International Journal in Management and Social Science
Volume 6 Issue 08, August 2018 ISSN: 2321-1784 Impact Factor: 6.178
Journal Homepage: http://ijmr.net.in, Email: irjmss@gmail.com
Double-Blind Peer Reviewed Refereed Open Access International Journal

Application Analysis of Balance Score Card Techniques for Performance Measurement:
A Structural Study

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ABSTRACT

This research article is framed toexplain the concept of balance scorecard by highlighting its use, application in depth. A critical enabler in achievingdesired performance goals is the ability to measure performance. Despite the importance of accurately measuring organizational performance in most areasof academic research, there have been very few studies that have directly addressed the question of how overall organizational performance is or shouldbe measured. The most popular of the performance measurement frameworkhas been the balanced scorecard abbreviated as BSC. The BSC is widely acknowledged to have moved beyond the original ideology. It has now become astrategic change management and performance management process.The approach used in this paper is the combination of literature review on evolution of balance score card and its applications in various sectors/organizations/areas. This paper identify that the balanced scorecard is a powerful but simple strategic tool and the simplicity of the scorecard is in its design. This paper provides a comprehensive overview of the balanced scorecard combined with application and strategy, which arenow in a better position to begin to recognize management's expectations and to discover new ways to build value for workplace learning and performancewithin organization.

Keywords: *Performance Measures, Performance Measurement, Balance Score Card*

INTRODUCTION

Over the past few decades, the complex global businessenvironment and increasing business competitiveness havehighlighted the importance of performance measurement.Performance measurement methods were widely adoptedin many industries and they had received more and moreattention (Niven, 2002; Yang, John, Albert, Chiang &Daniel, 2010). Owing to recent pressures attributed totechnological and competitive changes faced by all sectors,performance measures and measurement continue to becritical to the tracking, management and improvementof the competitive performance of organizations. Inthis context, understanding the scope, frequency andrelevance of different performance measures availableto executives is essential to the process of integratingthe different dimensions of organizational performance.(Gomes, Jabbour, Adriana & Charbel, 2011).

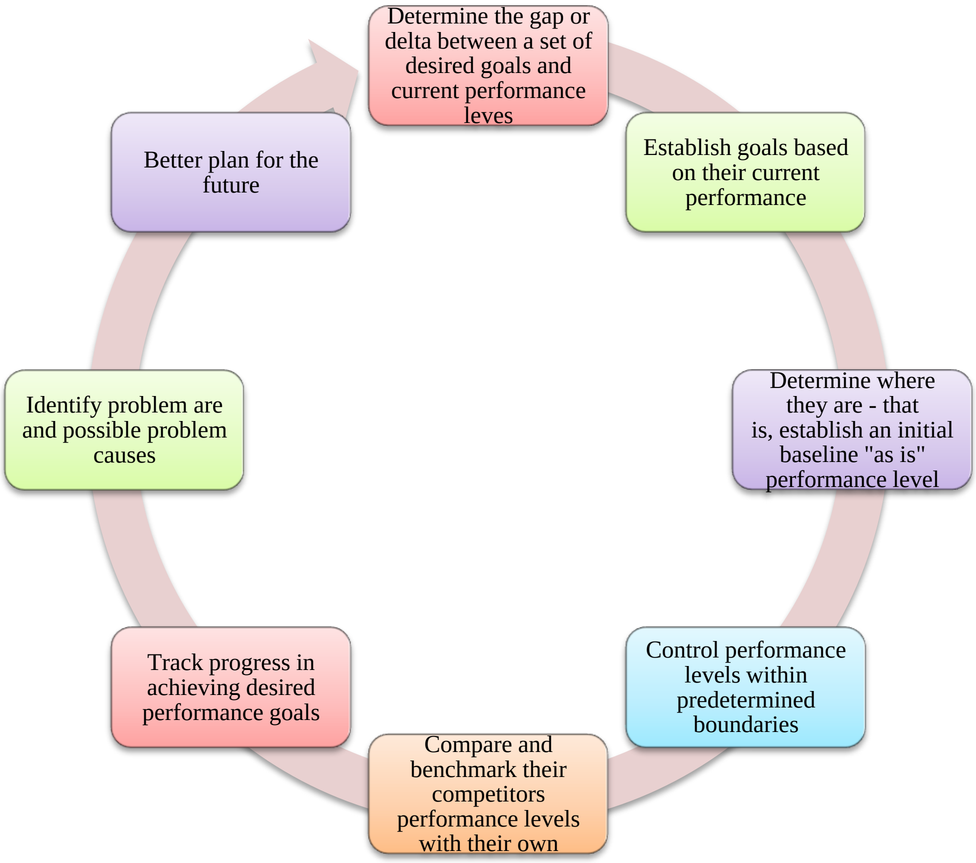
Research in the field of performance measurement (PM)has drawn on a wide cross section of disciplines, fromoperations and production management to accountingand management control (Neely, Gregory & Platts, 1995;Neely, 2005). Over the last two decades, the focus hasmoved from PM system design (Neely *et al*., 1995) tothe design and deployment of enterprise performancemanagement systems (Neely, 2005). With academic andpractitioner interest in the balanced scorecard (BSC),there has spawned a literature around the design (Kaplan& Norton, 1992; Neely, Mills, Gregory, Richards, Platts&Bourne, 1996; Bititci, Turner &Begemann, 2000),implementation (Bourne, Neely, Mills & Platts, 2003;Bourne, Kennerley & Franco-Santos, 2005; Bititci, 2006)and use of performance measures to manage performance(Bourne *et al*., 2005; Wouters&Wilderom, 2008) togetherwith a more critical interest in whether scorecards work(Norreklit, 2000, 2003) and whether they have a positiveimpact on performance (Bourne, Melnyk & Faull, 2007;Griffith & Neely, 2009). However, there remains onefundamental yet excruciatingly complex question – howis the performance of an organization managed? (Pavlov& Bourne, 2011).

