

Combination of Balanced Scorecard and Malcolm Baldrige National Quality Award for Strategic Management

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Abstract

During the 1980s and 1990s, increasing criticism was mounted against the use of performance measures based on traditional financial management. Consequently, strategic frameworks were developed for managing organizational performance. This study is going to integrate Balanced Scorecard (BSC) and Malcolm Baldrige National Quality Award (MBNQA). Each model is briefly explained and the strengths and weaknesses are discussed. Moreover, with using Quality Function Deployment (QFD), the advantages of the two models will be strengthened and the weaknesses will be reduced.

Keywords: Balanced Scorecard (BSC), Malcolm Baldrige National Quality Award (MBNQA), Quality Function Deployment (QFD), Performance Evaluation.

1. Introduction

Performance management has risen as one subject that attracts attention of scholars and business practitioners worldwide (Atkinson, 2012). Many researchers devote their study on its development with the aim of businesses that lend their hand in providing ground for implementation. Its necessity has its root from today's information era, where changes and exchanges of information flow rapidly thus demand a new approach for monitoring and evaluating company's performance. Such approach must be able to gauge company's performance in a timely manner. This is to complement the traditional financial measures that are still used but naturally lagging, hence its sole use will not be able to describe company's performance as a whole. In this regard, the search continues for a model that can be widely applied.

Among many developed models, Balanced Scorecard (BSC) stands out and is considered as a groundbreaking innovation in performance evaluation theories over the decades (Atkinson & Epstein, 2000). It has, however, evolved from one generation to another in its effort to adapt with the latest business environmental changes. This evolution is partly driven by reported failures of its application in various organizations that enforces the search for a better BSC (Bourne et al, 2003), (Neely & Bourne, 2000). One approach that has been adopted lately is through integration of two different systems. Using this integration approach, will overcome the weaknesses of one model with strength of the other.

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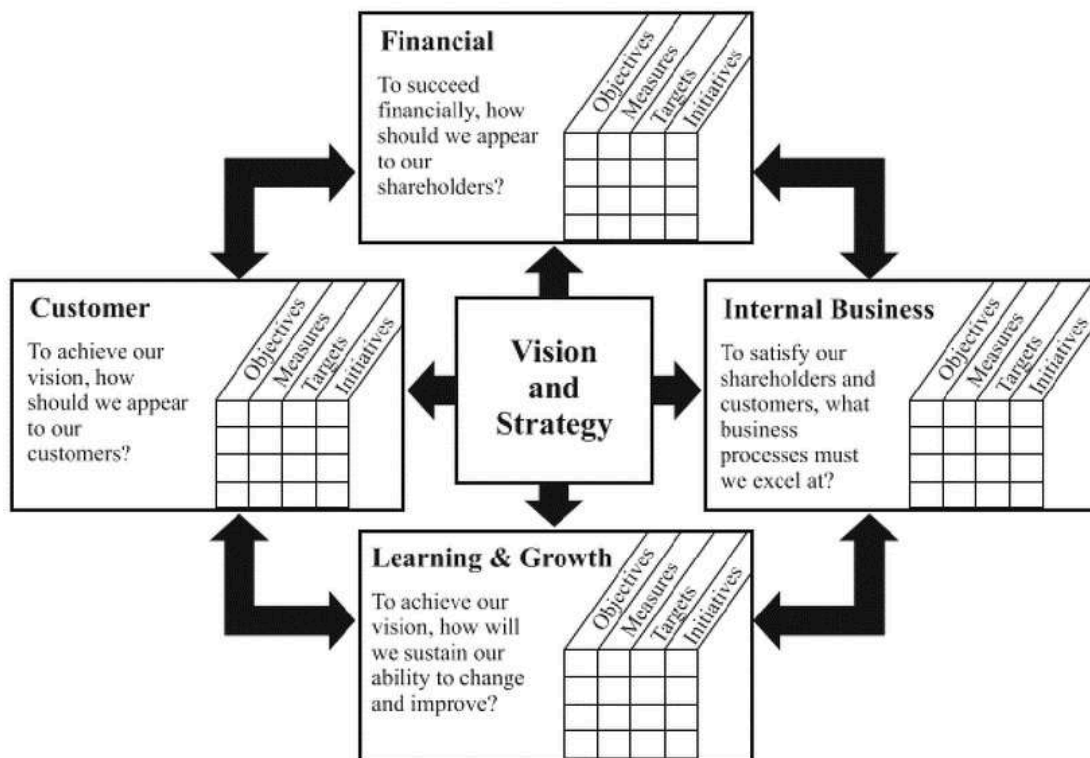
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This paper discusses the integration of two different performance measurement systems: Balanced Scorecard and Malcolm Baldrige National Quality Award (MBNQA). Each is firstly reviewed independently, and the process of integration is discussed. The new integrated model is then implemented and the results are reported.

