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The balanced scorecard in business networks: the case of a seaport

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Abstract

This dissertation examines the role that the balanced scorecard plays inside business networks. It does so to fill in a research gap regarding the role of the balanced scorecard in business networks. In this paper we will look at the characteristics of the balanced scorecard inside a business network environment and compare this towards businesses that are operating in more traditional environments to answer the question in which way the two differ. For this purpose we will analyze the Port of Aveiro. The Port of Aveiro represents an interesting case study because of the introduction of the government actor inside the network.

To answer this research question a series of interviews have been conducted amongst members of the Port authority of Aveiro. In these interviews special focus was given to the way the balanced scorecard was being used as well as the position of the port authority as network coordinator.

In these interviews it was found out that the main difference compared to the balanced scorecard of more traditional organizations was that the main benefit seemed to be the levelling of the playing field with regard to communication so to say. It allowed easier communication from the Port authority towards the other members of the port network. However given the increased complexity that business networks bring to corporate strategy it was surprising to not see this reflected in the actual design of the balanced scorecard. Overall we can state that the balanced scorecard has made it possible to easier track non-financial performance.

Keywords: Business networks, balanced scorecard, ports, management control

JEL-codes: L14; L90

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2. Introduction

The balanced scorecard was conceptualized in the early nineties as a way to rediscover some of the relevance that has been lost in the field of management control in the decades before. Kaplan and Norton stated, “If you cannot measure something, you cannot improve it” (Kaplan & Norton, 1992). They were essentially making reference to the need to consider non-financial strategic objectives along financial ones. Whereas in the past companies had no concrete way to measure these non-financial objectives, the balanced scorecard allowed companies to measure and control both more traditional financial data as well as non-financial data. Since then, in the mid 1990´s, Kaplan and Norton started to focus more on the strategic nature of this instrument. They suggested that the main purpose of the balanced scorecard was to communicate corporate strategy and to assist managers in its implementation. Since the conceptualization of the balanced scorecard a number of years have passed and the balanced scorecard has become one of the most implemented tools of management control in the world (Bain & Company (2007). This widespread implementation begs the question whether the balanced scorecard is still being used as it was originally intended to be.

The port authority of the Port of Aveiro is one of the organizations that has implemented the balanced scorecard. The port authority represents an interesting case study since the port authority is operating in a unique business network environment. It is a governmental agent but at the same time it is dealing with private interests. This complicates the role that management control plays inside the organization. As such this should also be reflected in the balanced scorecard that is used inside the Port of Aveiro. When we take a look at the literature there is very little literature that describes the role that the balanced scorecard can play inside networks. This is even truer for port networks. In this paper we will attempt to solve this research gap and compare the characteristics of the balanced scorecard as it used inside the Port of Aveiro with the balanced scorecard of more traditional organizations. This paper will look at the features that the balanced scorecard has assumed in the Port of Aveiro and analyze its particularities.

In this thesis we will start off looking at the available literature on business networks. Later on we will look at the balanced scorecard itself. After that we analyze the port sector and how it relates to the network theory. Following that we link the topics, balanced scorecard and network theory together. Afterwards we analyze the interviews that have been performed inside the Port of Aveiro. Lastly we will look at some observations and conclusions we can draw from those interviews. We conclude with the identification of some limitations and also some recommendations for future research.

3. Business networks

Of course before we can get started with finding out what the particularities of the balanced scorecard inside business networks are we have to first understand what we are talking about when we discuss business network. There are many different definitions of the term business network. In this chapter we will take a closer look at some of them.

A wave of privatization has swept the business world in the nineties (Teisman, Klijn, 2002). These privatizations have created new partnerships between public and private entities. This trend is also supported by the policy of `New public management` that many governments were practicing in the same period (Provan and Kenis, 2008). In these partnerships, the public side usually takes care of partnership governance while the private parties are responsible for the operational decisions within a network of inter organizational relationships. These partnerships can be seen as business networks. However business networks encompass more than just relationships between public and private entities.

Business networks can be seen as inter organizational relationships between multiple actors on many different possible levels (Nooteboom, 2004). These actors work together in a way so as to achieve their own goals, but also the common goals of the network as a whole. Business networks can provide a boost in value creation towards the actors of the networks. Social interaction and resource exchange will also lead to product innovation which will ultimately lead to the creation of more value. Networks allow its actors to pool resources, strive towards a common strategy and divide labor. This interdependence will subsequently need to be coordinated across boundaries to ensure that there is a fit. According to Dekker (2004), the use of management control mechanisms by the network coordinator is related to the level of interdependence and uncertainty that exists inside the network. Of course business networks are not a new thing. However the last years have seen a spur in the growth of research in to the role that business networks have towards value creation. Networks are not just the result of location decisions of individual firms they are more than that. Networks allow company value to be greater than the sum of all individual actors.

However, as the complexity of the network environment increases, so do the requirements that are placed on network governance (Dekker, 2004). This is especially true when there are conflicts of interests which often arise in business networks. Due to the conflicting nature of the strategies of different actors inside networks these conflicts will hurt the performance of the network. As such this places increased stress on governance.

Network coordination is a way to improve network performance as a whole. This can be achieved through an improved governance structure. Implementing this governance structure can be problematic, however. This is due to several factors: there is usually no hierarchy or ownership structure (Williamson, 1985), there are different commitments to common goals (Ring and Van der Ven, 1994), or there may be issues related to the compliance of network rules.