Figure 1 below clearly indicates the significance, importance andthe extent which performance measurement enables tocompare organizations performance and further growth.Organizations are managing their improvement effortsbased on fact. And measuring performance is derivingthose facts. That is, organizations are using performancemeasurements to help achieve desired performance levels.Companies are discovering that performance measurescan help any organization:

As indicated in Figure 1 performance measurement is,therefore, the key to calibrating the effectiveness of abuilt facility in a comprehensive manner. Amaratunga,Baldry and Sarshar

(2000) argue that performancemeasurement is vital to an organization as it providesmuch-needed direction to management for decisionmaking. Performance measurement extends opportunitiesto review past and present functioning, and to derive futurestrategies for successful operation of the organization andfor the fulfillment of its strategic goals (Lebas, 1995, Lavy,Garcia & Dixit, 2010)

Figure 1: Process of Performance Measurement



PERFORMANCE MEASUREMENT USING BALANCE SCORECARD

Introduction to Balance Scorecard

Successful competition in this era requires competenciesnot traditionally reflected in the existing financialstatements. To a certain extent, a heavy reliance on financialperformance measures could hinder future competitiveadvantage as financial indicators are outcome measures,which do not reflect drivers of future performance andtrue value creation (Adrien, Mark & Sin-Hoon, 2009).Hence, a balanced perspective ought to be adopted inapproaching the topic of performance measurement(Kaplan & Norton, 1996).

The balanced scorecard (BSC)has attracted considerable interest among researchers andpractitioners. Gautreau and Kleiner (2001) cite Silk asreporting that 60 percent of Fortune 1000 companies areeither implementing the BSC or are attempting to do it. Itis over 20 years since Schneiderman (1987) first used aBalanced Scorecard in analogue devices and now over 15years since Kaplan and Norton's (1992) first HBR article(Bourne *et al*., 2008). The balanced scorecard (BSC) isa powerful and balanced strategic management systemthat facilitates the implementation of strategy, usingmeasures to ensure that corporate vision and strategy areimplemented and achieved (Kaplan & Norton, 1996). TheBalanced Scorecard (BSC) translates an organization'smission and strategy into a comprehensive set ofperformance measures that provides the framework fora strategic measurement and management system. Thescorecard measures organizational performance acrossfour linked perspectives: financial, customer, internalbusiness process, and learning and growth (Armstrong,2006).

In the early 1990s, Robert Kaplan and David Nortondeveloped a new approach to strategic management.They named the system the "balanced scorecard". Indealing with some of the weaknesses and vagueness ofprevious management approaches the balanced scorecardapproach provides a clear definition as to what businessorganizations should measure in order to balance thefinancial perspective. The balanced scorecard can effectlarge-scale organisational change and improvement but itdoes require a degree of expertise in its implementation(Pitt & Tucker, 2008). The balanced scorecard is not justa system of performance measurement but it is also amanagement system that enables organizations to clarifytheir vision and strategy and translate them into action.It provides feedback around both the internal businessprocesses and external outcomes in order to continuouslyimprove strategic performance and results. When it hasbeen fully deployed, the balanced scorecard transformsstrategic planning from a routine undertaking into thefocus of organizational strategic direction. Kaplan andNorton claim that "The balanced scorecard retainstraditional financial measures. But financial measures tellthe story of past events, an adequate story for industrialage companies for which investments in long-termcapabilities and customer relationships were not criticalfor success. These financial measures are inadequate,however, for guiding and evaluating the journey thatinformation age companies must make to create futurevalue through investment in customers, suppliers,employees, processes, technology and innovation".

