



Performance measurement and management frameworks

Research trends of the last two decades

Research trends
of the last
two decades

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Abstract

Purpose – The purpose of this paper is to provide an integrated framework of performance management area showcasing research trends in performance measurement and management frameworks developed and discussed by revisiting the literature of the last two decades – from 1991 to 2011.

Design/methodology/approach – This paper provides a comprehensive review (excluding management control systems) of the performance measurement and management frameworks/systems/models developed in the last two decades, which helps to highlight the research trends related to performance management frameworks. The methodology for literature review is chronological review where it is divided into two periods – 1991-2000 and 2001-2011.

Findings – This paper portrays the developments that happened in performance measurement and management via looking at performance management frameworks and an analysis that reveals the research trends carried out in the last two decades, indicating paradigm shifts such as from a financial perspective to an integrative perspective (era 1991-2000), from an operational perspective to a strategic perspective, the utilization of systems and simulation techniques (era 2001-2011), etc. These shifts have led to the development of effective, integrated, and dynamic performance measurement systems.

Research limitations/implications – The frameworks/models related to management control systems and the trends related to performance control systems have not been discussed here and they require further research in future studies.

Originality/value – There is very limited work available in the literature that discussed specifically the performance management and measurement (PMM) frameworks/models and systems; most of the previous work talks about developments only till 2000. This paper gives a snapshot of the researchers in the field of PMM regarding the developments and transformations in the frameworks for enterprises for the period 1991-2011, thus incorporating recent developments as well.

Keywords Performance measurement, Performance management, Performance management frameworks, History of performance measurement

Paper type Literature review

It is not the strongest of the species that survives, nor the most intelligent that survives. It is the one that is the most adaptable to change (Charles Darwin).

Introduction

It is a common agreement that business environment is constantly changing. According to Huyett and Viguerie (2005), the combined pressure of global competition, technological advancements, interconnectivity and economic liberalization have made the life of organizations tougher than ever before. Changes in business ecology emphasize the need for value creation and developing and sustaining competitive advantages, in turn transforming the way enterprise performance measurement



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was done. In this dynamically changing business environment, the adoption of appropriate performance management and measurement (PMM) framework has been realized as one of the major challenges. The product manufacturers and service providers are largely service operations; so traditional accounting measures, as cost schedules, variance reports, profit and loss statements, etc. and the static view of costs are no longer appropriate in modern business environment (Quinn *et al.*, 1990). The words of Eccles (1991, p. 131) in his article "Performance measurement manifesto" seem true: "Within the next five years, every company will have to redesign how it measures its business performance".

Traditional financial performance measures have been highly criticized in the literature (Hayes and Abernathy, 1980; Dixon *et al.*, 1990; Bititci, 1994) and researchers have identified the need to integrate other non-financial perspectives, such as strategic, operational, quality perspectives, as complementary to the financial perspective. As per the MORI (1996) survey, "72 per cent of business leaders agree that a successful business will better serve its shareholders by focusing on the needs of its customers, employees, suppliers and wider community".

This paper is an attempt to understand and analyze the historical developments made in terms of PMM frameworks in the last two decades, as also delving into the trends presented in research and the changes in these trends observed in this period. The authors have chosen a timeline of the last two decades, i.e. from 1991 to 2011, due to the performance measurement revolution that came in this era, thereby changing the nature of work, increasing competition, bringing about specific improvement initiatives as well as national and international quality awards, changing organizational roles, changing external demands, and highlighting the power of information technology (IT), all of which have dramatically changed the way enterprise performance was measured (Neely, 1999). The rationale for selecting these two particular decades, i.e. 1991-2000, and 2001-2011, is that revolutionary changes in the PMM framework had taken place post 1990s – before that enterprise performance was only restricted to annual reports and financial figures. The research interest in performance measurement and management has notably increased in the last two decades (Taticchi, 2008).

This piece of work presents a comprehensive view (excluding management control systems) about the developments as well as transformations done in the last two decades and will be helpful for future researchers to understand better about the area of performance measurement and management for enterprises. The objective of this paper can be summarized as follows:

The objective of the study is to provide an integrated framework of performance management through understanding the research trends in the last two decades by reviewing the literature of PMM frameworks/models and systems[1].

The rest of this paper is structured in four main parts. The first part deals with the methodology for carrying out the literature review for selecting research works for this paper. Before discussing about frameworks, there is a discussion about the history of PMM; dealing with transitions has been put under the second part. The third part explores research trends of PMM frameworks developed in 1991-2000. The fourth part exhibits the research trends of PMM for the period 2001-2011. This review explores research trends and transformations made in the last two decades and helps to delineate future research prospects related to PMM.

Methodology of literature review

Before leading to the methodology of literature review, it is imperative to clarify some important terms, i.e. “performance”, “performance measurement” and “performance management”. Lebas (1995) stated that performance is about capability, performance is about future. He attempted to define performance: “performance is about deploying and managing well the components of causal model(s) that lead to the timely attainment of stated objectives within constraints specific to firm and to situation” (Lebas, 1995, p. 29). Thus, performance is case-specific and decision-maker-specific. Now, the question posed here is whether performance measurement and performance management are separate. The literature highlights some different definitions related to these two terms: as per Neely’s (1995) definition, performance measurement is a process of quantifying the efficiency and effectiveness of action, whereas Bititci *et al.* (1997) defined performance management as a process by which the company manages its performance in line with its corporate and functional strategies and objectives. But here the argument given by Lebas (1995), which is: “performance management precedes and follows performance measurement, in a virtuous spiral and performance management creates the context for measurement, so they are not separable” (Lebas, 1995, p. 34). As this paper is highlighting performance management frameworks presented in the literature, these two terms have been used collectively.

For this paper, the literature of the last two decades, i.e. 1991-2011, was explored[2] and chronological literature review methodology was adopted. The developments in the era before the 1990s have been presented in the section related to history of performance measurement and management. The purpose of dividing the study in two periods, i.e. 1991-2000 and 2001-2011, is that it will be helpful to understand the developments/transformations in trends of PMM over a period of time.

Electronic research database, such as EBSCO host, Proquest Science, Emerald Full-text, and Elsevier’s Science Direct, were reviewed with keywords including performance management frameworks/models/systems, updates in performance management systems and updates in balanced scorecard (BSC). During the selection of the literature, it was found that it covered many disciplines, such as operations management, management accounting, strategic management, organizational management, etc. and the journals’ coverage was very diverse. The abstracts of the papers were reviewed to identify whether the study had discussed new issues related to performance management frameworks/systems and whether they had been incorporated in the study. The final list of frameworks/models/systems for review was purposefully selected with the agreement of some of the classical and recent literature (Ghalayini and Noble, 1996; Neely *et al.*, 2000; Marr and Schiuma, 2003; Yenyurt, 2003; Tangen, 2004; Garengo and Bititci, 2005; Taticchi and Balachandran, 2008; Srimai *et al.*, 2011). There were many articles discussing variants of performance management frameworks/models/systems (e.g. first, second, and third generation of BSC) but those have not been included in the scope of this paper. Only those articles discussing the original work related to framework/model/system are considered here. The literature related to management control frameworks/system is not in the scope of study.

History of performance measurement and management

Performance measurement has its own history that dates back to the early nineteenth century. This section provides a snapshot of the history and transitions made in

performance measurement practices for an enterprise. This snapshot deals largely with the pre-1990s era. Figure 1 shows an integrated view of history and transitions of PMM.

