, an EB member stated that the BSC also tries to change cultures. Once it considers aspects which are different from the engineers' focus, it makes them think about those issues, opening themselves to new perspectives.

Nevertheless, according to the sub-units, the engineering cultural dominance is not a decisive factor to make them use the BSC differently among one another, with different intensities or to not use it at all. The interviewees in general said that in spite of a potential emphasis on one or two of the BSC perspectives, they would always have to take all of them into account during their management activities. This is in line with that what was said by another EB member, according to whom the directors of the sub-units had to demonstrate several management skills, or had specific training to acquire them. With regard to the focus of the team members, according to the middle managers an effort was made to communicate to them what their impact in the company results was, ensuring that everyone has the same openness to other perspectives.

It was noticeable among all the interviewees that the initial receptiveness to the BSC was higher in the case of AM than in SPI areas. According to the MC department, this can be explained by existing cultural differences between the two departmental groups:

> *"EDPP is a company with a long history, and the past of the organization may dictate the culture that is fostered among the employees. For instance, SPI areas constituted an independent company before, although still part of EDPP group." (MC1)*

> *"People responsible for these departments [SPI] are people with a lot of experience in managing these type of projects, who had never felt the need of using a BSC to control and support them". (MC2)*

This was consistent with some remarks of an interviewee from one of the SPI areas, who stated that:

> *"Being responsible for a project, I wouldn't need to have other people telling me what I should do, because I know what I have to do. (...) SPI reacted [negatively], because behind the BSC there was a criticism to our performance, as if the BSC would 'put us on track'." (SPI2)*

These cultural divergences can be easily associated to the differences of intensiveness of BSC use between these two groups of departments. On the other hand, it would be necessary to further explore the culture of each departmental groups to be able to clarify in which way it contributes to the SPI areas' negligence of the use of the BSC to communicate the strategy.

The SPI areas were also not used to being as scrutinized as the AM departments were. While in the AM employees already did this kind of reporting, SPI became much more visible within the company after the BSC implementation, as described by an interviewee from the MC department:

> *"The AM sub-units were already used to having permanent scrutiny, it was a normal thing for them. Therefore, with the introduction of BSC they didn't feel a strong increase in the level of scrutiny. On the contrary, this was a novelty in the SPI areas. The BSC revealed issues that were only discussed in informal conversations, and not in a formal document such as this new one." (MC1)*

From the interviews I could conclude that SPI perceives the BSC as a performance measurement system more than a tool to support management, and therefore they feel that they are under higher surveillance, even though interviewees said they were aware that the BSC is not trying to evaluate the teams but the projects.

Most of the SPI areas also mentioned that part of their performance was dependent on other SPI sub-units (Engineering Departments work for Project Teams) and third parties (e.g.: suppliers, external services, maintenance areas). Some AM departments also complained about the same problem regarding their dependence on third parties. Hence, they feel that the scores do not truly represent their performance and that sometimes they may be penalized by others. This was confirmed by the EB members, who admitted that

the BSC is not able to capture these matrix effects and that this is currently one of their main concerns for a future BSC reformulation:

> *"There are objectives that rely on several sub-units in order to be achieved. We have to be capable to identify the contribution of each of those sub-units to each of those objectives." (EB2)*

> *"There is not only an interdependence between the several sub-units but also a sequential order of their activities. For the BSC to capture these effects, they should be quantified, but it is not easy. (...) We still don't have a solution, but we have to think about how we can improve." (EB1)*

In spite of this, the BSC proposal for the sub-units had shed light on the fact that these BSCs included relevant indicators for business monitoring, regardless of the capacity of the sub-units to control them. The indicators were agreed to be useful for monitoring and not supposed to substitute official evaluation systems. Anyway, this issue is highly likely to be associated with a lower intensity of BSC use or even with its non-usage.

Most of the sub-units felt that they were sufficiently included in the implementation process. They were participating bringing forward thoughts on indicators, discussing whether the strategy maps made sense to them or not, bringing positions closer. They also feel that nowadays there is room for them to propose improvements, and some of them even made proposals during the interviews.

As mentioned in a previous section, the MC department combined efforts to make the concept of the BSC clear for everyone. These explanations, according to the sub-units, were very important for them to be more receptive to this tool once they understood its meaning and usefulness. One of the sub-units mentioned that after the implementation they also had the opportunity to take a company training program that allowed them to deepen their knowledge about the BSC and therefore acquire insights on how to take advantage of its use. The manager stated that this training could be provided to everyone who has a BSC and that if it had been done before the implementation, people would have been more open to the new instrument since the beginning.

