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# PROPOSED MODEL TO PORT FACILITY SECURITY MANAGEMENT AND PERFORMANCE MEASUREMENT

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#### **ABSTRACT**

Organizations like Ports Authorities and its security departments, more or less, face several obstacles in their effort to develop management, strategic planning and performance measurement systems that deal with all issues important to be measured. In managing port operations and growth, administration strategies must include systems for supporting the port's core business needs like security requirements. The Balanced Scorecard (BSC) performance measurement system is a tool capable of providing solutions to all aforementioned issues. Although the (BSC) was designed for for-profit organizations, many nonprofits have used the scorecard with success in determining the effectiveness of the organization in relation to the mission. The (BSC) is made up of four perspectives 1) Financial; 2) Internal Business Processes; 3) Learning & Growth; and 4) Customer. Nonprofits can modify the (BSC) by moving the financial perspective to the bottom and moving the customer perspective to the top. The Problem of this research lies in weaknesses and obstacles facing the management and performance measurement for port facility security departments in addition to the shortage of link between the strategic planning and the operational level to achieve security measure and requirement. The Research aims which are evaluating how the usage of the (BSC) is improving management and the performance measurement. Finally the main research results are to develop a proposed Strategic themes serving Port facility security Management and linking it with modified model of (BSC) components and perspectives.

**KEYWORDS:** Port Facility, Security, Balanced Scorecard, Management, Performance Measurement

#### INTRODUCTION

Port facilities operate within a complex and fluid intermodal transportation system, any weak link in the security chain within the larger transportation system represents a higher degree of vulnerability. In managing port operations and growth, property administration strategies must include systems for supporting the port's core business needs like security requirements. The port manager and his staff are responsible for creating competitive advantages for the port users, and improve the port's operational efficiency in addition to address client needs to make the most of existing logistical infrastructure.

The Balanced Scorecard (BSC) performance measurement system is a tool capable of providing solutions to all aforementioned issues. It can do so by forming a system of measurement that is in a position to retain traditional financial measures while adding up the prospects of the current and future value of an organization, that is its clients (users), providers, employees, technology, innovation, and internal processes. However the implementation of (BSC) via its

functions promotes free and fair trade as greater economic freedom is ultimately inseparable from political liberty. In order to achieve the mentioned goals, the notion of international security plays a vital role to the operation of port infrastructure.

Many if not most organizations dutifully complete strategic planning on a regular basis. However, studies suggest that fewer than 10% are successful in implementing the strategies created (Kiechel, Walter, 1982). In the majority of cases – researchers estimate 70% - the real problem isn't bad strategy but bad execution ( Charan, et al, 1999). Niven, (2006) notes the following barriers to strategy execution.

- Vision barrier only 5% of the workforce understand the strategy
- People barrier only 25% of managers have incentives linked to strategy
- Management barrier 85% of executive teams spend less than one hour per month discussing strategy
- Resource barrier 60% of organizations don't link budgets to strategy.

This paper discusses what the (BSC) is, describes implementation guidelines, and proposes practical way of how to implement the Balanced Scorecard for port facility security department. Also present a model to demonstrate the power and flexibility of the (BSC) as a strategic planning and performance measurement tool. The Problem of this research lies in weaknesses and obstacles facing the managerial level in benchmarking the performance of port facility security department. Additionally, there is a deficiency of the link between the strategic level and the operational level to achieve security requirements and objectives. Therefore, this paper aims to develop a proposed framework for a Strategic plan, establish a standard benchmarking for organization's performance and evaluate how the usage of the (BSC) is improving management and the performance measurement in facility security department.

#### LITERATURE REVIEW

Kaplan developed the (BSC) in (1991) to address many deficiencies of the traditional accounting models, which are basically based on the technological concept of the firm. Besides, the (BSC) can address the narrow financial focus of shareholder-value management tools based on the traditional property rights view of the firm (Speckbacher, 2003). The (BSC) enable any organization to execute more comprehensive management and control. It includes four dimensions: Financial perspective, Customer perspective, Internal Process perspective, and Learning and Growth perspective. Moreover, it merge financial and non-financial scales and measures the performance based on a company's concept and strategies (Wu and Hung, 2008).