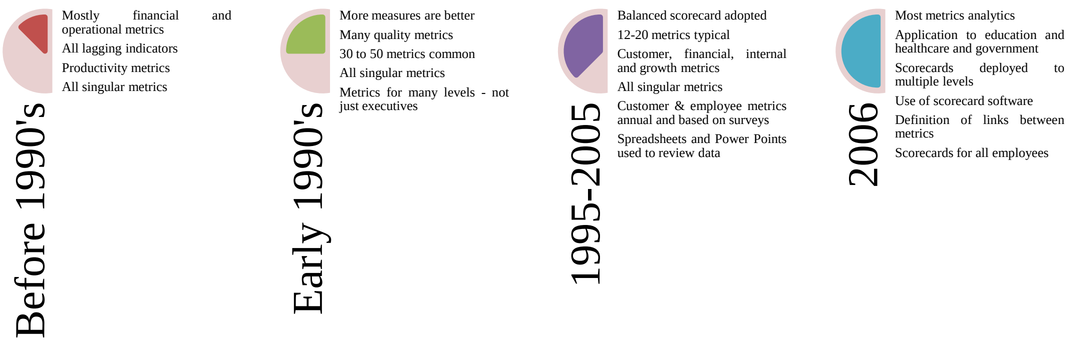
Evolution of Balance Scorecard

Performance measurement in organizations is notsomething new, but in the last 30 years or so, organizationshave realized that financial measures alone are notsufficient for evaluating the success of an enterprise.In the 1970s, productivity became a big concern, andbusiness and government organizations began trackingthe productivity of labor; machinery, and other resources.In the 1980s, we all became concerned with quality andcustomer satisfaction, so those measures became part oforganizational scorecards.

In the mid-1990s, the balanced scorecard concept wasintroduced; forcing executives to take a hard look at howmany of their metrics were financial and then balance outtheir scorecards with non-financial metrics. The balancedscorecard approach also recommended that fewer arebetter: The number of metrics that companies tracked hadbeen increasing each year for many years, but Kaplan andNorton suggested that no one should have more than 15 to20 metrics per scorecard.

Over the last 30 years or so, the approaches thatorganizations use to measure performance have gonethrough three clear phases or stages. Each phase haslasted 10 or 15 years, and with each successive phase,the practice of measuring performance has becomemore exact. The process is still a long way from whatyou would call science, but the measures are improving,as is the integrity of the data. Models like the Baldrigecriteria have helped facilitate this systematic approach tomeasuring and managing performance. Figure 4 showsthe evolution of the balanced scorecard.

Figure 2: Evolution of the Balanced Scorecard



The four perspectives of Balance Score Card

The balanced scorecard views the organization from fourperspectives, develops metrics, collect data and analysesthem relative to each of these perspectives: They areindicated in Figure 5.