In the literature, several different types of network governance can be identified (Provan and Kenis, 2008). In general the more complex the nature and role of the business network, the more need there will be for a coordinator or lead organization. Firstly, there is the self-organized model or shared model, wherein the individual actors of the network communicate and interact with all the other actors in the network. The performance of the network depends greatly on the individual commitment of the actors since there is often no overseeing coordination. Secondly, and in the other extreme, we have the mandated or lead mode of organization. Here one separate actor is responsible for governing the network as a whole. This actor is usually the focal actor of the network and thus responsible for the performance of the network as a whole. This often happens when one actor has a much greater benefit towards the well-being of the network as a whole than others. Thus network coordination is highly centralized and organized. Lastly there is the mixed-type model, where one actor or network coordinator is responsible for governance while it leaves more operational activities to the individual actors of the network to take care of.

Provan and Kenis (2008) have formulated key predictors of network effectiveness which can be found in the following table:

Key Predictors of Effectiveness of Network Governance Forms

Governance Forms	Trust	Number of Participants	Goal Consensus	Need for Network-Level Competencies
Shared governance	High density	Few	High	Low
Lead organization	Low density, highly centralized	Moderate number	Moderately low	Moderate
Network administrative organization	Moderate density, NAO monitored by members	Moderate to many	Moderately high	High

Table 1: Key predictors of effectiveness of network governance forms (Provan and Kenis, 2008)

They propose that network effectiveness is based on four main characteristics: trust, the size of the network, the amount of goal consensus and the nature of the task. Trust has been cited by many authors as one of the main indicators of network performance (Nooteboom, 1996). It is the willingness of actors to take a vulnerable position based on the expectation of a positive outcome in the long run based on other actors in the network. Provan and Kenis (2008) argue that the level of trust inside a network must be in accordance with the type of governance that the network has. They state that the level of trust must be on relatively equal levels along the entire network in order for networks to be effective. The size of the network influences the type of governance that is the most effective. This is because shared governance is easier in smaller, less complex organizations. That is because less relations exist and the coordinating activities are more efficient in these types of networks. Self-governed networks are more likely to succeed if there is a greater degree of consensus amongst goals. (Provan and Kenis, 2008). Goal consensus is not the same thing as trust. Trust is based on past experience whereas goal consensus is based on the similarity of goals. Network organizations are more likely to see the bigger picture and are thus more likely to make decisions that are more aligned to the goals of the network as a whole. Therefore a lead organization will work better if there is low agreement amongst goals amongst actors in the network. Lastly the higher the level of cooperation that is required amongst network actors, the higher the need for a network coordinator becomes (Provan and Kenis, 2008). This is because the requirements that actors place on others inside the network might require skills that are not present amongst all members and thus increased coordination is required.

The management of business networks is an inherently complicated affair. This has to do with the many different factors that lay outside of the control of the actor responsible for that management. These factors can have a fundamental effect on the performance of the company but are difficult to control. Not all aspects of a network are able to be controlled. In fact companies should ask themselves if this is a situation they wish for. Varadarajan et al. (1992) state that companies should decide what aspects of networks to control based on the following evaluation:

1. Is the issue a priority?
2. Is the issue manageable/influencable?
3. Do costs and benefits of action balance favourably?
4. Is it ethical/appropriate to influence the issue?

To summarize these points companies should focus on parts of the network that have a material effect on their own strategy while also being economical enough to manage. This is not to say that all other parts of the network should be ignored. They should be followed but it may not be in the interest of the company to control them (Varadarajan et al., 1992).

4. Ports

After having taken a look at network theory it makes sense to take a closer look at mixed type networks in practice. Ports are a good example of a mixed type network in which the government is cooperating with the private sector. In the following chapter we will be taking a closer look at the control of ports.

Public management has been undergoing changes in the last decades. Rather than trying to run public services by themselves, many governments have been trying to create conditions in which private companies are able to take on the task of providing these services (Tijsman and Klein, 2002). This is also reflected in the port industry. Most ports aim to try to create a balanced between public and private interests. Inside a typical port, the port authority is responsible for the port infrastructure while the private sector is responsible for the actual delivering of services. As such there is an interdependency between the two main actors. Ports can be seen as a series of inter organisational relationships with the port authority as the network coordinator (De Langen, 2006).

Drawing on the concepts explored in the previous chapter, the port industry is thus a good example of a mixed type network (Teisman and Klijn, 2002). The port authority acts as the governance agent for the rest of the harbor. Port authorities play an important role in the creation of core competences and are in the position to focus the performance of the business network as a whole. De Langen (2006) also highlights the fact that ports are an example of a mixed type network, although he notes that port authorities play a significantly different role than other types of network coordinators.

He states that the perfect network coordinator has the following four features.

1. The coordinator has incentives to invest in the rest of the network. This is because the revenues of the coordinator are linked to the performance of the network as a whole. This way the goals of the coordinator are linked to those of the network as a whole.

2. Cluster managers strive to be self-sustaining and are non-profit organizations. This is done to promote the independence of the manager and make sure they are not dependent on others.

3. The costs that the manager makes will mostly be attributed to the actors that benefit the most. However not all their revenues need to be related to the expenses they make. This way they will be able to invest in the cluster even if this cannot be directly translated in to benefits.

4. The manager should aim to invest in the cluster when the benefits for the network exceed the costs but individual private firms do not want to invest.

According to De Langen (2006) these guidelines closely resemble the role that port authorities play inside port networks. Notteboom (2001) identifies this type of port as a Landlord model.

