The uses (and non-usage) of the Balanced Scorecard: a case study

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Abstract

This paper addresses an apparent empirical puzzle from a large Portuguese utility. Preliminary evidence suggested that the BSC implemented across all the business units of this organization two years before was not being used consistently, or even not used at all, by their managers; overall, actual use across the organization seemed not to be aligned with the BSC designers' objectives.

In line with this preliminary evidence, we confirmed that the types and the intensity of BSC use indeed varied across the business units. The most popular uses were monitoring, control and management support, while strategy communication was the least popular – although it was the most emphasized objective when the BSC was proposed. Applying an extended version of Madsen and Stenheim's (2014) framework of problems with BSC usage, we explain this diversity of types and intensity in BSC usage, based on multiple conceptual, technical, social and political issues. These explanatory issues include: the BSC conceptualization, alignment with new strategic priorities and timeliness; existent competing tools; organizational culture; the level of scrutiny; the not-invented-here phenomenon; the controllability principle; top management commitment; uncertainty about the BSC continuity; and power games. Through this in-depth explanation, we contribute to the literature on the diversified usages, and the non-usage, of the BSC by managers in firms which have officially adopted this tool.

Key-words: Balanced Scorecard, Management Control, Strategy, Balanced Scorecard usage

1. Introduction

When implemented in an organization, a Balanced Scorecard (BSC) may be used by managers for different purposes, not necessarily equal to its designers' objectives. Therefore, its use may differ across the organization, and it may not even be used at all by some managers. Furthermore, the effects of any techniques may be determined more by their actual usage(s) in each particular organization than merely by their formal adoption or their intrinsic characteristics as a theoretical construct (Tessier and Otley, 2012). This recent call of attention gave renewed pertinence to Scapens' (1990) seminal and widely followed recommendation to study management accounting and control as practices in actual organizations, in particular when confronted with apparently puzzling empirical situations.

Such an apparent empirical puzzle was identified based on preliminary evidence from a large Portuguese utility, where the first author had recently started working and here anonymised as UtilCo, that the adopted and implemented BSC was not being used across the company in a consistent way and as originally intended; indeed, the BSC was even not used at all by some managers. While multiple uses of the BSC have long been highlighted, including by the prolific BSC creators Kaplan and Norton (1992, 1996, 2001, 2004, 2006, 2008, 2012, among others), such intra-organizational diversities in actual practices could not be readily explained merely based on such literature. However, research has also identified multiple factors influencing BSC implementations, practices and effects, as recently reviewed in Hoque (2014), including a stream of literature exploring difficulties and even failures around the BSC (for example, Nørreklit *et al.* (2008) and Madsen and Stenheim's (2014) review).

Making sense of this puzzle therefore became the theoretical motivation of this study, leading to a case study of the case company based on two main research questions: 1) How was the BSC actually used, if used at all, across the various business units in the case organization? 2) How and why did those actual usages (or non-usages) of the BSC emerge?

By answering these questions, this study intends to fill an existing research gap regarding BSC non-usage by managers in firms which have adopted a BSC, and contributing to the literature about the different uses (and non-usage) of BSCs, with empirical evidence from one of the largest companies in Portugal. This examination was also relevant to the case company, which was seeking to better identify and understand existing divergences in order to improve the actual usage of the BSC, in a consistent way across the organization.

After reviewing the literature in the next section, we explain the research method in section 3. In sections 4 and 5 we present and discuss the empirical results. In section 6, we present the conclusions, contributions and limitations, and indicate potential future research topics.

2. Literature Review

2.1. Balanced Scorecard: an introduction

In the first version of the BSC, Robert Kaplan and David Norton defined the BSC as a performance measurement system, integrating financial and non-financial measures to enable a comprehensive view of a business into four interconnected perspectives: financial, customer, internal-business-process and learning and growth perspective (Kaplan and Norton, 1992). Only later, in 1996, they highlighted its use as a strategic management system, translating 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, and defined five principles to keep strategy the focus when managing processes (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.

Subsequent books further developed these principles. 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 *Alignment*, they described how to take advantage of vertical and horizontal alignment between sub-units to create or capture existing corporate synergies, and how to motivate employees to execute strategy in their daily work (the third principle) (Kaplan and Norton, 2006). 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.

The concept of the BSC has therefore gradually shifted 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

The influence of BSC usage upon organizational performance has attracted significant attention. Davis and Albright (2004) found evidence suggesting a positive relationship between BSC usage and improved organizational performance, which is coherent with the findings of other authors (e.g. Hoque and James, 2000; Braam and Nijssen, 2004); Banker *et al.* (2000) identified a similar relationship, with regard to incentive plans including non-financial performance measures (though not specifically the BSC). In contrast, Ittner *et al.* (2003) found a negative relationship between the extensive use of the BSC and Return on Assets. In turn, other studies relating the focus on non-financial measures with improved financial performance presented mixed results, potentially explained by a lack of coherence of the emphasis put upon each measure (Davis and Albright, 2004). Exploring why using a BSC does not automatically improve performance, Braam and Nijssen (2004) pointed out that this effect depends on the extent to which its use is linked to the strategy. For example, a mechanistic use (measurement-focused use) may lead to a negative impact, and complementing the BSC with other management control systems may strengthen, neutralize or work against each other in terms of performance.

