

## **IS PERFORMANCE MEASUREMENT SYSTEM A MANAGEMENT CONTROL OR STRATEGIC TOOL?**

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### **Abstract**

The impact of Contemporary Performance Measurement(CPM) in literature on reported performance is still unclear(Santos et al,2012); which calls for further research to shed more lights in this area. In particular, the type D of reported performance is more relevant to management accounting for business performance and evaluations. With this as main focus which takes on a holistic view of the CPM, it reviews its development in literature in general which then lead to focus discussions on type D reported performance. In the face of the emerging challenges of social systems and cultural considerations, the objective of this paper is to build a network case of CPM that can serve management as control and also to meet the emerging challenges of the changing environment.

With the inception of 21st century of a knowledge arena; it calls for innovations as a strategic CPM. Hence, the intended contributions are not only to review and discuss its implications, but also to innovate CPM based on strategic information which is targeted to build competitive advantages that strengthen corporate governance and business practices.

### **Key words:**

Strategic Performance Measurement System, Management control, Knowledge management, Knowledge-Based View theory, Strategic Management Accounting

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### **Introduction**

Performance Measurement(PM) is essential and central to organization because it determines how successful the business results in terms of employee-stakeholders' strife to achieve the expected performance measures(PS). This information is usually captured in management systems to monitor the actual results and compared with the expected so that management of organization can evaluate and re-align if necessary to reduce under-performance gaps. Over

decades, traditional PM(using mainly financial measures) evolved into contemporary performance measurement(CPM) which combines financial with non-financial measures when it's linked to organizational strategy.

On the other hand, it can be summarized into different perspectives, approaches or classifications based on research streams. This makes the research so broad and with sparse findings and no consensus. For instance, the evidence is still mixed whether PMS has consistent positive impacts on organizational performance(Wouters, et al., 1999), whereas a significant association between the importance of PMS and performance (Widener, 2006). Furthermore, PMS supports the competitive strategies (Rivard, et al., 2006) and numerous researchers claimed that PMS plays an important role in assisting a firm to achieve high level of competitiveness (Fitzgerald, Johnston, et al., 1991; Kaplan & Norton, 1992; 1996; Simons, 2000; Chenhall R., 2005; cited in Abushaiba & Zainuddin,2012,p.190) whilst others(Raduan, et al., 2009; Bustinza, et al., 2010; cited in Franco-Santos and Bourne, 2005, p.116) argue that the gaining of competitive advantage might lead to achieve high performance. Thus, the impact of Contemporary Performance Measurement system (CPMS) in literature on reported performance is still unclear (Santos et al,2012). Nevertheless, it creates enormous opportunities for creative research and approaches which incorporates new innovations to enhance PM and systems. Since in literature, CPM is often interchange with strategic performance measurement system as it's linked with strategy. Thus, to be consistent with ease of distinguishing and relevance, this paper will use CPMS to refer as strategic performance measurement system instead of SPMS from now on in order to distinguish the new outcomes of the proposed design.

Normally, performance measurement system (PMS) is embedded as an integral part of the management accounting system which provides information to support different department heads to manage their activities strategically and fit in as parts of organization's operations (Lillis & Anne, 2002; Ittner, et al., 2003b; Malina & Selto, 2001; Fullerton & McWatters, 2002; Ullrich & Tuttle, 2004; Choe, 2003; cited in Abushaiba & Zainuddin,2012,p.1). Furthermore, from literature review on the evolution of CPMS, it is increasingly important for CPMS to adapt to changes (Bates, 1994) such as the environment and challenges that continues to enhance SPMS in terms of design, features, attributes, implementation processes or characteristics. This brings forth the motivation of this paper to innovate CPMS and in response to the aforementioned, the purpose and focus of this discussion paper is to postulate a change of network case by applying the knowledge-based view of strategic knowledge information as outputs and innovations to CPMS.