2. LITERATURE REVIEW

The balanced scorecard (BSC) is one of the most highly touted management tools (Gumbus, & Lussier, 2006, Staff, 2002, Kaplan & Norton, 2001). The Balanced Scorecard approach has been developed at the Harvard Business School by Kaplan and Norton (Aka, 1990) since the early 1990s. It suggests that as well as financial measures of performance, attention should be paid to the requirements of customers, business processes and longer-term sustainability. Thus, four areas of performance are defined (financial, customer, internal business and innovation and learning), and it is suggested that up to four measures of performance should be developed in each area (Figure 1 shows the BSC framework) (Atikson, 2012). Emphasizing on linking between performance measures and business strategy is a major strength of the Balanced scorecard (Jalaliyoon et al, 2020). The lack of connection between performance indicators and strategies is one of the problems of organizations and this model provides a practical approach to addressing this issue (Reda, 2017). The Balanced Scorecard is a potentially powerful tool because it can encourage senior managers to address the underlying issue of establishing the organization's strategic goals. (Chen, 2006).



MBNQA

The MBNQA was founded in 1987 to provide a systemic perspective for understanding performance management. The MBNQA criteria are designed to help organisations apply an integrated approach to organisational performance

management that results in delivery of ever-improving value to customers. The basic structure of the model involves seven criteria: leadership, systems domains (process management, human resource, strategic planning, information and analysis), customer satisfaction, and operational and business results. Since its initial construction, the model has undergone conceptual changes and is currently built as follows: leadership triangle (leadership, strategic planning and customer focus), results triangle (human resources, process management and business results), measurement, analysis and knowledge management (Aydın & Kahraman, 2019).

In most cases, the MBNQA is used for giving feedback to applicants on the basis of self-assessment. The scoring system is based on two evaluation dimensions: (1) process and (2) results. Process refers to the methods an organisation uses to address requirements and results refer to the organisation's outcomes in achieving the requirements (Aydın, S., Kahraman, 2019). In summary, the MBNQA offers an organisation the following advantages: (1) a multidimensional assessment by means of seven criteria; (2) a basic causality structure such that the leadership triangle influences the results triangle; and (3) an organisational profile to characterise the individual organisation and its environment.

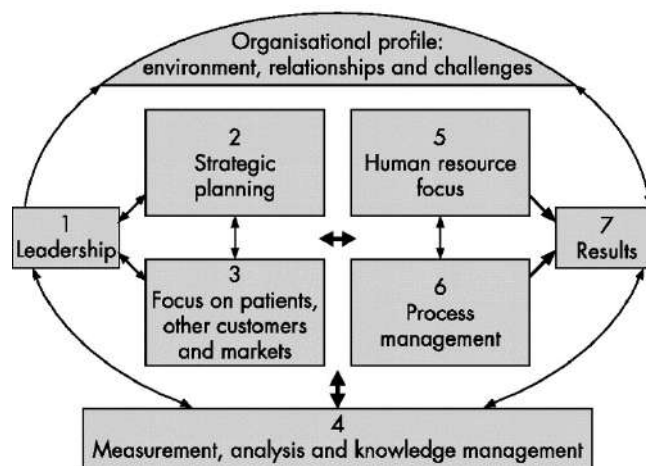


Figure 2: Framework of MBNQA

3. INTEGRATED MODEL BSC & MBNQA

There is a combination framework of BSC and MBNQA. It is realized that each system has its own strength and weak points. Being a vision-driven system, BSC helps organizations to achieve its future goals by aligning their strategies toward its vision. However, Vorria and Bohoris (2009) mentioned, the system itself does not well on the discussion as how to develop strategies. This lack of guidance is a potential problem whereby if strategies are not properly designed then the causal relationships among perspectives will also come to questions. By firstly mapping and finding similarities of functions between BSC's and MBNQA's perspectives, relations are made between them. The strength of BSC with its strategy map and cause-and-effect relationships is used as main structure of the combined model. Its weakness of being too flexible in strategy formulation is then offset by imposing MBNQA's structure into the strategy map. The combined Model is illustrated in the Figure 3.