Figure 3: The four perspectives of Balance Score

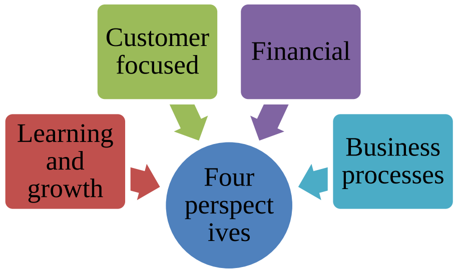


Table 1: The summary of these four perspectives

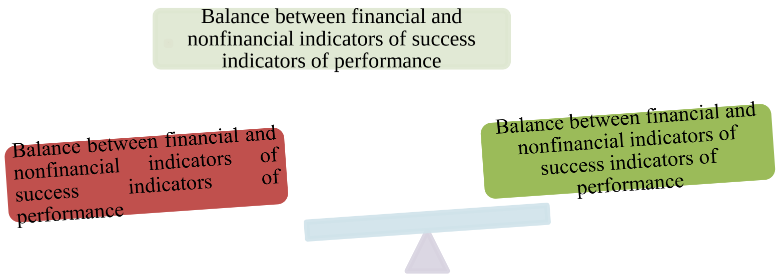
Sr.No.	Organization four perspectives	Description
1	Learning and growth	This perspective includes employee training and corporate cultural attitudes related to bothindividual and corporate self-improvement. In a knowledge-worker organization, people are the main resource and in the current climateof rapid technological change, it is becoming necessary for employees to be in acontinuous learning mode. Metrics can be put into place to guide managers in focusingstaff training funds where they can help the most. In any case, learning and growth constitutethe essential foundation for success of any knowledge based organisation. Kaplan andNorton emphasize that "learning" is more than "training" as it also includes things like;mentors and tutors within the organization, things that enable effective communicationamong workers, effective help in problem solving when it is needed and it also includestechnological tools.
2	Business processes	This perspective deals with internal business processes. Metrics based on this perspectiveallow the managers to determine how effectively their business is operating and whether itsproducts and services are meeting customer requirements. These metrics have to be carefullydesigned by those who are most familiar with these processes. In addition to the strategic management process two kinds of business processes may beidentified: core business focused processes; and support processes. The support processes are often more repetitive in nature, and hence easier to measure andbenchmark using generic metrics. However, the changing nature of facilities managementsince the introduction of the balanced scorecard means that the two types of processes cannotnow be treated in isolation.
3	Customer focused	The importance of customer focus and customer satisfaction in any business might be regardedas self-evident. If customers are not satisfied, they will eventually find other suppliersthat will meet their needs. Poor performance from this perspective is seen as an indicatorof potential future decline of the business even though the current financial situationmay look good. In developing metrics from this perspective, customers should be analyzedin terms of sector, organizationalsimilarity and the kinds of processes for which the productor service is being provided.

4	Financial	It is important to note that within the balanced scorecard system Kaplan and Norton donot disregard the need for traditional financial data. Accurate data, which is available asand when needed, should always be a priority. The argument is, however, that emphasis onfinancial data alone leads to the unbalanced situation with regard to other perspectives. It isthis that the balanced scorecard system seeks to address

Source: Michael Pitt (2008)

The BSC idea is to communicate a holistic model, linkingindividual efforts and accomplishments to business-unitobjectives because the concept of balance is central tothe system, specifically relating to three areas (Johanson,Skoog, Backlund & Almqvist, 2006) as showed in Figure 4.In 1993 Kaplan and Norton provided some step-by-stepapproach of balanced scorecard.

Figure 4: Balance in the Balanced Scorecard



As described by Kaplan and Norton, the balancedscorecard enables companies to track short-term financialresults while simultaneously monitoring their progress inbuilding the capabilities and acquiring the intangible assetsthat generate growth for future financial performance. Itsaim is to ensure that a broader and more balanced view istaken of the factors affecting business performance. Thisreplaces the focus on financial indicators alone, whichcould lead to short-term decisions, over- investment ineasily valued assets through mergers and acquisitionswith readily measurable returns, and underinvestment inintangible assets, such as produce and process innovation,employee skills and motivation or customer satisfaction,whose short-term returns are difficult to measure.

The balanced scorecard is, however, not simply a measuringdevice. It can and should be used as a fundamentalapproach to managing a business by ensuring thatstrategic goals in key performance areas are defined andcommunicated to all employees. If this is done, individualgoals can be aligned to corporate goals within a clearlydefined framework, which can also be used as a basis formeasuring, rewarding and improving their performance.

METHODOLOGY

The steps required to introduce and operate a balancedscorecard approach are listed in Figure 5.