It has been clearly stated that early nineteenth century traditional management accounting-based performance measures and cost accounting were considered to measure the performance. But cost management practices proved inadequate and misleading as they did not trace the cost of products, activities, processes and cost of quality, and instead focused on controlling processes in isolation (Bititci, 1994). Early activity in the 1920s was the work of Du Pont Corporation in developing return on investment (ROI) calculations that led the pyramid of financial ratios (Groppelli and Ehsan, 2000) which are still extensively used as a diagnostic tool for the measurement of the financial health of an enterprise.

Gradually executives realized that financial accounting measures such as ROI and earning per share gave misleading signals to innovation and continuous improvement activities which are demanded by today's competitive environment. Tableau de bord, an innovation by French engineers, emphasized a marriage between financial and non-financial measures, thereby taking more care of daily operations and less of strategic issues (Epstein and Manzoni, 1997).

Some other initiatives such as social accounting (process of communicating social and environmental effects of organization's economic actions to society at large; Gray *et al.*, 1987), strategic management accounting (incorporating longer term outlook and a generic approach to accounting for strategic positioning; Simmonds (1981)), activity-based costing (determining the product cost on the basis of activities exist to support production and delivery of goods and services; Cooper and Kaplan (1988)), had supported the importance of other aspects of performance beyond financial and accounting measures.

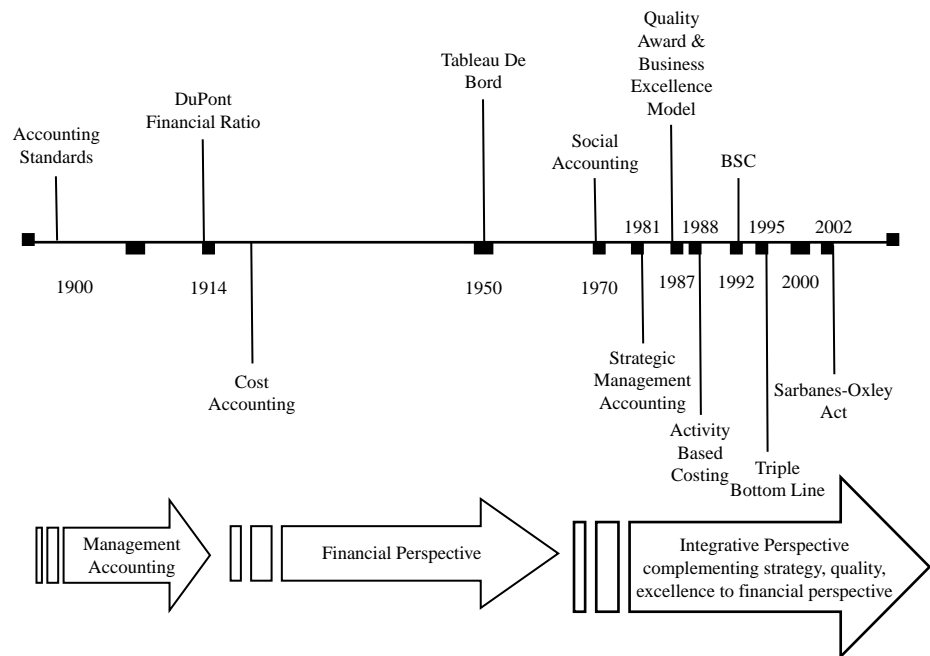


Figure 1.
Transitions of
performance measurement
and management

Post 1985, some quality and excellence awards such as Malcolm Baldrige National Quality Award (1987), European Foundation for Quality Management (EFQM) (1988) and Deming Prize have driven organizations to bring quality and excellence as a measure of higher performance since these awards were made for “contribution to quality and dependability of products” (Deming, 1986).

Revolution has been brought by Kaplan and Norton (1992) by introducing BSC which proved to be complementary to financial measures by bringing operational and strategic measures of performance. Although many researchers (Skinner, 1974; Banks and Wheelwright, 1979; Hayes and Abernathy, 1980) have analyzed to think beyond financial measures, Kaplan and Norton identify financial performance as a lagging indicator which depends on leading factors (customer satisfaction, quality, innovation, excellence and improvement activities) of performance. The integration of non-financial measures, such as quality, innovation activities, strategic orientation and business excellence models, with traditional financial measures has brought the integrative perspective of performance management, which is an important phase of revolution of PMM for enterprise.

The three transition phases – management accounting perspective, financial perspective and integrative perspective – have been shown explicitly in Figure 1. The important milestones of revolution can be identified as quality awards, business excellence models and BSC. These have made drastic changes in the way enterprise performance was traditionally measured and they have received considerable discussion in PMM literature.

The concern of sustainability for the corporations, impact on society and environment, economic growth, social progress and environmental health has brought out a concept named triple bottom line (TBL). The TBL is a framework for measuring and reporting corporate performance against economic, social and environmental parameters (Elkington, 1997). This framework concerns people, planet and profit (PPP) related to the performance of an enterprise. It emphasizes that profit is not the only concern of any enterprise; environmental and social obligations also form vital driving factors for higher performance.

Thus, some of those incremental developments happened before the 1990s – Tableau de bord, Du Pont financial ratio, activity based costing and revolutionary developments which were largely happened post 1990s in the form of BSC, PPP, some business excellence awards – brought drastic changes in the way performance measurement was done for an enterprise. The following sections discuss trends of measurement and management exclusively for the era post 1990s.

Research trends of performance measurement and management frameworks: 1991-2000

“What gets measured gets done” portrays the half-truth of measurement. In the 1990s, the focus shifted to: “how to manage what is measured”. The main objective of any performance measurement system is to encourage proactive rather than reactive management (Bititci, 1994). The need for relevant, integrated, balanced, strategic improvement orientation has been realized in numerous publications (Johnson and Kaplan, 1987; Drucker, 1990; Russell, 1992). The introduction of new management techniques like just-in-time (JIT), business process reengineering (BPR) and total

quality management (TQM) have brought momentum for developing new performance measurement systems (Johnson, 1992; Watson, 1993).

This section highlights details about PMM frameworks developed in the period 1991-2000, where the discussion is related to issues highlighted, contribution(s) as well as limitation(s) of the frameworks selected. A summary of PMM frameworks/models/systems of the period 1991-2000 has been presented in Table I.

The incorporation of non-financial measures has been a great topic of interest throughout the 1990s (Medori and Steeple, 2000). Not only were non-financial measures considered, the quality of financial measures was also examined (Ittner and Larcker, 1998). Keeping some of these issues in mind, numerous developments were made in this era.

Results and determinants framework (Fitzgerald *et al.*, 1991) took a lead by incorporating leading and lagging indicators of performance. It was based on the assumptions that there are two types of performance measures in any organization – one is related to results and other is determinants of results, where they are lagging indicators whereas determinants are leading indicators. Very specific framework measures for time-based competition (Azzone *et al.*, 1991) considered some measures to pursue the strategy of time-based competition, but it failed to incorporate other non-financial performance measures.

To demonstrate a clear link between performance measures at different hierarchical levels of business processes and functional levels of any company, a performance pyramid, i.e. strategic measurement analysis and reporting technique (SMART) system, was proposed by Lynch and Cross (1991). The development of a framework starts with defining corporate vision and then translating business unit objectives. Operational measures and key performance measures are used to bridge the gap between the top level and operation floor. According to Ghalayini *et al.* (1997), its strength is that it integrates corporate objectives with operational indicators but it fails to provide a mechanism to identify key performance indicators (KPI).

Nanni *et al.* (1992) introduced the concept of integrated performance measurement where the emphasis has been put on service-oriented approach rather than product-oriented methods of traditional management accounting. This work has realized and re-emphasized to expansion of understanding of field of management accounting and to integrate it with strategic and operational perspectives to meet the needs of changing business environment.

