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## BALANCED SCORECARD APPLICATIONS IN HEALTH CARE

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### Abstract

With reference to the saying 'You can't manage what you can't measure' making management by measuring is possible with Balanced Scorecard which is one of the performance evaluation models. It is not only accepted as an element of strategic management, it is also accepted as a management system that allows the business strategies become measurable. Balanced scorecard provides the businesses to be evaluated in a holistic sense by means of financial, customer, internal processes through learning and development aspects. This model can also be used in many industries to improve corporate performance. The model which is also increasingly being used in the health sector, has also been found that it can be applied in health care organizations in different scales. The study aims to examine the feasibility and assessment of the Balanced Scorecard in terms of the aspects used in the health care.

## ARTICLE INFO

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## 1. Introduction

In addition to the successful implementation of the Balanced Scorecard in service and industrial establishments, the implementations in the hospitals can be seen in many countries despite the scarcity of the number [1]. The Balanced Scorecard was changed by various researchers and applied in health care providers and suggested to be an effective performance measurement model [2]. According to Zelman, it's also been confirmed that Balanced Scorecard implementations exist in the health sector group including hospital systems, hospitals, university departments, long-term care services, psychiatric centers, insurance companies, national health service organizations, federal governments as well as local governments [3]. Chang et al., implemented the Balanced Scorecard successfully in Mackey Memorial Hospital which has 2149 beds and more than 9.000 outpatients daily. They attributed this to two reasons: Firstly, The Balanced Scorecard management team consisted of senior executives and board members from the beginning of the implementation, secondly the modular Balanced Scorecard implementation which was launched successfully, was implemented to the entire organization two years later, depending on the budget planning. It can be concluded from this that the Balanced Scorecard which can be implemented in Mackey Memorial Hospital successfully can also be implemented to the other health care organizations [4]. According to the results of the research carried out in 121 hospitals out of 555 hospitals in Canada by Chan and Ho, 80% of the hospitals namely 97 hospitals have heard the Balanced Scorecard before and 43 hospitals have been implementing the Balanced Scorecard [1]. As a result of this implementation, the Balanced Scorecard have been recognized as

one of the modern management tools by hospital managers. According to Coşkun, the Balanced Scorecard can also be used for the hospital units, too. There are Balanced Scorecard samples prepared for Pediatrics, cardiology, intensive care units, hospital emergency room, anesthesia units, burn treatment center, cardiology unit, obstetrics and mental illness treatment centers available [5]. An example to be given for one of these departments is that Chun-Ling uses the Balanced Scorecard that they prepared to measure the patient flow and patient density level in the emergency unit [2].

## 2. Balanced Scorecard Implementations in Health Care

When the studies are revealed, it is seen that Balanced Scorecard implementations exist in many countries, mainly the USA.

### a. Mayo Clinic

Mayo Clinic-specific key performance measures are determined by the team that developed the measurement system. As a result of the collection and analysis of data that will contribute to the formation of the Balanced Scorecard four performance criteria within eight dimensions were determined on [6]:

1. Customer satisfaction: Primary care and minor health care delivery rate,
2. Clinical efficiency and effectiveness: The clinical efficiency of physicians per capita for each working day of each business day for the number of physicians per capita outpatient treatment,
3. Financial: costs of service units,
4. Activities (internal processes): The average examination time in one day, patient complaint rates, waiting times of patients,

5. Mutual respect and diversity: percentage of staff from the less represented groups, employee satisfaction surveys,
6. Social responsibility: Mayo Clinic's contribution to society,
7. Foreign bystanders' hospital assessments: environmental studies done by organization managers, Mayo Clinic's market share,
8. Characteristics of the patients: geography and income groups of patients.

#### **b. Duke Children's Hospital**

The most used strategic aspects that Duke Children's Hospital used in the performance measurement via the Balanced Scorecard are research, education, and training aspects instead of the customer and financial aspects [7], [8].

#### **c. Bridgeport Hospital**

At the beginning of 2000, the Balanced Scorecard Implementation was based on 12 critical success factors established by 56 criteria. By the year 2001, Bridgeport Hospital which lead to improvements increased the success factors to 5 and reduced the criteria to the 35s and continued to make performance measurement. In 2002, thanks to the quality and process improvement studies, by reducing the critical success factors (aspects) to 4 in total, the Balanced Scorecard is used with the final state [9]. The Balanced Scorecard implemented by the Bridgeport Hospital is limited to the following four performance aspects [7]:

1. Increasing market share
2. Quality improvements,
3. Process improvements,
4. Organizational health.

#### **d. Sema Hospital**

Still continuing its activities in Istanbul, Sema Hospital implemented a strategic plan in 2007 within the framework of the Balanced Scorecard.

The senior management of the hospital studied this strategic plan under the name of "Hospital United Balanced Scorecard" in four aspects. In the established criterions four aspects are used to measure the performance of both the hospital and the laboratory services [10]:

1. **Customer perspective:** How do patients and their families see our hospitals? How are we known? What is important to them? Criteria that are used: patient satisfaction, employee satisfaction, employee turnover rate.
2. **Financial Perspective:** How investors see our hospital? What is important to them? The criteria that are used: the number of the patients, patient use templates, patient demographic information, financial records, major surgery number / total number of operations increase.
3. **Functional Perspective:** what areas do we need to be successful in our work? What are the areas that will harm our business if done wrong or badly? Criteria Used: quality improvement efforts, infection rates, waiting times.
4. **For the Learning and Innovation:** How can we continually improve our securities in the health sector? How can we do better for our patients, community or Turkey?  
The criteria that are used: the education per capita, business development efforts.

#### **a. Vakıf Gureba Teaching Hospital**

The Balanced Scorecard model was implemented in Vakıf Gureba Teaching Hospital within the standards of Joint Commission International (JCI) by Türkeli and his friends [11].