Figure 5: Steps of Balance Score Card Approach

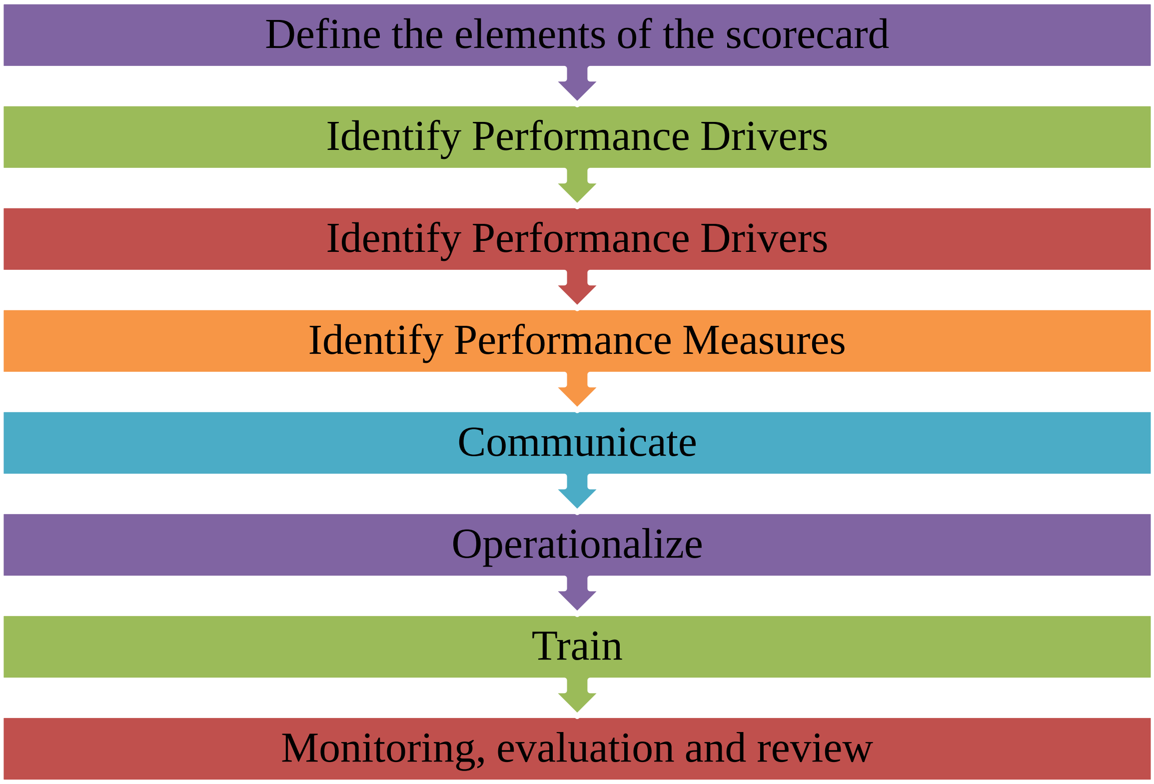


Table 2: Balance score card and application

Author	Year ofPublication	Sector/Area/ Application	Application of Balance Score Card
Hasan, H. and Tibbits, H. R.	2000	Strategic management of electronic commerce	This paper discusses a case study of the implementation of the balanced scorecardin a public utility and that will be analysed to suggest how the basic concepts andphilosophy of the balanced scorecard can be retained in its adaptation to the strategicmanagement of electronic commerce.
Turner, G.	2000	Human Resource Accounting	This paper considers, in relation to the human element of an organization, howit may be possible to strengthen the innovation and learning perspective of thebalanced scorecard, where the knowledge and skills of employees are the principalasset of an organization. This model may well be considered the beginningof Puxty's (1993) long road in search of a planning, control and performancemeasurement system that accounts for the human element of an organization'sintellectual assets.
Olsson, B, Karlsson, M. and Sharma, E.	2000	Telecommunication Firm Ericsson	This paper explores the links between aspects of the implementation of BSC withobservations with the help of theories of organizational change.

Johnsen, A.	2001	Public management	In this study it is argued that positive agency theory is a relevant theoretical perspectivein studies of the balanced scorecard in business management becauseagency theory addresses implementation and organizational control issues.
Rodney A. Stewart, Sherif Mohamed	2001	Construction	This paper looks at potential applications and benefits of using the BSC as aframework to evaluate the performance improvement resulting from IT/IS implementationby a construction organization. The paper firstly seeks to adapt theoriginal BSC concept to construction and then attempts to develop a performancemeasurement framework in the form of a tiered “Construct IT” BSC.
Chua, C. C. and Goh, M.	2002	Hospitals	This paper discusses a specific case study of a public sector hospital in Singaporeis provided to illustrate how the SQA and the BSC can be integrated to help a publicsector hospital implement and manage performance-based programs. Throughthis framework, hospitals can make better quality decisions based on structuredmeasurement and knowledge
Carmona, S and Grönlund, A	2003	Swedish Law Enforcement	This paper discusses implementation of the balanced scorecard in police workthis study details concern about the aggregation of non-financial performancemeasures.
Dabhilkar and Bengtsson, L	2004	Manufacturing companies	This paper illustrates how strategic continuous improvement (CI) capabilitieswere developed in three Swedish manufacturing companies that have implementedthe Balanced Scorecard (BSC).
Kettunen, J and Kantola, I	2005	Management information system	This paper concludes that the balanced scorecard approach is useful not only inaccomplishing the objectives, measures and targets of the institutional strategybut also in the planning of the management information system.
Kaplan, R. S	2005	McKinsey 7-S model	This paper indicates that the BSC model as the contemporary manifestation ofthe 7-S model, helping to explain its popularity as a practical and effective toolfor aligning all the organizational variables and processes that lead to successfulstrategy execution.
Gibler, R. R.	2006	Distribution facility locations	The paper gives examples of how one company identified their key performanceindicators and applied them to the facility closure decision-making process.
Funck, E.	2007	Healthcare organizations	The study indicates that different interests that are made visible within the perspectivesof the BSC without giving priority to one interest over another.
Simmons, J	2008	Stakeholder accountable performance management systems	The paper identifies the concept of the responsible organization as a means ofassessing organizational maturity in performance management, and links it to dimensionsof organizational justice.
Chavan, M	2009	Australian organisations	The paper concludes that the balanced scorecard approach may require somesubstantial changes in culture within the organization. The balanced scorecardrequires understanding, commitment and support from the very top of the businessdown.
Yongvanich, K and Guthrie, J	2009	Thai stock exchange	The study found no significant association between types of BSC usage and companysize. Also, the extent of BSC use is not significantly different between differenttypes of BSC usage. Further, the extent and manner of BSC use are notsignificantly associated with