The introduction of many quality awards is one of the major reasons for performance measurement revolution (Neely, 1999). The EFQM award is based on nine criteria related to enablers and results for self-assessment of any company. The popularity of the award is evident from the fact that there are around 529,000 references available on the web. So, these quality awards came up to bring substantial improvements in enterprise performance.

A revolutionary development in the 1990s was the introduction of BSC (Kaplan and Norton, 1992), which was listed as one of the 75 most influential ideas of the twentieth century by *Harvard Business Review* (Bible *et al.*, 2006). This framework proposed that the company should use a balanced set of performance measures incorporating financial and non-financial perspectives. This framework has been adopted by different types of organizations (Lucianetti, 2010) and several companies have reported improved operational efficiency and profitability as a result of using BSC (Atkinson and Epstein, 2000; Gumbus and Lyons, 2003). Kaplan and Norton (1996) have

Name of PMM framework	Author and year	Issue(s) highlighted	Dimensions of performance measures	Contribution(s)	Limitation(s)
Results and determinants framework	Fitzergald <i>et al.</i> (1991)	Identification of leading and lagging factors	Financial performance, competitiveness, quality, flexibility, resource utilization, innovation	It highlights that results are lagging indicators and determinants are leading indicators	Considerations of non-financial measures, stakeholders and their behavioral aspects related to performance have been neglected
Measures for time-based competition	Azzone <i>et al.</i> (1991)	Identification of time as a strategy of competitive advantage	R&D engineering time, sales and marketing order processing lead time	It reflects the efficiency and effectiveness of performance	Quantitative measures are not sufficient for performance management
Performance pyramid	Lynch and Cross (1991)	Identification of performance measures for organizational hierarchy	Market, financial, customer satisfaction, flexibility, productivity, quality, delivery, cycle time, waste	It ties together the hierarchical view of business performance measurement with the business process view	It does not provide any mechanism to identify key performance indicators (KPI) and does not explicitly integrate concept of continuous improvements
Economic value added	Stewart (1991)	Provides a measure of wealth creation	Financial measures	It gives an advantage over ROI as it aligns decision making with shareholder wealth	It is inadequate for measuring company's progress in achieving strategic goals
EFQM – excellence model	European Foundation (1991)	Organizational improvement through self-assessment	Leadership, people, policy and strategy, partnership and resources, processes, key performance results	It is a non-prescriptive framework based on nine criteria related to enablers and results for self-assessment to improve performance	It does not consider the dynamics of changing external environment
Balanced scorecard	Kaplan and Norton (1992)	Complements financial measures with non-financial performance measures	Financial, customer, internal processes, learning and growth perspectives	Most dominating and highly used performance measurement framework which highlights to consider non-financial measures compliment to financial performance measures	The problems to identify cause-and-effect relationships between linkages of different perspectives, static nature of performance measurement and major stakeholders related to performance are not adequately addressed

(continued)

Research trends of the last two decades

Table I.
Review of PMM frameworks/models/systems for the period 1991-2000

Table I.

Name of PMM framework	Author and year	Issue(s) highlighted	Dimensions of performance measures	Contribution(s)	Limitation(s)
Input-process-output-outcome framework	Brown (1996)	Highlights performance management as a process	^a -	It identifies the input, process, output, outcome performance measures	The mechanism is conceptually very appealing but it does not consider the dynamics of external environment
Consistent performance management system	Flapper <i>et al.</i> (1996)	Designing of performance management system (PMS) covering all aspects of performance relevant for organization	^a -	It describes the steps to develop consistent PMS by defining performance indicators (PI), relations between PI's and setting target values for PI's	The framework needs to be examined for general use
Integrated dynamic performance measurement system	Ghalayini <i>et al.</i> (1997)	Continuous performance improvement tool	Financial measures, customer satisfaction, cycle time, defect rate, quality, delivery, process technology, education and training	It helps for dynamic updating of general areas of success and associated performance measures and indicators	The framework is extensively for manufacturing based companies and its generalized application is not discussed
Shareholder value	Rappaport (1998)	Increasing wealth to shareholders	Financial measures	It gives principles for value creation that collectively helps any company to realize its potential for creating shareholder value	The other stakeholders as customers, employees are neglected
Dynamic performance measurement system	Bititci <i>et al.</i> (2000)	To bring in dynamics to performance measurement systems	^a -	It highlights the integration of IT for review mechanism, feedback loops and integrating changes in internal and external environment	The wider application of this framework is not highlighted in literature
Integrated performance measurement framework	Medori and Steple (2000)	Auditing and enhancing performance measurement systems	Quality, cost, flexibility, time, delivery, future growth	This is an integrated framework to audit and control the performance measurement system	For designing the PMS, very few competitive dimensions are considered
Quantitative models for performance measurement systems	Suwignjo <i>et al.</i> (2000)	Quantification of the effects of factors on performance	Cost (fixed, variable and total) per unit	It uses the quantitative methods for building the performance measurement system for organization	For subjective performance measures, this framework has limited mechanism

purported it as a strategic management system. The “balance” in BSC is supported by considering financial and non-financial measures, leading and lagging indicators and short- and long-term measures (Ahn, 2001).

Although it has got popularity, the literature highlights many shortcomings of BSC, such as a lack of stakeholder focus, static nature, lack of cause-effect relationships, clustering of performance measures, a closed system approach, difficulties in double loop learning, etc. (Atkinson *et al.*, 1997; Norreklit, 2000; Ahn, 2001; Akkermans and van Oorschot, 2005). Furthermore, Neely and Bourne (2000, p. 3) point out that “70 per cent implementation of BSC fail due to inappropriate design and implementation failure”. Norreklit (2000) extensively criticized BSC for its poor guidance on causality in terms of relationships between different measures. Mooraj *et al.* (1999, p. 481) state that:

[...] although surrounded by much publicity in both professional and academic circles, few organizations are yet in a position to quantify its benefits, therefore investing time and money for unquantifiable results.

But no doubt, it has drastically changed the way performance was measured and still it is one of the most dominant performance management frameworks. Now, performance is linked to the company’s vision, objectives and strategies – a shift in performance measurement from an operational perspective to a strategic perspective.

Seminal work has been done by many scholars to provide consistent, integrated and dynamic performance management systems (PMS) for enterprises. Flapper *et al.* (1996) presented a systematic method for designing a consistent PMS for practitioners. This system claimed to cover all aspects of performance that are relevant for an organization as a whole. Thus, it emphasized at (re)designing an effective, consistent PMS but the applicability of the framework in practice has not been widely recognized.

The major developments related to PMS were largely done in the context of manufacturing companies. Ghalayini *et al.* (1997) presented an integrated performance measurement system where the focus was to relate strategic areas of success with the performance of the company and allow dynamic updating of its general areas of success and associated performance measures. Thus, the concern for integrated approach and dynamism was incorporated in this development.

Bititci *et al.* (2000) argued that PMS needed to be dynamic enough to deploy changes in the internal objectives while being critical and sensitive to changes in the external and internal environment of the organization. Therefore, they proposed that dynamic PMS should have an external monitoring system, internal monitoring system, review system and internal deployment system. This framework emphasized the use of IT based systems, artificial intelligence and neural network technology to facilitate closed-loop control system. In this way, the research related to performance management framework led towards an integrated and dynamic approach.

One of the classical works related to auditing and enhancing PMS was carried out by Medori and Steeple (2000). They provided a six-stage plan for developing integrated performance measurement framework. The unique feature of the framework was that it could aid to set up a new PMS and had audit capability which could aid in examining the existing PMS. The major shortcoming highlighted was that the framework did not provide a mechanism to integrate dynamic and competitive dimensions.