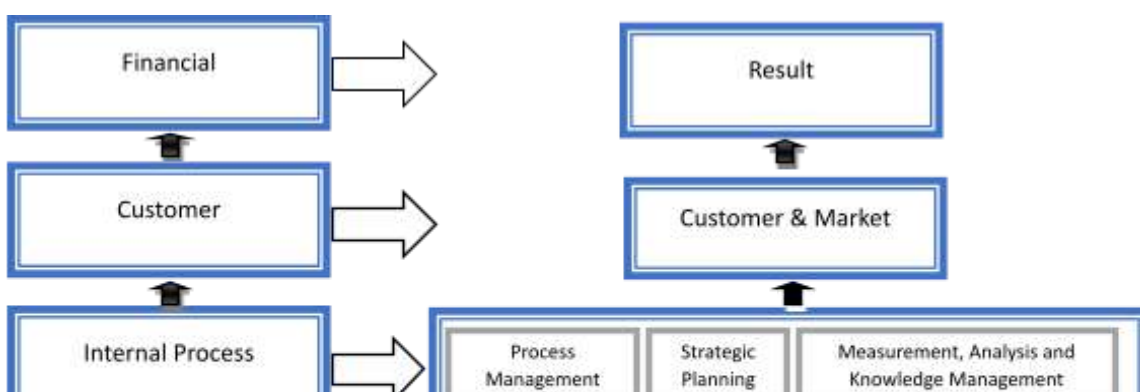




Figure 3: Integrated model of BSC-MBNQA

As can be seen in Figure 3, the interrelationship between perspectives in BSC is maintained, but the structure is replaced with those of MBNQA's. In this combined model, learning and growth perspective of BSC is substituted with MBNQA's driver perspective, consisting of two categories: leadership and workforce focus. Internal business process perspective is viewed equivalent with system perspective of MBNQA that consists of the following categories: process management; strategic planning, measurement, analysis and knowledge management. Two categories in MBNQA's results perspective (results, and customer and market focus) are broken down and connected to the last two of BSC's perspectives (Financial and Customer).

4. Matrix QFD

QFD "is a method for developing a design quality aimed at satisfying the consumer and then translating the consumer's demand into design targets. Major quality assurance points are used throughout the production phase. QFD is a way to assure the design quality while the product is still in the design stage. As a very important side point, when QFD appropriately applied, the reduction of development time by one-half to one-third is depicted (Wei & Zixin, 2023)

The 3 main goals in implementing QFD are:

1. Prioritizing spoken and unspoken customer wants and needs.
2. Translating these needs into technical characteristics and specifications.
3. Building and delivering a quality product or service by focusing everybody toward customer satisfaction.

In order to combine two models (BSC and MBNQA) the BSC perspectives are in the "what" column and the MBNQA criteria are in the "how" row. The aim of devoting the weight in relation between BSC and MBNQA aspects is to increase

the strategic view of the MBNQA model as well as continuous performance improvement in organizations (Wei and Zixin, 2023). In figure 4 the overview of integrated model of BSC and MBNQA has been depicted. After collecting data from questionnaire and with Geo Metric mean the final score of each indicator has been calculated and is illustrated in the table 1.

