

Application of Balanced Scorecard in the Libyan Construction Industry

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Libya is a developing country that has a growing construction industry, however, the management of construction projects frequently experiences challenges with time and cost restraints and this affects the overall performance of the project as well as the performance of the project managers. The main aim of this paper is to apply BSC in the Libyan construction industry and evaluate the factors that impact project manager performance and their ability to complete and deliver projects successfully in Libya. This study will ascertain the role of project managers, the challenges that project managers in Libya frequently encounter the cause of time and cost overruns within construction projects and the main factors for successful construction projects. This research adopted both quantitative and qualitative research methods. The findings are based upon 300 structured questionnaires distributed to general, project managers working on construction sectors in Libya (Tripoli). Completed questionnaires received were 183. This is a response rate of 61%. A statistical analysis was used to confirm and addressed the issues of reliability and validity of the questionnaire survey as a measuring instrument. In addition structured interviews with qualified project managers were used to confirm that the data collected was truly reflective. Upon the data analysis from the questionnaire survey and structured interview that the project manager is the most important factor affecting the success of the project in construction industries Libya, furthermore project manager skills are important component that influence the performance of project manager.

Introduction

A construction project requires input from many different parties, there are many stages to a project and input from both public and private sectors are often used on projects. The priority of a construction project is to be completed successfully within the financial plan. The extent of success of a project highly depends on managerial quality, financial aspects of the project, technical factors and the general organization and performance of the parties involved. The success of a project is normally evaluated if it has been delivered within the required deadline, budget and the specifications meets the clients expectations. Often, different viewpoints are used to evaluate the success of a project, such as; clients, developers, contractors and general public etc.

Construction Project Success Performance Measurement:

Project success can be evaluated using many different levels of measurement. Evaluation of project success differs as the project develops, and is dependent on stakeholders (Morris and Hough, 1987). From a client's point of view, the success of the project is unknown until payment has been made or until the client has seen signs of progress and objectives have been met. On the other hand, a contractor will not know how successful the project is until the client pays them and gives them feedback on the project. Therefore, as a result of varying views of when project success can be determined, the general concept of project success remains ambiguously defined and the definition of success often changes from project to project (Parfitt and Sanvido, 1993). The secret to a successful construction project is to manage the project efficiently through all steps. Effective performance management depends on performance measurement (Maloney, 1990). The systematic approach to measure performance has interested many construction firms, government sectors, public and private clients and other project-orientated companies. Sinclair and Zairi, (1995) Stevens, (1996)

Atkinson, (1999) Mbugua et al. (1999) Love and Holt, (2000) and Chan, (2001) collectively define performance measurement as the regular collection and evaluation of information regarding input, efficiency and effectiveness of construction project activities. Project performance can be evaluated both financially and non-financially, and can be compared and contrasted with the performance of others within the organization. Kelada (1999) states that performance measurement should not simply apply only to product or service quality, i.e. the business performance, but it should also extend further to quality management, customer satisfaction, needs, wants and expectations. This way, all three stakeholders, shareholders customers and employees, can be satisfied. Measurement can be classified in three main ways. The first method of measurement is the numerical and quantitative indicators, the second method refers to the qualitative/subjective matters, and the third refers to deciding which performances to measure. Stevens (1996) states that there are 'hard' and 'soft' aspects in measuring project success; time and cost are the 'hard' aspects and satisfaction is the 'soft' aspect. Research conducted by Freeman and Beale (1992) and Rigs *et al.* (1992) separate project success into tangible and non-tangible aspects; the tangible aspect includes cost and time parameters, whereas the non-tangible aspect includes customer satisfaction, performance of project manager, weather conditions and other attributes. Even though all the literatures stated above use different ways to characterize performance measures, all literatures agree that results from the measurement have to be compared to the initial plan and reference values in order to identify the standard (Stevens 1996; Mbugua et al. 1999; Love and Holt, 2000). One main factor that influences the performance of construction projects and construction organizations is the state of the national economy, the implementation of process improvement programs can have an impact on the organization both in the long and short term. Construction Industry Task (Force 1998); (Tang and Ogunlana; 2003). One way of improving project and organization performance is to integrate process improvement strategies; such as, arranging collaborative partnering, having supply chains in place, developing management-risk strategies, management safety approaches, value engineering, Kaplan and Norton grouped their measures into four main groups, also known as perspectives. Each perspective contained measures that complement and combine traditional financial measures with strategies. The four perspectives are operational measures, internal process, customer satisfaction and innovation and learning. Kaplan and Norton (1993, p.139) state that the balanced scorecard “provides *executives with a comprehensive framework that translates a company’s strategic objectives into a coherent set of performance measures,*” it is often referred to as a “strategic management system”.

