

The Impact of BSC Implementation In Higher Education Institution: Evidence from Past Studies

Peter u. Anuforo¹, Hazeline Ayoup², Ahmad Haruna Abubakar³

^{1,2, & 3} Tunku Puteri Intan Safinaz School of Accountancy, College of Business, Universiti Utara Malaysia.

¹ peteru.love@gmail.com, ² hazel@uum.edu.my, ³ ahmadhabubakar@gmail.com

Abstract

The intensity of competition among contemporary Higher Education Institution (HEIS) has led to many of such institutions to focus more on how to provide high quality education so as to attain a suitable position in the university world ranking by implementing a suitable management performance. This paper aims to examine the impact of Balanced Scorecard (BSC) implementation in HEIS. The conceptual issues of BSC concept basically stem from the questions raised by the four perspectives. Although, there are other issues of BSC that are associated with the implementation process. We found out that the BSC can be strategically implemented through the use of strategy maps. We also found out that effective BSC implementation requires links to be developed among any of the BSC perspective so as to reflect cause and effect relationships as well as a suitable strategy map that will align and link the institution's mission, visions, strategy and objectives respectively. BSC is a model that can be implemented in several ways.

The unique basic criterion is that it must be modified to suit a particular institution needs. Essentially, buy-in from employees and support from senior management in BSC implementation is paramount.

Keywords: Balance Scorecard, Higher Education Institution, Strategy map, Balance scorecard perspective, performance management

1.1 INTRODUCTION

The intensity of competition among contemporary Higher Educational Institution (HEI) spanning from both developed and developing countries has led to many of such institutions to focus more on how to provide high quality education to their students (customers) and other stakeholders so as to attain a suitable position in the university world ranking. This has prompted many of such institution to opt out for suitable performance management tools like the Balance scorecard (BSC) in order to enhance its performance and improve its competitive edge over its competitors. It is against this background

that this paper focuses on the need to adopt one of the most powerful, tested and trusted modern day efficient and effective strategic business performance evaluation tool called Balance scorecard.

According to Kaplan & Norton developed in their work at Harvard University in the early 1990s that the Balanced Scorecard (BSC) is a performance appraisal technique. The Balance scorecard is a strategic performance evaluation tool that provides information or targets about which priorities are essential to help the institution or organization function and perform better. Balance scorecard implementation in institutions of higher learning involves setting a benchmark and targets and working towards realizing those targets (i.e. Strategic objectives). These targets involve working towards achieving the mission and vision statements of the institution of higher learning.

The performance system of university is a multifaceted socialized system that requires a holistic approach. Thus, Montex, (2004), highlighted that the university world today, is confronted with complex and tasking competitive reality. Similarly, Barlas and Decker (2000) indicates that modern-day universities worldwide are confronted with management difficulties such as uneven growth in the population of students in

universities, coupled with infrastructures that cannot cater for the increased student enrolment growth to faculty ratios, thereby raising concerns about the quality of teaching, pronounced competition for inadequate funding in research, and aggressive competition in the limited student demand in private universities. Moreover, these issues are interrelated and seemly interact concurrently, hence contributing more complexity in the dynamic performance system of the university.

In general, implementing a successful BSC (strategy) requires educating and involving competent staff that are saddled with the responsibility in strategy implementation (Kaplan & Norton, 1996, p. 199). Thus, according to Ayoup, et al. (2015), an organization that adopts BSC must “make strategy everyone’s everyday job”. More so, for any university to successfully accomplish its broad mission and vision strategy, must as a matter of necessity, ensure that it tackles the issues that are associated with implementing the BSC. However, these issues that need to be addressed here is the four fundamental questions raised by the concept of the BSC perspectives. They include;

The general issues about the BSC basically stem from the questions raised by the 4 main perspectives. They are

- The Customer Value Perspective (CVP) – how can we delight or satisfy our customers so as to accomplish our vision?
- Internal Business Process (IBP) - What internal process can we undertake to excel, or are we presently doing the right things?
- Learning & Growth (LG) – How then, can we continue to create or add and improve customer value in order to accomplish our vision?
- Financial - Are we working towards accomplishing shareholder's expectations?

Moreover, Balance scorecard implementation related issues includes;

- Employees buy-in
- The level of readiness and commitment by both employees and managers.
- Performance excellence culture.
- Level of educational trainings of staff concerned.
- Clarity and concise strategic vision, and outcome.

- Support from organization information and communication system
- Linkage between KPIs in the organization's 's scorecard and reward system
- Firm's environmental and attributes of organization.
- Organization's level of readiness for change.