			all performance variables.
Foster, A. et al	2010	Foster and Ferguson-Boucher at Aberystwyth University.	This study identified compatibility between the principles identified in the FosterFerguson-Boucher (FFB) model and the principles associated with the balancedscorecard (BSC) technique and Broady-Preston's earlier work. Bringing togetherthe FFB model and the BSC technique the resulting matrix, the Information SituationScorecard.
Aidemark, L. G	2010	Hospital privatisation	This paper discusses the balanced scorecard (BSC) with the attempt to controlboth volumes and health care quality delivered by the private competing contractors.
Lee, J. K and Morrison, A. M.	2010	Web site performance	This paper attempts to use BSC approach to measure the overall effectiveness ofthe hotel websites, by comparing hotel websites in South Korea and USA.
Jafari. M., Rezaeenour, J., Akhavan, P., and Fesharaki, M. N.	2010	Aerospace industries	The analytical approach identifies eight issues as critical success factors of theknowledge strategy map in this case study. The overall results from the case studyare positive as well, thus reflecting the appropriateness of the suggested SKMMmodel.
Schneider, R. and Vieira, R.	2010	Wind-farm company	The paper identifies the main issues related to performance measurement andpresents a BSC designed for a wind-farm company.
Yu-Jia Hu, Yi-Feng Yang, and Majidul Islam	2010	Manager-Employee Relationship	The findings supported the hypothesis that there is a positive and statisticallysignificant relationship between sales managers' transformational leadership andsales associates' job satisfaction. The result identified the predictors of sales managers'transformational leadership on the sales associates' job satisfaction throughregression analysis
Smandek, B., Barthel., A., Winkler, J. and Ulbig, P.	2010	Intellectual property (IP) rights	The BSC approach implemented in this paper provides guidelines to reconcileseemingly conflicting requirements for a public entity while at the same time generatingeconomic benefits in terms of additional income from licensing.
Rasila, H., Alho, J. and Nenonen, S.	2010	Operationalizing FM strategies	The paper illustrates how the balanced scorecard can be used in the workplacenetwork. An exemplary goal is derived to the level of numeric measure.
Bigliardi, B. and Dormio, A. I.	2010	R&D	The preliminary result obtained from this case study, that is a BSC model suitablefor R&D, helps in the development of a general BSC model to be tested on a widesample of firms that actively operate in the R&D field.
Zandi, F. and Tavana, M	2010	Electronic business process management (e-BPM)	A case study is presented to demonstrate the applicability of the proposed frameworkand to exhibit the efficacy of the procedures and algorithms. The contributionof the proposed method is threefold: it is grounded in the four perspectivesof a BSC, it considers imprecise or vague judgments which lead to ambiguity inthe decision process, and it uses a meaningful and robust multi-objective modelto aggregate both qualitative judgments and quantitative data.
Agostino, D. and Arnaboldi, M.	2011	Non-financial companies	The results show the interdependence between the change process, which is influencedby organizational forces, and its outcome.
David Longbottom, and Julie Hilton	2011	Financial services sector	The paper found that service improvement initiatives have focused on the use ofpopular business models, SERVQUAL, balanced scorecard, and European BusinessExcellence Model. Results show that