The simplicity of (BSC), In many ways, is unaltered from its original form (Kaplan & Norton, 1992), although the balanced scorecard of today is only part of a much larger management system used to develop and join strategy inside and outside of an organization (Kaplan & Norton, 2006). It was primarily defined as a combination of both financial and non-financial measures that provide managers with further information about the activities they manage; arranged in four clusters of measures that have a strategic focus (Kaplan & Norton, 1992; 1993). Beyond that definition and the four perspectives (financial, customer, internal processes, learning and growth), Kaplan and Norton, (1992) introduce little direction on how the framework should be used.

A few authors have identified a second and third generation of (BSC) development. The main changes in this generational concept came from organizational usage and challenges from scholars and practitioners. The main challenges are filtering (selecting certain measures to address), clustering (grouping measures into four perspectives), and causality

(the cause and effect relationship between perspectives). By the time Kaplan and Norton, (2001) issued The Strategy-focused Organization; efforts were exerted to settle those topics. The causality topic continues to be debated. Strategy Maps: changing Intangible Assets into Tangible Outcomes (Kaplan & Norton, 2004) presented detailed approaches on how to describe and visualize strategy utilizing linked objectives. This presented consultants and corporate strategists with a tool they could use to form the balanced scorecard.

Kong, (2007) considers the (BSC) as a tool for business organizations to change intangible assets such as corporate culture and employee knowledge into tangible outcomes. Although Kong considers the (BSC) in much the same way as others that have studied its usage, his research is the exclusive one that proposes that the (BSC) is not the optimum way to measure the effectiveness of non-profits. Kong argues that there are several reasons to propose that the (BSC) presents an inferior framework for the non-profit context. First, the (BSC) proposes a strategy formulated and executed according to the assumptions that presupposed existence of a stable target group of customers are permanently in place and the maximization of the bottom line profitability between two competing organizations constantly exist. Second, there is a concern that the cause-and-effect relationships among the four (BSC) perspectives are reasonable rather than causative. The assumption about the reasonable cause-and-effect relationships is less convincing in non-profits because the organizations are responsible for multiple constituents. Third, the (BSC) is criticized for being fairly strict because the four linked perspectives and the indicators within them are relatively limiting. The expected risk is that non-profit leaders and managers may be misled by focusing exclusively on the four perspectives in the (BSC) and may end up missing other equally critical factors in their organizations (Kong, 2007).

The dimensions of a (BSC) are used by management to control mechanism design instead of as a performance index. For nonprofit organizations, the financial perspective is a restraint instead of an objective. Because these organizations have to control their expenditures according to budget, the performance of these organizations has to be evaluated by if they have satisfied fund supporter's demand or achieved a vision or mission, rather than focusing on budget control. Wu and Hung, (2008). As stated by Wu and Hung (2008), that comprehensive evaluation is the core of the (BSC). Kaplan states that the standard models is smoothly changeable to nonprofit organizations by change the financial perspective from the top to the bottom and place the customers on top. Wu and Hung went a step further in modifying the (BSC). They changed the Customer perspective from the bottom to second, just below the financial perspective, keeping the financial perspective on top. Then they added a fifth perspective called the Mission perspective and put it just above the financial perspective. This model reads 1) Mission; 2) Financial; 3) Customer; 4) Internal Process; 5) Learning and Growth. Wu and Hung assert that these five dimensions have a cause-and-effect relationship.

## USING BALANCED SCORECARD (BSC) AS A PROPOSED MODEL TO PORT FACILITY SECURITY MANAGEMENT AND PERFORMANCE MEASUREMENT

In the absence of both a mission and vision statement, the port facility security department will constantly be in reaction mode. The port facility security officer (PFSO) will find himself reacting to security threats with any resources which are available at any specific time. Undoubtedly, this is neither an effective nor efficient method to manage a port facility security. Additionally, it will be hard to acquire new financial resources for security department when (PFSO) is unable to clarify what he was able to accomplish with the security resources which were already given to his department. For that reason, there is a paramount necessity to establish strategic planning and measurable objectives for the port facility security department.