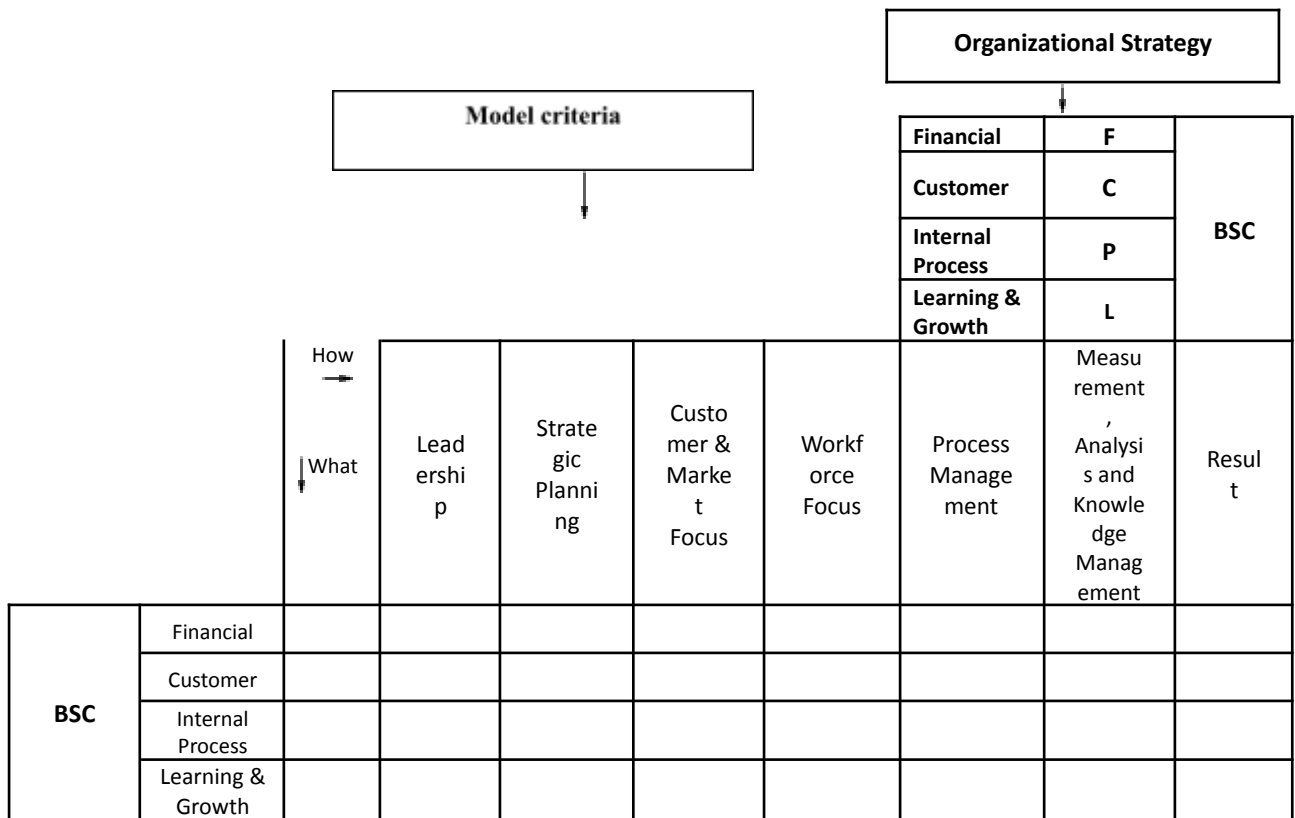


Figure 4: Integration of BSC and MBNQA with QFD Matrix

5. Relation between BSC and MBNQA via QFD Matrix

According to the discussion above, it is understood that using BSC and MBNQA jointly enable organization to impart their advantages together. Therefore, an interview was conducted among experts in an Electrical Company's and eighteen indicators were chosen among BSC's indicators which had more priority in comparison with other indicators against MBNQA seven criteria. Then, BSC and MBNQA based on the collected data has been analyzed.

Table 1: Relation between BSC and MBNQA with OFD Matrix

| | | BSC Perspectives | BSC Indicators | MBNQA Criteria | | | | | | | Total |
|----------------------------|---|------------------|--------------------------|----------------|--------------------|-------------------------|-----------------|--------------------|--|--------|--------|
| | | | | Leadership | Strategic Planning | Customer & Market Focus | Workforce Focus | Process Management | Measurement, Analysis and Knowledge Management | Result | |
| B a l a n c | 1 | Financial | Increase profits | 3.162 | 2.913 | 2.632 | 3.364 | 3.310 | 4.120 | 3.350 | 22.851 |
| | 2 | | Become a cost leader | 2.213 | 2.280 | 1.682 | 2.213 | 2.378 | 2.449 | 2.280 | 15.495 |
| | 3 | | Increased utilization of | 2.115 | 2.449 | 1.414 | 2.000 | 1.565 | 1.565 | 1.732 | 12.841 |