Specifically, this study aims to examine BSC implementation in public institutions of higher learning and its impact on performance of such institutions.

1.2 Balance Scorecard Historical Development

Kaplan and Norton (1992) originated the concept of balance scorecard a Harvard Business Review article titled “The Balance Scorecard – Measures that Drive Performance”. According to Brudan, (2010), BSC has transformed from a measurement tool to a strategic tool of management; hence it is oftentimes regarded as a tool performance management strategy.

Lawrie and Cobbald (2004), outlined that the development of BSC is divided into three generations. The initial generation commenced from the scorecard to the adoption of a modified version by Norton and Kaplan. The next generation described how the originator of the

concept attempted to address the weaknesses that is associated with the scorecard implementation. Thus, the 3rd generation dealt with how the scorecard functionality and strategic importance were improved by adding more features. However, the Business Farm, (2010), incorporated a 4th generation of Balance Scorecard, which offers a better solution that catapults the scorecard techniques to another level, and involves aligning the company value to the scorecards Value Advisory Services, leading to mapping firm's footprint on both the community and the environment at large. Although, Cobbold and Lawrie (2002) describe the associated risks of the strategic objectives of BSC implementation at a certain future date. Thus, the selecting process of strategic objectives, the designed of linkage between the objectives, and the set targets contributed a lot. Moreover, the basic concepts behind the balanced scorecard remain unchanged.

Note that the prior purpose of developing the BSC was initially meant for the profit oriented outfit with the aim of enhancing financial improvement, however it was later adopted and/or adapted in non-profit outfit as an arrangement geared towards providing and communicating effective service to the members of the public. Kaplan, (1999) stressed that the BSC application in a public sector organization is

very suitable. However, it is important to reiterate here that the prospects and potentials of enhancing management performance in not-for-profit organization tend to be more promising in yielding better results (Kaplan, 1999). Hence, the framework of the BSC application in the public sector must be adjusted in order to reflect its peculiarity and the uniqueness of its mission driven nature since it focuses more on ensuring a better result and accountability in satisfying user expectations for public services.

To get to the heart of the matter, this paper aims to closely examine the impact of BSC implementation in institutions of higher learning particularly in one of the Malaysian Public Universities. The remaining parts of the paper is structured thus: Section 1.3 discusses BSC as a strategic management tool in institution, and section 1.4 examines the application of the BSC in institutions of higher learning, which serves as the basis for discussion in the next section and the subsequent section (i.e Implementation of BSC in institution of higher learning, and Impact of BSC implementation on performance). And lastly is the Conclusion part.

1.3 BSC and Strategic Management Tool in Institution

Institution of higher learning is increasingly looking for new forms of internal management.

Similarly, to Pienaar and Penzhorn (2000), in a fast changing business environment, innovative organizations are progressively adopting the Balanced Scorecard so as to ascertain future values by communicating key elements (Kaplan & Norton, 1996) and providing suitable indicators and parameters of organizations future destination. The BSC is usually modified to suit the individual requirement of the organization. One of the useful BSC strategy tools is strategy map.

The first step and the most important task in the implementation of BSC process is the Strategy map development (Makhijani & Creelman, 2008; Philbin, 2011). Kaplan and Norton (2004) stressed that the aim of using the strategy map is to ensure successful BSC implementation in an organization. The strategy map can be defined as a one page picture telling the story of an organization's strategy that shows the logical flow of strategies by representing the objectives of the critical processes that creates customer value propositions value and the learning and growth processes that supports the organizational. Thereafter, the objectives are translated through the use of strategy map by the balanced scorecard as targets and measures.

According to Kaplan and Norton (1992) the BSC technique aims at focusing the entire

organization on what needs to be executed to achieve breakthrough performance through the development of a set of measures that enables the managers to know the fast and comprehensive organizational view. Yee-Ching Lilian Chan, (2004), stressed that the balanced scorecard is a valuable tool of management that offers the need for change and improvement that will ensure improved performance management in the public sector or HEI. For example, Kaplan, (2001) highlighted that "the City of Charlotte, North Carolina, the United Way of Southeastern New England and New Profit Inc., a venture capital philanthropic fund based in Boston, have used the balanced scorecard to redefine and re-align their strategic importance as well as to focus and create value for their customers".

