

MULTIPLE CASE STUDY ON BALANCED SCORECARD IMPLEMENTATION IN SUGARCANE COMPANIES

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Abstract

This paper poses the empirical findings of two case studies on Balanced Scorecard implementation in sugarcane Brazilian companies. The Balanced Scorecard framework is the most important achievement of performance measurement revolution. There are many studies on BSC implementation, but there are almost no studies in sugarcane companies although they played a very important economical role in Brazilian economy. The main empirical findings point out to implementation of different BSC generations, importance of information technology, the importance of involvement of managers and directors in leading the implementation.

Keywords:

Performance measurement system, Balanced Scorecard, performance measurement, sugarcane, agribusiness.

1 INTRODUCTION

The Balanced Scorecard framework, proposed by Robert S. Kaplan and David A. Norton, can be considered the most evident achievement of performance measurement revolution. Since 1980s many authors have realized the inadequacy of traditional performance measurement systems, based on traditional Managerial Accounting. Then a performance measurement revolution was envisioned by some authors.

The Balanced Scorecard framework was proposed as a performance measurement system in 1992 by Kaplan and Norton. Since then, according to the proponents, such framework has evolved according to its application in many companies around the world. Nowadays we are in the third generation of Balanced Scorecard. The frame has evolved from a performance measurement system to strategic management system.

In the literature, there are many studies on Balanced Scorecard implementation. However, there are almost no studies in sugarcane companies. Then, this paper intends to give the first step to fill this gap. The following section the theoretical background is presented. Next, the research method and the main empirical findings are posed. Finally, the final remarks are made.

2 PERFORMANCE MEASUREMENT SYSTEMS (PMS)

Instead of defining PMS, it is important, first of all, to define performance. Performance is about the potential for future successful implementation of actions in order to attain the objectives and targets [8]. Performance is the result of decision making by managers. It is related to quantity and quality of available information [4]. The objectives of any organization contain [8]:

- Targets to be reached;
- Elements of time for achieving the target; and
- Rules about a preference ordering regarding how to get there.

A comprehensive definition of performance measurement system is a "set of processes an organization uses to manage its strategy implementation, communicate its position and progress, and influence its employees' behaviors and actions. It requires the identification of strategic objectives, multidimensional performance measures, targets and the development of a supporting infrastructure." [28].

Another interesting definition is “performance measurement system enables informed decisions to be made and actions to be taken because it quantifies the efficiency and effectiveness of past actions through the acquisition, collation, sorting, analysis, interpretation, and dissemination of appropriate data” [14].

Performance measurement system consists of individual performance measures, set of performance measures, both internal and external environment which the performance measures are used, and supporting infrastructure that enables data to be acquired, collated, sorted, analyzed, interpreted and disseminated [9,24].

There are many reasons to measure performance. The roles can be classified in three main categories [27]:

- Strategic: the roles of translating the strategy into performance measures to support the implementation and challenging the assumptions behind the strategy;
- Communication: the roles of checking position, complying with the non-negotiable parameters, communicating direction, providing feedback and benchmarking; and
- Motivational: the roles of evaluating and rewarding behavior and fostering improvement and learning.

Another reason to measure performance is the use of PMS information in planning, controlling and improving activities at different levels of organization. The use of information in different activities as well at different hierarchical levels requires different kind of information [16].

The traditional PMS, based on financial and productivity measures, are criticized because they [15]:

- Encourage short-termism;
- Lack strategic focus and fail to provide data on quality, responsiveness and flexibility;
- Encourage local optimization;
- Encourage managers to minimize the variances from standard rather than seek to improve continually; and
- Fail to provide information on what customers want and how competitors are performing.

The main reasons for the deficiency of traditional performance measurement systems are [15]:

- The changing nature of work as consequence direct labor is not anymore main source of costs;
- Increasing competition for achieving customer satisfaction;
- Specific improvement initiatives as Total Quality Management and Lean Manufacturing;
- National and international awards which requires new PMS;
- Changing organizational roles which means more people using PMS information;
- Changing external demands which means new stakeholders with different demands; and
- The power of information technology in acquiring, analyzing and disseminating the PMS information.