Out of the various developments related to PMS which highlighted different mechanisms/steps for designing, auditing and enhancing performance measurement systems that took place during the 1990s, there was one set of research that highlighted different methods/tools for PMS. Suwignjo *et al.* (2000) looked into different techniques such as cognitive maps, cause-and-effect diagrams, tree diagrams and analytic hierarchy process for developing quantitative models for PMS. The benefits of this approach were that the factors affecting performance can be identified and quantified. The quantitative model would be valid as long as internal and external environments are stable. As for subjective performance measures, the study had a very limited discussion.

It can very well be stated that the era of 1991-2000 has witnessed numerous developments and transformations in performance management frameworks/models. It is worth noting that these developments were largely done in the context of manufacturing companies since operational measures have paramount importance for them. Similarity the selected frameworks implies that most of the frameworks' major concern is to provide a process or mechanism which helps management for competitiveness and long-term focus towards achievement of organizational objectives. The dimensions of performance measures covered by these frameworks are largely focus on financial measures, quality, people-related issues, customer satisfaction, competitiveness, etc. These measures witness a shift from purely financial perspectives to integrated perspective which is a major contribution of this era. As already mentioned, PMS needs to be proactive rather than reactive in nature; the concern to bring dynamic PMS has been highlighted very well in this decade. BSC has contributed to integrate strategic perspective with PMS, leading to the fulfillment of long-term objectives and the vision of the enterprise.

This decade provided revolutionary movements for enterprises to shift towards measurement and management from merely measurement and control. Researchers realized that an effective performance management is one which brings an entire organization in alignment with the purpose of creating business values (Aguilar, 2003; Kaplan and Norton, 2006). Literature has highlighted the application of quantitative and mathematical modeling techniques for the development of PMS. Figure 2 exhibits

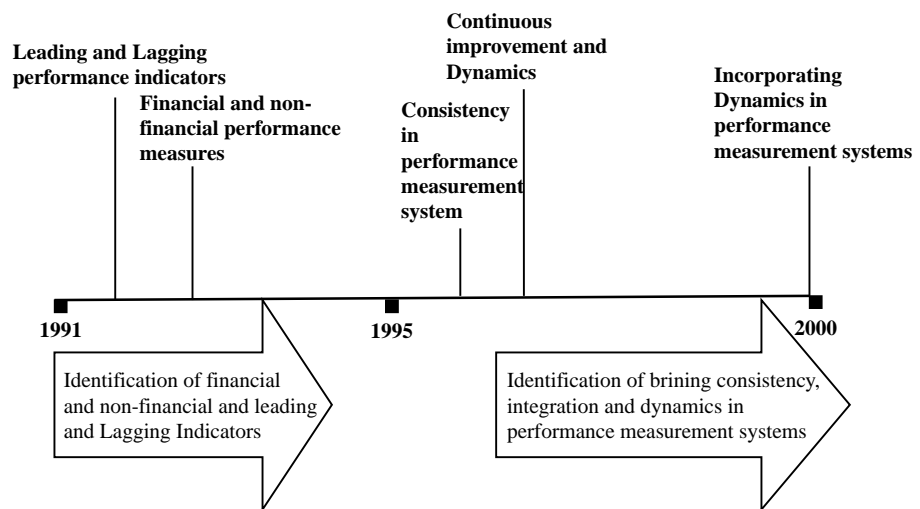


Figure 2.
Research trends of PMM
for the period 1991-2000

research trends highlighted in this decade in terms of the concerns and issues discussed by different frameworks/models.

There were still many issues which were at the back of the mind of researchers but not very explicitly highlighted in literature related to PMM. The concern for stakeholders like customers and employees had been taken care of in many frameworks but other stakeholders were still not being addressed very well. While concern for dynamism in this era was part of the research, there was a limited study on its scope in the future. It has been very well stated that now research related to PMM has reached the second generation where the diffusion and exploration of proactive PMS is the agenda. Criticisms and shortcomings of the BSC approach was also highly discussed in this research and its way forward in the era post 2000 was examined, as discussion for the next section.

Research trends of performance measurement and management frameworks: 2001-2011

The era post 2000 witnessed the opening up of broader avenues for researchers who were updating BSC as well as discussing other prime issues related to PMS to develop effective PMS for any enterprise. As the perspectives shifted from financial to integrated, some other issues were integrated in performance management frameworks. Table II summarizes the developments of the last one decade of PMM frameworks, their contributions, limitations and the issue(s) highlighted.

Literature argues that BSC has failed to consider many other important stakeholders in its framework (Sureshchandar and Leisten, 2005). Also, Neely *et al.* (2001) have argued that the only reason the organizations have strategy is to deliver value to a set of stakeholders. Performance prism (Neely *et al.*, 2001) integrates stakeholder perspective under five facets – stakeholder satisfaction, stakeholder contribution, strategies, capabilities and processes. Thus, the shift from merely looking for shareholders (financial perspective) to a set of stakeholders provides PMS a long-term focus. Literature highlights that a number of organizations have integrated social and environmental perspectives with their traditional perspectives, thereby thinking beyond merely making profits (Figge *et al.*, 2002; Lämsiluoto and Järvenpää, 2008). Some of the emergent management terms like corporate social responsibility (CSR), sustainability reports and international bodies such as International Organization for Standardization (ISO) compelled the companies to incorporate all stakeholders' perspectives into performance measures.

The era post 2000 brought out many developments updating the BSC approach. As it is well known that BSC is well used and often abused all over the world, many scholars have developed updated BSC frameworks. Kanji's business scorecard (Kanji and Sá, 2002), a highly discussed framework in literature, argues that BSC approach should be consistent with business excellence and TQM and companies need to consider:

- maximizing shareholder value;
- achieving process excellence;
- improving organizational learning; and
- delighting the stakeholders.

Which, in turn, would help to extend an understanding of the four BSC perspectives. This initiative integrated stakeholder approach but its emphasis was mainly on

Table II.
Review of PMM
frameworks/models/
systems for the period
2001-2011

Name of PMM framework	Author and year	Issue(s) highlighted	Dimensions of performance measures	Contribution(s)	Limitation(s)
The action-profit linkage model	Epstein and Westbrook (2001)	Identify, measure and understand causal links between actions and profit	Company actions, delivered product/services, customer actions, economic impact	It provides framework to manager to understand the linkages of actions within corporate functions to overall profitability and shareholder value	The practical application of model is not widely available
Performance prism	Neely <i>et al.</i> (2001)	The stakeholder orientation	Stakeholder satisfaction, stakeholder contribution, strategies, processes, capabilities	It highlights comprehensive view of different stakeholders related to the performance of any enterprise and new stakeholders (potential customers, alliance partners or intermediaries) are also considered	It gives little way about how performance measures are being realized and hardly any consideration is given related to use of the framework for existing PMS
Kanji's business scorecard	Kanji and Sá (2002)	Overcoming the weakness of BSC	Stakeholder values, process excellence, organizational learning, delighting stakeholders	It looks for process excellence, organizational values and learning and delighting stakeholders	This scorecard focuses mainly on the external stakeholders
Beyond budgeting	Hope and Fraser (2003)	Devolving authorities to employees and making adaptive management process	^a —	It gives a process to devolve authorities to employees and designing an adaptive management process for flexible organizational structure	The main emphasis is on shareholders, other stakeholders are not adequately addressed

(continued)

Name of PMM framework	Author and year	Issue(s) highlighted	Dimensions of performance measures	Contribution(s)	Limitation(s)
Dynamic multi-dimensional performance framework	Maltz <i>et al.</i> (2003)	Thinking beyond BSC and integration of people development	Financial, market, process, people and future	It integrates people development and future measures perspectives with BSC perspectives	The implementation of framework is not adequately addressed
The performance planning value chain	Neely and Jarrar (2004)	Extracting value from data	^a	It provides a systematic process for extracting value from data for adding knowledge and sustainable experience	It is just a concept given, no empirical validation is presented
Holistic scorecard	Sureshchandar and Leisten (2005)	Integrated scorecard for measuring and managing business performance	Financial, customer, business process, intellectual capital, employee and social perspectives	It highlights six perspectives of performance – financial, customer, business process, intellectual capital, employee and social	The generalization of the framework is not discussed
Total performance scorecard	Rampersad (2005)	Integrating personal and organizational performance	Financial, customer, internal, knowledge and learning perspectives, process improvement, personal improvement	It integrates personal and organizational scorecard with PDCA (plan, do, check, act) cycle, talent development cycle and Kolb's learning cycle	The insights are built from experience, no empirical validation is presented
Holistic performance management framework	Anderson <i>et al.</i> (2006)	Holistic performance management	Stakeholder, market, supply chain management, value creation	It encompasses diverse areas that need to play together and reinforce each other to give full effect to organization	The framework is developed on the basis of pilot study and needs to be further tested

(continued)

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Table II.