2.3. Different uses of control systems and of the BSC

In 1995, Simons proposed four Levers of Control, which must be properly combined when designing management control systems in order to ensure their effectiveness in the implementation and control of strategy (Simons, 1995). The four Levers of Control are diagnostic control systems, interactive control systems, belief systems and boundary systems.[1] The purpose of the diagnostic control systems is to "coordinate and monitor the implementation of intended strategies" (Oriot and Misiaszek, 2004:267), while the purpose of the interactive control system is to "facilitate and guide emerging strategies" (Oriot and Misiaszek, 2004:267). In a nutshell, diagnostic controls follow a top-down approach in strategy implementation, while interactive controls aim to involve several players 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. These first two components are the intensity of use by senior managers and by operating managers, i.e., how much attention they pay to controls and how involved they get with their subordinates' activities by using these systems. Third, face-to-face meetings between both sides of management must be regular and frequent to debate and challenge important assumptions or implemented action plans. Since the content and nature of this communication is also relevant, the fourth component states that it should be focused on the strategic uncertainties of the business. Finally, the fifth component involves "non-invasive, facilitating and inspirational involvement" (Bisbe *et al.*, 2007:807).

In a revised framework of Levers of Control, Tessier and Otley (2012) defined diagnostic and interactive controls based on how controls can be used, instead of control systems per se, as depicted in the original version. 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 it 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

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[1] Beliefs systems and boundary systems are not further analyzed due to their lower relevance to this study.

controls', related to how intensively controls are used, viewing a more intensive use as promoting and facilitating communication (Adler and Chen, 2011; Tessier and Otley, 2012), and learning (Ferreira and Otley, 2009; Tessier and Otley, 2012). On the contrary, 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).

According to Ferreira (2002), a control system does not have to be part of only one lever, because each control mechanism may be given different emphases in its use (Ferreira and Otley, 2009). Tuomela's (2005) case study found both diagnostic and interactive uses of the BSC. More than thirty measures within a BSC were reported and reviewed on a regular basis (without much discussion), which allowed people to be aware of the deviations from the goals and indicates diagnostic control. Concurrently, the interactive use occurred through meetings at the measurement team, management and sub-unit levels to discuss and question the strategy translated in the BSC, a use which promotes learning and may reshape the current strategy.

Regardless of the issue of different usages, several authors questioned whether the BSC itself was a diagnostic or an interactive control system. Due to its top-down approach, many authors consider the BSC to be a diagnostic system, including Simons (1995), and in fact Kaplan and Norton (1992, 1996) focused mainly in the diagnostic character of the tool. Only later did Kaplan and Norton (2001) start to highlight the ability of the BSC to work as an interactive control system as well.

Given Kaplan and Norton's gradual change of emphasis for the BSC, many authors attempted to develop frameworks describing the main types of BSC (see Speckbacher *et al.* 2003; Lawrie and Cobbold, 2004; Brudan, 2005; Soderberg *et al.*, 2011; Perkins *et al.*, 2014). Although differing in terms of classification schemes, in general all these authors refer to the types of BSC as generations of BSC implementation and design. Their studies suggest that the BSC has been improving throughout its generations from a simple version of the BSC with an emphasis in performance measurement to a fully developed BSC that supports strategic management.

Malmi (2001) and Witcher and Chau (2008) differentiate the BSC types of usage based on how users classify BSCs as a control system. Those who 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. On the other hand, those who classify the BSC as a strategic management system, use it to implement, manage and control the strategy, in line with Kaplan and Norton's (1996) later positioning.

Overall, the use and interpretation of a BSC matters for its implementation success and relevance for adopting organizations (Braam and Nijssen, 2004), and indeed 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; see also Ferreira, 2002). Therefore, the literature has provided ample evidence of the need to correctly identify and understand those multiple uses and their causes.

2.4. BSC problems

Once the BSC is introduced in an organization, several factors may work against or disturb its acceptance and use. Making a system usage 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.

Madsen and Stenheim's (2014) literature review on BSC implementation issues identified four categories of issues: conceptual, technical, social or political. Table 1 adapts and extends Madsen and Stenheim (2014), including for each category additional topics (identified with asterisk [*]) suggested by other authors. This table structures the remainder of this section and will provide a theoretical structure for the empirical analysis.