As a result, the traditional PMS failed in providing relevant information for different decision makers at different hierarchical levels. Then, many researchers and practitioners have proposed PMS frameworks during the 1990's to fill the gap as Performance Pyramid [2], Balanced Scorecard [6,10] [11,12] and Performance Prism [17,19] for naming some of them. Then, a performance measurement revolution was envisioned by some authors [3,5,15]. Perhaps, the most important achievement of such efforts is the Balanced Scorecard framework proposed by Kaplan and Norton that will be detailed in next section.

2.1 Balanced Scorecard

The Balanced Scorecard (BSC) framework was first proposed as a performance measurement system framework in 1992 by Kaplan and Norton [6]. The main idea is to balance the financial performance measures with nonfinancial measures. The first ones are the lagging measures and the second are the leading measures or performance drivers. The Figure 1 exhibits the BSC framework. The performance measures are grouped in four perspectives which provide a comprehensive view of performance.

Since then according to the proponents, BSC has evolved following the use of it in many companies around the world [7,12]. The performance measures are derived from company's vision and strategy. The Figure 2 illustrates this main change. The vision and strategy are summarized in four

perspectives: financial, customers, internal processes, and learning and growth. The cause-and-effect relationship links the four perspectives and their performance measures.

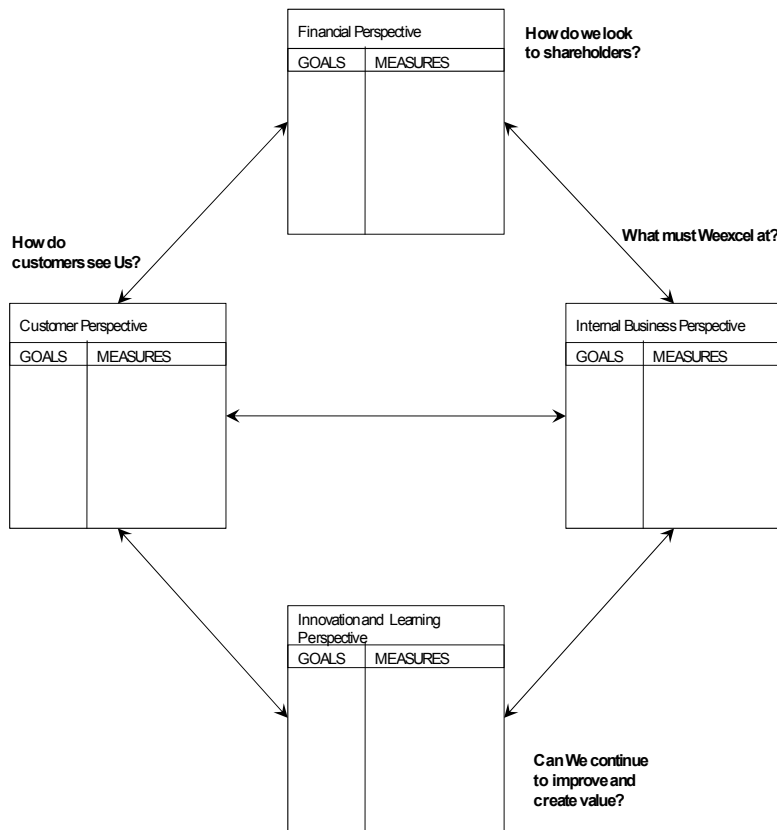


Figure 1 – The Balanced Scorecard framework [6].

The application of BSC in many companies mainly in USA has pushed the framework to a strategic management system [12]. It happens because the development of BSC is part of strategy implementation through a top-down cascading approach. The cause-and-effect relationship among the performance measures of four perspectives can be viewed as expected cause-and-effect which will be achieved through strategic initiatives to be implemented [23]. This emphasis is represented by the growing importance of the strategic map.