1.4 Application of BSC in Institution of Higher Learning

The model of BSC is increasingly being applied by many universities across the globe as well as highly appreciated among many practitioner and academy researchers. Not only is it a framework for strategic management and measurement technique, it serves also as a management technique that translates an institution's strategy mission into a broad performance measurement setting. Essentially, the BSC is an element of strategic management technique that aligns an

institution's mission, vision and core values along with the future strategies, targets, and initiatives that are clearly organized to specifically inform and encourage endless and consistent efforts toward well-articulated improvement (Kaplan & Norton, 1992a, 1992b, 1993, 1996a, 1996b; Newing, 1994, 1995; Hoffecker, 1994; and Maisel, 1992).

The dearth of published research on BSC indicates that, the BSC has not been widely embraced in the educational institution unlike the business sector where it is apparently clear that the BSC has been extensively implemented (Karathanos & Karathanos, 2005). "Sutherland, (2000), (cited in Karathanos & Karathanos, 2005) highlighted that the BSC was adopted to assess the academic program and planning process of the Rossier School of Education at University of Southern California with the primary goal and critical success factor for institutions of higher learning in order to attract and retain the best talented calibre of the workforce".

Furthermore, there has significant argument that the BSC implementation may not be appropriate for the academic environment and may only be suitable for profit-oriented organizations. On the contrary, significant studies have revealed that the scorecard can be modified to address the

respective needs of every organization. For example, "the Rossier School of Education at University of Southern California used the BSC to measure the effectiveness of its academic programme (Sutherland 2000 cited by Umashankar & Dutta 2007)". There are so many other examples of high ranking universities worldwide that have implemented the BSC which resulted in better performance such as "University of Edinburgh, University of Southern California, Ohio State University, University of California, University of Akron and so on (Walker & Ainsworth 2007; Balanced Scorecard Institute 1998–2008; Karathanos & Karathanos 2005; Umashankar & Dutta 2007)".

1.5 Implementation of BSC in Institution of Higher Learning

According to Chen, et al. (2006), the BSC enhances and promotes necessary changes in university educational operations, which makes it a suitable management tool for evaluating firm's performance. Similarly, Cullen, et al. (2003), highlighted that BSC harnesses the mission and objectives of a university into one single structure. Additionally, there are few studies that have been conducted on similar topic and have come up with significant results of implementing BSC in institutions of higher learning. Some of

the list of these studies with their respective titles includes. Chen, et al. (2006), application of “BSC method as a performance measurement and strategic management tool in Taiwan higher education. Philbin, (2011) adapt BSC in operational management of a university institute and identified how it can improve the operational management. Kettunen,(2006) utilizes BSC to provide joint regional strategies for higher education institutes in Finland”. However, according to Rahimnia and Kargozar(2016) they agree that it provides a crystal clear understanding for both employees and managers in every institute as well as how it promotes the contribution of network strategy. More so the BSC approach provides valuable and insightful guide in in a college of business while implementing strategic performance management system, (Papenhausen & Einstein, 2006). Although the first known non-profit organization to implement BSC was the United Way of Southeastern New England (UWSENE) (Kaplan & Norton, 2001a),.

To commence BSC design, involves the identification of strategic goals through the use of the strategic map (Makhijani & Creelman, 2008; Philbin, 2011). However, as a prerequisite there must be a link in the strategic goals before developing the scorecard measures (Yee-Ching Lilian Chan, 2004). Thus, BSC implementation

process is divided into four phases (Kaplan & Norton 1996, p. 105), as follows;

- Translating the vision and getting employees buy-in
- Communicating the objectives, setting targets and strategy linkages
- Allocating resources and establishing appropriate indicators and
- Providing suitable feedback system and learning process.

Similarly, other studies on BSC implementation came up with related implementation processes. For example, according to Farid, et al. (2008), divided the process of BSC implementation into two versions. The first version is made up of six stages and is more of a theoretical process while the second version is more practical process which involves the institutional alignment stage and the operationalization stage. Additionally, Bilalova, et al. (2016), also suggested a five stage framework of BSC implementation projects for Higher Education in Malaysia. These five steps include; BSC Readiness Assessment, BSC Training, BSC Automation, BSC Cascading and BSC Review.

The ultimate aim of implementing BSC in Higher Education Institutions (HEIS) is to promote and sustain the mission and vision of the school, thereby safeguarding the image and

reputation of the university. It also involves monitoring an institution's performance as well as making necessary adjustments to emerging challenges that may arise during the course of implementing key strategies. According to Deborah F. Beard, (2013), the process of developing the BSC provides institutions with the opportunity of identifying what customers actually need or want: why the institution exists (i.e the institution's mission), what is essential to the organization, and what the organisation aspires to be (i.e the institution's vision). By identifying and adopting suitable key performance measures that links the institution's mission and/or core values and searching for continuous development provides opportunities to develop value to educational institutions. Accordingly Sudirman I., (2012), pointed out that the purpose of implementing the BSC is to ensure that university management aligns its strategy at each unit effectively and efficiently towards accomplishing its set objectives.

