



# A model proposal concerning balance scorecard application integrated with resource consumption accounting in enterprise performance management

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## ABSTRACT

### Keywords:

Competitive Power, Resource Consumption Accounting (RCA), Activity-based Costing (ABC), Balance Scorecard (BSC), Matrix Approach, Performance Evaluation Model

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The present study intended to investigate the “Balance Scorecard (BSC) model integrated with Resource Consumption Accounting (RCA)” which helps to evaluate the enterprise as matrix structure in its all parts. It aims to measure how much tangible and intangible values (assets) of enterprises contribute to the enterprises. In other words, it measures how effectively, actively, and efficiently these values (assets) are used. In short, it aims to measure sustainable competency of enterprises. As expressing the effect of tangible and intangible values (assets) of the enterprise on the performance in mathematical and statistical methods is insufficient, it is targeted that RCA Method integrated with BSC model is based on matrix structure and control models. The effects of all complex factors in the enterprise on the performance (productivity and efficiency) estimated algorithmically with cause and effect diagram. The contributions of matrix structures for reaching the management functional targets of the enterprises that operate in market competitive environment increasing day to day, is discussed. So in the context of modern management theories, as a contribution to BSC approach which is in the foreground in today’s administrative science of enterprises in matrix organizational structures, multidimensional performance evaluation model -RCA integrated with BSC Model proposal- is presented as strategic planning and strategic evaluation instrument.

## **Introduction**

Enterprises are required to comply with environmental factors and changes in which they act in order to make necessary organizational changes like biological species. The enterprise which realized these changes and transformations maintain their lives being adapted to the change, enterprises which are weak and have no adaptability are always under the threat of changes in the environment and they cannot maintain their lives. Sustainable strategy of an enterprise defines how it plans to produce values to its shareholders (part owner, customer, and society). Sustainable competitive power of an enterprise depends on existence of its sustainable core competence (self-ability). Sustainable core competence has five main components, namely being valuable, being rare, being inimitable, not being substitutable and being adaptable to the changing environment (Papatya, 2003; Ulgen & Mirze, 2004). The enterprises losing their competitive power are facing with the symptom of leaving out of the market. This system is only disappeared by development of value creation strategies. During this strategically management process, success strategies to be developed against opportunities and threats occurred in the environment suggesting either open analysis, opportunity approach, or sourcing approach models.

## **Performance Evaluation and Control Techniques in Enterprises**

In the corporate performance evaluation process, two approaches are discussed, including “opportunity approach” which analyzes and reviews performances in one dimensional approach and “sourcing approach” which analyzes and handles in multidimensional approach.

### **Opportunity Approach in Corporate Performance Evaluation Process**

Opportunity approach tries to put forward one dimensional corporate performance indicator whether the enterprises ensure return above the average. If these indicators are not achieved, it is foreseen to use corporate or competitive strategies which permit to achieve specified targets. Some of the prominent methods include Kurosawa structural approach, Lawlor’s approach, Gold’s approach, and quick productivity evaluation approach.

### **Sourcing Approach in Corporate Performance Evaluation Process**

Source-based approach defines enterprises as unique and combination of organized sources (Lopez, 2003; Papatya, 2003; Tarim, 2004). A broad meaning is attributed to the term “source” in business administration literature, which includes all sorts of elements that permit to form and apply strategies to develop efficiency, productivity, and competitive power of enterprise (Ordaz, Alcazar, & Cabrera, 2003). Therefore, every element that the enterprise uses as input in the processes realized to produce goods or service is accepted as a source. Sourcing-based approach is founded on two terms, namely assets and ability (Papatya, 2003). The capacity of using assets and creating value states the ability of enterprise (Lopez, 2003; Ordaz, Alcazar, & Cabrera, 2003; Sanchez & Marin, 2005; Ulgen & Mirze, 2004). As long as this ability enables company to create value, it might result in sustainable competition among companies. For this, sources need to be valuable and rare, they should be difficult to imitate and the advantages provided should not be substitutable by other sources (Barney, 2002; Naktiyok & Karabey, 2007).

### **Performance Evaluation and Control Techniques in Enterprises**

In order to talk about institutional balance, there is a need for criteria which can present all activities of enterprise as integrated form (Elmaci, Sevim, & Celikkol, 2007). Criteria should have parallelism to the strategies specified by the management (Agca & Tuncer, 2006). Perception of change and the studies made in the leadership of management, in particular, should be brought into conformity with “BSC” model and “Financial Performance Evaluation” methods as a whole by strategic-based application organization to ensure definition of terms to provide understandability of strategies, make the organization suitable for the strategy, manage people by motivation and some other sub-factors related to this (Akman, 2003; Alkal, 1998). If the target of performance measurement and evaluation models is to evaluate enterprise performance, both the targets and evaluation criteria have differences according to the structure of the sector (Cinar & Kutlu, 2014; Olcer, 2005; Ordu, 2004). Therefore, enough attention should be paid to sector oriented sensitivity in forming of such models (Merih & Cinar, 2012).