Table II.

Name of PMM framework	Author and year	Issue(s) highlighted	Dimensions of performance measures	Contribution(s)	Limitation(s)
Flexible strategy game-card	Sushil (2010)	Dual perspective of performance	Situation, actors, process, performance, value in offerings and relationships	This is an attempt to provide a holistic, integrated and dynamic view of performance management which highlights the importance of dual perspective of performance, i.e. enterprise perspective and customer perspective	Recent development, needs empirical validation
"System dynamics-based" balanced scorecard	Barnabe (2011)	Matching traditional BSC approach with system dynamics principles	Financial, customer, internal process, learning and growth	It provides a mapping tool for more comprehensive design of strategy map	The focus of the tool is largely on service based business which is very difficult to apply as generalized
Proactive balanced scorecard	Chytas <i>et al.</i> (2011)	Using fuzzy cognitive map (FCM) and simulations	^a –	It addresses the problems of BSC and overcoming it by generating dynamic networks, simulating key performance indicators	It needs empirical validation
Sustainability performance measurement system	Searcy (2011)	Reviewing and updating of corporate sustainable PMS	^a –	It provides a conceptual framework to structure the process of updating a corporate sustainability performance measurement system	The conceptual framework needs an empirical validation

Note: ^aSpecific dimensions of performance are not defined

external stakeholders. The other developments updating BSC approach, as holistic scorecard (Sureshchandar and Leisten, 2005) extended BSC perspectives by integrating intellectual capital perspective, employee perspective, and social perspective, and thus addressed the need to integrate all stakeholders.

Total performance scorecard (Rampersad, 2005) integrated personal and organizational scorecard with the plan do check act (PDCA) cycle, talent development cycle and Kolb's learning cycle and thus integrated the personal ambitions with shared ambitions, leading towards higher performance and continuous learning and improvement. The conceptual insights were built on experience but no validation of the framework was discussed in literature. Some recent developments highlighted application of systems methodology and fuzzy logic to better utilize the BSC approach. Barnabe (2011) utilized the system dynamics methodology to develop BSC and realized that feedback loop learning, dynamic strategy maps and management flight simulators help to provide better support for decision-makers facing complex and dynamic domains. The fuzzy logic view for proactive BSC (Chytas *et al.*, 2011) proposes the methodology to draw causal representation of key performance indicators (KPI), simulates the KPIs and quantifies the impact of each KPI to adjust the performance targets. Thus, these initiatives trigger the decision-making process by integrating simulation techniques, and help to test the feasibility of policies by showcasing future results.

Some researchers emphasized to go beyond the BSC approach and looked forward to new frameworks. Maltz *et al.* (2003) presented a dynamic multi-dimensional performance framework which looks at five performance dimensions – financial performance, customer/market, process, people development and future – and provides guidance to management in the process of developing useful success metrics for different situations and environment. The other recent development looking beyond the scorecard to game-card is flexible strategy game-card (Sushil, 2010) that highlights the dual perspectives of performance, i.e. enterprise perspective and customer perspective. All major stakeholders are covered under enterprise perspectives, and as customers are the center point for strategy development, they are kept as an independent perspective. In view of dynamic environment and changing economy, these developments emphasize to go beyond the BSC approach. The only shortcoming highlighted is that there is no empirical validation available of these frameworks.

Looking towards integrated and holistic approach to performance management, some developments emphasized for providing structure and theoretical development of holistic PMS. Anderson *et al.* (2006) presented a generic framework considering stakeholders, organization, market, values and culture to integrate diverse areas to play together and lead to give full effect to organization. Incorporating the concern for sustainability, sustainability performance measurement system (Searcy, 2011) describes phases of evolution of corporate sustainable PMS. Thus, the concern for an effective, integrated, holistic, dynamic and sustainable PMS development was on the agenda for the era post 2000.

Integrating all the issues and concerns highlighted in the period 2001-2011, the research trends in performance management frameworks can be exhibited and summarized in some trends which are shown in Figure 3.

In this period, BSC was again in the discussion but this time, the discussion was largely related to update the BSC approach and many researchers had expanded four perspectives to add all other stakeholders which were not considered in BSC. Thus, the shift from a set of stakeholders to all stakeholders can be noted as a major contribution of this era.

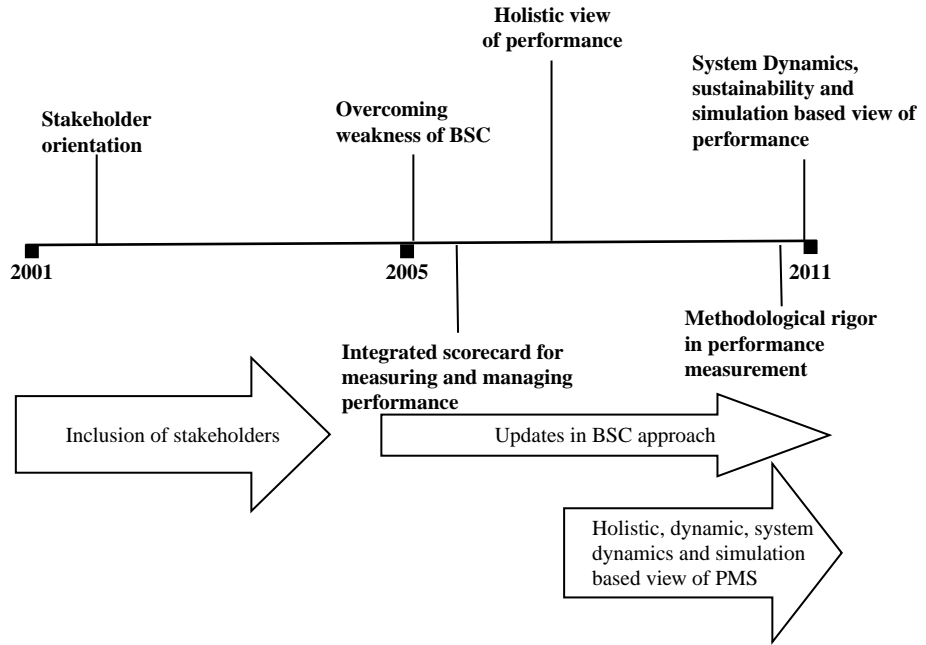


Figure 3.
Research trends of PMM
for the period 2001-2011

The methodological rigor to develop effective PMS is another major discussion of this period. The researchers realized that criticism of lacking causality in BSC could be overcome by using systems methodology, where one of the appropriate methodologies is “system dynamics methodology”. The application of simulation techniques to know the likely future of policy interventions can help to set and adjust targets for performance measures.