Effective implementation of BSC requires a group of committed and highly competent management and employees. Thus, management has important roles to play in developing suitable trainings, motivating staff and prompting the involvement of employees in the process of decision making so as to give them a sense of belonging in the BSC implementation processes.

Chen, et al. (2006), highlighted that the implementation of BSC in educational institution requires faculty, staff to exercise team spirit in their work. And this usually starts with the senior supervisors who are saddled with the responsibility of implementing policies in a structure of top-to-bottom organization hierarchy. Thus, buy-in from employees and support from senior management in BSC implementation is paramount so as to ensure a successful balanced scorecard implementation. Additionally, as a necessity, it must be emphasized here that the organization strategy needs to be clearly defined and linked to suitable employee reward system. Hence the implementation of the BSC will create a causal relationship leading to feedback from employees and effective communication among concerned corresponding functions. For example, Malina and Selto (2001) considered "the effectiveness of the BSC as a control and communication tool, however, their findings revealed that the BSC can be an effective tool for controlling and communicating corporate strategy. Thus, the BSC as a communication tool can serve as a source of demotivation to employees if the incentive is not properly designed and implemented".

Kaplan and Norton (2001) highlighted that there are five vital principles involved in the

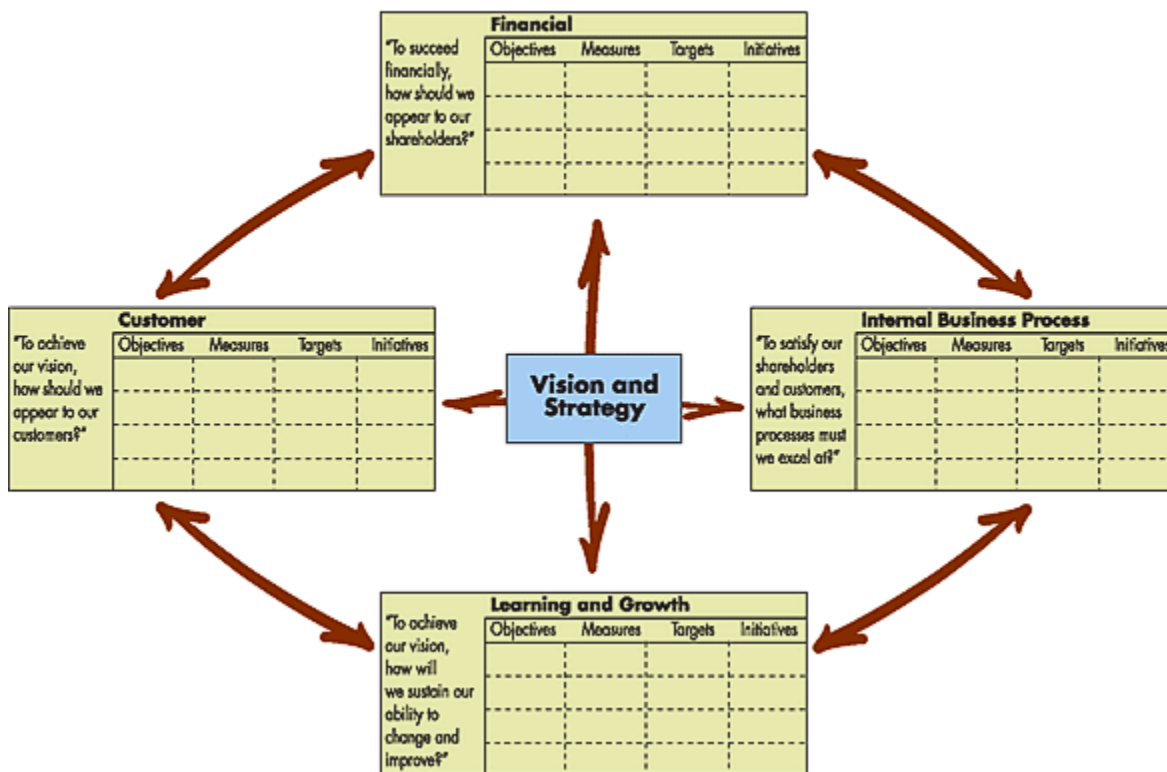
implementation of BSC as part of an institution

- Strategy translation into operational terms.
- Linking the institution’s strategy.
- Making strategy part of everyone’s everyday job.

core strategy

- Ensuring consistency in the strategy process.
- Activating change through supervision

Translating Vision and Strategy: Four Perspectives



Source: adapted from Kaplan and Norton 2004

Figure 1.1

From the above diagram (i.e. figure 1), it is crystal clear that the BSC is a performance measurement that translates an institution’s strategy into clear-cut objectives, measures,

targets, and initiatives, and incorporates a unique mix of both short- and long-term performance measures of financial and non-financial used within the institution. Thus, the general



structure, of BSC comprises of an institution's objectives, measures, targets and initiatives in each of the perspectives. However suitable links are developed in each and every perspective of the BSC so as to reflect the causal relationships.