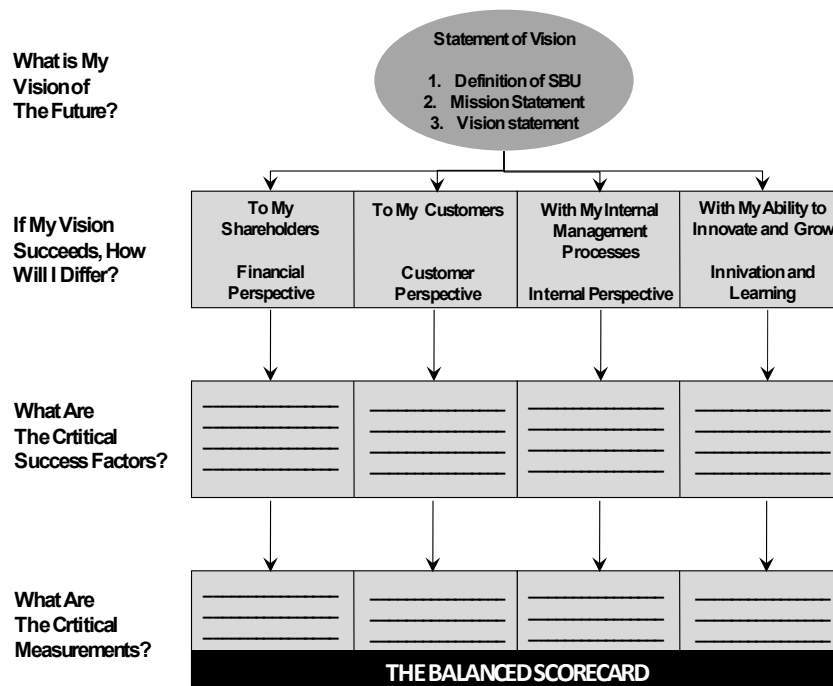


Figure 2 – Linking measures to strategy in BSC framework [7].

The strategy map is a graphical summary of strategy which is shown in Figure 3. It portrays the main assumptions of company's strategy arranged in four perspectives which have the strategic initiatives and their respective performance measures. The map plays an important role as communicator of strategy.

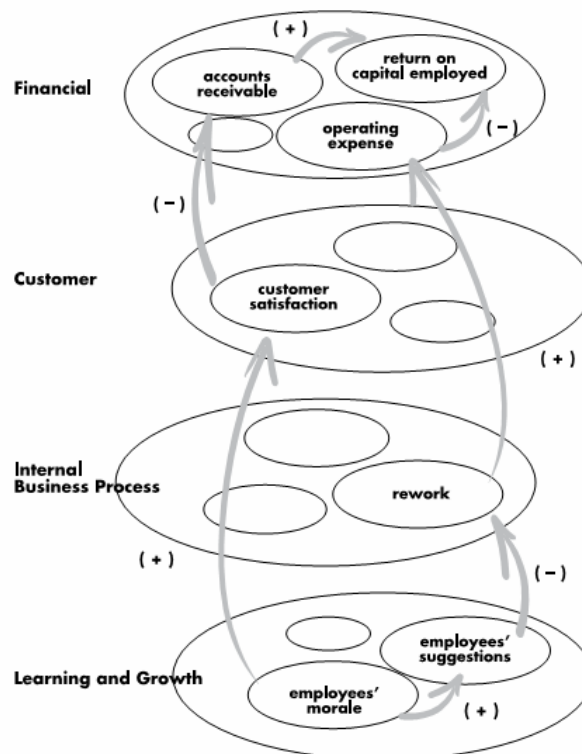


Figure 3 – Example of strategy map [12].

Another important change is addition of four critical processes to manage the strategy based on the development of BSC. These processes are [10,11]:

- Translating the vision – clarifying the vision and gaining consensus;
- Communicating and linking – communicating and educating, setting goals, linking rewards to performance measures;
- Business planning – setting targets, aligning strategic initiatives, allocating resources, establishing milestones; and
- Feedback and learning – articulating the shared vision, supplying strategic feedback, strategy review and learning.

Following the development of BSC, the last changes were made again in procedure to develop and implement the frame that still has four perspectives besides the critical of many authors. BSC is seen as a strategic management tool to communicate, implement, control, and the strategy implementation. The Figure 4 illustrates the five principles of Strategy-Focused Organization (SFO) where previous BSC frame is in the center. The SFO foundation is five principles: (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, and (5) mobilize change through executive leadership [18]. The development and use of strategy maps play a very important role in aligning and communicating the strategy through the organization [29].