#### Adoption of the Performance Measurement System

It has been stated that the major reasons for adoption of the performance measurement system by organisations and businesses are the following (Siousiouras, Deniozos, 2011):

- It's hard to understand if a company or a public organization is improving quality or performance without measuring results.
- Measurements can keep the managers focused on what really has to be done correctly and what really has to be corrected.
- Measuring prevents arbitrary organizational and cultural changes in an institution.
- Measurement activity offers management occasions to celebrate real outcomes that people can see and believe.
- Measurement encourages people to take part in changes because they supply feedback on their work and offer
  insights into what needs to be done next.
- By combining improvements and measurements, you keep different kinds of activities from being mixed, matched and confused.

#### Balanced Scorecard (BSC) Implementation as a System of Management and Performance Measurement System

The researcher believes that the adoption, of a performance measurement system is considered necessary for strategic and organisational purposes. A system such as the (BSC), would better security management and all key objective operation indicators such as: effectiveness, efficiency, relativity, reliability and economic viability, in a way that would completely satisfy the following necessities:

- The immediate and effective provision of services for port-users.
- The more suitable resource management and
- The constant optimisation of quality in all services.

The (BSC) can actually assist organisations to tackle two issues of significant importance: the first issue is being the precise measurement of an organisation's performance according to the expressed objectives and the successful implementation of an organisation's strategy.

#### Concept of the Balanced Scorecard

Norton and Kaplan, (1992) explained the concept of the Balanced Scorecard, which applies an overall strategic management system covering four perspectives to assist managers to gain accurate information very fast and learn the status of their business. The Balanced Scorecard is a complete management system for changing strategy into action, and its core value is achieving and implementing the organization strategy. The most important objective is to transform organizations' strategy into actions to enhance competitiveness. The four perspectives contain the conventional financial indicators and the other three non-financial operating indicators namely: the customer perspective, the internal process perspective, and the learning and growth perspective. Creators of the Balanced Scorecard believe that the fundamental concept of the Balanced Scorecard is to derive the objectives and measures from the total corporate strategy and to utilize the four perspectives as a "balanced" framework to monitor and accomplish these objectives.

#### **Balanced Scorecard (BSC) Components and Perspectives**

(BSC) contains the following elements (perspectives, Objectives, Measures, Targets and Initiatives). The correlation between these elements is as follows:

- Perspectives: For any certain perspective there are one or more objectives.
- Objectives: For any certain objective there are one or more measures.
- Measures: For any certain measure there is only one target.
- Initiatives: These generally affect an individual or a set of objectives, measures, and targets.
  - The (BSC) is in a position to offer answers to four basic questions:
- How do users (clients) believe in the operation of the port facility security measure? (User's perspective)
- What are the internal processes of the operation of the port facility security management should be enhanced to satisfy the security requirement and customer's necessities? (Internal processes perspective)
- How does the port facility security administration can achieve its funding objectives? (Financial perspective)
- Does the port facility security management have the capability to be more effective and valuable? (Innovation
  and employee learning perspective).

**User's Perspective:** This point of view justifies the ability of the organization to furnish high quality services. Users are commonly focused on time, quality, efficiency and services (security requirement). The element of time is of special importance for an organisation. The quality measures the level of deficiencies in the port facility security services provided, as those are perceived and measured by the user. The element of quality justifies the prompt delivery of port facility security services and consequently to the precision of all relevant expectations.

**Internal Processes Perspective:** This point of view justifies indicators such as: the number of advanced services, prompt processing, port facility user's proposals, research and development expenses, planned port facility security measure, availability for users, response time to user's petitions, time required for the conclusion of the port facility services provided, especially, physical and operational security measure and the ways to response to security threats. Measurement information systems play a critical role in decision making and in analysing comprehensive measures.

**Financial Perspective:** indicates financial strategic objectives and financial performance measures that offer evidence of whether or not the port facility financial strategy is increased profitability and decreased costs. It is general knowledge that the financial objectives are measured through the profitability of services, and the value of the stakeholders/ users of the port facility. For instance, this perspective contains issues such as funding resources, all expenditure, the median cost for every port facility security service provided, overhead costs, income from new services, profit margin, etc. The challenge lies in learning to integrate the operations with finances.