Port Models	Infrastructures	Superstructures	Operations	Other Services
Service Port	Public	Public	Public	Public majority
Tool Port	Public	Public	Private	Public/Private
Landlord Port	Public	Private	Private	Public/Private
Private Port	Public	Private	Private	Private majority

Table 2: Four models of port management (Notteboom, 2001)

Table two highlights some of the main governance models of the European port industry. After being proposed by the World Bank in the early 90s the landlord model of port authority has become one of the most common types of governance for ports in Europe. This model is a response to the trend of further privatization and deregulation in the public sector that has been going on the last few decades. Here the port authority provides the necessary infrastructure whereas the private actors of the network are in charge of the more operational activities such as transporting and warehousing. This model of governance has been proposed to solve the issues that arise when it comes to dealing with the investment of capital. This is related to the fact that governments all around the world are striving to limit their capital investments in activities that they deem can be undertaken by the private sector as well. Aside from that, private investments in to the port sector have a positive effect on port performance (Chen & Everett, 2014)

Since the port authority is a government owned actor inside the port network it receives most of its funding from them. However the performance of the port as a whole is dependent on the rest of the actors inside the network. This can lead to conflicts of interest for the port authority. This is especially true when it comes to conflicting strategies between actors of the port network and the government. While the government will want the performance of the network as a whole to flourish, this will not always be so clear for the individual actors. This means that increased focus will need to be placed by the port authority on making sure the strategies of the actors get as aligned as possible, as well as to create a common consensus towards the strategy as a whole. Furthermore communication inside a network will need to be properly managed and documented, in order to avoid conflicts and enhance the alignment of strategies.

Since the port authority is funded by the government, its ability to anticipate to changing environments in which it is operating is dependent on the funding that it receives. Port authorities should constantly think about the role that they play as a facilitator inside the network (Notteboom, 2001). This is also due to the increasingly changing nature of the business that they operate in, as well as the natural position that comes with being a responsible for the well-being of the port as a whole.

When we look at the network as a whole we can often see it being described in literature and practice as the port community. The port community is a relational system localized around the port itself. The port community can be separated into several decisional spheres, either formal, informal or institutional. It involves all the relevant actors inside the port network.

The change of many port authorities towards the landlord port model has brought about new challenges. These have to do with the public-private dualism as well as the increased focus that business networks have brought on in the port industry. These challenges can be traced back to two key objectives of the port authorities. These are firstly to increase the competitiveness of the port community and secondly to run the port authority as efficiently and effectively as possible. Research has been done about the key challenges that European port authorities have been facing recently. Van der Lugt (2013) formulated some of these challenges which can be found in the table below.

PA's strategic challenge	**Appropriate actions/strategies**
Reform (integration of corporate governance mechanisms and business objectives into the PA organization)	Corporate governance
	Value capturing from existing products/services
	Product/service diversification
	International expansion
Improve efficiency and effectiveness on the port cluster level	Concession policy
	Facilitating and catalysing role as cluster manager
	Environmental management/license to operate
	Effective port marketing, market intelligence, innovation, accessibility, education
Guarantee long-term development through positioning of the port cluster	Concession policy (e.g. flexible and sustainable land use)
	Total quality management
	Shift from product to market orientation
	Port-city interface
	Communication strategy
Develop the port network	Network optimization (both economics as sustainability)
	Taking strategic positions in the hinterland (e.g. participations in inland platforms)
	International expansion?

Table 3: An overview of some of the strategic challenges that port authorities are facing and their related strategic actions (Van der Lugt, 2013)

These are some of the challenges that we should expect managers of the port sector to have adjusted their strategy towards. Furthermore we can expect performance indicators to have been formulated that deal with tackling and tracking some of these objectives. These are some of the things that will have been reflected inside a tool such as the balanced scorecard. It is also interesting to note that despite geographical differences many ports worldwide still share the same strategic challenges.

5. The balanced scorecard

After having taken a closer look at the port industry and the way ports get controlled we will go back to the original research question. We want to look at the understand more about the role the balanced scorecard plays in ports after all. But before that we need to know a bit more about the balanced scorecard itself.

You get what you measure. The way you judge company performance, drives decisions the employees of a firm make (Hauser et al., 1998). This is one of the traditional problems that managers have faced when measuring the performance of their firms. These managers have traditionally been faced with the fact that there is not a single measure of performance that is perfect. This is because traditional measures of firm performance usually only take the financial perspective into account and neglect other perspectives such as the consumers and their internal processes. When a company only measures financial performance it will neglect other perspectives and ignore other stakeholders.

That's why Kaplan and Norton developed the balanced scorecard during the early 90's (Johnson and Kaplan, 1987, Kaplan and Norton, 1992, Johnson, 2004). This in itself is not entirely new. Most companies have long measured both their financial and their non-financial performance and the satisfaction of their consumers through a wide variety of measures. What the balanced scorecard excels at is creating a link between the corporate strategy and vision and these measures. The four perspectives of the balanced scorecard are all interconnected, with the final goal being the strategy of the organization. This is a critical point of the balanced scorecard. The cause-and-effect relationships between the different perspectives is what distinguishes the balanced scorecard from other management tools. Moreover this allows companies to better track their long term progress towards their goals. Traditional financial measures merely focus on short term goals whereas the balanced scorecard allows companies to maintain a more long term vision. The balanced scorecard creates a link between short term results and the long term strategy.

The balanced scorecard helps managers with four processes in organizations (Kaplan and Norton 1996):

- Translation of vision and strategy into measurable objectives
- Easier communication of the organization's long term goals
- Ability to integrate business plans with financial plans
- Ability to evaluate based on operational goals and adjust the company's strategy

Moreover the balanced scorecard helps managers with setting goals, allocating resources, planning and budgeting, getting strategic feedback and learning.

