

AN INTERDISCIPLINARY PERSPECTIVE ON THE EVOLUTION OF STRATEGIC PERFORMANCE MANAGEMENT SYSTEMS

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Abstract:

This paper provides an interdisciplinary perspective on the evolution of organizational performance management (PM) systems that transcends the limited perspectives currently found within certain academic disciplines. It looks for the presence of convergent evolution in those management systems. A review of the many management systems that have been harnessed into strategic systems suggests that pressure to be best at the same or similar tasks causes such management systems to converge to common forms and functions. Forms of PM are: 1) Measurement-embedded systems, 2) Horizontally and vertically integrated systems, 3) Strategic-oriented systems, and 4) Fact-based information systems. Functions of PM are: 1) Creating and maintaining strategic alignment, 2) Supporting decision making, 3) Assisting formulation and execution of strategy, 4) Influencing organizational behaviours, and 5) Facilitating a learning organization.

Keywords: Performance management, Performance measurement, Intellectual capital, Quality management, Management control, Convergent evolution

1. INTRODUCTION

This paper reviews the development of organizational performance management (PM)¹ with a goal to reach an understanding of PM in terms of the evolution of its related practices. It seeks to combine the mindsets of scholars from different academic arenas and focus them into a more interdisciplinary perspective of PM. It clarifies, synthesises, and organises a contemporary development of PM in an era in which a number of management practices from diverse arenas are converging to be a PM system. This study aims to provide a new perspective on social experience, as expressed in management, strategy, and accounting literature.

The history of PM shows an evolution from accounting management and meanders through operations management during the 1980s and 1990s via notions of performance measurement (Neely et al., 1995). As a result of continually-evolving competitive stresses, PM systems arose from divergent sources, growing beyond their creators' intent by embracing a strategy-management capacity, to create and deliver strategies in expected and unexpected ways, means, and forms (Srimai et al., 2011). This evolution, driven by the needs of organizations, may force management protocols from differing origins to converge to serve organizations in the same ways for the same purposes. This parallel development of similar attributes is analogous to the biological-science notion of convergent evolution. The evolution in PM systems can be conceptualized and organized, via a biological analogy, into those occurring due to random events/fluctuations or to responses driven by systematic change in the business environment (Nelson 1995, p. 64).

It is widely accepted that biological evolution-related concepts can provide useful analogies for economic, business, and technology issues (see Nelson 1995; Jamieson, 1998; Devezas, 2005) and the concept of evolution applied to explain the evolution of PM practices has several important consequences. When biological evolution-related concepts are adapted for application to business and management processes, convergence becomes an expected outcome where management protocols from differing origins are used, in a competitive environment, to achieve the same purpose (see Nelson 1995; Jamieson, 1998; Devezas, 2005).

This paper draws on the notion of convergent evolution to identify what attributes are needed to make PM systems more robust, in the face of the ongoing rapid evolution of managerial needs. Two modes of convergent evolution are identified: 1) *Related transformational characteristics* are presented by the evolving management practices. Parallel adaptations associated with convergent evolution are also observed at functional levels of their evolution. 2) *Similar functions and mechanisms* which the management approaches use to perform related tasks were revealed.

The rest of the paper is organized as follows. Section 2 outlines past and contemporary development of management practices. It gives a brief overview of relevant management concepts and practices. Section 3 depicts the development of four management themes (performance measurement, quality management, management control, and intellectual capital) which are converging toward PM. Section 4 offers critical analysis of convergent evolutions of the management themes to PM and discusses the related form and function of PM. The last section provides conclusions and suggestions for future research.

2. MANAGEMENT PRACTICES IN EVOLVING CONTEXTS

Tools are typically developed to serve specific purposes, often for specialized conditions. If conditions, context or purposes change or otherwise become irrelevant, a previously useful tool may be rendered irrelevant or even harmful. Profit maximization in demand-led markets and abundant resource conditions after WWII led decision-makers to expand and/or run their manufacturing plants at capacity (Ghemawat, 2002). In decades that followed from the 1970s on, rising capacity around the world brought a competitive intensity that increased executive concern over decision-making risks. This made long-range-planning critically important (Ittner and Larcker, 2001).

¹ We use the term 'performance management' because it has been using widely in the academic disciplines reviewed in this paper. Although it seems to be coined from professionals, current academic literature explicitly shows that this term is commonly followed by academia.

In the early 1980s, rising intensity in competition caused senior management to realize that the solutions from their traditional management approaches were becoming less and less competitive (Johnson and Kaplan, 1987; Johnson, 1992). In response, they sought a *one-off (silver bullet)* transformation of the management process (Davidson, 1996). At that time, the TQM and other related tools (such as Benchmarking and Six Sigma) were developed in the US and Europe in response to the momentum to drive quality improvement to compete with rising global competitors (e.g. Japanese firms); (Ishikure, 1988; Maskell, 1991; Cole, 1999).