The other major concern highlighted in this period was to think beyond BSC and provide the framework/structure or mechanism to develop dynamic, integrated PMS for enterprises. The concept of game-card, holistic performance management framework and PMS framework are now leading performance management research to new paradigms by opening the doors to a way beyond BSC. No doubt, with the development of Performance Prism and highlighting some other issues, this set of researchers from the UK has gained a reputed place in performance measurement research.

One of the most remarkable developments noticed in this era is implementation of PMS in service sector. Due to structural changes in industrial economies, as globalization and privatizations, service sector took a boom and development and implementation of PMS for service sector, as holistic scorecard for software industry (Sureshchandar and Leisten, 2005); development of BSC for assessing effectiveness of online courses (Strang, 2010); development of BSC for education (Schobel and Scholey, 2012), etc. had taken place. The implementation of PMSs for public sector was also one of the interests of researchers post 2000.

Discussions and key learning

The transformations and developments researched in the performance management framework reveal its multidisciplinary aspects. Researchers have realized the need to

look beyond merely scoring the performance and integrating the whole cycle of strategic management. The development of an integrated and truly balanced PMM system has been a transformation in the past one decade spanning 1991-2000, along with the inclusion of dynamism and multi-stakeholder perspective that have been widely discussed in 2001-2011 period. The methodological rigor supports in an effective execution of the performance measurement systems for an enterprise.

After an analysis and understanding of the trends of the PMM frameworks developed in last two decades, an attempt is made here to classify these frameworks on the basis of some broad themes.

1. Classical and dominant PMM frameworks

This theme includes those frameworks that have been very popular in literature as well as dominantly used by practitioners. Their contributions to the knowledge base are related to the incorporation of non-financial performance measures, quality, self-assessment and inclusion of most of the stakeholders. These can be listed as follows:

- balanced scorecard;
- performance pyramid;
- EFQM – excellence model; and
- performance prism.

2. Holistic and integrated PMM frameworks

As discussed, to fulfill the need for a holistic and integrated framework for enterprise performance, researchers have highlighted the following developments, which primarily discuss aligning performance with the future, brining individual performance with enterprise performance, and integrating operational, functional and strategic aspects of enterprise performance:

- consistent PMS;
- integrated dynamic performance measurement system;
- dynamic performance measurement system;
- integrated performance measurement framework;
- dynamic multi-dimensional performance framework; and
- holistic performance management framework.

3. Frameworks updating BSC approach

There has been a very wide discussion in literature about incorporating and updating the BSC approach keeping in mind organizational view, system dynamics methodology and modelling, fuzzy cognitive maps, intellectual and social perspectives, etc. The frameworks that update the BSC approach may be listed as:

- Kanji's business scorecard;
- holistic scorecard;
- total performance scorecard;
- "system dynamics based" BSC; and
- proactive BSC.

4. Context-specific PMM frameworks

This category includes frameworks discussing specific contexts of performance, such as economic value, social values, quantitative factors, performance value chain, etc. These PMM frameworks can be further clustered on the basis of underlying driving factors, as process-based frameworks (input-process-output-outcome framework, the performance planning value chain); financial performance drivers (shareholder value, economic value added); criticism of traditional control mechanism (beyond budgeting).

Context-specific frameworks are:

- measures for time-based competition;
- economic value added;
- input-process-output-outcome framework;
- shareholder value;
- quantitative models for performance measurement systems;
- the action-profit linkage model;
- beyond budgeting; and
- the performance planning value chain.

5. Recently developed PMM frameworks

Here, the frameworks which have been developed in the last three to four years and discuss about the major issues related to enterprise performance are taken into account, such as:

- flexible strategy game-card; and
- sustainability performance measurement system.

This study gives a comprehensive view (excluding management control system/frameworks) of existing performance management frameworks where the contribution(s) as well as limitation(s) are highlighted. The conclusion drawn from this study shows many paradigm shifts which have taken place in the research of PMM frameworks in the last two decades. Shift from financial measures to integrated measures, operational perspectives to strategic perspectives and consideration of a set of stakeholders to all stakeholders have been the major visible changes. The findings from this literature review are validated with the work of Srimai *et al.* (2011) who had presented evolutionary paths of performance measurement and showed four paths of performance measurement – from operations to strategy, measurement to management, static to dynamic and economic-profit to stakeholder focus.

This study has culled out these trends by specifically concentrating on the developments in the form of PMM frameworks/systems. This gives a small contribution to the knowledge base by collectively framing the history of research done in PMM frameworks in the past two decades. As business environment and conditions are more rapidly changing, the researchers and practitioners are always involved to look for future research prospects, giving way to further explore research opportunities related to PMM.

In these last two decades, industrial economies have experienced structural changes and so as the changes have been experienced in PMM research. In 1991-2000, the major developments of PMM frameworks were related to manufacturing operations, and the

performance measures were largely related to productivity, waste, cycle time, response time, cost, quality, delivery time, processes and technology. Since the shift has taken place from manufacturing to services, new developments have incorporated some new performance measures, such as leadership, training, education, innovation, capabilities, knowledge, personal improvement, etc. which can be seen explicitly in the era post 2000. In the last one decade, the development and implementation of PMS for public sector is also one of the major transformations observed in the literature. Thus, shifts in research trends in PMM framework has been observed as per the structural changes in industrial economies.

Looking forward

As already stated, the PMM research continues rapidly on the path of evolution and diffusion as now it is led towards the “second generation” of scholars who are contributing in this area by exploring multi-dimensions of performance management issues (Taticchi *et al.*, 2010). This paper is an attempt in this direction. It discusses and analyzes the PMM frameworks that have been developed and discussed in the last two decades to identify the opportunities which need to be explored in future.

The research agenda delineating through this study has been discussed in this section. It has been observed that enormous developments related to performance management frameworks have been made that highlight the plethora of issues related to an organization. But a large number of frameworks have been discussed solely on a conceptual ground and still require validation by way of an empirical testing. Researchers can take this challenge by further applying these issues in a practical context, attempting to build a mechanism for effective, integrated and holistic performance management framework.

Theoretical developments such as a resource-based view of firm (Barney, 1991) and core competence of a corporation (Hamel and Prahalad, 1990) provide a trigger to link the dynamic capabilities view to enterprise performance and thus, help explore the theoretical basis of existing performance management frameworks to open new avenues of research.

The effectiveness of PMM models/frameworks are still a big question mark (Taticchi *et al.*, 2010). There is a very limited mechanism available to help transform information into value-adding activities for an organization. Therefore, organizations need PMS to align performance targets and measures with company’s vision and objectives, and to provide feedback on the existing measures and make corrective actions when required. The cause-and-effect relationships, feedback loop learning and systems approach can be some of the remedies which can help to make double loop learning and thus develop an effective PMS. This will, in turn, help overcome the existing PMS criticism of being retrospective and bring dynamism to the system.

Bititci (1995) asserted that PMM should be viewed as a key business process which is central to the prosperity of any enterprise. PMS needs to be considered as an integral component of business process management, as it leads to define strategies and targets for any enterprise. The new developments highlighted in last two to three years capture the dynamic view of enterprise performance, and thus gives an opportunity to develop new business plans, and processes as per changing business dynamics.

A wide research interest related to the PMM frameworks has been identified as is evident from the 434,000 results available with this keyword on Google Scholar.

The wider application of IT, simulation techniques and qualitative and quantitative research methodologies can be helpful to trigger in testing the feasibility of different policy parameters and performance targets and thus help to avoid failure of existing PMS.