This is the first part of a series of theoretical discussion papers based on the inception of innovative ideas to enhance PMS. As so, it is purely literature research in order to introduce and propose the innovations as conceptual basis. Since it is at the paradigmatic discussion stage, the details of design and implementation related to this model will be discussed in another paper of the series. Therefore, the main objectives of this discussion paper are to highlight the rationale of evolution of performance measurement into strategic performance measurement, which gives rise to the innovations and importance in design for a knowledge-based strategic performance measurement and its role in management control. Thus, it gives way for the function of strategic management accounting model compiled as the KSPMS. The paper is organized as follows: the first section presents a briefly dwelt of literature review relating to PMS, which then follows the implications that call for innovations of CPMS. The methodology is to put forth the innovations in concept and design of knowledge-based view of the strategic performance measurement(KSPMS) via literature review. The discussion section attempts to propose a network case of an integrated strategic management accounting system model design for CPMS. It intends to conceptualize the knowledge-based strategic information as outputs through the strategic information process. With this conceptual model in place, it enables the re-design of CPMS which in turn can enhance the configuration that leads to implementation in system operations. The mechanism is operationalized by the strategic role of management accountant who consolidates the collaboration efforts that brings forth the innovations of CPMS.

The study concludes with expected contributions to which asserted to resolve the issues raised by Neely (2005). Throughout the design model's configurations and implementation, the strategic inputs, outputs and control feedback routines of KSPMS show that not only it can serve as strategic knowledge-based performance measurement by command-control, but also as strategic tool that formulates to gear employees/stakeholders performance and behaviour to organizational objectives. In contributions, the outcomes of design intends not only postulates organizational capabilities and competitive advantages, KPSMS can adapt to cope with the contemporary challenges and current issues relating to CPMS. Apart from this, the limitation of this research is that KPSMS needs to be tested which will be continued in the come-forth related research papers.

## **1. Performance Measurement System in Literature – An overview**

Performance Measurement is often referred to the key measures and indexes of performance or performance measures (PM) that reflect the organization's objectives

in assessing its business performance. The history of PM has long been established in literature. Scholars study this topic in different perspectives and approaches since it involves cross-functional boundaries, according to Franco-Santos et al (2007), they come from disciplines of operation, strategic control and management account to which also have impacts on relevant organizational stakeholders and behaviours.

Nowadays, PM evolves into strategic performance measurement system (SPMS) with special features that embedded within PMS. For example, Cheung et al (2007, p.221), advocating the balanced scorecard with sets of financial and non-financial performance measures. Alternatively, Hall(2008,p.43) defines CPM that “translates business strategies into deliverable results....combining financial, strategic and operating business measures to gauge how well a company meets its targets.” Hence, this defines CPM as main process to understand its mechanism. Ittner et al(2003b) suggest CPM provides financial and non-financial information(cited in Franco et al. 2012,p.80) that enables organization to identify strategy that align pertinent management processes to achieve firm’s objectives and results(Anthony and Govindarajan, 2003; Said et al., 2003; Melnyk et al., 2005; cited in Suwit et al.2011, p.665). The set of strategic CPM that linked to strategy is often referred as strategic performance measurement(SPM) (Atkinson et al., 1997; Ittner et al., 2003; Chenhall, 2005; cited in Suwit et al.2011, p.665); or SPMS if it’s translated into the system database.

On the other hand, research in CPM investigating impacts of organizational performance can have different levels of analyses such as on individual behaviour & performance (Hall 2008), team performance (Scott & Tiessen; 1999 cited in Franco-Santos et al, 2012,p.97), PM design, implementation and use (Speckbacher et al., 2003), or in the study of consequences of PM which focus on people’s behaviour, organizational capabilities or performance consequences. Therefore, in view of these aspects, this paper adopts its position based on Speckbacher et al (2003) who argue that no single definition can capture the complexity of systems. The literature reviews also concludes no consensus in agreed definition of CPM with reference to Santos et al (2012, p.80). Furthermore, the development of PM has evolved from its traditional control performance system to a strategic role that tied to strategy-as-practice or strategy of organizations. This is mainly due to the demand driven of the business environment.

## 2. Implications from the evolutions of Performance Measurement System(PMS) – from the management accounting perspective

Nevertheless, CPM leads to continual development as business environment changes whilst meanwhile organization also faces the challenges of cultural and social systems. In particular, organizations tend to align employees' performance to strategic business performance, henceforth by adopting Franco-Santos et al.(2012) typology of CPM, it may be better to understand and proceed with further discussions the managerial effect and impacts on CPM.