In the 1990s era of accelerated change, using long-established management concepts and practices as critical success-drivers may have been less than appropriate. Also, conventional management approaches, with their focus on tactical and operational improvement, as well as traditional performance measurement and control systems, which rely excessively on financial or operations aspects, were also likely to be less than sufficient. Identifying new business foundations as a source of competitive advantage, was a key motive in change-of-management functions (Teece, 2000; Low and Kalafut, 2002). A new competitive paradigm was needed to manage the accelerating innovation in ways by which organizations could identify, measure, analyse, and steer themselves (Drucker, 1982). After the early 1990s, executives increasingly became aware of, and sought to come to grips with the rapidly-changing amorphous mass of *beyond-control* factors in the effort to accommodate accelerated change in market demand and in the technical revolution (Davidson, 1996; Chenhall, 2003; Naisbitt, 2006). The spotlight on cost-control was refocused to wealth creation, as senior management (especially in high-tech and Internet firms) recognized and realized the importance of new perspectives of competitive advantage— workers' knowledge, intangible assets, hidden value and human capital, etc. (Sveiby, 1997; Roos et al., 1998; Bontis, 2001).

The next section will illustrate the evolution of individual management concepts and practices. After that a summary of the convergence of management practices will be given.

3. THE TRANSFORMATION OF MANAGEMENT PRACTICES

3.1 Performance Measurement

Traditional performance measurement systems are often criticized for being too financially driven, having too historical a focus, failing to highlight customer and market needs and over-loading senior management with data (Neely et al., 1995). However, the most urgent issue associated with traditional performance measurement systems is their failure to provide sufficient guidance to management. As a result of these criticisms, many performance measurement frameworks and models² (generated during and after the 1980s) strive to provide systems that are better matched to the expressed needs of management. Ideally, managing performance measurement leads to the systematic provision of the information needed to manage effectively. This innovative proposition extends the platform and outlet for managing performance measurement to PM. Currently, where performance measurement systems are holistic, strategic and integrated, that type of performance measurement is used interchangeably with PM (Kloot and Martin, 2000; Srimai et al., 2011). The need to better serve senior management has greatly extended the functionality of performance measurement frameworks and models into more of a PM role. Thus, from a variety of differing origins, performance measurement systems are evolving to form integrative frameworks that manage the performance of an entire organization—all are transforming from functional- and/or financial-foci to become more holistic and strategic systems that provide dynamic capacity to work in aggressively changing environments (Bititci et al., 2000; Srimai et al., 2011). Such adaptive systems, frameworks, and models are referred to as integrated, holistic, and strategic frameworks.

Performance measurement systems have evolved to create a means to plan, implement, and steer strategy, so as to provide and sustain long-term competitive advantage by attaining and maintaining

² For example: The Strategic Measurement Analysis and Reporting Technique system (Cross and Lynch, 1988), Sink and Tuttle Performance Measurement model (Sink and Tuttle, 1990), Balanced Scorecard (Kaplan and Norton, 1992), Integrated Performance Measurement Systems (Bititci et al., 1997), Integrated Performance Measurement Framework (Medori and Steeple, 2000), Quantitative Models for Performance Measurement System (Suwignjo et al., 2000), Performance Prism (Neely et al., 2001), and Dynamic Multi-dimensional Performance framework (Maltz et al., 2003).

strategic alignment. New innovative frameworks and models are being developed with a goal of gaining superior performance by using performance measurement to align all components of an organisation toward its goals.

3.2 Quality Management

Management for quality was developed by Japanese industrial organisations during the 1950s through the 1980s (Cole, 1999). Quality management in the US gained momentum in the 1980s as the TQM approach (Watson, 1993). About 30 years after the initial attempt, the TQM and its derivatives have gone beyond quality management to maintaining competitiveness by providing a philosophy to manage entire organizations. As Wu et al., (1997, p. 25) note:

The fourth and present stage [of quality management evolution] uses a quality system that embraces the entire organization including its management systems, suppliers, and customers.

As the rules of the game changed, the role of quality management shifted. While the quality of manufacturing goods was crucial for the 1980s and 90s, the focus on competitiveness in the 21st Century has shifted, from the shop-floor, to marketing and customers.

The closing of the *Journal of Quality Management (JQM)*, founded to provide a specific outlet for scholars in the field of quality management, is a good example of the change and shift within the quality movement. Cardy (2001, p. 113), a chief editor of *JQM*, states in *From the Editor*, in the final issue of that journal wrote:

The ending of *JQM* [...] is a reflection of how the landscape of quality has changed over the past six years. The quality movement was provocative and had strong and compelling implications for management. ... However, the quality movement had a faddish character. Further, it has been integrated into various functions and programs and is now less viable as a distinct stand-alone function.... Further, the quality movement has, to some extent, metamorphosed into a focus on customer related issues. The field of quality was, at its heart, a customer centric approach.