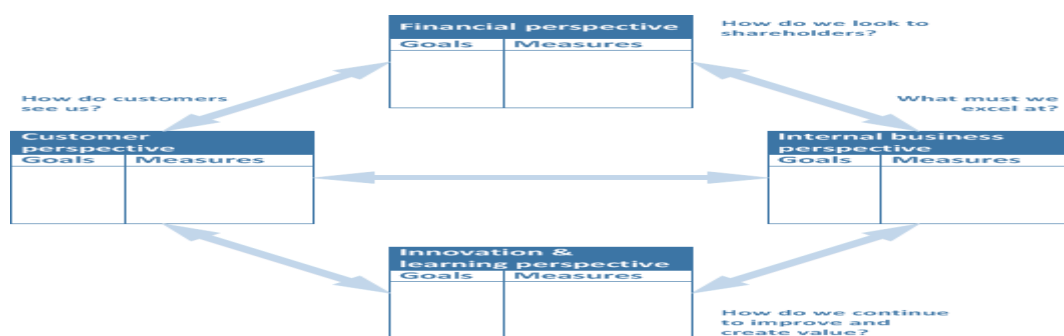


Figure 1: The balanced scorecard
 Source: Kaplan and Norton (1992)

Kaplan & Norton (1992) recommended that for each perspective there should be at least four goals and measures. Performance indicators with specific and achievable targets will monitor

each goal and measure; these are known as critical success factors (CSF) or key performance indicators (KPI) (Proctor; 2006, p43). The use of these performance indicators will ensure that each measure is kept specific and simple. Proctor (2006) also stated that the people that are responsible for ensuring the targets are achieved should put in place action plans to guarantee the success of each perspective.

Research methods:

Appropriate methods must be selected for collecting research in order to answer the specific questions addressed in the study, in order to do so, the researchers is required to make important decisions on selecting the correct method that will take into account the following:

- 1) In order to answer the research question, what methods are the most suitable?
- 2) What approaches can be used to collect and measure data that will complement the adopted methods?

This research aims to find practical solutions to a problem that exists in reality; this study is purely practical and not theoretical. Hakim (1987) distinguishes between practical and theoretical research by stating that practical research is: *“an emphasis on the substantive or practical importance of research results rather than on merely ‘statistically significant’ findings, and second, a multi-disciplinary approach which in turn leads to the eclectic and catholic use of any and all research designs which might prove helpful in answering the questions posed.”*

A comprehensive, thorough literature review is usually the first step taken for research as it allows the researchers to investigate what aspects have been previously explored and solutions that have previously been established.

Questionnaires:

Questionnaires were defined by Gray (2006) as “research tools through which people are asked to respond to the same set of questions in a predetermined manner”.

Once the objectives of the study are discovered, a questionnaire can be created to help gather the data required to satisfy the objectives. Designing and planning a good questionnaire can be hard to do and is often the most crucial stage.

Interview processes:

The Interview has been done to supplement and support the data analysis, the major aims of the interviews were to investigate the validity and support the data collection of the findings from the questionnaires survey, after 183 questionnaires were collected and analyzed. Five project construction managers from different companies in Tripoli were selected to validate my data analysis and develop guidelines for implementing BSC in Tripoli construction companies. The interviews were conducted in structured way due to time constrain and give more freedom to the interviewees,

After analyzed data, the result shown that project manager skills, roles and responsibility were the most important factors affecting the success of projects in Libyan construction industries, however, to help the companies solve their problems which facing them it must be look for proper method that can help the company and the manager in same time. There are many methods used such as total quality management (TQM), key performance indicator (KPI), Six sigma and balanced scorecard (BSC).

Balanced scorecard Perspectives:

This chapter will explain the main function of the balanced scorecard concept by explaining each BSC perspective. The main purpose of the balanced scorecard strategy is to interpret

the organization's vision by developing a number of objectives and measures that are based around four main perspectives. These perspectives are illustrated in figure(2) below.