According to the MC department, cultural questions may not only affect the use by sub-units but also by the top management. There may be EB members who are more committed to the BSC than others, and their level of use will be reflected upon middle

management. This has been suggested by the MC department and top managers themselves. One of them admitted to finding little value in the BSC at present, because of its timing and conceptualization:

> *"The BSCs as they are today have relative [low] value. Beyond the lack of timeliness, I feel that its conceptualization is making it impossible to provide a true view of the efficiency of each sub-unit." (EB2)*

4.4.4. Political issues

As explained within the technical issues' section, the quarterly BSC review takes a lot of time and resources. At a time when activities are being reconsidered and restructured, EDPP has to understand what is the use found in the BSC in order to decide which improvements should be made or whether its continued use makes sense or not. According to the MC members, the continued use of the BSC may be threatened due to the means that the company currently has:

> *"The reason why continued use is threatened has nothing to do with the level of satisfaction or the existing resistance among the BSC users. We simply have to rationalize the means that we have and since there are mandatory activities, and these have priority over those that are optional, such as the BSC." (MC2)*

The EB members even mentioned the threat of the other tools that exist for the SPI areas that give them enough information about the evolution of the projects in a timely manner, as well as the threat of a new KPI system (a system for official evaluation purposes) that is being developed and will take into account the matrix structure as issues that might reduce or even eliminate the existing interest on the BSC.

There is little evidence about previous failed experiences implementing other innovative tools. A few interviewees mentioned a specific business intelligent system that has high potential but has not been properly executed so it fell into discredit. Nevertheless, they did not demonstrate any link between this factor and the paradox we want to explain. Moreover, as discussed in the previous section, there was some disagreement between the

MC department and the sub-units regarding the incompatibility between the BSC and the organizational culture, which could potentially generate resistance to this new tool.

Some interviewees from the sub-units also argued that providing the data requested by the MC department to elaborate the BSC implies additional work that they had to fit in their agendas. From direct observation I could notice that it took some time for the MC department to receive the information from every sub-unit, which suggests that the BSC was not a priority for the latter group.

5. Discussion

In this chapter I will discuss the empirical results under the theories and studies reviewed. The literature review was useful not only to define potential BSC uses and factors that led to different uses or non-usage, which helped the elaboration of the interviews' guidelines, but also to compare the findings of this case study with the existing literature.

I will follow the structure used in the empirical analysis, starting by discussing the implementation of the BSC in section 5.1; then, section 5.2 discusses the paradox of the different uses and non-usage of the BSC; finally, section 5.3 discusses the explanations for the paradox.

5.1. The implementation of the BSC

The BSC, when initially proposed in EDPP, was defined mainly as a Strategic Management System (Kaplan and Norton, 1996), since the main aim was to translate the strategy into operational objectives and measures, the first principle was to keep strategy the focus (Kaplan and Norton, 2001). Therefore, to implement the BSCs in EDPP, strategy maps were developed following the guidelines proposed by Kaplan and Norton in *Strategy Maps*, in 2004. The strategy maps and the BSCs that resulted from them provide a framework to look at strategy from four different perspectives close to those proposed by Kaplan and Norton in 1992 (financial, customer, internal business and innovation & learning).

The BSC proposals fulfilled not only the first but also the four remaining principles to keep a "strategy-focused organization" (Kaplan and Norton, 2001):

1) By describing the strategy in operational terms, and therefore making it understandable to everyone, people would be able to execute it (1st principle);

2) By linking the several BSCs of each sub-unit to a top-down strategy, they promote alignment around its execution (2nd principle) and facilitate the development of synergies between them (Kaplan and Norton, 2006), since some of the sub-units share the same technologies, the same business processes and therefore they can take advantage of their common knowledge;

3) By creating awareness about the strategy, defining objectives linked to it and ensuring a stronger connection between sub-unit performance and their evaluation, the BSCs try to "make strategy everyone's everyday job" (3rd principle), motivating employees to execute strategy in their daily work (Kaplan and Norton, 2006);

4) By integrating the management of budgets and operations with the management of strategy, the BSCs contribute to "making strategy a continual process" (4th principle);

5) By defining the Executive Board as beneficiary of the BSC, it allows top management to "mobilize change through executive leadership" (5th principle), as explained in Kaplan and Norton (2008).