As a result of the studies carried out with "Quality Management Development Committee (KYGK)", the vision, mission, corporate objectives, internal and external factors, alternative strategies, strategic objectives, aspects, key performance indicators were identified. In the implementation, all 150 JCI criteria used for inspection of the Ministry of Health took place. Besides, more than 100 criteria selected from the criteria used by the international institutions were shared with KYGK.

As a result of both surveys, in the enterprises where the researches were carried out, it was detected that the Balanced Scorecard wasn't measured as frequently as the criteria within current performance aspects (infrastructure assets) were identified as important. The Balanced Scorecard was used for performance measurement in Brilliant Hospital and Balanced Scorecard measurements were carried out through the four traditional aspects. The patient satisfaction was the only measure of performance in the Customer aspect. In the financial aspect, return on net assets, competitive positions, growth in business volume, the decline of the cash payment, and increase in the cash flow, new product development in the process aspect, excellent services that are offered, strategic sensitivity in the aspect of learning and development while using outcome measures related to the clinical quality criteria, leadership research and criteria that are used in the form of training time per employee aspect were used [5].

Changi General Hospital, is a public hospital that operates in Singapore and uses the Balanced Scorecard performance measurement tool models which was created in the framework of a strategic plan. The key performance indicators of the Balanced Scorecard were implemented through five indicators, having been created according to the strategy of Changi General Hospital in the departments such as the hierarchical,

administrative, operational and clinical. These indicators are respectively as follows:

Corporate (overall corporate) aspect,

1. The aspect of being better (better),
2. The aspect of being faster (faster),
3. The aspect of being less expensive (cheaper),
4. The aspect of patient satisfaction

In the implementation where the same aspects (indicators) were used for all units, indicators were implemented under the name of "quality indicators" [12].

### **3. The Aspects of the Balanced Scorecard Used in Health Care**

Despite Kaplan and Norton created the Balanced Scorecard in four aspects as the original one, they later added new aspects to it, which can be changed in accordance with the strategy of the organization. For example, while Provost and Leddick (1993) added the aspect of "human capital" which was seen as an element of the importance of this area to be used in manufacturing and service industries [3], Potthoff et al. stated that these aspects were of "development and community-oriented", "human resources", "care and quality of service" [13].

Baker and Pink, in their study, proposed a strategy to adapt the Balanced Scorecard to the health care organizations. With this strategy, Kaplan and Norton's four proposed aspects were turned into clinical utilization and outcomes aspect, system integration and change aspect, financial performance and patient satisfaction aspect without adding a new aspect, re-conceptualizing (financial, customer, learning and internal processes and developments aspects) [14].

According to Griffity and White, adopting the Balanced Scorecard into the health care services

after having some changes made in accordance with the strategy of the organization is a widely used method [15]. Santiago (1999) made a similar change with an extension in the work of Baker and Pink, increased the number of aspects to five. Accordingly, these aspects were: learning and development aspect that investigate the complexity and accessibility of information systems with measures evaluating the innovation initiatives, length of stay, mortality, complications, side effects, duration of response (response time) and internal process aspects focused on the functional and financial results, such as cost per service units, patients, families, those who pay and health-related quality of life with employers, functional level, the ability to perform daily life activities, satisfaction and market share protection and expansion criteria directly related to the aspect of the customer and the financial aspect, consisting of investment criteria, including, such as added economic value [16].

In the health care services, four aspects are chosen by making changes on the original version of the Balanced Scorecard to measure the performance of patient flow and density the emergency department. These aspects [2] were: Patient experience, hospital processes, learning and development and the accountability.

According to Pakdil, the performance measurement in health organization are performed through indicators from different areas such as performance indicators based on the process of the business, financial performance indicators, patients (customers) related performance indicators, performance indicators related to employees, supplier performance related indicators and medical performance indicators [17].

Hospital performance is multi-dimensional structure; there is no single detailed performance

criteria covering hospital. In studies to define the performance of the hospital, the cost indicators, output ratios and many financial measures were used. In one of the studies that Gruca et al. conducted, they identified the hospital performance in three criteria: financial performance, operational/business performance, and marketing performance. The hospital performance indicators were studied in four groups by Tengilmoglu et al. as the service indicator, the indicator related to the use of beds, staff-related performance indicators, indicators related to the financial performance [18], [19]. Accordingly, the indicators used to measure the service performance of a hospital are in the following order: the polyclinic number, the number of discharged patients, the number of patients who died the number of operations, the number of birth, the number of boarding days, the number of emergency room visits.

Some of the indicators taken place in the 2008 report of The World Health Organization were collected in five areas (Smith et al: patient safety, quality of mental health services, the quality of health promotion, disease prevention and primary care services, the quality of diabetes care, the quality of Cardiac care [20]. According to Lin and Durbin, it is necessary for the available data to be calculated, for the potential indicators to reflect the strategic objectives and for the measures to be in a applicable level, short and understandable [21].

#### **4. Conclusion and Evaluation**

Balanced Scorecard makes both financial and non-financial indicators of the businesses an effective strategic element by evaluating material and non-material wealth together. The model is not only implemented in the services and industrial enterprises, but it is also implemented in many health care organizations in different scales throughout the world, particularly in hospitals. In

addition to the traditional aspect in the most of the organizations, some aspects that can be evaluated by the patients were added. It can be concluded from this point of view that a holistic approach with a patient perspective are followed in the health care where the Balanced Scorecard is implemented.

In addition, health care organizations need to identify their goals and define the mission and vision according to mission of this technique. The employees of the health organization need to get trained about this subject, so that all the staff adopt and implement the model in a holistic sense.

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