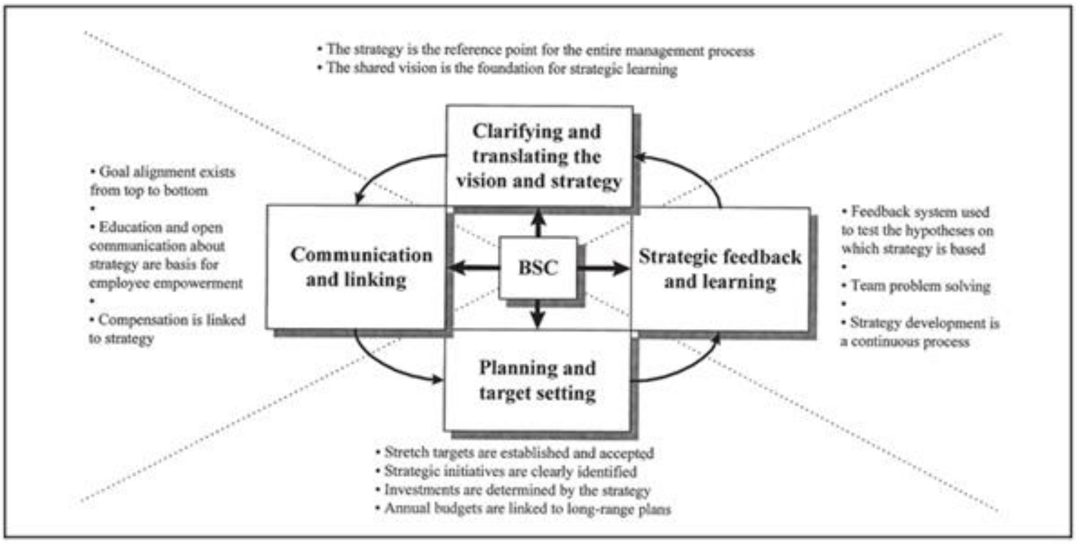

Figure 1 A management system for strategic implementation (Kaplan and Norton, 1996, p. 197

When we look at prior literature that has attempted to answer the question of whether the usage of the balanced scorecard is different in practice than it is in theory we can see that Malmi (2001) found two main types of usage of the balanced scorecard at a corporate level. Firstly, as a way of management by objectives: a way to communicate goals as targets and judge performance based on these targets. Secondly, as a tool for managers to gain more information and thus improve corporate performance.

Speckbacher et al. (2003) identified three main types of balanced scorecard usage that companies can assume: type one, which indicates the setup of strategic performance management system of both financial and non-financial measures; type two, which indicates the presence of cause and effect linkages between these measures and the conceptualization into operational actions; and, lastly, type three, which indicates that the scorecard is fully developed and implements the corporate strategy through communication, action plans and a reward system. The majority of firms that implement the balanced scorecard in some way are type one or two with only a small minority fully implementing a type three balanced scorecard (Speckbacher et al., 2003)

When we take a look at the managerial usage of the balanced scorecard, Chenhall (2003) discussed ways through which managers deploy the balanced scorecard in executing their tasks. Firstly, managers use the combination of performance measures to gauge whether they are still in line with the corporate strategy. Secondly, the balanced scorecard is used as a tool for communication of the corporate strategy. Lastly, the balanced scorecard can be used as a tool for coping with the growing complexity of the context facing the company.

The balanced scorecard is inherently a top down approach (Voelpel et al, 2005). This is because the KPI's are adjusted based on the corporate strategy. This strategy will be formulated by the top management and later be communicated to the rest of the employees. To set up the right performance indicators however there needs to be intensive communications between all layers of the organization. The balanced scorecard improves communication about the strategy and makes it easier for all layers of the organization to understand the corporate strategy. This means that the balanced scorecard reduces the gap between management and employees, which actually reduces the effect of this top down approach when it comes to strategy. This will also motivate employees. Since they will have inputs when it comes to selecting the right key performance indicators they will feel motivated. The setting of goals will also motivate them especially when the balanced scorecard gets integrated in the (existing) reward programs. Employees will be more motivated to work towards goals that they have a direct input on.

The balanced scorecard has been widely implemented across industries over the last decades. In the nineties much of the research has been focused on improving measurable company performance and streamlining organizations. The balanced scorecard is a direct continuation of this. It is estimated that around 60% of the fortune 1000 companies in the United States around the year 2000 have either adopted or are familiar with the balanced scorecard concept (Silk, 1998).

This widespread implementation however does not mean that the balanced scorecard is a perfect tool, however. While the balanced scorecard is very useful for many organizations it does not solve all the problems that management accounting has. It allows companies to link corporate strategy with directly measurable goals and gives them the ability to better align the strategy with business processes, but these alignments promote rigidity amongst managers. Less emphasis will be placed on indicators that do not fit properly within the traditional four perspectives of the balanced scorecard (Voelpel et al, 2006). Thus managers will focus more on indicators that are easier to measure and might risk ignoring other indicators that might also be beneficial to the corporate performance. This leads to higher corporate performance in areas that are being tracked, but less so areas that are not, something that might be negative to corporate performance as a whole (Hauser et al, 1998). Apart from enabling a confirmation bias the balanced scorecard can also lead to statism. The setting of goals will cause employees to focus on these goals but will limit their activities and initiatives that might go beyond these goals. This is even more true if the performance of employees is evaluated based on these goals. Overall the balanced scorecard reduces flexibility of the management by promoting rigidity inside the organization and setting goals.

Since the balanced scorecard can be so complicated to create, it will often be a long process that requires commitment from all its members. This means that not just the top management needs to see the benefits but also all the other layers (Kaplan, 1996). Without sufficient commitment the benefits might be diminished. It might also require a culture change inside the company. The balanced scorecard introduces an increased level of accountability. Not just financial performance indicators will be measured and judged but also non-financial ones. This requires focus on a wider spectrum of goals which can lead to trust and cultural issues. It also requires new skills from managers. If there is no belief that the performance indicators of the balanced scorecard have been selected properly, there can be a culture of distrust and discontent. This can ultimately run against the initial objectives of the balanced scorecard. If people do not accept accountability for achievements there is no balanced scorecard.