5.2. The paradox: the different uses and non-usage of the BSC

In EDPP, I could find different interpretations of this tool among its users, which were in line with those found by Malmi (2001), Speckbacher *et al.* (2003) and Witcher and Chau (2008). According to these authors, these divergences can be explained by Kaplan and Norton's gradual change of focus for the BSC, from a performance measurement system (Kaplan and Norton, 1992) to a strategic management system (Kaplan and Norton, 1996).

The empirical results from this case study show that most of the uses given to BSCs fit within the performance measurement system's definition. When using the BSC to monitor and control performance, people are clearly perceiving it as a tool to measure the sub-units' performance. They find it useful both to evaluate them and to control where improvements are necessary, which is consistent with the operational use given to BSCs found in other studies (see Malmi, 2001; Speckbacher *et al.,* 2003; Witcher and Chau, 2008). Another use that our interviewees find concerning their BSCs is to support management, since it provides a comprehensive view of the business in a single report, which is in line with Kaplan and Norton's (1992) definition as well.

Nevertheless, a smaller part of the company, belonging to the AM departments, also perceives the BSC as a strategic management system, which is closer to the Kaplan and Norton's view in 1996. These interviewees see the BSC as a powerful tool to

communicate strategy and ensure the coherence of their management with it, since the implemented BSCs link the strategy of the firm to operational objectives. This view was also the one highlighted in the BSC proposal.

The uses reported by the interviewees (monitoring and control, support for management and communication of strategy), as well as those that were part of the objectives of the BSC (improving communication and understanding strategy; promoting alignment around the execution of the defined strategy; strengthen the link between performance and evaluation), indicate diagnostic use according to Simons' (1995) definition of diagnostic systems. This definition states that the BSC aims to be a tool to support the implementation of the intended strategy, communicating it from top to down and monitoring whether there were discrepancies from the intended goals.

By adopting Ferreira and Otley (2009) and Tessier and Otley's (2012) conceptual frameworks, it is important to distinguish the results from AM and SPI areas again. Since most of the SPI managers stated to look at the BSC when there were discrepancies between the critical performance variables and the targets, without much discussion, we can clearly characterize the use that they give to the BSC as "diagnostic" (Ferreira and Otley, 2009; Tessier and Otley, 2012). AM areas use it more intensively, but it seems more appropriate to classify their use still as diagnostic rather than interactive (that corresponds to intensive, in the sense of Tessier and Otley, 2012). Although there is some evidence showing that by using the BSC they are promoting communication (Adler and Chen, 2011; Tessier and Otley, 2012) and learning (Ferreira and Otley, 2009; Tessier and Otley, 2012), there is no clear evidence that the BSC supports such an intense debate that is capable of leading to the emergence of strategic opportunities (Simons, 1995).

All in all, the diversity of BSC uses (monitoring and control, support for management and communication of strategy) was intended from the moment the BSC implementation proposal was made. The problem is not the diversity of uses itself, but the discrepant relevance given to one type of use in the beginning (strategic management) and the emphasis currently given to that use (performance measurement).

Moreover, another problem related to the BSC usage has to do with the different intensities of its use as a tool, in general. In fact, according to Hartwick and Barki (1994), the fact that system usage is mandatory does not imply uniformity in the intensiveness of

individual usage. There are several issues that contribute to weaken the use given to the BSCs that sometimes, in extreme situations, may even cause non-usage.

Among the BSC non-usage situations, not only those in which managers clearly stated not using were included but also those in which interviewees reported "false uses", i.e., those that were not considered to be real "uses" due to their insignificance. Within these false uses I included the simple validation of the BSC information, the provision of information for the BSC elaboration and the use of just a small part of this tool. Finding false uses among the interviewees highlights the importance of the chosen research method and sources (in-depth case study and interviews), without which it would not be possible to gain such an in-depth understanding of real-life events.

5.3. Explanations for the paradox

There was a huge variety of issues that arose from the implementation of BSCs in EDPP and from its use, in practice, as a tool. In addition, the correlations between the problems make it difficult to say with accuracy which ones contributed the most to the existence of different BSC uses, intensities of use and non-usage situations. In any case, the interviewees were asked about specific BSC problems that had been previously summarized in the initial literature review and could say whether they explained the irregularities found in EDPP or not. Additionally, interviewees also made some spontaneous remarks on issues that had not been initially found in the literature and hence not directly questioned in a first stage. In a second phase, I searched for theoretical support for these unexpected findings and incorporated it in the literature section. Throughout this section, when discussing such topics, I will differentiate these from those which were directly questioned.