**Table I – Contemporary Performance Measurement Types**

	CPM A	CPM B	CPM C	CPM D
Components	Financial and non-financial performance measures implicitly or explicitly linked to strategy	<ul style="list-style-type: none"> <li>• Financial and non-financial performance measures explicitly linked to strategy</li> <li>• With explicit cause-and-effect relationships among measures</li> </ul>	Financial and non-financial performance measures explicitly or implicitly linked to strategy	Financial and non-financial performance measures explicitly or implicitly linked to strategy
Use/purpose	<ul style="list-style-type: none"> <li>■ Inform decision-making</li> <li>■ Evaluate organizational Performance</li> </ul>	<ul style="list-style-type: none"> <li>■ Inform decision-making</li> <li>■ Evaluate organizational Performance</li> </ul>	<ul style="list-style-type: none"> <li>■ Inform decision-making</li> <li>■ Evaluate organizational and managerial performance (without links to monetary rewards)</li> </ul>	<ul style="list-style-type: none"> <li>■ Inform decision-making</li> <li>■ Evaluate organizational and managerial performance</li> <li>■ Influence monetary rewards</li> </ul>

Source: Santos et al (2012), p.82

Table I shows the summary of respective components, use and purpose of each type of CPM. The typology of CPM describes similarities and differences in components, uses and purposes that helps to analyse and discuss the effects on consequences of CPM. Since the focus of this paper is to innovate CPMS in light of the management accounting perspective. For instance, the difference of C & D in components are different in i) whether CPM is linked to strategy(implicitly or explicitly) and ii) PM are linked with monetary rewards as in type D. This paper postulates that type D is assumed more relevant for the following sections in discussions for organization in practice due to keen competitions and tight resource management. Organizations

tend to influence employees work behaviour and evaluations through incentives or rewards.

The inception of management accounting system, back to several decades ago, focused on financial measures such as in budgeting, costing and variance analyses has characterized the control of organizational costs as the traditional performance measurement system. Nanni *et al.*, (1992) and Ballantine & Brignall (1995) supported this traditional idea of performance measurement was mainly for manufacturing industry for control of organization's costs and targets(cited in Hussain, 2005) since management accounting has a close relationship with CPM in terms of the substance it matters. As globalization and rapid changes of business environment such as technology drives, Johnson and Kaplan (1987) assert that traditional management accounting systems are not providing useful information in fulfilling organizational objectives, decision-making, planning, and control (cited in Hussain, 2005, p.566) such as costs are not relevant as pertains to its nature of activities and business values. Hence, it doesn't support the demand led design and features of CPM to the growing demand of competitiveness of organization in business capabilities.

For instance, according to Vickers (1967), a generic performance measurement system (PMS) is composed of:

Inputs – performance measures and their resulting information;

processes – procedures to convey inputs into outputs, or practices of execution to ensure the expected yields; and

Outputs – the results derived directly from the performance measurement.

PM is embedded within the tool or PMS that captures and stores as performance measurement data and information for monitoring and controlling the business performance in results. It implies the performance management system operates when the feedback from performance measurement is available. Information from the performance measurement (i.e. inputs) facilitates the review of the actual performance of the entire organisation. By function, it is implemented as a control system since it feeds information back to executives for fine-tuning organizational performance such as re-aligning people and resources to achieve desired outcomes. All these operations are in process view and the role of PM is controlling to achieve short-term measurements.

As the development of PM evolves and literature reviews, the idea that performance measurement and strategy become closely linked (Anthony and Govindarajan, 2003;

Said et al., 2003; Melnyk et al., 2005; cited in Suwit et al.2011, p.655) in a system that translates strategy into a set of performance measures of a chosen strategy, is known as strategic performance measurement (Atkinson et al., 1997; Ittner et al., 2003; Chenhall, 2005; cited in Suwit et al.2011, p.655). The push of this re-design to link strategy in CPM is mainly due to changing business environment with keen competitions. In literature, it is often interchangeably with other names such as “comprehensive performance measurement”(Hall, 2008), contemporary performance systems(CPM) or “business performance measurement”(McAdam & Baillie, 2002; cited in Franco-Santos et al.2012, p.80). In this paper, it refers to CPM which tied to strategy to distinguish the traditional PM from evolutions and PMS as generic performance measurement system. Hence, it highlights the role of PM from traditional control role to strategic use and purpose since then. Normally, management accounting system is integrated as part of management information system in a holistic view of PM.

With the typology of CPM of Santos et al(2012) in Table I as basis condition to this study and discussions, from the organizational practical perspective, type D is seen more relevant in business community because management tend to motivate employees performance geared towards the performance measures using monetary rewards for monitor and control via SPMS. Its mechanism affects and aligns employee’s performance towards the geared targets by changing work behaviours towards the consequences of SPM. Strategic measures in the form of information will be captured as database and can be regularly retrieved by stakeholders through integrated performance reports and analyses such as financial or annual reports. Thus, it positions as type D condition in this case which facilitates the network case proposition for theoretical discussions next section.