6. The balanced scorecard inside networks

After having taken a closer look at the balanced scorecards and some of the issues that have arisen with its usage over the years, it makes sense to take a closer look at the role the balanced scorecard plays within networks. These networks consist both port and other types of mixed-type networks. In the following chapter we will look at some of the adaptations that have been made.

The level of complexity that network theory brings to the field of management control requires managers to make adaptations to their existing methods should they still wish to exert some level of control on the rest of the network. This will mean that some of the tools that managers have used in the past will have to be adjusted. For example a customer analysis will need to include a lot more elements when we are dealing with a company that offers unique business to business solutions inside a network than when we are dealing with a company that sells consumer goods to consumers. The same can also be said when it comes to the balanced scorecard.

The balanced scorecard was developed in the 90s before the recent trend of increased focus on business networks became a focus for management research. As a consequence the balanced scorecard has issues when dealing with business networks. Companies that are highly bureaucratic, hierocratic and have well defined responsibilities benefit from the implementation of the balanced scorecard (Voelpel, 2006). However, the more complex a business gets, the fuzzier will be the lines between key success factors. This is especially true in a business network environment. The increasing complexity of the changing business means that a simple cause-effect relationship will not always suffice, which was one of the original goals of the balanced scorecard. Moreover, the increasing complexity will cause the development of the balanced scorecard to take more time and cost more money. This is because it will take more time to develop suitable performance indicators. It is also more complicated to formulate a strategy that can be properly adapted into the balanced scorecard.

Indeed, and although the strategic objectives of a company can be very much directed towards the business network that they are operating in, the fact of the matter remains that the balanced scorecard is mostly used as an internal document to guide internal performance. The four perspectives of the balanced scorecard only take the activities of the rest of the network into limited account. Even though the costumer perspective looks at external actors it is mostly focused on the company itself. Activities of other actors inside the network can have a material effect on the performance of the company (Dekker, 2004). The balanced scorecard does not take these other actors into account sufficiently. The balanced scorecard in its systematic single company focused view is incapable of assisting companies in dealing with the changing nature of today's society. Therefore it is very important that the rest of the network gets taken in to account during the setting of the strategy and the development of the balanced scorecard in settings such as ports. Not doing so can lead to misalignments of strategy which can lead to reduced value creation.

While there is some literature available that deals with the role the balanced scorecard in other mixed type networks such as healthcare or governmental organisations, the port industry remains a bit lacking. On the one hand this is logical and can be explained by the greater complexity that arises when we look at the tracking of performance in a network perspective. On the other hand this might be a necessary evil. The judging of network performance is sometimes so complicated that it cannot be expressed in merely financial terms. (Provan, 2002) It is here that the balanced scorecard shines. While other performance measurement systems merely track and evaluate firms and networks based on financial performance, the balanced scorecard is also able to do this for non-financial measures.

When companies want to develop the balanced scorecard it is important that they first properly formulate their strategy and vision. This of course is more complicated when we are dealing with a company that is operating in a business network environment. It requires that an inventory is made of the strategy of all the relevant stakeholders inside the network. Furthermore it requires that the actors of the network are judged based on their perceived importance towards the effectiveness of the network as a whole. Furthermore it requires a mapping of all the internal relationships that exist inside the network. While these are not necessarily a lot different from the steps companies need to make of the rest of their supply chains, the fact that the company is operating inside a business network will have a significant effect on its strategy. The development of the balanced scorecard will also require a great deal of cooperation inside the network. Only this way will the balanced scorecard be able to be implemented in a way that actually contributes to firm performance (Kaplan and Norton, 1996).

When we look at mixed type networks we can see that the formulation of strategy is also complicated. The role of the government remains crucial within these networks. They are often the driving force between the creation of the network as well as one of the main beneficiaries of network performance. Corporate strategy of companies inside mixed type networks is also likely to reflect this. When we look at the port industry we can see this as well. The strategy of the individual actors of the port community reflects the presence of the port authority and their position inside the network.

Performance measurement and steering inside the network is most likely to be the initiative of the focal actor inside the network. This actor often has the biggest benefit to be gained by aligning the different actors and will be able to exert the highest amount of control over the other actors inside the network. The balanced scorecard is one of the tools that can be used for this.

Looking at the actual implementation of the balanced scorecard we can see the complicated nature of the business networks reflected as well. For example, when the balanced scorecard got implemented in the Swedish healthcare industry it was found that one of the main issues faced before implementation was dealing with the different interests that are at stake (Funck, 2007). However it was found that the balanced scorecard was a welcome addition to dealing with the different interests that are at stake. The health industry is another example of a mixed type network. Just like the port industry the government will have different interests from the private sector that is also operating inside the hospital. While in the private sector the balanced scorecard is mostly used as a strategic management tool, in the healthcare sector it is mostly used to strike a balance between the interests of different actors. Funck (2007) states however that it was important that the performance indicators were developed bottom-up. This put the design of the balanced scorecard in the hand of the people who were actually responsible for the performance indicators and not the managers. The author states that this was so because it is so difficult to change the mission of the healthcare sector into a strategy and to formulate more traditional goals. The bottom-up approach simplified things.

It is important to note though that the four original perspectives of the balanced scorecard have been adapted towards the situation. The Swedish hospital sector use the perspectives that more closely reflected the fact that the final beneficiary of the health network is the general population. This is reflected in the change of the costumer perspective towards the citizen and costumer perspective, something that results from the fact that the health industry is another example of a mixed-type network. There are many actors in this network that would benefit from increased accountability and measurability that do not traditionally get reflected in more traditional performance measurement tools.