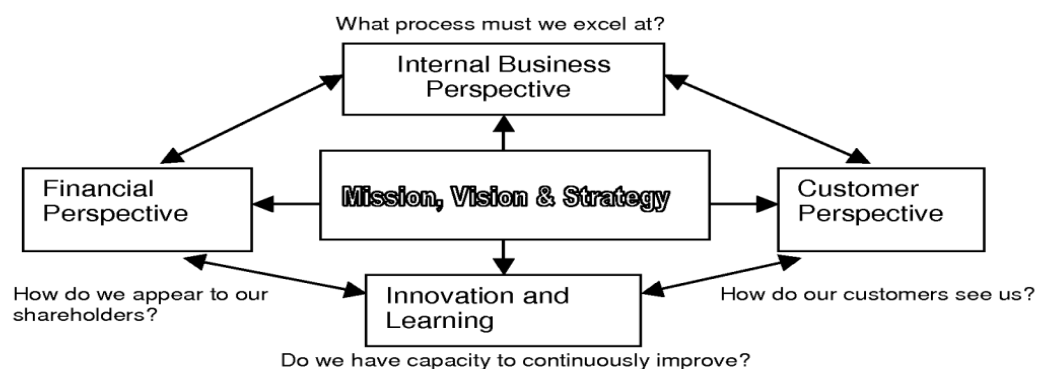


Figure 2: The Balanced scorecard Perspectives (Kaplan & Norton, 1994)

Financial perspective:

Generally, financial performance measures can be regarded as the most important component in applying company strategy; this is due to main role of supporting and improving companies. The main financial perspective goal is to increase shareholders value, growth and profitability (Kaplan and Norton (1992). Long-term financial growth can be attained by using the BSC to set objectives that measure financial performance combined with a series of activities that can be used to engage with employees, systems, financial processes, internal process and the customer.

Financial objectives, measures and critical goals assist in evaluating the financial performance predicted by using BSC. Table (2) below outlines the main measure, factors and objectives to consider as a financial perspective (Kaplan and Norton (2000b).

Table 2: The Financial Perspective's Measures and Objectives

Factors	Measures	Objectives
Contribution margin (%)	Profitability	Survive
Cash flow	Revenue	Prosper
Solvency (%)	Productivity improvement	Profitability
Return on investment (%)	Market value	Lowest cost
Total costs	Economic value added	Profitable Growth
Total assets / employee	Reduction in risk	Enhance emergency preparedness
Revenues / employee	Profit/total assets	Improve communication
Profits / employee	Enhancement of assets	Improve collaboration
Market value	Cost reduction	Logistical Support
Return on net assets	Reliability of performance	
Return on total assets (%)	Profit margin	

Customer Perspective:

In more recent years, the majority of organization has developed their vision based on their customer; as customer focus and satisfaction is regarded very important for any sector. The main aims of an organization based on a customer perspective is to provide excellent services, quality and to ensure customers are satisfied so that the business can maintain a good reputation amongst their customers (Amaratunga, et al., 2000).

Internal process perspective:

Internal factors can be used to categorize the customers and organization objectives. Measuring the company's process in order to reach the best performance outcome does this. By implementing the internal process perspective, customer and financial strategic targets can be attained (Kaplan & Norton, 1996a). Organizational processes can be observed through the use of BSC and it can ensure that results will be sufficient. There are main two differences between the traditional approach and the BSC style of measuring performance management; the two main differences are as follows:

- The main method used in traditional approaches was to observe and develop existing processes, whereas the BSC approach generates new processes that allow the organisation to surpass in meeting financial and customer objectives.
- In order to achieve new services and products the BSC also integrates innovation processes to increase the outcome (Amaratunga, et al., 2000).

Learning and growth perspective:

Whilst some consider this last factor as not as important as the other three; learning and growth perspective is the foundation that companies have to produce in order to determine long-term enhancement and growth. This is the last factor but ultimate factor that must be used in order to support the company's vision and enhance potential value for owners. This factor not only encompasses employee skills, framework and structure but also the efficiency of data and activities that support the achievement of company's aims. Learning and growth factors constitute the basis for achievement of any learning associations (both present and future learning ventures).

Implementing the Balanced Scorecard BSC on the Libyan Construction Industry:

The current growth in the use of performance measures illustrates the demand companies have for expanding their knowledge and information, more so than the time, cost and quality triangle (Walker & Johannes, 2001). However, the construction sector has yet to understand how more shareholders can impact the organizations performance. However, they have realized how the use of balanced scorecard strategies and triple bottom lines are gaining in popularity due to more companies in the service and management sector adopting their approach.

Therefore, within the construction industry, the effectiveness of adopting a BSC approach has improved company performance as it has taken into account the critical managerial requirements and ensured all activities are completed. The construction industry urgently requires a tool to measure project performance and help enhance the sector, as this would revolutionize construction management and increase performance by adding monetary value to procurement procedures. It would also help review other methods and tools used and project performance can be evaluated more efficiently and effectively.

It was recommended by Chan & Hiap (2012) that the BSC concept should be used by the construction industry. The reason for this is because BSC develops performance management and offers stakeholders a chance to see all objectives and long-term plans of the company in order to meet the strategy objectives. Chan & Hian (2012) also stated that the BSC approach can be used to assess critical achievement factors, make recommendations to modify the strategy in order to exceed the vision of the company and out-perform all other competitors.