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 'generic model' divided into four perspectives, each one containing key performance indicators linked to strategy. Therefore, such generic model requires adjustments to match each firm's characteristics, a task that may be very challenging (Madsen and Stenheim, 2014). Madsen and Stenheim (2014) 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 and highlighted pitfalls implicit in its design. Nørreklit *et al.* (2008), for instance, argued that the BSC oversimplifies the complexity of 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 Nørreklit *et al.*'s (2008) argument that the validity of a BSC depends on a precise definition and validation of these links (see Albuquerque, 2015 for an example of such validation), managers sometimes neglect this crucial step (Madsen and Stenheim, 2014). Moreover, Nørreklit *et al.* (2008) added that there are timing difficulties related to these causal relationships, since there may be a time lag between the cause and its effect (see again Albuquerque, 2015). Nevertheless, this time dimension is not explicitly a part of the BSC. These problems can lead, over time, to obscure the understanding of why things happen in an organization (Nørreklit *et al.*, 2008).

Speckbacher *et al.* (2003) found that less than 10% of the firms they studied 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), although 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 flexible and adapt when strategy 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, there is the need to regularly check for any strategic changes and, if needed, adapt the BSC accordingly.

2.4.2. Technical issues

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

Another problem identified by Madsen and Stenheim (2014) was 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 Kasurinen's (2002) case study showed that engineering culture also "tended to weaken the role of strategies and strengthen the role of diagnostic measurement" (Kasurinen, 2002:337).

Other technical issues in BSC implementation were found in Ittner *et al.*'s (1997) field study of U.S. retail banking operations. Issues were related with time demands, since it was necessary to review and correct numbers with other intermediaries, to carry out meetings, write narratives and so on. In addition, there were complaints about the existing management information systems, regarding distrust in the accuracy of the information provided and delays in information disclosure that compromised the BSC timeliness.

Problems in data collection and processing were also pointed out by Ittner *et al.* (1997), Kasurinen (2002) and Oriot and Misiaszek (2004), related to incomplete automation and hence significant need of manual work, 'delaying' the BSC (Kasurinen, 2002) and compromising its timeliness. Timely information emerges as a key requirement for managers. When timeliness is compromised, managers may develop their own ways of getting the needed information in a quicker way, through, for instance, observations, personal contacts and informal reports (Mendoza and Bescos, 2001), hence bypassing lagging systems.

Given that companies have a management control systems package (Malmi and Brown, 2008), i.e., a collection of controls and control systems, 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). According to Kaplan and Norton (1996), the BSC is not a substitute for a day-to-day measurement system – indeed, the BSC needs to be complemented by information systems disaggregating the summarized data in the BSC, in order to

identify the detailed causes of those results (Kaplan and Norton, 1992). However, seeing the BSC as a tool within 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 the study of Mendoza and Bescos (2001), more than 90% of the interviewees were faced with redundant information provided by different tools, which led 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

Compatibility between the BSC and organizational culture characteristics may be an issue. Oriot and Misiaszek (2004) reported resistance in a BSC implementation in an organization dominated by engineering professionals due to its culture of emphasising the technical and mechanistic aspects of the BSC over the 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.

An innovative organizational culture also positively influences acceptance of new management systems (e.g., see Baird *et al.*,2004 regarding the adoption of activity management practices). On the opposite direction, the implementation of the BSC may not only be affected by culture, but also influence it, since changing the way performance measurement is done may modify the context where the change is implemented (Andon *et al.*, 2005). This influence can be positive or negative. On the positive side, an organization dominated by engineering professionals could change its focus to a more business-orientated one, as Dent (1991) found in his study of a British rail organization's case about the adoption of a profit-base performance measurement. On the negative side, some researchers alerted that the BSC may become a 'straight jacket', hindering innovation and creativity (Voelpel *et al.*, 2006) and interaction and organizational learning (Antonsen, 2014).

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). In addition, the lack of motivation, by members of an organization or of a group of people within an organization, to implement a novelty 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). Training managers (Wiersma, 2009) and involving them in the definition of new control systems (Nørreklit, 2000) have been found to promote their commitment and lead to a better understanding and acceptance.

The design of the BSC may violate the principle of controllability (Jakobsen and Lueg, 2014) 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 at an earlier stage. These authors also proposed that dysfunctional applications and failed implementations may arise from this problem. The situation worsens if performance evaluation and compensation be linked to the BSC, leading not only to sub-optimization but also to stress and dissatisfaction among BSC users (Giraud *et al.*, 2008).

Finally, when top-management or the 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 spread to the rest of the organization (Madsen and Stenheim, 2014).

2.4.4. Political issues

A 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. Not everyone may be willing to invest the time and resources required in the development and implementation of the BSC (Kasurinen, 2002), particularly if benefits are perceived not to compensate the costs involved (Papalexandris *et al.*, 2004). This risk is particularly significant regarding lower level managers, if top-managers lack commitment to the BSC project (as discussed above).

The continuity of the BSC project in an organization after its implementation may be threatened by various political factors. 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) or

"soul-of-fire" (Stjernberg and Philips, 1993), endangering the survival of the BSC. Other factors such as a high turnover, many new hires, or external factors like an economic recession (Madsen and Stenheim, 2014) may also endanger the project through a weaker internal political support in the new context.