Some steps, based on experience with companies to implement BSC, are grouped in three phases: developing the scorecard, embedding it the organization's management system, and sustaining it [21]. The empirical findings of ten case studies have studied implementation of different PMS frameworks, regarding the causes of failures in implementing a PMS, also applies to BSC. The failures in studied companies, which did not finish the implementation, were coded in seven groups. The groups are [22]:

1. Time and effort required coded as “effort”;
2. The personal consequences of implementing the performance measures coded as “consequences”;
3. The perceived lack of benefit from proceeding with performance measurement coded as “benefits”;
4. Difficulties with data access and the information technology systems coded as “IT”;
5. Continued top management commitment coded as “TMC”;
6. The impact of parent company activities and initiatives coded as “parent company”; and
7. Problems with applying the process coded as “process”.



Figure 4 – The principles of Strategy-Focused Organization [18].

In the literature there are many cases on BSC implementation in manufacturing as well in service industry as well in profit and nonprofit organizations. Some are regarding the BSC frame as proposed initially by Kaplan and Norton [13]. Others are regarding some specific countries [25]. However, there are no studies on sugarcane companies.

3 RESEARCH METHOD

The applied research design was a multiple case study in a qualitative approach. Such design emphasizes the perspective of people involved with research issues, the description of context where the studied phenomena happens and the time line of events [1,26]. One remarkable characteristic of qualitative approach, as well case study method, is the flexibility for application of carrying out the investigation through the use of observation, interviews and document analysis [1].

However, the choice of multiple case study was due to difficulties of studying deeply an insightful case applying a longitudinal method. There are benefits of carrying out more than one case studies as more external validity of findings and choice of companies with different levels of BSC implementation. Moreover, regarding BSC implementation it is difficult to identify the criteria for choosing unique case study [26].

The selected companies for carrying out the case study are important players of Brazilian sugarcane agribusiness and they are located in the country of state of Sao Paulo, Brazil. They are large companies according to the criterion of number of employees. In the following sections the studied companies will be named as “Company A” and Company “B” due to companies’ privacy policies.

4 MAIN EMPIRICAL FINDINGS

4.1 Company A

The Company A is an entirely private capital company whose owners are members of the same family. It has started its operations 22 years ago. Nowadays, it employs 3,300 people. During harvest period 2007/2008, the company has processed 4.5 millions tons of sugarcane. The employee, who was involved in BSC implementation, was main source of information.

Before BSC implementation, there was no formal strategic planning process and the main tools for running the business were the budget and the operational objectives and targets. While a change to professional management had been carrying out, the Balanced Scorecard framework were chosen as management tool to support better the decision making process.

The BSC implementation started in the second semester of 2003. A consulting company had participated actively of the development phase that took 9 months. People from Operations, Staff and consulting company had taken part of a multidisciplinary work team. They were in charge of proposing the performance measures for the four BSC perspectives – financial, customer, processes and learning and growth. The performance measures should be linked to the strategic and operational objectives and targets.

It is important to highlight that the work team has not established any strategy map. This happened because the consulting company did not suggest it and the other team members did not know it. Nowadays, people know it but there is a fear of changing the company's BSC because it is working properly, according to the interviewed people.

The existence of operational performance measures facilitated the choice of performance measures for the processes perspective. The cost targets, which based on budget, are the performance measures of financial perspective. The team faced difficulties to measure customer satisfaction because a cooperative, named Copersucar, trades the Company A products. Finally, the performance measures of learning and growth perspective were not efficient. According to the interviewed person, the consulting company has no experience on implementing BSC in sugarcane companies.

There were no formal actions to disseminate and communicate the BSC to entire company. Only during management meetings, it was explained what is BSC and how it works.

Initially, Excel® electronic spreadsheets were applied for acquiring, storing, interpreting, and disseminating the performance measures. Afterward, an information system was developed by information technology department of Company A to automate the five tasks of measuring performance.