Activity-based Accounting (ABC) is a cost method which is based on activities in hospitals and employs these activities for determining patient costs (Chan & Ching, 1993). Resource consumption accounting method of activity-based accounting redefines the

enterprise as a complement of activities and determines consumed sources by these activities (Aktas, 2013). In a sense, it would not be false to express RCA as combination of normal costing and activity-based costing. RCA looks at the enterprise from sourcing-based point of view, follows the quantity of consumed sources and natural base of these sources' costs (i.e., their behaviors). Some of main features of RCA are idle capacity, using substitution costs rather than historical costs and following and grouping ability of cost information at various levels (Aktas, 2013). The costs of RCA groups' resource could be fixed and proportional according to cost behaviors and give opportunity to idle capacity cost calculation. Idle capacity cost calculations are not distributed to goods and therefore goods receive no shares from the sources that they do not consume (Cengiz, 2012). The most important priority of RCA might be that it allows following and managing idle capacity and use of substitution cost method rather than historical costs in depreciation calculation. The substitute cost method is based on the concept that the value of the resource or required amount depends on the cost of renewing the capacity according to the current prices, and finding a substitute for the resource. Due to the price variance, historical costs are critical factors in terms of reflecting opportunity costs of resources (Aktas, 2013; Cengiz, 2012). This method is of primary importance in using detailed contribution margin statement of income in management decisions, especially effective, efficient, and rational decision making. It gives support of logistics information for the managers to present correct cost information to be used in effective, efficient, and lucrative decision making process. Activities are a whole presented as combination of technology, labor, material, and ability in order to provide medical service in hospitals and determine cost elements of the service provided in the hospital by defining what kind of work is executed, how long the work takes and how the output of the works can be reached. RCA is a comprehensive and full integrated cost management system. This integrated cost management system has three main steps: Analysis of resources, qualifications of costs, and quantitative method (Aktas, 2013; Cengiz, 2012; & Ozyapici, 2012). It is of pivotal importance in RCA to specify the relationship between resources and cost objects which consume the resources. This principle, which can be called as causality principle, requires the modeling of flow of funds and costs which the resources are related in a way that it reflects cause and effect relationship. In producing cost and effect relationships of tangible and intangible values (assets), BSC and Strategy Maps of the enterprise are important means (Kaplan & Norton, 2006). This provides opportunity for objective cost distribution between resource pools. In this context, if causal relationship

cannot be established between flow of funds and costs, there would be an important obstacle in managing this flow of funds and costs. In the BSC method, it is discussed in four aspects both internal dynamics and complementary things as financial, customer, inner process, and learning development (Kaplan & Norton, 1996, 2003, 2006, 2007).

Financial performance criteria provide opportunity to control whether the enterprise is developed or not (Brown & McDonnell, 1995). These criteria form the basis of other performance criteria and are considered critical indicators in terms of achieving these targets, showing how the company is seen by its owners and managers (Kaplan & Norton, 2001, 2002, 2004 a, b). In other words, customer is focal point for internal process of enterprise and learning or developing aspects (Ozbirecikli & Olcer, 2002; Tarim, 2004).

### **Installation and Operation of BSC Model Integrated with RCA**

Using BSC in medical enterprises and management, through increasing performance efficiency and service quality, keeping up with organizational changes, improving in-house operation, and achieving strategic targets provides an opportunity for continuous development and changes per pattern through the transformation of envisaged mission and vision in the physical measurements (Barney, 2001). Also by considering some factors, namely providing the best health through the determination of the patients' and their relatives' expectations, increasing service quality and employee's satisfaction, performance of hospital employees, meeting their requirements, and balancing the above mentioned factors, BSC collects information about how the effects on strategic planning and management are realized (Kaygusuz, 2005).

After stating the strategic targets in Gediz state hospital, measurements and targets reflecting them are specified. Financial measurements are the indicators measuring managers' and employees' satisfaction or dissatisfaction. Customer-oriented measurements specify measurements that analyze patients' satisfaction and their point of view towards the hospital. The aspect of in-house processes is for evaluation of satisfaction and dissatisfaction of patients, patients' relatives and managers and company employees all together. The measurements specified for learning and developing are urgent for evaluating the degree of satisfaction and dissatisfaction of the managers and the employees.