Conclusion

Implementation Approach of BSC into Libyan companies has many advantages. The main advantages are briefly described below

- Highlights the company's strategy and increases consensus amongst managers.
- Defines the directions, objectives and differences between the new and old strategy to shareholders through education and effective communication to the company.
- Offers managers the chance to observe the organisation from four essential points of view and allows them to focus on what actions to take to meet the objectives in the allocated budget.
- Allows managers to make rapid decisions by providing managers with measures that are most important for the business, it keeps all information concise to avoid overload of information.
- Put emphasis on combining personal and departmental goals.
- Supports alignment and recognition of strategic initiatives.
- Outlines the managerial roles in companies, such as; human resource management, controlling and planning of organisation actions, managing the organisation's resources and their distribution etc.
- Improves the organisation's performance through strategic feedback by evaluating the processes and assessing performance measurement techniques, defining the right measures that need to be monitored, establishing the groundwork to lead to the growth of the company and indicating performance orientation.
- Ensures long-term performance of the company is improved by tracking the intellectual capital and intangible performance for the organisation.
- Guarantees organisation outcome by building a respectable reputation amongst personnel, stockholders and customers.

Even though, BSC has many advantages, there are also some disadvantages. Many authors have criticized it for being too over-simplistic and not containing a rigid measuring classification (Kagioglou, et al., 2001). Letza (1996) explained some critical mistakes made by organizations when designing and implementing BSC, they are as follows:

- Lack of knowledge on what to measure; this occurs when managers miss connections between the organisation's strategic goals and measures.
- Not measuring strategic actions; this occurs when managers believe that certain things cannot be measured or the activities are conducted in a professional way.
- Dispute between managers on what needs to be measured. Disputes can also occur if certain departments under-performed.

One flaw of the balanced scorecard concept is that it ignores the fact that critical parties can impact the success and performance of the company. For example, BSC makes no mention of employees, suppliers, pressure groups, alliance partners, local communities and regulators (Neely, et al., 2001).

Gautreau and Kleiner (2001), state that problems may occur in using BSC when organizations attempt to automate the system. As the BSC defines strategies, there could be many different performance measures in place; which could make quantifying the measures and relating the measures to specific items difficult. The application of successful performance measures is very complex and difficult because it takes a large amount of time and required a great amount of resources in order to update the scorecard.

An advantage of using the balanced scorecard concept in Libya is that it generates an image of how performance enhancement choices that are in line with corporate targets can be developed. Therefore, with this concept in mind, the balanced scorecard can be defined as being an integral scorecard strategy that is connected with the company's future vision, daily process and desired operative behavior.

Kaplan & Norton (1992) believe that BSC limits should be tested so it can be seen how far BSC can be used to accomplish business objectives in construction. There are many types of performance-based assessment structures that the balanced scorecard technique can be implemented in, such as; supervision, work environment, progress, internal work and quality.

Key Findings:

The study's findings were mainly based on the results and analysis of the questionnaire and interviews. The responses received from the questionnaire it can be seen that experienced project managers who answered the questionnaires, have ample knowledge on the organizations implemented strategy and developed specific skills within the Libyan construction industry.

The main challenges that face the Libyan construction industry were demonstrated from different perspectives.

According to chapter eight and nine, the findings of the research have to be centralised of producing the balanced scorecard role:

1. BSC can be used to evaluate the overall business and produce ways in obtaining the company vision. However, it is important that the implementation of the balanced scorecard strategy is evaluated to see the weakness and strength of the business and how well the four perspectives were applied. This study found that BSC ultimate performance measurement tool and new strategy, its measures financial and non-financial aspects of the business and analyze these factors to help improve existing measures and focus on operational measures such as; customer satisfaction, internal processes and companies leading growth activities.
2. Application of the new strategy will encourage the growth and progression of the construction industry in Libya. BSC will help transform the vision, increase communication and linking, develop business plans and will also boost feedback and learning.
3. However, the BCS strategy does have some disadvantages if it is not implemented effectively. The data analysis findings developed some recommendations on how the balanced scorecard strategy should be applied within the Libyan construction industry.
4. Another key finding is that the current organization strategy within the Libyan construction industry needs to be evaluated to see how effectively it is transforming the vision into actions that are understood and communicated by all employees. Evaluating the current strategy will also highlight any issues and gives the new strategy a chance to address these issues by modifying certain areas and establishing measures for budget and long-term plans.

5. improved the strategic outlook between managers , by this means the ability to solve management problems

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