The BSC of Company A is linked to variable reward that is based on Value Based Management (VBM). VBM is a management approach that ensures corporations are run consistently on value for shareholders and other stakeholders. The methods and techniques are applied in order to maximize the company's value.

In effect, Company A uses BSC as performance measurement system for controlling operational processes, providing information to the owners and establishing targets to the operational objectives. It is important to emphasize such use is different of Kaplan and Norton proposal.

The main barriers for implementing BSC were related to information technology, specifically the information system implementation, and the personal consequences of implementing the performance measures as Bourne et al. has pointed out [22].

The initial application of electronic spreadsheets became a barrier to information system implementation because some people thought the spreadsheets were more easy to use. That is one of reasons of developing the information system internally. So it was possible to incorporate the spreadsheets features into the information system.

There was resistance from leaders which were not used to have their performance measured. They pointed out the BSC as the main reason for not achieving their targets and objectives.

4.2 Company B

Besides, the Company B intends to become a public company soon, it is still an entirely private capital business, like Company A, whose owners are members of the same family. The company has started its operations 61 years ago. Nowadays, it employs 9,200 people. During harvest period 2007/2008, the company has processed approximately 8.3 millions tons of sugarcane.

The Company B owns the brand leader of Brazilian sugar market. The company is also a player in other sector of Brazilian agribusiness such as orange juice and port terminals. The employee, who was involved in BSC implementation, was main source of information.

Before BSC implementation, the strategic objectives were not always measureable. The performance measures were also not clearly linked to each other. Some of them were outdated not providing relevant information to decision makers. There were a clear mission, vision, values and strategic principles, but the managers realize there is missing a strategic management system that could provide them a comprehensive business performance view. The performance measures, before BSC implementation, only provided to them a partial business performance view.

That time, in 2001, the Human Resources Director knew the Balanced Scorecard framework attending a management conference. Then, he decided to show the frame to managers in their meetings as a solution for providing a business strategic vision. Once he got the approval from management board, he disseminated the BSC framework and its benefits to managers until they decided to implement the frame.

The next step was to train the potential BSC users and the assignment of directors and managers as members of implementation work team. One of work team challenges was to adapt the BSC to the real company's needs. The rest of workforce, who do not receive training in BSC, were the target of intensive communication program which encompass information on boards, internal TV channel and on intranet. There was also an initiative called "Cascade Program". Every foreman received folders about BSC and distributed them to their employees. Nowadays, the folders are distributed with payment receipts.

The development of strategy map was the most important activity during the BSC implementation. Since 2003, a team of managers has taken part in developing the strategy map. Then, they have negotiated the map with directors. Finally, the owners have approved the strategy map.

The Balanced Scorecard of Company B has the traditional four perspectives: financial, customer, processes, and learning and growth. Before BSC implementation, there were approximately 600 performance measures. In 2004, the number decreased to 178. Nowadays, there are around 250 performance measures.

There is an infra-structure of information technology, Oracle® database and Excel® electronic spreadsheets, to acquire, store, interpret, analyze and disseminate the relevant information to decision makers. The performance is debated in top management meetings where the strategy map is a reference to make decisions because it reflects the company's strategy.

The BSC is the strategic management system of Company B. There is another management system for short-term purposes – the Operational Target Plan (OTP). Since 2007, the variable reward is paid based on BSC and OTP.

Since begin of BSC implementation, the major difficulty has been the strategy communication. The cited communication means and initiative, as "Cascade Program", and the strategy map are the ways to dealt with communication problems for operational and strategic levels, respectively. According to the interviewed person, the strategy map is like constitution with respect to strategic management.

5 EMPIRICAL FINDINGS ANALYSIS

The Table 1 summarizes the main points of two case studies. One of major differences is the reason of implementing the Balanced Scorecard framework. The Company B management system was more mature than Company A system. The management needs of both companies were totally different. While Company A needed a performance measurement system, the Company B needed a strategic management system. Therefore, the Company A has implemented the BSC according to first proposal by Kaplan and Norton [6]. On the other hand, the Company B has implemented the BSC according to most recent Kaplan and Norton proposals [10,11,12,18]. It is important to highlight that Kaplan and Norton argues the evolution of BSC concept [18], but they do not mention the implementation according the organization's need. Indeed, there is nothing in the literature regarding the resistance of changing the BSC generation as it was observed in Company A. This requires more attention of researchers and more investigation must be carried out to understand such resistance of changing the BSC generation.