## **Conclusion**

In the BSC method, it is possible to list targets, results, and suggestion for both internal and external dynamics and complementary things as financial, customer, inner process, and learning development in four aspects of the enterprise in which application is made within the scope of project.

In terms of financial aspect, the reason of decrease in the number of in-patient operation should be researched. Also, the reason of decrease in birth and increase in ex-patients should be researched and solutions should be sought. The most important cost concepts are patient day costs, bed cost, patient cost inpatient services, surgery cost, examination cost, and shooting costs in special service departments and polyclinic costs in polyclinics. As a result, there has been only decrease in polyclinic costs and all other costs have been increased. Necessary precautions should be taken into account in order to decrease patient costs of the institution. In addition to this, as the institution is in the position of growing and developing hospital, general costs could not be decreased. Therefore, necessary precautions should be taken. Also, it is a positive improvement that the invoice amount made out the institutions after diagnosis and treatment is increased. In fact, it is positive that working capital, accounting and finance transactions are recorded properly and on time.

In terms of customer aspect, while it is a positive improvement that the trust in the hospital and patient satisfaction have increased, it is a negative improvement that survey results of patient satisfaction show a decrease at a rate of 2%. By evaluating the survey results, it should be determined for which reasons the patients are unsatisfied and it would be suitable to make new studies for proving these issues. In addition to this, it is a positive result that studies and training on patient rights have been made in the institution and training about patient and patient's relatives have been given and the rates are high. The reason of decrease in survey results of patient satisfaction at a rate of 2% should be found and solved.

While positive improvements at the rate of annual patient increase and the rate of referred patients from the institution are reflecting an important success for the institution, the reason of decrease in in-patient number should be found and necessary measurements should be taken to eliminate the problem. Additionally, delivery service of patient consultation of institution is successful. But it would be good to complete lack of technical equipment, advertisement brochure, and handbook in a short time. Besides, the hospital entitles its patients to choose their doctors and it results in synergistically positive outcomes in terms of

customer satisfaction. As a final point, the institution is successful because it makes patient records and patient file studies properly and on time.

Internal process is successful in providing service by the use of new and modern medical devices, increasing efficiency of devices and practicality level of technological devices. Also it is essential for the improvement of physical places and infrastructure, and work environment within the scope of citizen-oriented public service program. Actually, it is required to decrease the average waiting period of patients in the institution, and the problem of insufficient doctor and medical officials should be solved as soon as possible. It is also successful in getting ambulance and service vehicles to the sufficient equipment and number. Also, within the scope of quality of employees, it is successful to make studies for founding corrective and preventive action unit. The institution is making extra payments to its employees in order to increase efficiency pursuant to the Regulations and Circular of Ministry of Health. In addition, it is successful in meeting the necessary conditions for examination rooms, and successful studies are being conducted for ensuring the security of patients and employees. The deficiencies in Improving In-House Security Program should be removed as soon as possible. Besides, the problems in providing waste management should be eliminated as soon as possible.

In terms of learning and developing, increasing the ability and qualification of personnel and managers are important. While in-house trainings and improvement, plans and studies are pursued in coordination with ministry of health, provincial directorate of health, and education branch office. Also, chief physician studies for increasing the participation rate in training in the institution are being done. It is successful in reaching information and increasing productivity by using information. In other words, it is successful in reaching information. Considering this, having a clean and hygienic working environment, providing general and physical conditions, following the renewing of medical equipments and electronic devices are successful indicators for the institution.

When speed of employees' turn over and their transfer rate are analyzed, it is understood that the institution has a status which is preferred by personnel. Although conducting employee satisfaction survey has no successful result for the institution, but it is required to conduct employee satisfaction survey and evaluate the results and increase employee satisfaction rates according to the outcomes, then specify and solve the employee problems. Eventually, the institution is successful in providing self-development of the employees by the use of in-house educations, various associations, educational institutions' education

seminars, educations and conferences of ministry of health and provincial directorate of health. At last, it is successful in controlling and avoiding the infections.

The performance of the hospital in four aspects is measured by BSC model formed in the hospital. Using this model, strategic targets are set and by measuring these strategic targets, weakness and strengths, successful and unsuccessful aspects of the institution have been specified. Necessary suggestions have been made in order to make negative events more neutral and positive. Considering the outcomes, present state assessment of the hospital has been made, and the strategies, methods, procedures and policies increasing the competitive power in the future have been specified. In brief, action plan in the future has been presented by specifying the strategic map of the institution.

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