### **3 Theoretical Discussions – from a management perspective**

The implications in the evolutions have revealed PMS from an operational perspective and approach to strategic role measures to evaluate its employees’ performance measures to impact organizational performance. However, there are still some challenges for SPMS in the face of changing environment, cultural and social systems. The question is what innovations can bring to SPMS to cope with these emerging challenges. This paper proposes three innovative aspects in SPMS:

- 1 Knowledge-based SPMS with strategic knowledge information to build organizational capabilities
- 2 Network base case of SPMS to enhance the locus of knowledge via motivating employees performance in collaborative efforts
- 3 To ensure SPMS is linked to strategy, to propose strategic role of accountant and develop structured strategic process to consolidate and compile the outputs as strategic knowledge measurements onto the SPMS.

The rationale of each will be discussed accordingly and the methodology to go about these features of innovations will be deployed in the case of strategic model in management accounting (SMA). To understand what this strategic role, it adopts the notion of Simmonds to define SMA as “the provision and analysis of management accounting data about a business and its competitors, for use in developing and monitoring business strategy” (Simmonds, 1981, p. 26). Henri’s work (2006) asserted with the insight of an integrative framework of strategy, resource-based view and management accounting. To extend the ideas within this context, it further postulates and applies knowledge-based theory for theoretical proposition of knowledge information in this study. Given the intensity of competition and based on this knowledge-based view, the outputs of SPM are strategic knowledge information. As substance matters, it enhances the competitiveness and capabilities of organization. Knowledge information is strategically unique to each firm and can’t be replicated because each firm will have their unique intellectual capital of human resources and organization capabilities to compete in the market. According to Porter (1985), competitive advantage is the extent to which a firm can create a defensible position over its competitors. By the same token, unique knowledge of a firm enhances its capabilities to do better than its competitors which also help to improve its competitive advantage in creating significant difficulties for others to imitate; which results in a long-term or sustainable competitive advantage. This is the reason of knowledge based information as special features and outputs of SPMS.

In line with this, to produce strategic knowledge information is a design of network case with designated functional employees of departments or business units. Due to the limitation of coverage and not the objective of this paper, this paper will not explain how to define but instead use it as the assumption conditions of deploying strategic management accounting model. It has its strategic components of strategy, risk management, strategic tools and accounting, intensity of market competition and



competitors' information. All those knowledge information derived from these elements will be the outputs of pertinent responsible employees; results from their expertise knowledge and related experiences. According to Felin & Hesterly (2007), the locus of knowledge or source of creating new value, in knowledge resource in this case, can be individual and collectives. Since there is evidence, such as the surveys of Burney and Widener (2007), Hall (2008), and Cheng et al. (2007)(cited in Franco-Santo et al.2012,p.92) suggesting that SPM systems affect the extent to which people understand their role requirements and how they are satisfied with their jobs. This implies SPM is not only a control system to gear employees towards the reported measures; it can further enhance the accumulation of intellectual capital assets in terms of strategic knowledge information. When the design of SPMS supports employees to understand better their role and mechanism of SPMS, in this case they are more satisfied with their jobs, which in turn create better employee performance towards the measurement targets. According to Aranda & Arellano (2010, p.334), the theoretical argument for the previous findings is that individuals make evaluative judgments within the parameters set by their knowledge structures (Nisbett and Ross, 1980; Lord et al., 1984; Lurigio and Carroll, 1985; Sternberg, 1985-cited in p.334). These knowledge structures are mental templates consisting of organized knowledge about an information domain that enables interpretation and action in that same domain (Walsh, 1995- cited in p.334). Therefore, the usefulness of information not only depends on the information itself – its own content and characteristics – but also, on how it matches with managers' specific knowledge structures that use to represent their information domain and to facilitate information processing and decision making related to said domain. Likewise, the design of SPMS tied to the knowledge domain of the knowledge structure of strategic elements, it can create new values in strategic knowledge information with added intellectual capital (stimuli to employees) as organizational capabilities. This may be on individual basis and is crucial of what strategic role of elements we expect to derive from the knowledge-based information.