In other sectors we are also able to see that the main benefit of the implementation of the balanced scorecard in a network environment is communication towards other actors in the network and to serve as a common language with which goals and results are able to be communicated (Aidemark, 2001). The balanced scorecard forces actors of the network to think of performance indicators that are measurable by all actors in the network. This translation of the overall strategy into smaller goals boosts communication and performance tracking. It creates a sort of level playing field and allows members of the network to establish common goals and to create a consensus towards them more easily, something which is very important when it comes to network performance: levels of trust and accountability are boosted, which ultimately leads to value creation for the network. While functions such as control and performance measurement are relevant, other tools are more useful for that. The balanced scorecard in this case is not just used to create value for the actor itself but can be used as a tool to strike a balance between financial and non-financial performance. We can also see that the balanced scorecard makes it easier to track non-financial performance (Kloot, 2000), an aspect that is traditionally very complicated in the governmental sector.

To summarize we can find that although the balanced scorecard struggles when it comes with dealing with companies that are operating in a network environment. However we have also seen that in practice this is not always the case. It is exactly in the tracking of non-financial objectives and the balanced view of the environment that the balanced scorecard performs better than other management accounting tools.

7. Methodology

Since there is very little literature available that explains the role that the balanced scorecard plays inside the port sector, it makes sense to make a more qualitative study. We will use this study to answer the question of what the differences in characteristics of the balanced scorecard are that get introduced when we start dealing with the network environment, with a particular focus on the port sector. The environment of the port community is a highly complex one. Furthermore the lack of existing literature further complicates the issue. Analyzing the implementation of the balanced scorecard is not a simple measurement. It requires the tracking of operational links over time over which little control can be issued. Statistical analysis would not make sense in this case. The limited sample size also makes a case study approach more suitable. We will also be exploring the ways that the balanced scorecard is different in the port industry compared to other more traditional industries.

The object of research was the port community of Aveiro. The port authority of Aveiro has implemented the balanced scorecard and has been working successfully with this for a few years now. This allowed us to have access to a considerable mass of data. The recent implementation of the balanced scorecard meant that relevant issues that might have arisen during the design and implementation process are still fresh in the memories and the people who were responsible at the time are still actively working inside the Port of Aveiro.

We analysed the balanced scorecard in order to gather information on the features and working of the balanced scorecard, and on the differences between the balanced scorecard of the Port of Aveiro and more traditional balanced scorecards. For the exploration of the issues that have arisen during the implementation and work with the balanced scorecard in a network environment a series of interviews have been conducted. In these interviews various stakeholders from the port authority of Aveiro have raised their opinions on the role that the balanced scorecard plays inside the Port of Aveiro. These interviews have been conducted with members of the port authority with different backgrounds to diversify the perspective. Furthermore a closer look was taken at the particularities of the implementation of the balanced scorecard in a network environment such as the one in Aveiro.

The questions for the interviews have been derived based on a combination of literature review as well as a theorization based on balanced scorecards in different industries and can be found in appendix 1.

8. The Case Study

When we look at the Port of Aveiro we can see that the balanced scorecard was developed inside the port authority around 2005. Before then there was little involvement from people on the work floor when it came to the process of strategy. This changed with the implementation of the balanced scorecard. The balanced scorecard brought a more balanced approach to strategy towards the port authority. It forced individual team members to think about strategy and performance indicators. It also made sure that people were made responsible for these goals even if these were non-financial.

"It allowed us to turn our overall strategy in to smaller parts and easier communicate this towards teams. These teams were made responsible of some of these objectives" –Member of the port authority

Despite this the initial signal to develop the balanced scorecard came from the management of the port authority and it was meant as a balanced scorecard for the authority itself. This is not to say that the balanced scorecard of the port authority stands in a vacuum. During the initial design process the rest of the network was consulted about their opinions. This involved sharing the strategy and inventorying the role the rest of the network envisioned for the balanced scorecard. There was room for constructive criticism which was taken in to account during the design. This design was based on knowledge from external partners and was done in close collaboration with the accounting department. It is important to note that initially the strategy was only shared with the non-governmental actors inside the network. The government was only brought in later. This has to do with the more practical nature of the balanced scorecard.

One of the key objectives of the series of interviews was to test in what way the balanced scorecard that is implemented inside the Port of Aveiro matches the theory that is available. On multiple occasions it was stated that the balanced scorecard as it is used inside the Port of Aveiro is mostly used as a tool for the alignment of the different actors inside the network. This is in accordance with one of the main objectives of the port authority as a whole. The port community as a whole benefits from improved alignment of the strategic objectives of the different actors in the network. While individual actors might have strategies that differ from the network as a whole, the performance of the community will suffer if these are not brought into alignment. This is also one of the objectives that the government has placed upon the port authority. The members of the port authority stated that this alignment was crucial to the success of the port community as a whole.

Apart from alignment that the balanced scorecard brought improved communication and tracking of performance. Where in the past goals and strategies of actors in the network were formulated they were not always communicated. Furthermore the balanced scorecard allows actors of the network to formulate performance indicators which are easier to communicate and easier to track. To quote the director of the port:

> *"Everything I do in my daily work is about improving the communication amongst the members of the port. The balanced scorecard is one of the things that helps me with this."*

This focus on alignment and communication are similar to the objectives that can be found within other mixed type networks such as the healthcare industry. Here we also saw that levelling the playing field and increased communication both inside the network as well as inside their own organisation was one of the main benefits that managers associated to the implementation of the balanced scorecard inside their organisations. It allowed them to increase network performance by being clearer on what is expected of other members of the network.