1.6 The Impact of BSC Implementation on HEIs Performance

One of the important benefits of BSC is that it links organisation's strategy leading to enhanced communication and employee motivation which increases performance (Kaplan & Norton, 2001). Some of the little evidence of the impact of a successful implemented BSC system in HEI includes, among others: organizational synergy; effective strategic management; an improved reward system of employees; effective communication in the organization; efficient decision-making process; minimized costs; increased student satisfaction and higher competitive advantages (Ljupco, et al., 2016). Although evaluating organizational performance is highly tasking, particularly when it involves measuring the effect of a 'broad and deep'

management control system such as the BSC implementation in HEI.

Great banks and Tapp (2007) pointed out, "that the use of BSC within a public service city council in New Zealand enabled its employees to clearly appreciate their role and focused more on the delivery of performance related measures that supported the organizational strategy". Furthermore, a study has shown that the implementation of BSC (Strategic Plan Phase 1, 2011-2015 and Phase 2, 2016-2020) here in UUM has significantly improved its world-wide university ranking and at the same time has led to the university getting the hard-not to crack AACSB (Association of Advanced Collegiate School of Business) accreditation and lots more. For example, figure 1.2 depicts the impact of BSC implementation in UUM. On the other hand, according to the study by Braam and Nijssen (2004) "on the performance effects of using the BSC in Dutch companies" revealed that the implementation of the BSC does not immediately improve firm performance but involves a gradual process.





Figure 1.2 Illustrations of the Impact of BSC implementation in Universiti Utara Malaysia (UUM)

More so in a study conducted by Ayoup, et al. (2012), on BSC Implementation in Malaysian GLC: Perceptions of Middle Managers, the outcomes of the study revealed that the organizations derived benefits from the BSC implementation because the company believed that the BSC implementation has helped them to focus more on areas that needed refinement as well as significantly guiding them in making a

better improve decision. A similar result was also attained in a case evidence in Geomotion company.

1.7 Conclusion

The conceptual issues of BSC concept basically stem from the questions raised by the four perspectives. Although, there are other issues of



BSC that are associated with the implementation process. They include; employees buy-in, level of readiness and commitment by employees and managers, performance excellence culture, level of education and training of staff concerned, clear vision, strategy and outcome. Support from organization's information and communication system, alignment of KPIs in the scorecard and organization reward system, firm's environmental and organizational attributes and Organization's level of readiness for change.

BSC concept is concerned with an organization's performance management tool that incorporates both Financial Performance Indicator (FPIs) and Nonfinancial Performance Indicators (NFPIs) in measuring the performance of an institution. BSC development is a vital process that ensures continuity of improvement and enhancement of institution. Noted that forgotten that support from senior managers is crucial to implementing a successful BSC in any institution. Note that the buy-in from employees and support from senior management in BSC implementation is paramount so as to ensure a successful balanced scorecard implementation. Additionally, as a necessity, it must be emphasized here that the organization strategy needs to be clearly defined and linked to suitable employee reward system. Hence the implementation of the BSC will create

a causal relationship leading to feedback from employees and effective communication among concerned corresponding functions.

From the study of the streams of literature on the BSC, it was found that, the BSC is used as a reference point for monitoring and evaluating organization's performance periodically. The BSC is also known as a "living document" by which the objectives, measures, and initiatives must be reviewed on a regular basis. In otherwords, monitoring and conducting reviews on the performance of the institution, business units and departments as well as its various divisions are very essential. Furthermore, it is hoped that the BSC as a performance management tool will provides a clear and holistic picture and effective communication of the organisation's mission and objective institution of higher learning. Moreover, this BSC will be best achieved if properly implemented, that is when its performance measures are linked to the organisation's overall strategy (Kaplan, 2010). Hence, this will lead to a significant improvement to any institution that implements it, thereby increasing the university's world ranking profile and its other related general performance compared to the ones that fail to implement the BSC.