The scepticism of organizational members regarding the capability of the BSC to serve them can lead to some resistance against the BSC. This scepticism 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 above, incompatibility between a particular concept and existing organizational culture promotes resistance to its implementation (Madsen and Stenheim, 2014). According to Rogers and Shoemaker (1971, cited in Wiersma, 2009), receptiveness 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).

Other sources of scepticism and consequent resistance are the ambiguity and subjectivity of BSCs, a poor BSC's design and the perception that the weight of BSC's indicators has been affected by the political weight of stakeholders (Modell, 2012). Focusing on intra-organizational power struggles, power games between finance and non-finance personnel may hamper the project success, as Wickramasinghe *et al.* (2007) suggested based on a case in which non-finance people started to be required to provide additional information, implying an extra effort from them. This last situation stresses the need to 'sell' the BSC concept to non-finance people, in order to motivate them to cooperate.

3. Methodology

Given our descriptive and explanatory research questions, requiring an in-depth, contextualised and holistic understanding of actual organizational practices in a particular organization, we chose an interpretive research approach and the case study method. This approach and method enabled rich descriptions and a deep understanding of the UtilCo case, promoting new learning about the behavior and meaning of the real-world (Yin, 2009). Given the need to investigate multiple topics and perspectives, multiple sources of evidence were used to collect qualitative data from three sources: interviews, documents and direct observations.

Three different interviews' scripts were developed, each one corresponding to a different group of interviewees (from the sub-units, the Management Control department and the Executive Board). Interviews were semi-structured (Yin, 2009) to enable spontaneous commentaries on issues not covered in the scripts. Following Yin's (2009) recommendations, the interviews' general scripts were adapted to each particular manager, based on our research questions and updated during the research process to incorporate on-going empirical findings and issues needing to be confirmed or further explored (see the scripts final versions in the appendix).

We interviewed the managers of the majority of the sub-units of UtilCo which have a BSC (eight out of eleven), the BSC designers (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, including a code to identify the author of each quote to be used in the next section.

Table 2. 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	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 with 2 interviewees

In addition, documents that supported the design of the BSCs (strategy maps and presentations of the BSC proposals) and direct observation during daily work in the Management Control Department also contributed to the generation and collection of information. Using different sources allowed triangulation of information to test for consistency, strengthening the research credibility and mitigating the risk of biased results.

4. Empirical Analysis

4.1. The case company

The case company, here anonymised as UtilCo, is an utility, with plants in various countries, and one of the largest subsidiaries of a market leader in Portugal. In Portugal, UtilCo's departments are grouped in three parts, according to their role: Asset Management; Studies, Projects and Investments; Support Areas.

The Asset Management (AM) part comprises five centres, each of which manages the operations of a particular plant. The Studies, Projects and Investment (SPI) part is divided into six sub-units: three Project Teams manage specific expansion investment projects; and three Engineering Departments facilitate the implementation of the expansion projects, as well as the execution of the maintenance investments of the plants, providing them specialized engineering services. Finally, the Support Areas encompass all departments assisting the entire organization, such as management control (responsible for the BSC creation and operation), regulation, sustainability, maintenance, human resources and general administration.

All these departments have a leader, here referred as 'middle managers', and report to and follow instructions from the Executive Board, whose members are referred as 'top managers'. Figure 1, below, depicts UtilCo's organizational structure.

Figure 1. Organizational Structure of UtilCo
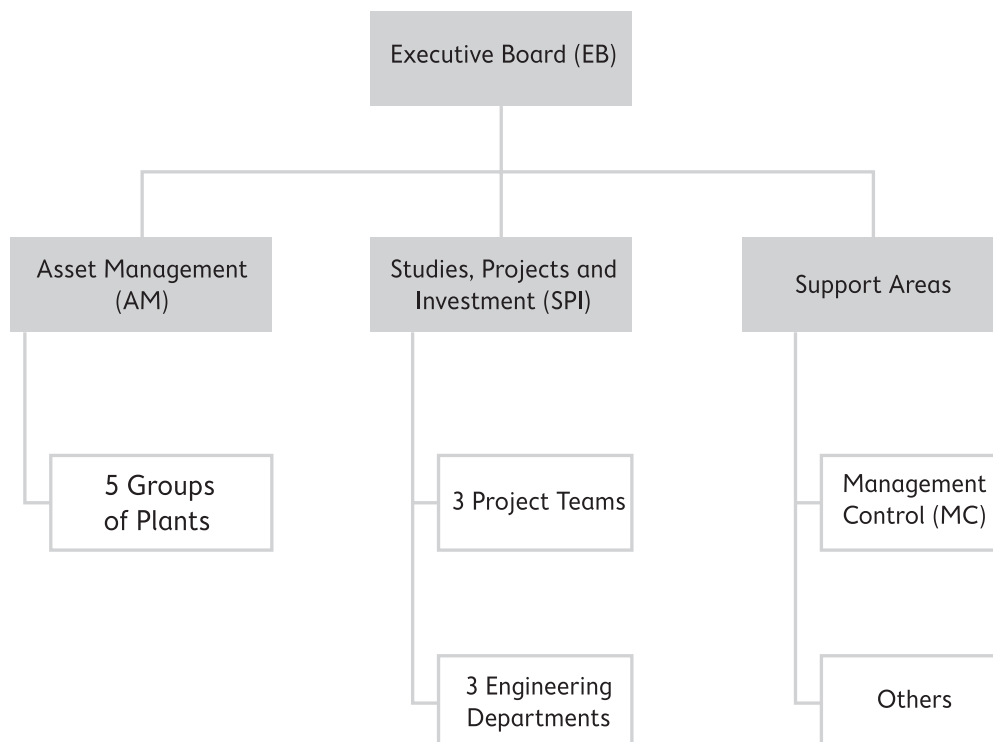
4.2. The implementation of the BSC