The other main objectives of the balanced scorecard found less fertile ground inside the Port of Aveiro. Although performance tracking of individual members was already being done before the implementation of the balanced scorecard in practice the balanced scorecard proved to be difficult to position in this mixed network environment. This was due to the fact that the role of the government made the evaluation of goals that are related to individual actors complicated. Individual staff members cannot be rewarded or punished based on their performance.

"The role of the government complicates our ability to judge the performance of individual team members. We can only judge the ability of teams as a whole" – Members of the port Authority

This made one of the main benefits of the balanced scorecard irrelevant. Namely the linking of performance indicators to individual members. Although this was tried in the past it ultimately proved to be not as successful as was hoped.

The balanced scorecard proved to be a critical point of use in the daily work inside the port authority. It provides a framework to translate strategy into action. Thanks to the ability to translate the corporate strategy into smaller goals people have a clearer picture of what is expected of them. While the balanced scorecard gets reviewed every six months, the more short term goals are able to be adapted on a shorter notice. This has been done in the past too, for example due to a misalignment of results or due to a mistiming of the objectives. To achieve these goals teams are created amongst members of the port authority. These teams are held responsible for achieving these goals. This is done to create a common commitment amongst all members of the port authority. These teams will communicate and work closely together with other members of the port community where it is deemed relevant to the success of the strategy. This creation of smaller teams allows the port authority to create trust amongst the other members of the port. Furthermore it creates a commitment amongst all layers to work towards common goals. It was noted, though, that this situation is not always working as well as it should. Sometimes difficulties arise to properly involve everybody that is relevant to the situation. This also has to do with the complexity of some of the objectives. Especially the government is not always involved in all decisions.

The port community as a whole has meetings every six months. In these meetings the strategy of the port as a whole gets discussed. As such the balanced scorecard also plays a part in these meetings. It is also here that disagreements get solved and that consensus can be garnered towards common objectives. It is also here that disagreements get solved that might arise. This of course has to do with the complex nature of the business network that the port authority is situated in. Conflicts also get solved by the scheduling of meetings on a case to case basis. The port authority acts as a mediator between involved parties inside the port. Overall though there is a high level of trust in the working of the port authority as a network coordinator. This is important to have for the port authority because without this level of trust it cannot work efficiently.

"*I feel that the companies in the port trust in the way we operate here. If problems arise we work together to mediate these in meetings or reunions" – The director of the port*

When we take a look at the balanced scorecard itself (which can be found in appendix 2). We can see that there are no strategic objectives being undertaken in the value part of the balanced scorecard. This is because the value perspective is the consequence of the other perspectives. If the cause and effect links are properly in place this will mean no additional actions will be necessary in order to achieve the goals that are set out in the value perspective.

We can also see that some of the strategic challenges that the Port of Aveiro is facing are similar to the ones other ports are facing in other sectors (table 2). The Port of Aveiro is focusing on improving its port network through enhancing its connection with the hinterland, increasing the efficiency of the port network through improvement of its port services as well as its potential customer base. In this balanced scorecard we are able to clearly see cause effect relationships between the various strategic objectives. It is also interesting to note that alignment of the actors of the port networks is one of the objectives that's being followed inside the internal processes perspective. This is one of the things in which this balanced scorecard differs from other normal scorecards. Overall there is not a big difference between the actual design of the balanced scorecard compared to the scorecard of other a business unit inside a larger organisation. In a way business units inside a larger organisation can also be described as being inside a network. The biggest difference between these business units and the balanced scorecard in the Port of Aveiro is the way the scorecard is being used in the network environment with regard to the communication and strategy setting.

9. Discussion

When we compare the results that of the interviews to the theory we gathered in the literature review we are able to make some interesting observations with regard to the way the balanced scorecard is being used inside the Port of Aveiro and the translation of these towards the bigger picture.

Firstly, we can note that the balanced scorecard is a relevant tool within the Port of Aveiro. The balanced scorecard is actively being used and the benefits of its use are known throughout the organisation. The objectives that were set for its implementation have been achieved. Several factors concurred for this: it was crucial that the implementation was properly managed. This involved active communication amongst all participants of the network. Even now we can see that this intense level of communication remains. We can state that based on this case communication seems to be something that is highly relevant towards the success of implementing the balanced scorecard inside a network environment such as a port.

Secondly, the balanced scorecard helps dealing with the high complexity of performance measurement inside mixed-type networks brings. Traditional performance measurement tools focus only on financial performance. Mixed-type networks however also require the tracking of non-financial measures. These might in fact be more important to the achievement of the strategy than more traditional financial measures. The balanced scorecard allows members of complex business networks to strike a more balanced perspective between financial and non-financial performance.

Thirdly, while the balanced scorecard has brought other benefits to the Port of Aveiro the main benefit still remains the fact that the balanced scorecard allows for easier communication of the strategy amongst members of the port. It creates a level playing field and allows members of the network to know where they stand when it comes to network strategy and goals. If we extrapolate this towards business networks in general it makes sense. Business networks are often very complicated in nature. As such communication within the network can reach complicated levels. While some of the other benefits of the balanced score card might still be applicable the higher the level of complexity the more basic the benefits will have to be. This was also found by recent studies in what managers who had implemented the balanced scorecard thought were the main benefits. They stated that increased alignment was one of the three main benefits of the balanced scorecard (Wiersma, 2009) I would argue that the more complex the nature of the business or the environment that the company is operating in, the more valuable it becomes to communicate one's strategy. Thus the more complex the nature of the business becomes, the more the role of the balanced scorecard shifts from a more traditional management accounting tool towards a tool of communication of strategy.

Fourthly, when we look at the strategic challenges that the Port of Aveiro is facing, we can see that these are very similar to other ports around the world. While there are differences that are related to the immediate environment that the Port of Aveiro is operating in, overall the situation is similar to other ports. As such we can expect the balanced scorecard in other ports to have similar dimensions as the one in Aveiro. It is interesting that we can see these challenges reflected because it makes it easier to compare other aspects of the balanced scorecard with other ports.