The researchers in the field of performance measurement and management need to look beyond the scorecard and utilize these avenues of research to develop holistic, integrated, dynamic and effective PMSs that can help an enterprise to compete and succeed in turbulent and competitive business environment. The structural changes in industrial economies which has led from manufacturing to services to now highly innovative web-based services, the dynamism in PMM frameworks can be considered as a crucial element, where they need not only to measure and manage the enterprise performance, but also to simulate the expected results to get high performance in future.

Notes

1. The terms performance measurement and management frameworks, models, systems or techniques are used widely and sometimes interchangeably in performance measurement and management literature (Ittner and Larcker, 1998; Bjoornenak and Olson, 1999; Ax and Bjoornenak, 2005; Modell, 2009). In this view, they have been used as integrative here.
2. The justification of using this time period is already explained in the introduction section.

References

- Aguilar, O. (2003), "How strategic performance management is helping companies create business value", *Strategic Finance*, Vol. 84 No. 7, pp. 44-49.
- Ahn, H. (2001), "Applying the balanced scorecard concept: an experience report", *Long Range Planning*, Vol. 34, pp. 441-461.
- Akkermans, H.A. and van Oorschot, K.E. (2005), "Relevance assumed: a case study of balanced scorecard development using system dynamics", *Journal of the Operational Research Society*, Vol. 56 No. 8, pp. 931-941.
- Anderson, B., Henriksen, B. and Aarseth, W. (2006), "Holistic performance management: an integrated framework", *International Journal of Productivity and Performance Management*, Vol. 55 Nos 1/2, pp. 61-78.
- Atkinson, A. and Epstein, M. (2000), "Measure for measure", *CMA Management*, Vol. 74, September, pp. 22-28.
- Atkinson, A.A., Banker, R.D., Kaplan, R.S. and Young, S.M. (1997), *Management Accounting*, Prentice-Hall, Englewood Cliffs, NJ.
- Ax, C. and Bjoornenak, T. (2005), "Bundling and diffusion of management accounting innovations-the case of balanced scorecard in Sweden", *Management Accounting Research*, Vol. 16 No. 1, pp. 1-20.
- Azzone, G., Masella, C. and BerteleÁ, U. (1991), "Design of performance measures for time-based companies", *International Journal of Operations & Production Management*, Vol. 11 No. 3, pp. 77-85.
- Banks, R.L. and Wheelwright, S.C. (1979), "Operations versus strategy – trading tomorrow for today", *Harvard Business Review*, May/June, pp. 112-120.
- Barnabe, F. (2011), "A system dynamics-based balanced scorecard to support strategic decision making", *International Journal of Productivity and Performance Management*, Vol. 60 No. 5, pp. 446-473.

- Barney, J.B. (1991), "Firm resources and sustained competitive advantage", *Journal of Management*, Vol. 17 No. 1, pp. 99-120.
- Bible, L., Kerr, S. and Zanini, M. (2006), "The balanced scorecard: here and back", *Management Accounting Quarterly*, Vol. 7 No. 4, pp. 18-23.
- Bititci, U.S. (1994), "Measuring your way to profit", *Management Decision*, Vol. 32 No. 6, pp. 16-24.
- Bititci, U.S. (1995), "Performance measurement for performance management", paper presented at IFIP WG5.7 Working Conference, Seattle, USA.
- Bititci, U.S., Carrie, A.S. and McDevitt, L. (1997), "Integrated performance management systems: a development guide", *International Journal of Operations & Production Management*, Vol. 17 No. 5, pp. 522-534.
- Bititci, U.S., Trevor, T. and Begemann, C. (2000), "Dynamics of performance measurement systems", *International Journal of Operations & Production Management*, Vol. 20 No. 6, pp. 692-704.
- Bjoornenak, T. and Olson, O. (1999), "Unbundling management accounting innovations", *Management Accounting Research*, Vol. 10 No. 4, pp. 325-338.
- Brown, M. (1996), *Keeping Score: Using the Right Metrics to Drive World Class Performance*, Quality Resources, New York, NY.
- Chytas, P., Glykas, M. and Valiris, G. (2011), "A proactive balanced scorecard", *International Journal of Information Management*, Vol. 31, pp. 460-468.
- Cooper, R. and Kaplan, R. (1988), "Measure costs right: make the right decisions", *Harvard Business Review*, Vol. 66 No. 5, pp. 106-111.
- Deming, W.E. (1986), *Out of the Crisis: Quality, Productivity, and Competitive Position*, Cambridge University Press, Cambridge.
- Dixon, J.R., Nanni, A.J. and Vollmann, T.E. (1990), *The New Performance Challenge – Measuring Operations for World-Class Competition*, Dow Jones-Irwin, Homewood, IL.
- Drucker, P.F. (1990), "The emerging theory of manufacturing", *Harvard Business Review*, May/June, pp. 94-102.
- Eccles, R.G. (1991), "The performance measurement manifesto", *Harvard Business Review*, January/February, pp. 131-137.
- Elkington, J. (1997), *Cannibals with Forks: The Triple Bottom Line of 21st Century Business*, Capstone, Oxford.
- Epstein, M.J. and Manzoni, J. (1997), "The balanced scorecard and the tableau de bord: translating strategy into action", *Management Accounting*, August, pp. 28-36.
- Figge, F., Hahn, T., Schaltegger, S. and Wagner, M. (2002), "The sustainability balanced scorecard – linking sustainability management to business strategy", *Business Strategy and the Environment*, Vol. 11 No. 5, pp. 269-284.
- Fitzgerald, L., Johnston, R., Brignall, S. and Voss, C. (1991), *Performance Measurement in Service Business*, CIMA, London.
- Flapper, S.D.P., Fortuin, L. and Stoop, P.P.M. (1996), "Towards consistent performance measurement systems", *International Journal of Operations & Production Management*, Vol. 16 No. 7, pp. 27-37.
- Garengo, P. and Bititci, U.S. (2005), "Performance measurement systems in SMEs: a review for a research agenda", *International Journal of Management Reviews*, Vol. 7 No. 1, pp. 25-47.
- Ghalayini, A.M. and Noble, J.S. (1996), "The changing basis of performance measurement", *International Journal of Operation & Production Management*, Vol. 16 No. 8, pp. 63-80.