In 2013, UtilCo launched a project that aimed at optimizing the organization, processes and employee behaviour for strategy execution, including the implementation of the BSC and the improvement of other reporting activities.

Initially, the desire was to make a first level BSC, i.e., a BSC at the company level. But since the beginning there was the aspiration to, in a second moment, cascading down to the department level, in order to improve the reporting of the sub-units that had a major contribution and best explained the financial indicators EBITDA and CAPEX. However, after implementing second level BSCs, UtilCo ended up eliminating the BSC at the company level, considered redundant given the existence of other systems enabling adequate monitoring of the company performance. In contrast, BSCs still exist at department level, and these are the ones addressed in this study.

Second level 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 specificities of each plant, each Project Team and each Engineering Department. All of these BSCs had a trial period, and turned official in the beginning of 2015.

It is important to distinguish the two sub-unit groups (AM and SPI), as explained by a member of the Executive Board:

> *"Between AM and SPI, the components of the BSCs 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 different types and scope of activities of the two departmental groups, the BSCs designed for AM diverge from those made for SPI. By contrast, the BSCs within each group share significant similarities, although they are not completely identical. In addition, management styles vary between AM and SPI, and therefore the usefulness perceived by the different beneficiaries may also diverge.

4.2.1. Characteristics and Objectives

The BSC in UtilCo was defined as an instrument to support strategic management. Based on the BSC four standard perspectives, UtilCo selected financial indicators and the operational indicators perceived to drive future financial performance, balancing short, medium and long term objectives, financial and non-financial, and internal and external performance perspectives. A weight was assigned to each indicator based on its relative importance, enabling the calculation of a score per perspective and a global score. Importantly, the BSC was introduced to complement, not to substitute, other financial evaluation instruments.

The formally approved proposal of the Management Control (MC) Department positioned the BSC as a strategy communication tool, with the following objectives:

1) Translating 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.

In the same vein, Executive Board (EB) members indicated the objectives of communicating strategy, measuring financial and non-financial performance, and monitoring sub-units in terms of evaluation and in terms of expected improvements. In particular, they highlighted the BSC benefit of synthesizing multiple aspects from multiple perspectives, allowing them to monitor performance through a comprehensive overview.

4.2.2. Intended Beneficiaries

When the BSC was implemented, 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 considered the BSC to be more useful to the EB than to themselves. As an EB member put it:

"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 also believed that if the EB uses the BSC to monitor its subordinates' performance, the middle managers will do the same at their sub-units' level, as stated by another EB member:

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

This was also noted by a MC department interviewee, arguing that if a top manager did not value or use the BSCs, his subordinates would probably not feel motivated to do it at their level. This usage by middle managers is, indeed, the main focus of this study, since the BSCs exist at their sub-units' level.

4.2.3. Planned frequency of use

The BSCs are produced every quarter, by the MC Department, for all the AM and SPI areas. When ready, after around 3 weeks, each BSC is sent to the respective sub-units' managers, as well as to the top managers. Therefore, the desired frequency of use is also quarterly, as well as the periodicity that most sub-units' directors reported to use. Nevertheless, some sub-units reanalysed the BSC every month if necessary, to recall their performance in the previous quarter, keeping in mind the required improvements to achieve defined objectives. Importantly, the BSCs were never supposed to be a day-to-day tool, as described by a MC interviewee:

> "Obviously, the BSC did not have the objective of supporting day-to-day management activities. This would require a daily BSC, which would not make sense, considering its positioning [as a strategic management tool]." (MC1)

4.2.4. Clarification sessions about the BSC

The BSC concept was explained to the middle managers by presenting them the strategy maps showing the company strategy, and by discussing how their sub-units contributed to its execution. After this first session, the MC department quickly changed its focus to more practical questions, preparing the first customized BSC proposals and presenting them to the respective sub-units. During the pilot phase, there was room for suggestions and improvements, involving people in the development of the BSC until reaching its final and current version.