Once again, I am going to take advantage of a classification of BSC problems already used in the previous analysis to organize the line of thought for this discussion: the macro-categories of conceptual, technical, social and political issues.

5.3.1. Conceptual issues

In conceptual terms, the EDPP BSCs designers followed the principles of Kaplan and Norton (1996), developing strategy maps, defining cause and effect relationships between objectives and indicators and specifying the relative importance of each one. Although the MC members have found it challenging to customize the BSC to the reality of each sub-unit (a potential problem suggested by Madsen and Stenheim, 2014), the results showed that several adjustments were made to make them fit the different areas and, in general, interviewees suggested that the conceptualization of the BSC was a success, with the exception of a particular SPI member, who questioned the BSC contextualization, the cause and effect relationships and its link to the strategy of the firm. Actually, total consensus was not reached in SPI areas, which is probably not only hindering the use of the BSC as a tool to communicate strategy but also weakening the intensity of its use in general among SPI members.

Nevertheless, some interviewees spontaneously questioned the consistency of the BSC in current conditions, since initial strategic priorities have changed over time. This seems to be even more serious in SPI areas, since the strategic shift affected them more significantly. This suggests that current BSC assumptions may no longer be adequate under the new circumstances and that adaptations to it should be made. This was one of the things that Mendoza and Zrihen (1999) pointed out. They argued that the BSC was not able to self-evolve with strategy and therefore it was necessary to regularly check whether the current strategy was still relevant and voluntarily adapt the BSC when it changes.

All in all, the empirical results suggest that the adequacy of the BSC conceptualization in SPI areas is lower, which decreases their interest in using the BSC in general, and particularly to communicate strategy. The same effect happens when the strategy changes and the BSC is not adjusted to it, a problem that is particularly relevant in SPI areas.

5.3.2. Technical issues

In the case of EDPP, the IT infrastructure chosen to support the BSC included customized Excel-spreadsheets and not a purchased software package, which does not leave room for

the company to have a contextualization problem (Madsen and Stenheim, 2014) through this factor.

The major technical problematic questions presented by the interviewees, who mentioned them spontaneously, involved the collection, processing and validation of the information. More precisely, the time, manual work and effort that these activities take to the MC department and to the other sub-units in order to ensure the quality of the report, which in the end can lead to a delayed BSC report. Moreover, the complexity of the adopted BSC model makes the process even more complicated and time-consuming. These types of issues seem to be consistent with prior literature. For example, a study of Ittner *et al.* (1997) suggested that time demands and inaccurate information provided by some management systems affected the timeliness of the BSC. The need of much manual work was also a problem found in previous studies (see Ittner *et al*., 1997; Kasurinen, 2002; Oriot and Misiaszek, 2004). In the EDPP case, the delays of the BSC turn out even more serious since some managers stated that, due to these issues, their BSC it is already outdated when they access it, hence finding little use in it.

To meet information needs, there are other management control tools at managers' disposal which, comparatively to BSCs, are quicker and give them the ability to have a more detailed view on specific key performance indicators. Empirical results collected from spontaneous and non-spontaneous[3] comments suggest that the number of available tools and the overlap of information that they provide negatively influences the intensiveness of BSC usage. Therefore, managers tend to focus on other tools, disregarding the BSC or speed reading it, as Mendoza and Bescos (2001) pointed out. In addition, in SPI areas they have their own tools, which aggravates this situation due to potential social issues, further discussed in the next section.

In summary, the technical problems that seem to be the most relevant to explain the low intensiveness of BSC usage, or, in some cases, its non-usage are the lack of BSC's timeliness and the existence of competing tools. These issues revealed themselves as

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[3] Since the existence of other management control tools was pointed out by several interviewees spontaneously, I included a specific question in the interview guide for subsequent interviews.

being extremely important since they were pointed out by the interviewees in mainly a spontaneous way.