| | BSC Perspectives | BSC Indicators | MBNQA Criteria | | | | | | | | |
|--|------------------|--------------------|---|--------------------|-------------------------|-----------------|--------------------|--|--------|---------|--------|
| | | | Leadership | Strategic Planning | Customer & Market Focus | Workforce Focus | Process Management | Measurement, Analysis and Knowledge Management | Result | Total | |
| e d s c o r e c a r d l i n d i c a t o r s | | assets | | | | | | | | | |
| | Total | | 7.490 | 7.642 | 5.728 | 7.577 | 7.253 | 8.134 | 7.362 | 51.187 | |
| | 4 | Customer | Reduce the number of customer complaints | 4.729 | 3.464 | 1.968 | 2.632 | 2.060 | 2.213 | 2.449 | 19.516 |
| | 5 | | Reduce the delay in delivery of goods | 4.472 | 2.913 | 2.340 | 2.213 | 2.378 | 2.378 | 2.449 | 19.145 |
| | 6 | | After sale service | 2.783 | 2.280 | 1.968 | 2.060 | 2.378 | 2.378 | 1.861 | 15.708 |
| | 7 | | Focus on customer | 2.991 | 2.783 | 2.340 | 2.060 | 2.378 | 2.378 | 1.861 | 16.792 |
| | Total | | 14.975 | 11.440 | 8.617 | 8.965 | 9.195 | 9.349 | 8.621 | 71.161 | |
| | 8 | Internal Processes | Product returns | 2.115 | 2.991 | 2.213 | 3.162 | 1.861 | 2.449 | 2.378 | 17.170 |
| | 9 | | Team working | 4.472 | 3.663 | 1.861 | 3.761 | 1.817 | 2.000 | 2.060 | 19.634 |
| | 10 | | Relationship between competence and payments | 1.968 | 2.340 | #NUM! | 2.783 | 1.189 | 1.732 | 1.732 | 13.061 |
| | 11 | | Waste caused by operator error | 1.968 | 2.515 | 1.414 | 3.162 | 1.682 | 2.000 | 2.000 | 14.741 |
| | 12 | | Appropriate hardware infrastructure in the organization | 1.968 | 2.236 | 1.495 | 2.783 | 2.340 | 2.632 | 1.861 | 15.316 |
| | 13 | | Organization feeling from being in the competitive market | 2.236 | 2.943 | 2.115 | 3.344 | 2.515 | 2.000 | 2.213 | 17.366 |
| | 14 | | Development of equipment and modern technologies | 1.861 | 2.515 | 2.213 | 3.162 | 1.861 | 1.414 | 1.861 | 14.888 |
| | Total | | 16.588 | 19.203 | 12.628 | 22.157 | 13.266 | 14.228 | 14.106 | 112.176 | |
| | 15 | Learning & Growth | Capita education | 1.968 | 2.115 | 1.000 | 1.682 | 1.414 | 1.414 | 1.316 | 10.909 |
| | 16 | | Education funding | 2.000 | 2.000 | 1.000 | 1.682 | 1.316 | 1.414 | 1.414 | 10.826 |
| | 17 | | Mean absence of staff | 2.115 | 1.861 | 1.000 | 1.495 | 1.316 | 1.414 | 1.414 | 10.616 |
| | 18 | | Staff training | 2.115 | 1.861 | 1.316 | 1.682 | 1.316 | 1.414 | 1.316 | 11.020 |

| | BSC Perspectives | BSC Indicators | MBNQA Criteria | | | | | | | Total |
|--|------------------|----------------|----------------|--------------------|-------------------------|-----------------|--------------------|--|--------|--------|
| | | | Leadership | Strategic Planning | Customer & Market Focus | Workforce Focus | Process Management | Measurement, Analysis and Knowledge Management | Result | |
| | Total | | 8.197 | 7.837 | 4.316 | 6.541 | 5.362 | 5.657 | 5.461 | 43.371 |
| | Sum | | 47.251 | 46.121 | 31.289 | 45.240 | 35.076 | 37.367 | 35.550 | 277.89 |
| | % | | 17.00 | 16.59 | 11.25 | 16.27 | 12.62 | 13.44 | 12.79 | |
| | Priority | | 1 | 2 | 7 | 3 | 6 | 4 | 5 | |

6. Conclusion

To sum up in this research by doing survey with experts the relation between BSC and MBNQA criteria's and the result has been depicted (table 2). The scoring methodology was based on Chen and Chou (2006) (the strong relation with 5, weak relation with 1 and no relation with 0 is considered).

Table2: BSC, MBNQA and Allocation of Resource

| MBNQA Criteria's | Score | BSC Perspectives | Score | Allocation of resources |
|--|--------|-------------------|---------|-------------------------|
| Leadership | 47.251 | Learning & Growth | 43.371 | 15.61 |
| Workforce Focus | 45.240 | | | |
| Customer & Market Focus | 31.289 | Customer | 71.161 | 25.61 |
| Strategic Planning | 46.121 | Internal Process | 112.176 | 40.37 |
| Process Management | 35.076 | | | |
| Measurement, Analysis and Knowledge Management | 37.367 | | | |
| Result | 35.550 | Financial | 51.187 | 18.42 |
| Sum | 277.89 | | 277.894 | |

As it is clear the company for achieving the goal need to allocate 15.61 % of their resource to learning and growth, 25.61% to the customer, 40.37% and 18.42% to the internal process and financial respectively. In conclusion, Organizations by focusing on each aspect especially most important one and finding areas that need improvements will be able to plan the strategic planning of their organization according to the results.

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