4.2.5. Sub-units' participation and inclusion

According to the MC department, sub-units were suitably included in the process of selection of the indicators. Explaining the BSC concept and how it worked and presenting the strategy maps to the sub-units was a very important step. It also enabled the MC department to collect detailed information about sub-units activities – crucial information to propose appropriate BSC models but that the MC Department lacked. After this phase, the MC department proposed to the sub-units a first version of their BSCs, followed by a discussion about the suitability of each indicator. Nevertheless, engaging sub-units was considered to be difficult, not so much regarding AM managers but particularly SPI managers, due to opposing attitudes towards the BSC project:

"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 preventing the project progression." (MC1)

4.2.6. Connection of the BSC to the strategy

The developed BSCs were based on the strategic priorities for 2013–2015. For each priority, a strategic map was created in order to schematically illustrate the cause and effect relationships between the objectives and their respective indicators. This connection was acknowledged and valued by most middle managers interviewed. However, interviewed EB members were concerned about the required constant BSC improvements, not only to find increasingly better indicators to represent a certain objective, but also to adapt to the changes in strategy whenever they happen. Importantly, the company has come to the end of a cycle: existing expansion investment projects are approaching conclusion – a strategic shift affecting mainly SPI areas, whose activities are 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 it 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, leading to a greater 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 a 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.

Given the insights collected from the interviews, we categorized 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 enhanced by one of the advantages most frequently mentioned by the interviewees: synthesizing a wide range of aspects into a brief map. We now analyse each usage in more detail:

1) **Monitoring and Control**: As previously mentioned, there are other instruments that serve the formal, 'official' evaluation purposes. These instruments are composed of key performance indicators (KPIs). The BSC, in order to strengthen the connection between sub-units' performance and evaluation, combines in a single map some of those official KPIs (used for evaluation purposes) with other KPIs used for other purposes. Hence, some 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 seek 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, by providing managers 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 mentioned to value the communication power of the BSC, not only with regard to themselves (i.e., to align them with the organizational strategy), but also with regard to their subordinates, ensuring that everyone understands their contribution to the sub-units' objectives and, consequently, to the company results. Within small teams, middle managers usually circulate the BSC to everyone, but in the biggest ones middle managers only shared the BSC at the management level. Nevertheless, in the latter case, some of them acknowledged 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 UtilCo. 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, both the MC department and the EB members perceived that differences between AM and SPI areas may exist, with AM more likely to use it more often and intensively than SPI due to several reasons. These perceptions are in line with the interviews to middle managers, with AM managers demonstrating a higher interest, while SPI areas assumed a lower commitment to the BSC.

In addition to differences in usage types and intensities, members from the EB and the MC Department acknowledged the possibility of a total absence of usage, although without having certainty about it:

> *"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)*

Indeed, some sub-units clearly stated that they do not use the BSC for various reasons. The majority of these non-usage situations were found within the SPI group, in line with the perception of the MC department and the EB members. It is important to clarify that we classified as non-usage the 'false uses', i.e., those situations in which the interviewees:

1) said that they examined 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 and insignificant part of the tool.

The existing diversity of uses was not exactly a problem at UtilCo, since such diversity was already intended. Considering the planned usages for the BSC, which included all the types of uses found (monitoring and

control, support for management, communication of strategy), the paradox found in this case study refers to:

1) The lack of use of the BSC to communicate strategy;

2) The different intensities of BSC usage;

3) The BSC non-usage.

The large number of interviews at the middle management level enabled to understand the BSC utilization patterns, between the two groups of its beneficiaries: the AM and the SPI areas. These patterns have emerged from a qualitative comparative analysis of the various interviews, which allowed to establish a clear differentiation between the usages across the two groups, and significant consistency within each group. Table 3, below, distinguishes the types of use found in AM and SPI departments and compares the degree of intensiveness and the number of non-usage situations between these two departments.

Table 3. BSC utilization patterns: AM vs SPI

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

As previously stated, we can conclude from Table 3 that the SPI areas lack the 'communication of strategy' type of use, they use the BSC less intensively compared with AM departments, and a higher number of BSC non-usage situations were reported in SPI areas comparatively to AM ones. However, and 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 users in general, rather than exclusively 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 of the BSC to communicate the strategy. We now discuss these explanatory factors, following the structure adopted in the literature review, categorizing them as 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, we could conclude that there was indeed a strong concern about customizing the BSCs to each sub-unit, differentiating them not only between AM and SPI areas but also within these two groups. The scope of each BSC is different within AM (some departments are composed by totally different types of plants, using totally different technologies) 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 agreed with the current indicators of their BSCs, stating that they include the main indicators and that they are enough for the brief overview that the BSC intends to provide. However, a particular SPI member disagreed with the conceptualization of his BSC, 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)

Therefore, there was not consensus about the conceptualization of the BSC, as previously stated, and this lack of consensus still prevails. This is one of the factors that contribute not only to weaken the intensiveness of BSC use but also to the negligence of the use of the BSC to communicate strategy by this group of managers.

The concern about the adequacy of the BSC conceptualization is also shared by the EB members, emphasising 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 which better represent 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 UtilCo, we 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 limitation is probably affecting more the use of the BSC to communicate strategy among SPI managers than among AM managers.