Lastly, although the nature of the network environment renders the role of management control more complex, this is not reflected in the actual design of the balanced scorecard itself. The balanced scorecard has the same features you would be expecting inside normal organisations. The four perspectives are there as well as the link between them. In fact this scorecard does not appear to be much different to the scorecard of a business unit inside a large conglomerate. We can expect business units to also have indicators that are related to dealing with other business units inside their company. Furthermore there will be relationships that require control here as well. While there are some performance indicators to be found that are unique for the strategic situation that the Port of Aveiro is operating in. These performance indicators are still strongly related towards the strategy of the port authority. As such this complexity is not reflected in the balanced scorecard.

10. Conclusions

Overall we can see that this research has contributed to promote a greater understanding of the role the balanced scorecard plays inside the port industry. We can see that the implementation of the balanced scorecard inside the Port of Aveiro has been a success. The balanced scorecard in Aveiro has fostered greater collaboration amongst the members of the port community. When we look at the differences in characteristics between the balanced scorecard in the network environment of the Port of Aveiro and more traditional scorecards we can see that through the translation of the strategy in the balanced scorecard communication has been simplified amongst actors of the port network. When we compare this to our initial research question we can see that this is also the main difference between the ways the balanced scorecard is being used here, in a network environment, and how it is used in a more traditional organisation. Namely the increased focus on communication seems to be one of the biggest differences. The ultimate goal of the balanced scorecard is to create value. The more complex the environment that a company is operating in the more valuable a tool which can streamline communication and common strategy becomes. Thus while not exactly its main purpose it does create value in this case.

It is surprising that the complexity of the network environment is not more intensively reflected in the design of the balanced scorecard. The balanced scorecard inside the Port of Aveiro did not deviate much from the design of the balanced scorecard as it was proposed by Kaplan and Norton for more traditional companies that don’t operate inside mixed type networks. While some objectives related to its position inside the network are present, we would still have expected that the design would be highlighting its position in the network. We can also state that this complexity might actually be beneficial to the balanced scorecard as a whole. The measurement and control over non-financial objectives is one of the unique benefits of the balanced scorecard. It is exactly these objectives that are especially relevant in mixed-type networks.

This study had some limitations:

- The nature of the case study methodology means that we are dealing with a limited sample size. The unit of study was just the Port of Aveiro. This means that in order for the results of this study to be generalized the study needs to be performed at other settings as well.
- Only members of the port authority itself have been interviewed. To get a clearer picture it would be useful to conduct more interviews with members of the port community. This would allow us to gain a different perspective and to see if the balanced scorecard is as well supported outside the port authority as it is inside. Within the port authority I was ensured that there were high levels of trust all around the network, but it would be wise to test this amongst others as well.
- The limited amount of relevant literature available makes it more complicated to draw comparisons between the balanced scorecard in other mixed-type business networks such as hospitals and the port sector.
- The study was conducted using interviews solely in Portuguese ports. It is possible that ports in other nations have different opinions regarding the use of the balanced scorecard.

Given the similarities in strategic challenges that ports around the world are facing, we should expect to see this reflected in their balanced scorecards. As such more research should be done towards the comparisons that can be drawn between the balanced scorecard in the Port of Aveiro and those of other ports. This is especially true given the limited literature that is available regarding this subject.

More research should also be done towards the role of the balanced scorecard in other business networks. The health industry is one of the few industries where there is a lot of research available. It would be interesting to check if comparisons can be drawn between the findings here and the balanced scorecard in other sectors such as waste disposal or education. Do they find the biggest benefit is communication as well or do they value the increased control aspect as well?

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Apendixes:

Appendix 1: list of interview questions

Questions related to the implementation of the balanced scorecard

- Can you tell me something about why you chose to implement the balanced scorecard?
- Did you look at other alternatives?
- What was the situation before the balanced scorecard got implemented?
- Why was the balanced scorecard chosen?
- What were the goals you hoped to solve by implementing? Were these goals achieved?
- Was everybody convinced about the benefits before implementation?
- Who was involved in the implementation process? Who were the drivers of this change? Why were these people chosen? What about the other stakeholders in the network? Was it something that came top down or bottom up?
- What were the challenges that arose during the process of designing the balanced scorecard? How did these issues get solved? Would you change something to the implementation process?
- Were any other ports contacted during the implementation process? Did you reinvent the wheel or was there a case of best practice?
- Can you shortly describe the process of strategy?
- How is the balanced scorecard reviewed? Is this done periodically?
- What happens with disagreements?
- What's would you say is the main benefit the balanced scorecard is brought to the organisation?

Questions relating to the network

- How did you take in to account the fact that there are a lot of stake holders?
- How is the communication within the network? Is the balanced scorecard communicated to all stake holders?
- How do conflicting interests get dealt with?

- What is the role of the government in all of this?
- Does the role of the port authority gets accepted by everyone? Are you involved in all the key decisions in the port? Is there a general level of trust in your operating?

Questions relating to the features of the balanced scorecard

- How did the measures get decided? How is the link with previously existing measures?
- What about the key performance indicators? How were they decided?
- How come the four perspectives are slightly different than the theory prescribes? (value instead of financial, resources instead of learning and innovation)
- How is the link between the strategy and the features created?
- How do short term goals get adopted in to the balanced scorecard?
- What is the day to day role of the balanced scorecard? Is it something that is relevant for your daily work?
- Is the balanced scorecard communicated through the entire organisation or is it something that’s merely for the management?
- Are there dashboards?

Appendix 2: Balanced scorecard of the Port of Aveiro.