5.3.3. Social issues

EDPP is a company with a long history, so organizational culture was expected to play an important role in the BSC usage. Being a firm where engineering professionals dominate, it might be expected that the BSC users could have a greater focus on the technical and mechanistic aspects of the BSC rather than on management ones, which is consistent with the opinion of the interviewees and has been previously suggested by Oriot and Misiaszek (2004). Nevertheless, the majority of the interviewees said that in spite of that focus, this factor had no influence in their type or intensiveness of use. In any case, it is difficult to be certain about these results, because the majority of the interviewees belong to the sub-units, which are made up of engineers. This means that their opinion constitutes a reflection about their own behavior, an aspect in which the risk of interviewees' bias may be particularly relevant.

A top manager of EDPP commented that the BSCs also try to change cultures, making engineers consider other perspectives than only those they are more used to. This seems to be in line with Andon *et al.* (2005), who argued that this type of organizations could change their focus to a more business-orientated one due to the BSC introduction, as was the case in a case study by Dent (1991, cited in Andon *et al.*, 2005) due to the adoption of a profit-base performance measurement.

The empirical results from SPI areas suggest that receptiveness to such a system may be hindered by closer monitoring and higher scrutiny, which seems to be in accordance with prior literature that states that these factors may threaten people and create resistance among them (Vaivio, 1999; Braam and Nijssen, 2004).

The tendency to focus more on other tools rather than the BSC, described in the technical issues' section, proved to be more noticeable in SPI areas. Apart from the fact that they have had their independence in the past, they still currently have their own management control section, which produces their own management control tools. Consequently, they use them more frequently and are less motivated to use the BSC, which was a tool

implemented by a third party. This indicates the "not-invented here" syndrome, a social issue also found in Kasurinen's (2002) study.

To make middle managers more receptive, the MC department involved them in the implementation process (cf. Nørreklit, 2000) and clarified the BSC concept to them, putting an effort to sell this instrument as suggested by Dutton *et al.* (2001). Some middle managers commented that if training had been provided before BSC implementation, they could be more receptive to it, working as a way to increase their willingness to accept the BSC, as suggested by Wiersma (2009).

The feeling that teams are being held accountable for what they are not able to influence or control was one of the topics spontaneously pointed out by several middle managers, mainly from SPI areas, as an explanation for a less intense use of the BSC. The EB members also commented the existence of this problem, although non-spontaneously. This seems to be consistent with Jakobsen and Lueg (2014), who showed that a situation like this may lead to a dysfunctional use or to failure in the implementation of the BSC. In spite of this feeling, in EDPP, the scores do not constitute a formal evaluation of the sub-units. According to Giraud *et al.* (2008, cited in Jakobsen and Lueg, 2014), the problematic issues can be worse in the case that the performance evaluation and compensation was linked to the BSC, which is not the case of EDPP.

Finally, the empirical results suggest that some top managers are less committed to the BSC, and that low interest spreads itself to middle management. According to the evidence, this seems capable of affecting the success of the BSC, which is in line with Wickramasinghe *et al.* (2007). Madsen and Stenheim (2014) also added that top managers' low interest would spread to the rest of the organization's members.

In summary, cultural and historical aspects of the SPI areas dictate their low receptiveness to the BSC, as well as their resistance to higher scrutiny since they are not as used to it as AM. Moreover, having their own management control tools, SPI areas may end up preferring those in detriment to the BSC. Finally, the violation of the controllability principle found in the BSC, as well as the lack of commitment of some top managers to this tool seem to negatively contribute to the intensiveness of its use among BSC users in general.

5.3.4. Political issues

EDPP is currently rationalizing its resources according to its new priorities. The continued use of the BSC in EDPP is therefore called into question by both the MC department and the EB due to this political issue. This is supported by prior literature which suggests that the BSC project consumes a lot of time and resources in an organization (Madsen and Stenheim, 2014) and that not all firms are willing to invest those time and resources in the development of BSCs (Kasurinen, 2002).

Since the designers of the BSCs are still in the company (in the MC department) and that, in addition, they are currently responsible for orientating and supervising the BSC quarterly review, there is no evidence of the loss of the "champion" (Chakrabarti, 1974, cited in Madsen and Stenheim, 2014) or "soul of fire" (Stjernberg and Philips, 1993, cited in Madsen and Stenheim, 2014) in the EDPP case.

In EDPP, there is no clear evidence of the relevance of previous failed experiences in implementing other innovative concepts to explain resistance and skepticism to the BSC, as it was suggested by Røvik (2011). Moreover, as discussed in the previous section, it was not possible to clearly determine if there is incompatibility between the BSC and the organizational culture, a situation that constitutes a potential generator of organizational resistance (Madsen and Stenheim, 2014).