**Innovation, Learning and Growth Perspective:** This perspective indicates what type of staff and automation the organization must own to accomplish the mission, sustain the internal processes, and completely satisfy the customers. Processes will only succeed if adequately skilled and motivated employees, supplied with accurate and updated information, are driving them. This perspective helps to determine gaps among the current employee skill levels, culture,

and supporting information systems besides discover the optimum level of operation at which these elements become high performing internal processes. Figure (1) shows an example of combing Balanced Scorecard elements and perspectives.

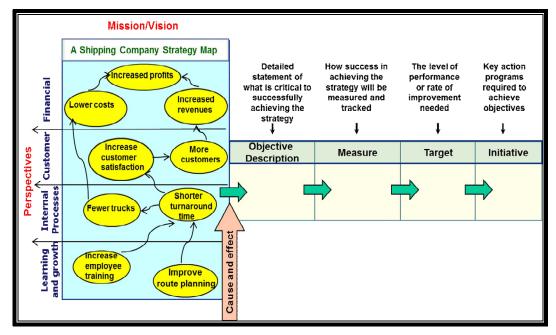


Figure 1: Shows an Example of Combing Balanced Scorecard Elements and Perspectives

#### **Action Steps of the Balanced Scorecard Implementation**

#### State the Vision

The vision statement is a word picture of what the project finally intends to become 5,10, or 15 years in the future. Although mission statements are often abstract, the vision statement should include a concrete picture of the desired end state to provide a basis for development strategies.

#### Formulate the Purpose (Mission Statement)

The mission statement should be brief, to the point, and state the reason why the organization exists. It should also include how the organization shall be operated in order to have maximum effect on its stakeholders.

### Conduct a SWOT (Strengths, Weaknesses, Opportunities, and Threats) Analysis

A (SWOT) analysis is a tool used to gather stakeholder input and objectively examine the organization's operating advantages and hindrances to effectiveness. This tool is so powerful that it can help an organization to determine internal operating strengths and external opportunities which are easy to follow up. Furthermore, having understanding the weaknesses, an organization determines what processes should be enhanced. Therefore, an organization will be aware of the possible external threats that process allows the organization to manage or eliminate such threats. Taking an objective study at advantages and barriers, the organization develops a strategy that focuses on strengths, minimizes weaknesses, and takes the greatest potential advantage of available opportunities. After the (SWOT) analysis is completed, look for key strategic ideas that appear to fit in one large category of similar ideas (e.g., provide high-quality ministry support, plan to work more effectively, and streamline and automate work tasks) that might span multiple categories. These strategic ideas

are valuable input to the next step of developing a strategy map utilizing (SWOT) analysis input to examine the organization from the four Balanced Scorecard perspectives.

#### **Define the Strategic Themes**

Once strategic themes are categorized and placed on the strategy map, the planning team shall ask questions about each strategic theme before proceeding in the planning process. There are two useful questions to ask at this point. These questions are:

- "What is it?" What is the definition of the strategic theme, taking into account the (SWOT) analysis input, assumptions made, and discussion points linked with the strategic themes?
- "Why is it vital to the organization?" As further discussion about a strategic theme happens, it is easy to forget why the planning team thought it was important at the time. Upon documenting the "Why?" question, the team has an important reference point for future discussions about indicators, measures, and targets.