4.4.2. Technical issues

The BSCs were parametrized in Excel-spreadsheets, fed with quarterly information and returning scores that combine the defined weights of each indicator, the target and the actual performance figures. According to the scores obtained, red, yellow or green little circles are presented, providing a clear and friendly view of the sub-unit performance.

According to the designers of this infrastructure, the Excel-spreadsheets' preparation was not a critical step of the BSC implementation. In technical terms, the problematic question related to 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 by any system because it implies much manual work." (MC2)

Direct observation and the interview to the MC department revealed that the quarterly process of producing the BSC involves interactions with multiple parties, particularly 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, validating information, to recheck details and ensure information quality, requires almost always questioning its provider again, as described by an interviewee from the MC department:

> "Sometimes we notice that some of the information provided by third parties is not updated or it doesn't meet some 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 several SPI managers:

> "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 make their estimates based on historical information and potential future correlations. In addition, the form in which the information is requested may imply some data processing before its provision, which may delay it.

All these time-consuming issues put at risk the timely disclosure of the information – a key issue to the sub-units. Some interviewees argued that when the BSC is finally disclosed, it is too late, and one of them even considers it outdated, hence finding it hardly useful. Some sub-units that reported the timing problem, presented it as the main factor underlying a non-usage situation, or at least a very low intense use:

"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:

"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 suggested that a possible solution could be to decrease the complexity of the BSCs to ensure their timeliness, and progressively increase complexity as producing the main variables becomes fully mastered.

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

reported by other tools. This raises the issue, as the MC department put it, around the expected role of the BSC:

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

Indeed, an 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 also present in various other instruments, and include some new indicators first introduced in the company through the BSC. They do not try to completely represent the sub-units' performance, but to give a brief view of what it is critical. As mentioned in the initial proposal, the BSCs will always need to be complemented by other tools, in line with what directors from various sub-units feel. But apart from the combination of uses of different tools, since some sub-units have quicker access to other management control tools providing the same or more detailed information, they tend to focus more on those rather than on the BSC, as described by some sub-units' interviewees:

> *"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, SPI areas have their own documents to control and manage their operations, because they have their own management control section that produces these specific tools. They therefore 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. Since the BSC 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 in their management activities. Similarly, an EB member noted that 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 interviewees that the initial receptiveness to the BSC was higher in the case of AM than in SPI areas, something which the MC department explained based on cultural differences:

> *"UtilCo is a company with a long history, and the past of the organization may dictate the culture fostered among the employees. For instance, SPI areas constituted an independent company before, although still part of UtilCo 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 remarks of an SPI interviewee:

> *"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.

However, further research about the culture of each departmental group would be required to clarify how 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 AM employees already did this kind of reporting, much greater visibility into SPI activities was created 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 we could conclude that SPI perceives the BSC as a performance measurement system more than a tool to support management, and therefore they feel under higher surveillance, even though they acknowledge that the BSC is not trying to evaluate the teams but the projects.

Most SPI areas mentioned that part of their performance was dependent on other SPI sub-units (since Engineering Departments work for Project Teams) and third parties (for example, suppliers, external services and 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 their scores may be penalized by others' performance. 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 depend 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 moni-

toring, regardless of the capacity of the sub-units to control them. The indicators were set 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 involved in the implementation process. They participated commenting on indicators, discussing whether the strategy maps made sense or not and 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 already mentioned, the MC department attempted 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. EB members may have different levels of commitment to the BSC, and their level of use will be reflected upon middle management, as 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 [i.e., low] value. In addition to 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 at UtilCo, understanding the BSC usages and perceived usefulness is crucial to decide upon potential improvements and even upon its continuation. According to the MC mem-

bers, the continued use of the BSC may be threatened due to the current limited resources:

"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 our resources; and 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 for the SPI areas providing them suitable and timely information, as well as the threat of a new KPI system (a system for official evaluation purposes) currently being developed taking into account the matrix structure (which the BSC failed to suitably address, as mentioned above), as issues that may reduce or even eliminate the existing interest on the BSC.

There is little evidence about previous failed experiences when 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.

Finally, some sub-units' interviewees also argued that providing the data requested by the MC department to produce the BSC implies additional work. From direct observation we could notice delays for the MC department to receive information from every sub-unit, which suggests that the BSC was not a priority for the latter group.

5. Discussion

5.1. The implementation of the BSC

As already stated, the BSC, when initially proposed in UtilCo, 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 the focus on the defined strategy (Kaplan and Norton, 2001). Therefore, to implement the BSCs in UtilCo, strategy maps were developed following the guidelines proposed by Kaplan and Norton in Strategy Maps, in 2004. The strategy maps and the resulting BSCs provide a framework to look at strategy from four perspectives close to those proposed by Kaplan and Norton in 1992.