Finally, the empirical results suggested the existence of power games between finance and non-finance personnel because of additional information requests made by finance to non-finance employees and consequently extra effort needed from the latter group, which is in line with what was stated in Wickramasinghe *et al.* (2007).

In summary, the empirical results suggest that the uncertainty regarding the continuity of the BSC and the existence of power games between finance and non-finance personnel may be negatively affecting the interest to use this tool in general.

6. Conclusions

In this chapter I present the main conclusions of this work. In section 6.1 I summarize this study's findings and implications. In section 6.2 I explain the theoretical, methodological and practical contributions of this study. In section 6.3 I make a reflection about the limitations of this dissertation. Finally, in section 6.4, I give some indications about potential future research topics.

6.1. Summary

Based on the triangulation of data collected from interviews, direct observations and documentation, I was able to identify different utilization patterns for this tool.

The most popular uses found among BSC users were monitoring and control as well as support for management, while the least popular was communication of strategy – which, interestingly, was the most emphasized objective when the BSC was proposed. Among the members of the SPI areas, the latter type of use was not found at all. Apart from that, different intensities of BSC use and situations of non-use (among which "false uses" were included) were also found among the BSC intended beneficiaries. Once again, the SPI areas were those in which the intensity of use of the BSC was found to be lower and in which non-usage situations were more common.

The existence of the paradox described above may be explained by several problems whose analysis was structured based on four types of issues, identified in the literature review: conceptual, technical, social and political. First, the conceptual issues in this case are related to the adequacy of the BSC conceptualization and need of adjustments of the BSCs to the new strategic priorities. Second, the technical issues are associated with the BSC's lack of timeliness and the existence of competing tools. Third, the social issues concern the organizational culture, the level of scrutiny, the "not-invented here" phenomenon, the violation of the controllability principle and some lack of top management commitment. Finally, the political issues in this case have to do with the uncertainty regarding the continuity of the BSC and the existence of power games between finance and non-finance personnel.

Other issues suggested in prior literature were explored in this study but were not found to be relevant to explain the paradox in EDPP case. Among them there were technical problems related to the infrastructure that supports the BSC and the tendency to focus too much on measurement, as well as political issues associated with the loss of the "champion" and resistance arising from previous failed experiences in implementing other innovative concepts.

Looking at the BSC issues that were found among the BSC intended beneficiaries, it is possible to easily understand how they can hinder the degree of BSC usage or contribute to its non-usage by the intended BSC beneficiaries in general. From the empirical analysis it was also simple to identify that the current need to adjust the BSCs to the new strategic priorities negatively influence the significance of the BSC usage to communicate strategy among the BSC users as a whole.

On the contrary, it is not easy to understand why the uses of the BSC, the intensities of its use and the number of BSC non-usage situations differ between the two studied groups of intended users: AM and SPI sub-units. From the empirical analysis it was possible to conclude that these two groups differ in several aspects that influence the utilization of the BSC. First of all, the empirical results suggest that the adequacy of the BSC conceptualization to the SPI sub-units is lower, which decreases their interest in using the BSC in general, and particularly to communicate strategy. The same effect happens when the strategy changes and the BSC is not adjusted to it, a problem that is particularly relevant in SPI areas since the recent changes in strategy affected their activities more than those of the AM departments. In addition, the culture and history of the SPI areas promote a low receptiveness to the BSC, as well as their resistance to a higher scrutiny since they are not as used to it as AM. Finally, having their own management control section that produces their own management control tools, they end up preferring those in detriment to the BSC.

6.2. Theoretical, Methodological and Practical Contributions

In theoretical terms, this study contributes to fill an existing gap regarding the BSC non-usage of officially implemented BSCs, and it adds another case study to the existing literature about the diversity of BSC uses. Moreover, this study leaves some clues to

explain these dysfunctional situations, which is something that companies are generally not open to speak about, and seemed to be an under-researched area. All in all, it adds empirical evidence from one of the largest companies in Portugal to the literature about different uses of the BSC, intensities of use, non-usage and related problems.

In this study, I considered some uses of the BSCs to be "false uses", and classified them as non-usage situations. Regarding methodological contributions, this highlights the importance of the case study methodology, which allows one to get a deep insight into the real-life situations that organizations face (Yin, 2009). It would certainly be much more difficult to detect such a context-specific and "camouflaged" situation with other methods based on distant observation/measurement of control practices.