REFERENCES

- [1] Al-Hosaini, F. F., & Sofian, S. (2015). A review of balanced scorecard framework in higher education institution (HEIs). *International Review of Management and Marketing*, 5(1), 26.
- [2] Al-Zwyalif, I. M. (2012). The possibility of implementing balanced scorecard in Jordanian private universities. *International Business Research*, 5(11), 113.
- [3] Ayoup, H., Omar, N. H., & Rahman, I. K. A. (2012). Implementation of Balance Scorecard (BSC) in a Malaysian GLCS Perceptions of Middle Managers. *Asia-Pacific Management Accounting Journal*, 7(2), 99-126.
- [4] Ayoup, H., Omar, N., & Rahman, I. K. A. (2015). Behavioral Factors Affecting Strategic Alignment Based on the Balanced Scorecard Framework: Evidence from A Malaysian Company.
- [5] Bilalova, EM, & Kichikhanov, PM (2016). The application of the system of balanced indicators in the university (on the example of the Dagestan State University). *Fundamental research* , 3 (2).
- [6] Braam, G. J., & Nijssen, E. J. (2004). Performance effects of using the balanced scorecard: a note on the Dutch experience. *Long range planning*, 37(4), 335-349.
- [7] Brudan, A. (2010). Rediscovering performance management: systems, learning and integration. *Measuring Business Excellence*, 14(1), 109-123.
- [8] Chen, S. H., Yang, C. C., & Shiau, J. Y. (2006). The application of balanced scorecard in the performance evaluation of higher education. *The TQM magazine*, 18(2), 190-205.
- [9] Cobbold, I., & Lawrie, G. (2002). The development of the balanced scorecard as a strategic management tool. *Performance measurement association*.
- [10] Crabtree, A. D., & DeBusk, G. K. (2008). The effects of adopting the balanced scorecard on shareholder returns. *Advances in Accounting*, 24(1), 8-15.
- [11] Cullen, J., Joyce, J., Hassall, T., & Broadbent, M. (2003). Quality in higher education: from monitoring to management. *Quality Assurance in Education*, 11(1), 5-14.
- [12] Davis, S., & Albright, T. (2004). An investigation of the effect of balanced scorecard implementation on financial performance.

Management accounting research, 15(2), 135-153.

[13] del Sordo, C., Orelli, R. L., Padovani, E., & Gardini, S. (2012). Assessing global performance in universities: an application of balanced scorecard. *Procedia-Social and Behavioral Sciences*, 46, 4793-4797.

[14] Eftimov, L., Trpeski, P., Gockov, G., & Vasileva, V. (2016). Designing a balanced scorecard as strategic management system for higher education institutions: A case study in Macedonia. *Ekonomika*, 62(2), 29-48.

[15] Farid, D., Nejati, M., & Mirfakhredini, H. (2008). Balanced scorecard application in universities and higher education institutes: implementation guide in an Iranian context. *Universitatii Bucuresti. Analele. Seria Stiinte Economice si Administrative*, 2, 29.

[16] Greatbanks, R., & Tapp, D. (2007). The impact of balanced scorecards in a public sector environment: Empirical evidence from Dunedin City Council, New Zealand. *International Journal of Operations & Production Management*, 27(8), 846-873.

[17] Hawari, N. N., & Tahar, R. M. (2015). A dynamic model of balanced scorecard to enhance strategic university planning process. In

Mathematical Sciences and Computing Research (iSMSC), International Symposium on (pp. 361-366). IEEE.

[18] Hoffecker, J. C., McNamara, A. R., Schafer, C. P., Smith, H. E., & Walsh, N. E. (1994). U.S. Patent No. 5,325,505. Washington, DC: U.S. Patent and Trademark Office.

[19] J. Montex, (2004) "Pursuing excellence in higher education: Eight fundamental challenges", *Review of higher Education*, vol. 24, no. 4, pp. 586-587,

[20] Kaplan, R. S., & Norton, D. P. (1995). Putting the balanced scorecard to work. *Performance measurement, management, and appraisal sourcebook*, 66, 17511.

[21] Kaplan, R. S., & Norton, D. P. (1996). Using the balanced scorecard as a strategic management system.

[22] Kaplan, R. S., & Norton, D. P. (2000). Having trouble with your strategy? Then map it. *Focusing Your Organization on Strategy—with the Balanced Scorecard*, 49.

[23] Kaplan, R. S., & Norton, D. P. (2001). Transforming the balanced scorecard from performance measurement to strategic management: Part I. *Accounting horizons*, 15(1), 87-104.