#### **Build a Strategy Map**

While a (SWOT) analysis results in knowledge about internal operations and external influences, the strategy map catches "buckets" of ideas called strategic themes. These themes are crafted into strategies for which objectives and performance indicators can be defined and made applicable. In the Balanced Scorecard model, these strategies are developed within the Financial, Internal Process, Customer, and Learning and Growth perspectives. Although private sector firms are profit-driven and place the greatest emphasis on the financial perspective, nonprofits generally rearrange the strategy map to have the Customer perspective on the top renaming it the Community perspective. Whether the Financial perspective or Customer perspective is at the top of the strategy map, the topmost perspective is still sustained by the other three perspectives. Strategy maps for balanced scorecards make explicit the strategy's hypotheses. They answer the question, "What must we do well in each of the perspectives to execute the strategy?" They provide a framework to help the organization to move from deciding to doing. Strategy maps are commonly a one-page graphical representation of what you shall do well in each of the four perspectives to successfully implement your strategy. Implementation of a strategic plan contains a set of hypotheses concerning a cause-and-effect relationship between strategic objectives (and measures) over the perspectives on the strategy map. With the strategic maps across the organization, there is an understanding of the direction, which the organization is working to. The cause-and-effect relationship offers a smooth flow of business performance starting from a lower level to an upper level within or between perspectives. Balanced Scorecards with strategy maps captures a cause and effect relationship according to all parts linked together. Across the Balanced Scorecard, strategic areas link across to strategic objectives, and strategic objectives are associated with measurements.

## **Identify Strategic Objectives and Performance Indicators**

Strategic themes are implemented through the definition of strategic objectives which detail very specific things. The organization must do well to accomplish its mission. However, just determining and defining strategic objectives are not enough. Therefore, performance indicators shall be developed to provide measures of success. Indicators shall not to be confused with metrics or targets which provide measurement standards and report performance. Indicators typically track trends, are less accurate, and can act as a barometer of whether progress of a strategic objective is positive or negative. In

the case of a negative trend, further investigation will be needed to locate the source of the root cause driving the negative trend

#### Feedback and Learning

Besides tracking progress on past results, managers can utilize the (BSC) to figure out the future. Managers have to discuss not only how they accomplished previous results, but also whether their future expectations continue on track or not. Variations in the circumstances such as modern technology or updated legislative initiatives may create new opportunities or threats not expected when the managers developed their initial strategies. This focus acts as a foundation for effective process improvement and risk management. Also, it completes a feedback loop that sustains decision-making at all levels of the organization.

#### Proposed Modified Model for Using (BSC) in Port Facility Security Management

(BSC) has been described as a way to provide a framework to map and execute strategies by serving as a management system, strategic management system, and communication tool. Although the (BSC) was designed for for-profit organizations as mentioned later in this chapter, many nonprofits "like Port facility security department" may use the scorecard with success in determining the effectiveness of the organization in relation to the mission (Kaplan, 2001). The (BSC) is made up of four perspectives we stated before 1) Financial; 2) Internal Business Processes; 3) Learning & Growth; and 4) Customer. As written, this approach works well for for-profit organizations. This approach also works well in nonprofit organizations with one major modification. For-profits list the financial perspective first in the (BSC), as profit is the main focus of the organization. Nonprofits can modify the (BSC) by adding mission achievement perspective to another's and moving this perspective with customer perspective to the top and moving the financial perspective to the bottom.

This approach has served security department well and lead this study to develop a proposed Strategic themes serving Port facility security Management and linking it with modified model of (BSC) components and perspectives as following table:

Perspectives	Strategic themes	Objectives	Indicators/measures	Target	Initiative
Mission achievement perspective	Execute security protection.     Effective response to security threats.     Secure ship and port facility interface and activities.	Minimize security breaches and incidents.     Improve security environment and culture.     Fulfilling security policy objectives.	Internal and external audit.     Voluntary self-assessments of security measures.     Security Trend reports related to goals.     Reported security breaches and incidents.     % achievement of security policy objectives.		International legislation
Users Perspective	Increase users' satisfaction with timeliness. Improve quality of security services. Provide lower cost services. Improve security environment. Effective security service partnership (Responsiveness, cooperation, communication).	Close the gap of unmet services. Increase users' satisfaction. Improve access to needed/wanted services. Maximize operational flexibility.	% of users who report that needed services were not available.     % of users achieving % of goals: total served.     % of users satisfied with quality of security supports and services.     % of users satisfied with the responsiveness, cooperation, and communication of the security staff.     % of users satisfied with timeliness.	% Increase	(ISPS Code- SOLAS)  National legislation and Programs
Internal processes perspective	Enhance security measure efficiency and Achieve operational excellence.     Improve security management.     Maintain security procedure and programme.     Effective quality control system.     Fulfilling security policy objectives.     Compliance with minimum international standards.	Create a secure environment for users, staff & visitors. Develop systems to effectively & efficiently deliver security services. Establish measures & analyse data on outcomes to continuously improve security services. Meet or exceed regulatory compliance.	% of users satisfied with security service and who have adequate service.     Public survey.     Security Trend reports related to goals.     Reported security breaches and incidents.     Internal and external audit.     % of users and staff that feels secure in their activities.	% Achieve	Management Practice ISO Standard
Learning and Growth Perspective	Motivate security staff with right skills, right work place and right work time.     Increase staff competencies and Improve security culture.     Utilize technology.     Create a satisfied workforce.     Recruitment, educates, promote and communicate.     Information availability for strategic decision making.	Develop recognition programs for staff. Provide personal growth opportunities to employees. Employ technology to support security services provision. Relate Job descriptions with strategic goals.	% of staff successfully completing training.     Personal growth programs offered.     Employee satisfaction survey.     % of staff meeting minimum competency requirements.     % of staff able to utilize security equipment.     % of staff meeting mandatory qualification standards.     % of staff satisfied with the work environment.		
Financial Perspective	Maintain financial stability and strength.     Maximize funding and grow new revenues and resources.     Improve cost efficiency.     Minimizing administrative costs.     Decrease operating expenses.     Maximize long-term profitability.     Improve asset utilization.     Resource allocation.	Maintain financial stability.     Grow new service revenues.     Maximize funding/increase discretionary funds.     Operate at a breakeven including all allocated costs.     Efficient utilization of resources.	Cash flow. Cost/unit. Average cost per type of service. Ratio of current assets to current requirement.		

#### **CONCLUSIONS**

The Balanced Scorecard is a powerful framework for supporting the flexible implementation of strategic plans. When implemented well it effectively drives the communication of goals and the distribution of accountabilities within complex organizations. The conceptual framework of the (BSC) has been implemented and utilized effectively for years in a large number of for-profit organizations. More recently, the model has been effectively utilized in not-for-profit organizations as well. This study described how the (BSC) approach can implemented in port / port facility security department.

Many ports / port facilities security departments are critically limited by lack of alignment between the strategic level and the lower management and operational levels. It was found that security departments are at varying stages of operationalization of strategic plans. These security departments have explicitly formulated their strategic plans, and they are moving forward to define their corporate performance measurement.

The (BSC) allows port security manager to focus on performance improvement and management of performance information to make better decisions in planning for success. Strategic planning provides the direction that port security need to stay focused on to quantify performance in terms of security and professional interests while achieving their overall mission of serving the best interests of security requirement. Measurement is not an end in itself, but a tool for more effective management. The results of performance measurement will tell us what happened, not why it happened, or what to do about it. In order to make effective use of the results of performance assessment, it must be able to make the transition from assessment to management.

#### RECOMMENDATIONS

This research recommends continuing exerting efforts to implement the framework in port /port facility security management. The implementation of the proposed framework is very vital in coordinating goals, objectives and measures whether horizontally or vertically throughout the organizational management levels. This research recommends some main points as follow:

- The focus of the (BSC) shall not be implemented exclusively on the past or prevailing situation in organization. In fact, The (BSC) shall be implemented for the future organizational performance as well.
- The modus operandi of BSC is objective to some degree. Therefore, there is a great need for the existence of subjective approach. The BCS shall take into account the manager' intuition towards performance evaluation.
- The BSC procedures shall be integrated with the strategy of the organization otherwise it could resulted in negative effects in the organization performance.
- The BSC should be successfully implemented and surely resulted in positive outcomes just in case of there is a
  real conceptual foundation of supportive culture in organization starting from top management to lower level
  worker.
- BSC shall be organized and utilized in a specific way that it not only leads to higher performance but also be supportive for developing new service and organizational innovation.

 There shall be appropriate responsiveness in the BSC towards all potential different external situations of security circumstances.

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