From a practical perspective, this study helped the case study company to be aware of the existing BSC different uses and intensities of use, as well as non-usage situations. This was relevant and timely for EDPP because the implementation of the BSCs was recent, so it was a good time to assess the way users were analyzing them, in order to reflect about the future of the tool. For other companies, this case study provides them an example of issues that may arise after implementing the BSC, giving them the opportunity to avoid or anticipate them.

6.3. Limitations

One of the limitations observed is associated with finding various and, sometimes, correlated issues that could potentially explain the existence of the paradox regarding divergences in its use and its non-usage. This made it difficult to determine with accuracy which ones contributed the most to it and how. As previously said, this study leaves some clues, but it does not provide clear evidence on how the factors are linked to the paradox and between each other. Moreover, in most of the cases, the connection between those issues and different intensities of BSC use or non-usage situations is clearer than their connection to the negligence of the use of the BSC to communicate strategy. For instance, and as mentioned in section 4.4.3, the cultural divergences between the AM and SPI departments can be easily associated to different intensities of BSC use, but it would be necessary to further explore the culture of each departmental group to be able to clarify

how it contributes to the SPI areas' negligence of the use of the BSC to communicate strategy.

Regarding the methodology chosen, although the case study method allows one to get a deep insight regarding a specific case organization, it provides a limited perception about the extent to which the findings are shared by other organizations – although the identified factors are theoretically plausible to be relevant in other organizations. Therefore, this study can contribute towards a research program aiming to achieve theoretical (not statistical) generalization (Scapens, 1990).

It is also difficult to be certain about the reliability of some of the data collected from the interviews, since the majority of the interviewees are mainly speaking about their own behavior, an aspect in which the risk of interviewees' bias may be particularly relevant. With regard to direct observations, they did not cover the BSC implementation phase, so this part of the study counted only on people's testimonies and documents. However, it did include first-hand insights into the issues currently unfolding in EDPP and to all organizational actors with relevant insights on the history and the present of the BSC at EDPP. The short span of time elapsed further reassured that memory loss may only be a limited problem.

6.4. Future Research

The insights generated and explored in this paper should be further investigated in-depth in future studies. More case studies and qualitative studies that integrate multiple industries should be developed in order to understand to which extent the suggestions of this study are shared by other organizations. Since the different types of BSC problems found are likely to occur at different points in time of the BSC history in each organization, longitudinal studies should also be carried out.

Another suggestion for future research is to select one of the issues (or category of issues) from those found in this study in order to further investigate its capacity to influence the use of the BSC in practice. For instance, in the EDPP case, the social issues, mainly the cultural ones, seem to have a strong influence in the explanation of the studied paradox, and it would be interesting to understand what the real impact of the culture and history

of the companies is in the way BSCs are received. Moreover, is the BSC actually able to change cultures? In addition, in the EDPP case there is no direct link between the BSCs implemented and the company's compensation system; therefore another suggestion of future research would be to study the relevance of this issue in a company where BSCs are connected to people's rewards for performance.

Within the case study company there is still room for further research. In case EDPP takes corrective actions to mitigate the problems found, such as managing BSC adjustments to the new strategic priorities or improving the automation of the information systems to improve the BSC timeliness, it would be relevant to restudy the case, in order to understand the impact that the adopted solutions had in the BSC use and non-use. Another suggestion would be to study the impact that the announced new KPI system (a formal evaluation tool that takes into account the matrix effects that the BSC was failing to consider, as mentioned in section 4.4.4), will have in the use of the BSC. Finally, since the results suggested the continued use of the BSC could be in danger, it would make sense to study the reaction of the various organizational members in case the BSC fails to continue.

Appendices

A. Questions of the interviews to the sub-units (translated from Portuguese)

1. Sometimes the tools are not useful or suitable in all circumstances, and the BSC is not an exception. In your opinion, does the BSC have a purpose that justifies its implementation and use?

2. What is the frequency/intensiveness with which you use the BSC? Is there some regular utilization pattern?

3. Who uses the BSC? (Director/individual or team/collective)

4. How many meetings have already taken place to discuss the BSC outputs in your sub-unit?

5. When do those meetings happen? (When there are negative discrepancies only or whether there are negative, positive or neutral results?)