- [24] Kaplan, R. S., & Norton, D. P. (2004). Strategy maps: Converting intangible assets into tangible outcomes. Harvard Business Press.
- [25] Kaplan, R. S., & Norton, D. P. (2007). Using the balanced scorecard as a strategic management system. Harvard business review, 85(7-8), 150.
- [26] Karathanos, D., & Karathanos, P. (2005). Applying the balanced scorecard to education. Journal of Education for Business, 80(4), 222-230.
- [27] Karpagam, U. P., & Suganthi, L. (2012). A strategy map of balanced scorecard in academic institutions for performance improvement. IUP Journal of Business Strategy, 9(3), 7.
- [28] Kettunen, J. (2006). Strategic planning of regional development in higher education. Baltic Journal of Management, 1(3), 259-269.
- [29] Lawrie, G., & Cobbold, I. (2004). Third-generation balanced scorecard: evolution of an effective strategic control tool. International Journal of Productivity and Performance Management, 53(7), 611-623.
- [30] Lilian Chan, Y. C. (2004). Performance measurement and adoption of balanced scorecards: a survey of municipal governments in the USA and Canada. International Journal of Public Sector Management, 17(3), 204-221.
- [31] Malina, M. A., & Selto, F. H. (2001). Communicating and controlling strategy: an empirical study of the effectiveness of the balanced scorecard. Journal of management accounting research, 13(1), 47-90.
- [32] Mohamed, S. (2003). Scorecard approach to benchmarking organizational safety culture in construction. Journal of construction engineering and management, 129(1), 80-88.
- [33] Papenhausen, C., & Einstein, W. (2006). Implementing the Balanced Scorecard at a college of business. Measuring Business Excellence, 10(3), 15-22.
- [34] Philbin, S. P. (2011). Design and implementation of the Balanced Scorecard at a university institute. Measuring Business Excellence, 15(3), 34-45.
- [35] Pienaar, H., & Penzhorn, C. (2000). Using the balanced scorecard to facilitate strategic management at an academic information service. Libri, 50(3), 202-209.
- [36] Rahimnia, F., & Kargozar, N. (2016). Objectives priority in university strategy map for resource allocation. Benchmarking: An International Journal, 23(2), 371-387.

[37] Sudirman, I. (2012). Implementing balanced scorecard in higher education management. *International Journal of business and social Science*, 3(18).

[38] Taylor, J., & Baines, C. (2012). Performance management in UK universities: implementing the Balanced Scorecard. *Journal of Higher Education Policy and Management*, 34(2), 111-124.

[39] Umashankar, V., & Dutta, K. (2007). Balanced scorecards in managing higher education institutions: an Indian perspective. *International Journal of Educational Management*, 21(1), 54-67.

[40] Weerasooriya, R. B. (2013). University Performance Measurement Using the Balanced Scorecard Method-Special Focus to the Learning and Growth Perspective (LGP).

[41] Y. Barlas, V.G. Diker, (2000) "A dynamic simulation game (UNIGAME) for strategic university management", *Simulation & Gaming*, vol. 13, no. 3, pp. 331-358,

[42] Zolfani, S. H., & Ghadikolaei, A. S. (2013). Performance evaluation of private universities based on balanced scorecard: empirical study based on Iran. *Journal of Business Economics and Management*, 14(4), 696-714.