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 UtilCo, we could find different interpretations of this tool among its users, which were in line with those found by Malmi (2001) 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; 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 we 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 UtilCo 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, interviewees were asked about the specific BSC problems that had been previously summarized in the initial literature review and whether they explained the empirical findings or not. Additionally, interviewees also made spontaneous remarks on issues not been initially found in the literature and hence not directly questioned in a first stage; therefore, we further searched the literature and expanded our review with theoretical support for these unexpected findings. Throughout this section, when discussing such topics, we will differentiate these from those which were directly questioned. Once again, we will organise this discussion adopting the already used classification of BSC problems, based on the macro-categories of conceptual, technical, social and political issues. Indeed, we can eschew the short time elapsed since the BSC implementation as an explanation for the lack of usage (the 'time lag' effect amply described in the management control literature – e.g., Granlund and Malmi, 2002), since the empirics in the previous section revealed clear

reasons for non-usage related with the above four macro-categories, not simply an insufficient passage of time.

5.3.1. Conceptual issues

In conceptual terms, the UtilCo 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 UtilCo, 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 contex-

tualization 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 UtilCo 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[2] 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 being extremely important since they were pointed out by the interviewees in mainly a spontaneous way.

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

5.3.3. Social issues

UtilCo 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 UtilCo 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) 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 UtilCo, the scores do not constitute a formal evaluation of the sub-units. According to Giraud *et al.* (2008), 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 UtilCo.

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

UtilCo is currently rationalizing its resources according to its new priorities. The continued use of the BSC in UtilCo 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) or "soul of fire" (Stjernberg and Philips, 1993) in the UtiCo's case.

In UtilCo, there is no clear evidence of the relevance of previous failed experiences in implementing other innovative concepts to explain resistance and scepticism to the BSC, as it was suggested by Røvik (2011), nor regarding the subjectivity and ambiguity of the tool, its indicators' weights, and its design as suggested by Modell (2012)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

6.1. Summary

Based on the triangulation of information obtained through interviews, direct observations and documentation, we were able to answer our two main research questions: 1) How was the BSC actually used, if used at all, across the various business units in the case organization? 2) How and why did those actual usages (or non-usages) of the BSC emerge?

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. In addition, 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, in the SPI areas the intensity of BSC use was lower and non-usage situations were more common.

We addressed and explained the empirical paradox by identifying several conceptual, technical, social and political issues. First, the conceptual issues in this case are related to the adequacy of the BSC conceptualization and the need of adjustments of the BSCs to new strategic priorities. Second, the technical issues are associated with the BSC 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 are related 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 but were not found to be relevant to explain the paradox in our 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, from ambiguity and subjectivity of the BSC, from a poorly designed BSC or from a reflection of the political weight of stakeholders in BSC indicators' weight.

The BSC issues found enabled to clearly understand how they can hinder the degree of BSC usage or contribute to its non-usage by the intended BSC beneficiaries. The empirical analysis also clearly highlighted 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.

However, it was challenging 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. It was possible to conclude that these two groups differ in several aspects that influence the utilization of the BSC. The adequacy of the BSC conceptualization to the SPI sub-units is lower, hence decreasing 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 pro-

duces their own management control tools promotes preferring these tools, in detriment of 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 identifies explanations of the observed practices, including some dysfunctional situations, something that companies often avoid discussing and is under-researched. 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.

The methodological contributions emerge from our finding that some uses of the BSCs should actually be considered as 'false uses', to their organizational insignificance. This highlights the importance of the case study methodology, which allows a deep insight into the real-life of organizations (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. Analysing how managers were using the BSC was relevant and timely for UtilCo because the implementation of the BSCs was recent and the company wanted 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

The study identified various and sometimes correlated explanatory factors of the divergences in the BSC use and its non-usage, making it difficult to accurately determine the ones contributing the most and how. This study leaves some suggestions, but the inter-related nature of these complex organizational factors and phenomena limits the identification of clear evidence on how the factors are linked to the paradox and between each other. Moreover, in most 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, 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, we acknowledge its limitation in identifying 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).

We acknowledge a potential risk of interviewees' bias, since most interviewees were referring to their own behaviour, although the substantial triangulation carried out across information generated through different methods and in particular across different interviews provide substantial reassurance on its validity. 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 UtilCo and to all organizational actors with relevant insights on the history and the present of the BSC at UtilCo. 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 future in-depth studies. More case studies and qualitative studies across multiple industries will promote understanding to which extent the suggestions of this study are shared by other organizations. And 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. Finally, since at UtilCo, there is no direct link between the BSCs and the company's compensation system, future research may study the relevance of this issue in a company where BSCs are connected to managers' rewards for performance.

Within the case study company there is still room for further research. Should UtilCo take corrective actions to mitigate the problems found, such as adjusting the BSC to the new strategic priorities or improv-

ing information systems automation to improve the BSC timeliness, re-examining the case would enable to understand the impacts of the adopted solutions upon the BSC use and non-use. Another suggestion is studying the influence of the announced new KPI system (a formal evaluation tool taking into account the matrix effects that the BSC was failing to consider) upon the use of the BSC. Finally, since the continued use of the BSC at UtilCo may be in danger, studying this drastically new potential scenario would be particularly interesting.

Appendix

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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