6. For which purposes do you use the BSC?

7. Do you see the BSC as a way to, in the medium-long term, contribute to the execution of the strategy of the company?

8. Do you consider that the BSC developed for this sub-unit is well adapted to your reality? Are the indicators adequate?

9. In your opinion, is the number of indicators adequate? What about their weights?

10. Are there / have there ever been any difficulties in the collection of some of the required data to the review of the BSC? If yes, have they been already solved? How?

11. What other management control tools do you have and how do you use them?

12. This sub-unit is mainly/completely made up of engineering professionals, which may lead to a stronger focus on some of the BSC perspectives, in detriment of others. How do you evaluate the compatibility of your team's culture and the BSC use? Why?

13. How did your sub-unit respond the BSC implementation?

14. How was the reaction of the team to a higher visibility of their activities?

15. Did you ever experiment failed implementations of other tools?

16. How was the participation of the sub-unit to the BSC development?

17. Were the given training/clarifications sessions about the BSC sufficient and adequate?
18. In your opinion, is the time invested in the BSC implementation and, nowadays, in the data collection to its elaboration, sufficiently compensated?
19. Was there any factor that generated resistance to the BSC implementation?
20. Do you consider that the BSC permitted a better understanding of your sub-unit to the MC department? Did it make them question you more?

B. Questions of the interviews to the Executive Board (translated from Portuguese)

1. What was the purpose of the BSC implementation?
2. For whom would the BSC serve?
3. For what would the BSC serve?
4. Do you perceive the existence of different uses given to the BSC among its users?
5. Do you perceive the existence of situations in which some sub-units do not use the BSC?
6. What is the desirability of the existence of different uses?
7. Do you see the BSC as a way to, in the medium-long term, contribute to the execution of the strategy of the company?
8. Do you consider that the BSCs developed for the sub-units are well adapted to their reality? Are the indicators adequate?
9. Do you consider that the BSCs is timely enough?
10. Do you consider that the sub-units are able to influence the indicators of their BSCs?
11. In which way is the BSC complementing other tools? Excluding others, what is the risk of losing interest in the BSC?
12. The sub-units are mainly/completely made up of engineering professionals, which may lead to a stronger focus in some of the BSC perspectives, in detriment of others. How do you evaluate the compatibility of the sub-units' culture and the BSC use? Why?
13. How was the receptiveness of the sub-units to the BSC implementation?
14. How was the reaction of the sub-units to a higher visibility of their activities?

15. What is the level of interest of the Executive Board in the BSC? Is it a priority?
16. Can the continued use of the BSC be in danger? Why?

C. Questions of the interviews to the Management Control department (translated from Portuguese)

1. What was the purpose of the BSC implementation?
2. For whom would the BSC serve?
3. For what would the BSC serve?
4. According to your perception, what is the real use given to the BSC?
5. Do you perceive the existence of different uses given to the BSC among its users?
6. Do you perceive the existence of situations in which some sub-units do not use the BSC?
7. What is the desirability of the existence of different uses?
8. How was the process of design of the BSC?
9. Did you define and test the cause and effect relationship of the indicators?
10. Did you use strategy maps?
11. Do you consider that the BSCs is timely enough?
12. Do you consider that the sub-units are able to influence the indicators of their BSCs?
13. Was the IT infrastructure that supports the BSCs difficult to develop? Why did you opt for Excel format?
14. Are there / have there ever been any difficulties in the collection of some of the required data to the review of the BSC? If yes, have they been already solved? How?
15. In which way is the BSC complementing other tools? Excluding others, what is the risk of losing interest in the BSC?
16. The sub-units are mainly/completely made up of engineering professionals, which may lead to a stronger focus in some of the BSC perspectives, in detriment of others. How do you evaluate the compatibility of the sub-units' culture and the BSC use? Why?
17. How did the sub-units respond to the BSC implementation?

18. How was the reaction of the sub-units to a higher visibility of their activities?

19. How was the participation of the sub-units to the BSC development?

20. What is the level of interest of the Executive Board in the BSC? What about the level of commitment of the Management Control department to the BSC project? Is it a priority?

21. Were the given training/clarifications sessions about the BSC sufficient and adequate?

22. How much time did you spend in the BSC implementation? And nowadays, in its quarterly elaboration?

23. Can the continued use of the BSC be in danger? Why?

24. Was there any factor that generated resistance to the BSC implementation?

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