Appendix

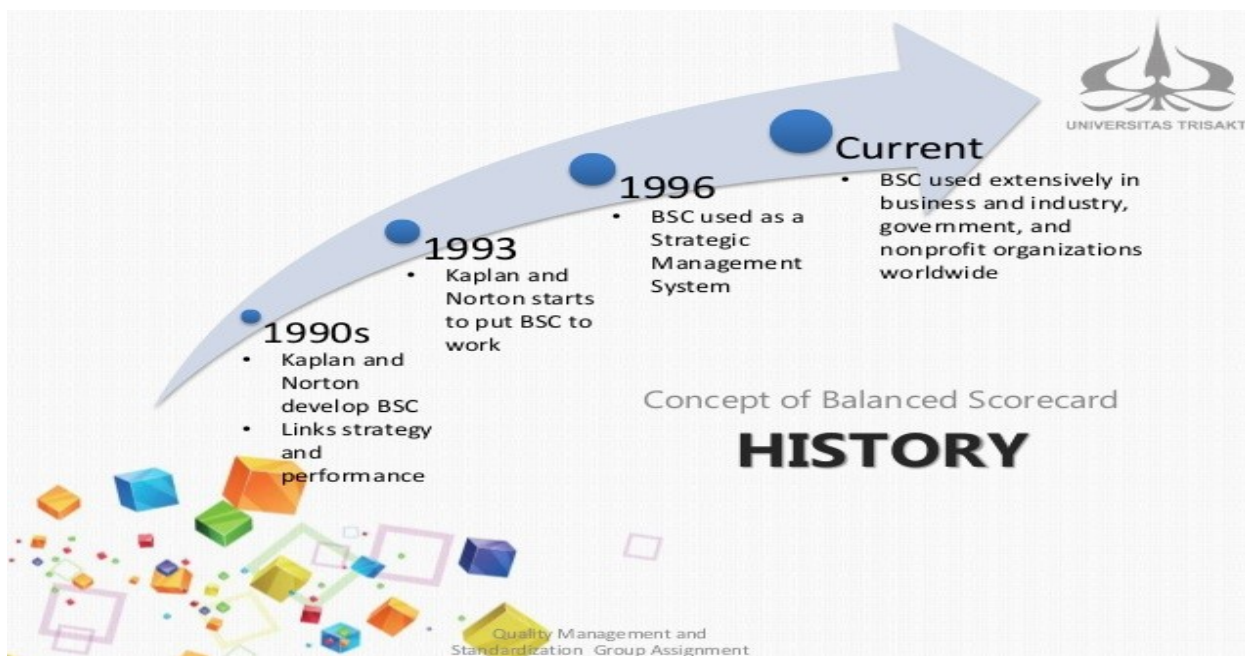


Figure 2. Concept of Balance Scorecard History

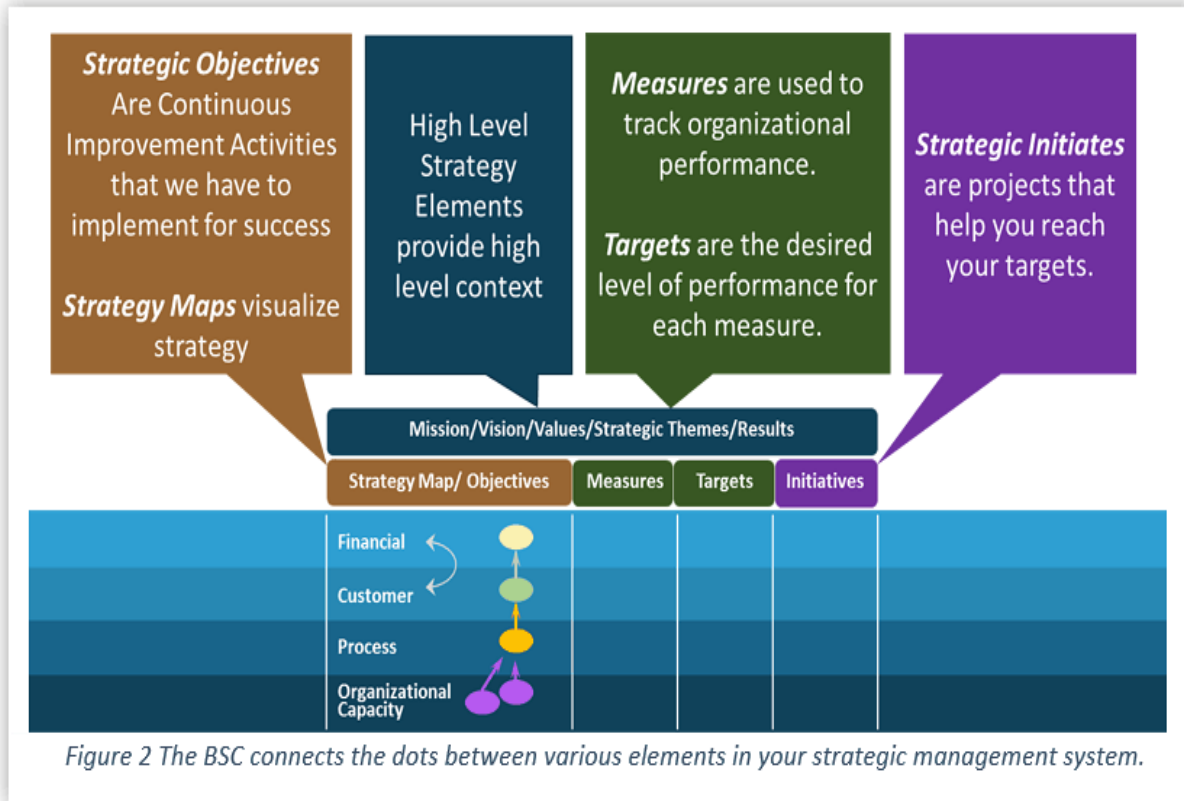


Figure 3. BSC and Strategic Management Tool in Institution