Both companies have implemented the BSC framework in different ways. While Company A decided to implement the frame was a part of change management to professional management, likely as suggestion by consulting company, managers of Company B have studied and analyzed the frame. Certainly, the Human Resources Director has played a very important role as a champion in the entire

process, but he had gotten the directors board approval. Indeed, the Company B has studied and adapted the BSC to its needs while the Company A was very dependent of consulting company. It is important to emphasize the consulting company's competence is critical.

Table 1: Cases comparison

	<i>Company A</i>	<i>Company B</i>
Reasons for implementing BSC	Lack of performance measurement system	Lack of strategic management system
# of performance measures before BSC	15	684
Types of performance measures before BSC	Productivity and financial/budget performance measures	Financial, process, customer satisfaction performance measures
Use of strategy map	There is no strategy map	Strategy map is a communication tool and is a framework for decision making at top level of hierarchy
Use of BSC	Measure performance for controlling processes, providing information to owners, and establishing operational targets	Strategic management system for implementing the company's strategy
Main difficulties during the BSC implementation	Information technology and personal consequences of implementing the performance measures	Strategy communication
Responsible for implementing BSC	Consulting company	Human Resource Director
Development time	9 months	16 months

The type and number of performance measures have changed in Company A after the BSC implementation although it did not happen in Company B. The likely reason for that is the reason of BSC implementation. The Company A needed a performance measurement system while the Company B a strategic management system. The Company B had financial, customer, and processes performance measures whilst Company only had traditional performance measures.

The studied companies have faced different difficulties in implementing BSC, but they were reported by Bourne et al. [22]. The Company A has overcome the difficulties with information technology and personal consequences of implementing the performance measures. The use of electronic spreadsheet had facilitated the BSC implementation in the initial phase, but it became a barrier when a more sophisticated system would replace them. It is an interesting finding that requires more investigation because the use of spreadsheets is very popular in many organizations. Perhaps the resistance comes from the fear of losing the spreadsheets' flexibility to manipulate data. The Company B uses jointly a database and electronic spreadsheets. The Company B has faced difficulties in communicating that is applying the process group. The company applies different ways to communicate strategy and keep the alignment. It is important to note the application of strategy map in high levels of hierarchy while other means to lower levels of hierarchy.

If the strategy map is a proxy of Balanced Scorecard, then the Company A has not implemented such PMS framework. Strategy map was not noted in Company A. It is significant to highlight that the consulting company did not suggest the development the strategy map to Company A. Hence, it is critical to hire such kind of services for supporting the BSC implementation. On the other hand, the strategy map plays a key role in Company B. It is natural because the strategy map is not a part of first Balanced Scorecard proposed by Kaplan and Norton in 1992 [6,7].

6 FINAL REMARKS

The empirical findings of two case studies have shown very interesting points. The first is the two different BSC implementations although the Kaplan and Norton never stated this is possible. They also argue the implementation of last generation of BSC. Moreover, there is resistance in Company A to upgrade the BSC. Certainly, this finding deserves more investigation. The second point is the implementation leadership. The apparent success of Company B does not mean the assignment of

champion is the best practice, but definitely the consulting company's competence on BSC is critical. It also important to note the involvement of managers and directors is very important to study and adapt the concept to the organization. The third point is key role of information technology and specifically the role played by electronic spreadsheets. As they are part of any organization, it is necessary to consider how it will be part of information technology infrastructure to support PMS. Certainly it deserves more attention by both researchers and practitioners. The third and last point is the communication difficulties when a company decides do implementing last generations of BSC. It seems the strategy map plays a very important role, but it is a part of communication arsenal that companies should applies to communicate clearly the strategy. It is critical to achieve the alignment to implement the strategy successfully.

Therefore, this paper made a contribution to understand better the implementation of very known performance measurement system, the Balanced Scorecard, but some lessons and findings could also applied to other PMS and some deserves more attention by academics and practitioners.

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