Furthermore, Mahama(2006; cited in Franco et al.2012,p.84) shows that CPM(or SPMS) facilitates cooperation and socialization in supply relationship. Thus, when individual locus of knowledge present amongst the interaction of employees, it enables learning and problem solving which results in collective locus of knowledge. In this case, it enhances stakeholder relationship which facilitates better performance in return to business results. This network design structure takes care of the cultural & social

systems of organizations. Felin & Hesterly(2007) quotes Nahapiet & Ghoshal (1988, p.252) which discuss the role that social capital plays in collective knowledge outcomes: “who you know directs what you know“; implies that the design of knowledge structure and role is critical.

On the other hand, the results on reported performance in literature are inconclusive; Santos et al.2012, cited previous researchers’ findings and results of positive (e.g. Crabtree & DEBusk 2008, Cruz et al.,2011; cited in p.96), no relationship(e.g. Hassab Elnaby et al, 2005, Ittner et al., 2003b; cited in p.96) and mixed results(e.g. Griffith & Neely, 2009, Ittner & Larcker, 1997; cited in p.96). The growing consensus concludes in literature that SPMS do not automatically improve firm performance but suggests that it depends on the design of SPM and structured process performance measurement to performance improvement (e.g. Braam & Nijssen 2004, Henri,2006a; cited in p.96). Same for Bourne et al. (1999 & 2005; cited in Neely 2005), they identify the belief that strategic role of strategic performance measurement systems become more crucial in the re-design and focus to enhancing business results; which means that there are still some generic issues and questions to be resolved in SPMS; such as those questions raised by Neely (2005): “How can measures be integrated both across an organization’s functions and through its hierarchy? How can we ensure that the performance measurement system matches the firm’s strategy and culture? Or to which dimensions of the internal and external environment does the performance measurement system have to be matched? “(2005, pp108-109). In resolving these issues, the next section’s discussions intend to provide solutions and answers to those questions.

#### 4 **Towards a Knowledge-based strategic information for CPMS – importance and implications**

The aforementioned discussions in knowledge-based mechanism of CPMS with a network case of employee-stakeholders relationship postulates to resolve contemporary challenges and answer those challenging questions raised by Neely. The structural equation relationship of this knowledge-based information SPMS:

$$KSPMS = f(\textit{strategy \& risk management, strategic tools, strategic accounting and intensity of market competition and customers' information, Strategic management accounting involvement, Strategic Information Process})$$

Literature review also highlights associations between information type and the

development and implementation of strategy; with the appropriate mix and balance of financial and non-financial measures. It is important to support strategic processes and monitor the achievement of strategic goals (Bhimani & Langfield-Smith, 2007). This equation contends to gear towards this direction. Building knowledge information through activating one another in the learning process, Simon (1991:125) argues that organization learns through its individual members or by ingesting new members who have knowledge that the organization didn't previously have. By the same token, if this phenomenon prevails, the outcomes will create new strategic knowledge and accumulates as organization's resources, in turn, enhanced employee's performance to achieve the performance measurement of SPMS. All those accumulated resources create new values as organizational capabilities and alignments. Consequently, the feedback routines in SPMS will monitor and gear employee's motivation and work behaviours towards the synergies of better performance and increasing competitive edge to enhancing organizational competitive advantages. Therefore, the whole SPMS as strategic performance measurement systems configured with these innovations can run parallel as control feedback system to monitor business performance. With this model, the control and strategic mechanisms are integrated with one another and no longer independent and mutually exclusive systems.

Furthermore, it is important to have an agent or catalyst to take charge of the above structured strategic management process to produce strategic knowledge information and influence stakeholders' behaviour for strategic measures. In this case, the mission role is to deal with a lot of strategic knowledge information and management. It follows that the role player should have the capabilities to master the strategic information process and strategic management accounting to manage the strategic functions and operations. The literature findings from Aver & Cadez (2009) in the survey of 193 large Slovenian companies reveal that their accountants are relatively strongly involved in the strategic management process. It follows that the role of strategic management accountant is considered capable to mediate and moderate in this strategic knowledge management process and can support organizational strategic objectives. During the strategic information process, this designated role of strategic management accountant(SMAA) by functions can integrate the collaborative efforts of different functional employee stakeholders who carry the strategic roles to compile knowledge information; such that they can be consolidated as strategic performance measures outputs and onto SPMS. It is expected SMAA may seem more relevant and

appropriate to perform these functions and may be more effective to arrive at the expected outcomes of this process since accountants' role and duties normally oversee the whole operations in terms of different organization functions in financial management. SMAA bridges the gaps of functional units and hierarchy of organization and can ensure that outputs measures are in lines with strategy composed of relevant internal and external strategic factors and components. Communications with almost every stakeholder of the organization is critical in building the network case of SPMS and managing the strategic knowledge management process and so SMAA is in a better position to facilitate the essential communication by way of financial management channel.