			participant perceptions towards thesemodels are generally negative, with a high incidence of failure to achieve expectedresults and negative organizational consequences.
Huang. H. C., Lai. M. C., and Lin, L.H.	2011	Biopharmaceutical firm	The study concludes with implications for theory, research, and practice. Its resultsprovide a logical and reliable way for individual business units to describeand implement their strategies.
Seyedhosseini, S. M., Taleghani, A. E., Bakhsha, A., and Partovi, S.	2011	Auto part manufacturers.	In this research, a systematic & logical method is introduced for the auto part manufacturersto enable them to extract and set criteria for being lean by using the conceptof balance scorecard. There is a cause & effect relationship among the objectivesand draw a lean strategy map for the organization. This will help an organizationto improve criteria selection strategy by using the higher weighted lean objectives.
Northcott, D. and Smith, J.	2011	Performance of New Zealand board	The proposed BSC for the study incorporates multi-dimensional outcome (i.e.lagging) measures. It also recognizes the importance of including subjective measures,rather than focusing on readily quantifiable measures that board membersperceive as less informative.
Garengo, P. and Biazzo, S.	2012	Small and medium-sized enterprises (SMEs)	The authors identify a circular methodology to implement a strategically alignedPMS in SMEs. The proposed methodology is based on the balanced scorecardmodel and features four main phases: (1) the analysis of current 'individual dashboards'to actually show the performances that are kept under control; (2) theclarification of the key success factors (critical success factors (CSFs)) underlyingthe measures under control; (3) the definition of the desired strategy map asa result of the comparison between CSFs that are currently under control and thedesired strategy; (4) the translation of the desired strategy map into a dashboard ofindicators necessary for the implementation of the strategy. The identified implementationprocess features key aspects, connecting the actual strategy with theintentional strategy and engaging SMEs in a process of observation and clarificationof their future vision.
Danaei, A. and Hosseini, A.	2013	Pipe company.	The proposed study of this paper investigates the existing strategic objectives inthe strategy map of a pipe company located in city of Shiraz, Iran. The resultsof our study indicate that the firm could reach 41.4% of its financial objectives,87.38% of its customers' requirements, 66.13% of internal processes and 70.94%of its learning necessities according to four major BSC requirements. In summary,the firm could reach 66.45 % of its requirements during the fiscal year of 2011.
Memari, F., Momeni, M., and Ghasemi, A. R.	2014	Application of synthetic technique	Some indexes are necessary for performance evaluation of a managementsystem. Balanced scorecard (BSC) is used in order to extraction of theseindexes for evaluating the necessary performances in the evaluation process.Utilization of BSC causes to prevent in increasing information and data. Furthermore,all of the important indexes are considered in evaluation performance.Data envelopment analysis (DEA) is applied for evaluating the system performance.It is a

			non-parametric method based on linear programming. This methoduses multiple inputs and outputs indexes. Synthetic application of BSC-DEA causes the weak points of each methodis enveloped using strong points of another one. In the other hand a systematic relation between the methods can be created.In this paper, the BSC-DEA techniques are considered in order to improvethe systems performance, synthetic application of BSC and DEA are consideredand reviewed
Valmohammadi and Ahmadi	2015	Petrochemical Company	This paper is to present a holistic approach regarding evaluation of knowledgemanagement (KM) practices on organizational performance. The effects of sevencritical success factors (CSFs), namely leadership role, organizational culture,KM strategy, processes and activities, training and education, information technology,and motivation and rewarding system, on organizational performance inthe framework of four perspectives of balance scored card (BSC) approach weresurveyed.

CONCLUSION AND SUGGESTIONS

Organisations understand that in order to thrive in acompetitive environment, they must make their processesdeliver products and services better, faster, and cheaper.It is crucial for leaders to monitor performance in orderto make correct and timely management decisions.Increasing competition and globalization of markets hasled organizations to strive to differentiate themselvesfrom their competitors. Markets are driven more byvalue than cost, forcing organizations to consider quality,customer service, response and other such attributes. Thischange of focus has generated the need for performancemeasures to facilitate the control of these attributes(Bourne *et al.*, 2000). Performance measurement is nota one-off activity and should be viewed as a continuum.Measurement and using its output is an on-going effortto identify performance levels against a set of expectedbaseline performance by meshing strategy with realityand aligning people with goals

Measurement is at the core of process and performancemanagement and is a key enabler for developingand executing organizational strategies and businessgoals. The Balanced Scorecard assists organizationsin overcoming two fundamental problems: effectivelymeasuring organizational performance and successfullyimplementing strategy.