- Ghalayini, A.M., Noble, J.S. and Crowe, T.J. (1997), "An integrated dynamic performance measurement system for improving manufacturing competitiveness", *International J. Production Economics*, Vol. 48, pp. 207-255.
- Gray, R., Owen, D. and Maunders, K. (1987), *Corporate Social Reporting: Accounting and Accountability*, Prentice-Hall, London.
- Groppelli, A.A. and Ehsan, N. (2000), *Finance*, 4th ed., Barron's Educational Series, Inc., Hauppauge, NY.
- Gumbus, A. and Lyons, B. (2003), "A three-year journey to organizational and financial health using the balanced scorecard: a case study at a Yale New Haven health system hospital", *Journal of Business and Economic Studies*, Vol. 9 No. 2, pp. 54-65.
- Hamel, G. and Prahalad, C.K. (1990), *Competing for the Future*, Harvard Business School Press, Boston, MA.
- Hayes, R.H. and Abernathy, W.J. (1980), "Managing our way to economic decline", *Harvard Business Review*, July/August, pp. 67-77.
- Hope, J. and Fraser, R. (2003), *Beyond Budgeting: How Managers Can Break Free from the Annual Performance Trap*, Harvard Business Press, Cambridge, MA.
- Huyett, W.I. and Viguierie, S.P. (2005), "Extreme competition", *McKinsey Quarterly*, No. 1.
- Ittner, C.D. and Larcker, D.F. (1998), "Innovations in performance measurement: trends and research implications", *Journal of Management Accounting Research*, Vol. 10, pp. 205-238.
- Johnson, H.T. (1992), *Relevance Regained: From Top-down Control to Bottom-up Empowerment*, The Free Press, New York, NY.
- Johnson, H.T. and Kaplan, R.S. (1987), *Relevance Lost: The Rise and Fall of Management Accounting*, Harvard Business School Press, Boston, MA.
- Kanji, G.K. and Sá, P.M. (2002), "Kanji's business scorecard", *Total Quality Management*, Vol. 13 No. 1, pp. 13-27.
- Kaplan, R.S. and Norton, D.P. (1992), "The balanced scorecard – measures that drive performance", *Harvard Business Review*, January/February, pp. 71-90.
- Kaplan, R.S. and Norton, D.P. (1996), "Using the balanced scorecard as a strategic management system", *Harvard Business Review*, January/February, pp. 75-85.
- Kaplan, R.S. and Norton, D.P. (2006), *Alignment*, Harvard Business School Press, Boston, MA.
- Lämsiluoto, A. and Järvenpää, M. (2008), "Environmental and performance management forces", *Qualitative Research in Accounting and Management*, Vol. 5 No. 3, pp. 184-206.
- Lebas, M.J. (1995), "Performance measurement and performance management", *Int. J. Production Economics*, Vol. 41, pp. 23-35.
- Lucianetti, L. (2010), "The impact of the strategy maps on balanced scorecard performance", *International Journal of Business Performance Management*, Vol. 12 No. 1, pp. 21-36.
- Lynch, R.L. and Cross, K.F. (1991), *Measure up – The Essential Guide to Measuring Business Performance*, Mandarin, London.
- Maltz, A.C., Shenhar, A.J. and Reilly, R.R. (2003), "Beyond the balanced scorecard: refining the search for organizational success measures", *Long Range Planning*, Vol. 36 No. 2, pp. 187-204.
- Marr, B. and Schiuma, G. (2003), "Business performance measurement – past, present and future", *Management Decision*, Vol. 41 No. 8, pp. 680-687.
- Medori, D. and Steeple, D. (2000), "A framework for auditing and enhancing performance measurement systems", *International Journal of Operations & Production Management*, Vol. 20 No. 5, pp. 520-533.

- Modell, S. (2009), "Bundling management control innovations", *Accounting, Auditing & Accountability Journal*, Vol. 22 No. 1, pp. 59-90.
- Mooraj, S., Oyon, D. and Hostettler, D. (1999), "The balanced scorecard: a necessary good or unnecessary evil?", *European Management Journal*, Vol. 17 No. 5, pp. 481-491.
- MORI (1996), *Attitudes of Captains of Industry*, MORI, London.
- Nanni, A.J., Dixon, J.R. and Vollmann, T.E. (1992), "Integrated performance measurement: management accounting to support the new manufacturing realities", *Journal of Management Accounting Research*, Vol. 4, Fall, pp. 1-19.
- Neely, A. (1999), "The performance measurement revolution: why now and what next?", *International Journal of Operation & Production Management*, Vol. 19 No. 2, pp. 205-228.
- Neely, A. and Bourne, M. (2000), "Why measurement initiatives fail?", *Measuring Business Excellence*, Vol. 4 No. 4, pp. 3-6.
- Neely, A. and Jarrar, Y. (2004), "Extracting value from data-the performance planning value chain", *Business Process Management Journal*, Vol. 10 No. 5, pp. 506-509.
- Neely, A., Adams, C. and Crowe, P. (2001), "The performance prism in practice", *Measuring Business Excellence*, Vol. 5 No. 2, pp. 6-12.
- Neely, A., Gregory, M. and Platts, K. (1995), "Performance measurement system design: a literature review and research agenda", *International Journal of Operations & Production Management*, Vol. 15 No. 4, pp. 80-116.
- Neely, A., Mills, J., Platts, K., Richards, H., Gregory, M., Bourne, M. and Kennerley, M. (2000), "Performance measurement system design: developing and testing a process-based approach", *International Journal of Operations & Production Management*, Vol. 20 No. 10, pp. 1119-1145.
- Norreklit, H. (2000), "The balance on the balanced scorecard – a critical analysis of some of its assumptions", *Management Accounting Research*, Vol. 11, pp. 65-88.
- Quinn, J.B., Thomas, L.D. and Penny, C.P. (1990), "Beyond products: service-based strategy", *Harvard Business Review*, March/April, pp. 58-68.
- Rampersad, H.K. (2005), "Total performance scorecard: the way to personal integrity and organizational effectiveness", *Measuring Business Excellence*, Vol. 9 No. 3, pp. 21-35.
- Rappaport, A. (1998), *Creating Shareholder Value: The New Standard for Business Performance*, The Free Press, New York, NY.
- Russell, R. (1992), "The role of performance measurement in manufacturing excellence", paper presented at the BPICS Conference, Birmingham, UK.
- Schobel, K. and Scholey, C. (2012), "Balanced scorecards in education: focusing on financial strategies", *Measuring Business Excellence*, Vol. 16 No. 3, pp. 17-28.
- Searcy, C. (2011), "Updating corporate sustainability performance measurement system", *Measuring Business Excellence*, Vol. 15 No. 2, pp. 44-56.
- Simmonds, K. (1981), "Strategic management accounting", *Management Account (UK)*, Vol. 59 No. 4, pp. 26-29.
- Skinner, W. (1974), "The decline, fall, and renewal of manufacturing", *Industrial Engineering*, October, pp. 32-38.
- Srimai, S., Radford, J. and Wright, C. (2011), "Evolutionary paths of performance measurement: an overview of its recent development", *International Journal of Productivity and Performance Management*, Vol. 60 No. 7, pp. 662-687.
- Stewart, G.B. (1991), *The Quest for Value: The EVA Management Guide*, Harper Business, New York, NY.

- Strang, K.D. (2010), "Education Balanced Scorecard for online courses: Australia and US best-practices", *Journal of Cases on Information Technology*, Vol. 12 No. 3, pp. 45-61.
- Sureshchandar, G.S. and Leisten, R. (2004), "Holistic scorecard: strategic performance measurement and management in software industry", *Measuring Business Excellence*, Vol. 9 No. 2, pp. 12-29.
- Sushil (2010), "Flexible strategy game-card", *Global Journal of Flexible Systems Management*, Vol. 11 Nos 1/2, pp. iii-iv.
- Suwignjo, P., Bititci, U.S. and Carrie, A.S. (2000), "Quantitative models for performance measurement system", *International Journal of Production Economics*, Vol. 64 Nos 1-3, pp. 231-241.
- Tangen, S. (2004), "Performance management from philosophy to practice", *International Journal of Productivity and Performance Management*, Vol. 53 No. 8, pp. 726-737.
- Taticchi, P. (2008), "Business performance measurement and management: implementation of principles in SMEs and enterprise networks", PhD thesis, University of Perugia, Perugia.
- Taticchi, P. and Balachandran, K.R. (2008), "Forward performance measurement and management frameworks", *International Journal of Accounting Information Management*, Vol. 16 No. 2, pp. 104-154.
- Taticchi, P., Tonelli, F. and Cagnazzo, L. (2010), "Performance measurement and management: a literature review and a research agenda", *Measuring Business Excellence*, Vol. 14 No. 1, pp. 4-18.
- Watson, G.H. (1993), *Strategic Benchmarking: How to Rate Your Company's Performance Against the World's Best*, Wiley, New York, NY.
- Yeniurt, S. (2003), "A literature review and integrative performance measurement framework for multinational companies", *Marketing Intelligence & Planning*, Vol. 21 No. 3, pp. 134-142.

Further reading

EFQM (1991), *The Business Excellence Model*, EFQM Publication, Brussels.

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