Therefore, we have seen several importance of this research. Firstly, the innovative knowledge-based SPMS enables all sizes of businesses to develop and benefit; which considers as one of the important contributions of the KSPMS. Secondly, the paradigmatic SMA model in knowledge-based view of strategic information enables its configurations and equations with strategic components. The outcomes of these produce strategic measures which in turn enables knowledge-based performance measurement systems(KSPMS) through implementation and operation. It implies CPMS, in this case, has dual functions of strategy and control. The whole CPMS becomes an integrated KSPMS of strategic information. The function of strategic management accounting and strategic information process compiles the products and results from collaborative efforts of strategic functional and hierarchical units as critical strategic factors. The importance of this answers the questions of Neely(2005) as quoted above. In turn, KSPMS can adapt to the emerging cultural and social systems challenges and changing business environment as can be seen the KSPMS is dynamic and not static. This leads to envision the plausibility of KSPMS can build strategic capabilities as means to create competitive advantage; in the face of challenges emerging from business needs and trends.

Furthermore, the implications of this KSPMS also reveals the agility of performance measurement which enhance the quality of performance measures in term of knowledge-based strategic information from the strategic perspective with strategic critical internal and external factors as proposed with the SMA model and its elements. This edition and version of knowledge-based strategic performance measurement systems implies an enhanced and better developed CPMS throughout this discussion paper. This is by and large dependent upon the design and configuration of CPMS

based on the proposed strategic management accounting model in knowledge-based view and configuration of strategic factors in equation. Hence, it postulates it has impacts to the organizational performance through the compilation of strategic management accounting model in strategic knowledge information as strategic performance measures to be captured as strategic data unto the CPMS.

## **Conclusion**

From this theoretical discussion paper, the evolutions of PM to strategy linked CPM has reviewed the traditional attributes of PMS to CPMS as initial operating control tool to strategic role with review-feedback control routine functions. With literature reviews as methodology to propose the highlights of innovations, firstly, it highlights the rationale of evolutions of PM into CPMS as demand-driven by the changing business environment. It also concludes the emerging changes with cultural and social systems have revealed the importance of KSPMS and its role in management control. Thus, it spells out the agility of strategic knowledge information derived from strategic design and configuration as strategic management accounting performance measurement system based on the proposed model and assumption of knowledge-based view of strategic management accounting. The expected outcomes results with the efforts of proposed strategic management accountant role and involvement, it ensures KSPMS are linked to strategy of organization that further enhances capabilities and competitiveness. It implies long term sustainability impacts rather than short term evaluations.

With this motivation, the potential contributions of this paper has revealed several design aspects which highlighted the differences between strategic CPMS and KSPMS, despite it is purely theoretical discussions to project this paradigm at its inceptions of knowledge-based SPMS. It is worthwhile in the first of kind with literature research to innovate SPMS in terms of proposing a strategic management accounting model and perspective; namely i) with the innovative attributes of knowledge-based strategic information to develop the capabilities of organization; ii) deploying a network case approach in strategic role employees' relationship to facilitate the accumulations of strategic knowledge. It targets to enhance employee-stakeholders' motivations; in turn impact performances of both employees and business results.

Furthermore, the contributions of the innovative features in design also answer and resolve the questions of Neely in managerial perspective and that PMS which evolved to CPMS can be dynamically to develop and sustain as management control system parallel run as strategic tool. Those innovations call for new opportunities in KSPMS in terms of knowledge-based attributes and design functions implies CPMS is an advanced version with higher quality of strategic knowledge information. It also asserts the feasibility of KSPMS in management with the design and features adapt to the emerging changing environment, cultural and social systems. As per the classifications of Srimai et al. (2011), the innovations proposed also seem to fit in the significant attribute development paths; i.e. from operations to strategy, measurement to management, static to dynamic, and economic-profit to stakeholder focus. Knowledge-based KSPMS can be a dynamic model when it is configured to capture the strategic elements pertaining to changing business environment, the emerging cultural and social systems. It poses new challenge to the designed strategic model to be tested which is the major limitation in the theoretical inception of its proposed innovations. Nevertheless, another potential contribution of this paper, in addition to the discussed benefits, is that it provides an appropriate direction to further study knowledge-based strategic management accounting in design details and empirical research of these areas which will be continued in the forthcoming papers.

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