Finally, this paper stressed the importance of the word*balance* in the Balanced Scorecard. It represents thebalance among:

1. Financial and nonfinancial indicators
2. Internal and external constituents of theorganization
3. Lag and lead indicators

This paper highlights the various applications of balancescore card which indicates that the approach is most widelyaccepted for organizational performance in all contextsand almost in every field or sectors. The most importantmanagerial implication of the BSC is that it makespossible to evaluate managerial activities from a broadviewpoint, by looking at both tangible financial aspectsand intangible nonfinancial aspects. BSC having its rootin practical application provides a means of measuringorganizational performance in the new age. Organizationshave been using it for two different but related purposesone for controlling the organization and other as astrategy implementation tool. BSC tries to provide abalance measure of control between past performancesindicators (measured by financial perspective) andfuture performance indicators (measured by other threeperspectives viz. Customer, internal business processesand learning and growth). Strategy implementation hasalways been a complex issue for companies as reflected inlow success rate of implementation. BSC gives solutionto the problems related to strategy implementation (viz.linking strategy to organizational goal, bringing all onboard, establishing cause and effect relationship, adaptivelearning or double loop learning.

Upcoming research area could be identifying variables ormeasures under each perspective highlighted in the paperand linking the same with organizational performanceboth in short term and long term using techniques likestructural equation modeling.

REFERENCES

- Adrien, C., Mark, G., & Sin-Hoon, H. (2009). Performancemeasurement in supply chain entities: balanced scorecardperspective. *Benchmarking: An InternationalJournal*, 16(5), 605-620.
- Agostino, D., &Arnaboldi, M. (2011). How the BSC implementationprocess shapes its outcome. *InternationalJournal of Productivity and Performance Management*,60(2), 99-114.
- Aidemark, L. G. (2010). Cooperation and competition:Balanced scorecard and hospital privatization.*International Journal of Health Care QualityAssurance*, 23(8), 730-748.
- Bititci. (2006). Dynamics of performance measurementand organizational culture",*International Journalof Operations and Production Management*, 26,1325-1350.
- Bourne, M. (2005). Researching performance measurementsystem implementation: The dynamics of successand failure. *Production, Planning and Control*, 16(2),113-124.
- Bourne, M. C. S., Kennerley, M., & Franco-Santos, M.(2005). Managing through measures, a study of impacton performance. Journal *of Manufacturing TechnologyManagement*, 16(4), 373-395.

- Bourne, M. C. S., Mills, J. F., Wilcox, M., Neely, A.D., & Platts, K. W. (2000). Designing, implementing and updating performance measurement system.*International Journal of Production and OperationsManagement*, 20(7), 754-771.
- Bourne, M., Melnyk, S., & Faull, N. (2007). The impactof performance measurement on performance.*International Journal of Operations & ProductionManagement*, 27(8), 781-3.
- Paul, R., and Putterill, M. (2003). An integral frameworkfor performance measurement. *Management Decision*,41(8), 791-805.
- Simmons, J. (2008). Employee significance within stakeholder-accountable performance management systems.*The TQM Journal*, 20(5), 463-475.
- Sink, S., & Tuttle, T. (1989). Planning and measurement inyour organization of the future. *Industrial Engineeringand Management Press*, Norcross, GA.
- Smandek, B., Barthel, A., Winkler, J., &Ulbig, P. (2010).Balanced score card implementation for IP rights managementin a public research institution. *MeasuringBusiness Excellence*, 14(4), 65-75.
- Taticchi, P., Cagnazzo, L., & Brun, A. (2010). The roleof performance measurement systems to support qualityimprovement initiatives at supply chain level.*International Journal of Productivity and PerformanceManagement*, 59(2), 163-185.
- Turner, G. (2000). Using human resource accounting tobring balance to the balanced scorecard. *Journal ofHuman Resource Costing & Accounting*, 5(2), 31-44.
- Valmohammadi, C., & Ahmadi, M. (2015). The impactof knowledge management practices on organizationalperformance: A balanced scorecard approach. *Journalof Enterprise Information Management*, 28(1), 131-159
- Wisner, J., & Fawcett, S. (1991). Link firm strategy tooperating decisions through performance measurement.*Production and Inventory Management Journal*,3, 5-11.
- Wouters, M., &Wilderom, C. (2008). Developing performancemeasurement systems as enabling formalization:A longitudinal field study of a logistics department.*Accounting, Organizations and Society*, 33(4-5),488-515.
- Yang, H., John, F. Y. Y., Albert, P. C. C., Chiang, Y. H.,& Daniel, W. M. C. (2010). A critical review of performancemeasurement in construction. *Journal ofFacilities Management*, 8(4), 269-284.
- Yongvanich, K., & Guthrie, J. (2009). Balanced Scorecardpractices amongst Thai companies: performance effects.*Pacific Accounting Review*, 21(2), 132-149.
- Zandi, F., &Tavana, M. (2011). A fuzzy multi-objectivebalanced scorecard approach for selecting an optimalelectronic business process management best practice(e-BPMBP). *Business Process Management Journal*,17(1), 147-178.