Quality management is enabled by measurement. Performance measurement frameworks, especially those of the 1980s, have become the heart of quality management initiatives. Several scholars have claimed that the development and use of such quality management techniques and philosophies radically influenced the development of performance measurement systems (e.g. Dixon et al., 1990; Maskell, 1991; Johnson, 1992)—a number of performance measurement systems (see Cross and Lynch, 1988; Sink and Tuttle, 1990; Kanji, 1998; Kanji and Sa, 2002) were initially designed to be incorporated with quality management techniques and philosophies. A number of studies (Turney and Anderson, 1989; e.g. Johnson, 1992; Lind, 2001) suggest that adopting new quality management techniques and philosophies, such as TQM, WCM, and JIT, strongly affected existing performance measurement systems and caused them to be modified to better suit the new techniques and philosophies.

3.3 Management Control

Cost and management accounting can trace its origin to the European Renaissance (i.e. the Venetian Republic, cc1580-1679; Carmona, 2006). Related early developments in cost and management accounting occurred in Britain in the 18th Century (Boyns and Edwards, 2006). However, this review starts when cost and management accounting settled in the industries of Europe and America, early 19th Century into the 20th Century. Management accounting precepts have been the basis of manufacturing performance measurement, inventory valuation, product pricing and capital investment analysis (Johnson and Kaplan, 1987; Maskell, 1989). After WWII, management accounting gradually changed from an initial focus on cost and budgets to a broader organizational view of management control (Johnson and Kaplan, 1987; Ryan et al., 1992). Traditional budgeting and control systems initially performed well in, what was then a relatively stable and less-competitive environment (Bunce et al., 1995; Wallander, 1999), but were seen as being much less responsive, flexible and able to serve management needs in the current hyper-changing knowledge-based economy with its rising customer demands (Hope and Fraser, 1997; Ekholm and Wallin, 2000; Hope and Fraser, 2000; Otley, 2003). A quick response to rapidly changing environments involved shifting the management control approach from a top-down cost control to a more bottom-up approach, so as to empower and enable frontline employees to use the information to solve problems, satisfy customers, and beat competitors (Johnson, 1992).

Simon et al. (1954; cited in Otley, 2003, p. 135) described the three functions of management accounting information as “*decision-making, attention-directing, [and] scorecard*”. Management control models feed intelligence back to managers for fine-tuning organizational strategy and re-aligning people and resources to achieve desired outcomes—specifically, information from strategic performance measurement systems are constructed at the core of the control system to provide: 1) a cybernetic control to track, review, and adjust the system for achieving predictable goals; 2) interactive use in an organic control-system that supports the emergence of communication processes; and 3) the mutual adjustment of organisational behaviours.

Management accounting, in response to the pressure of organisational changes in form and perspective, is evolving. Based on his involvement with management control research and practices over the past 35 years, Otley (2003, p. 319) advocated “Performance management, as I now prefer to call the area of management control...”. Similarly, Ittner and Larcher (2001, p. 352) reflect the extension of management accounting research and practices over 40 years by calling the new approach “*Value-based management (VBM)*” and draw attention to it as an “...integrative managerial accounting framework for measuring and managing business”.

3.4 Intellectual Capital

The earliest notion of intellectual capital in the form of human capital was traced back to the 1960s where it provided support for managing workforce as assets (Flamholtz *et al.*, 2002). Human capital as a core and potential asset to create capabilities had a resurgence of interest in the early 1980s (Flamholtz *et al.*, 2002). Sullivan (2000, p. 13) asserts that, in relation to intellectual capital “...history actually began in the early 1980s, as managers, academics, and consultants around the world began to notice that a firm’s intangible assets, its intellectual capital, were often a major determinant of ...[its profits].” Before that time, the dominant practice of business strategy was based on a competitive-based view. As alternative standpoint, a resource-based view, the intellectual capital literature has made dramatic advances since the mid-1980s, when the concept of intangible assets was first introduced to managers in Northern Europe and Scandinavia (Allee, 2000). Intellectual capital literature usually presents three aspects: reporting, measurement and management.

As an evolving field of activity, the management aspect of intellectual capital has been highlighted as the need to create and extract competitive value—this role positions intellectual capital at the core of a firm’s systems. If the optimum role of a business organisation’s management is to gain/maintain long-term competitiveness, the management of intellectual capital should serve “...the true values of a company’s performance ... its ability to create sustainable value by pursuing a business vision and its resulting strategy” (Edvinsson and Malone, 1997, p. 17).

4. CONVERGENT EVOLUTION OF PERFORMANCE MANAGEMENT

PM, (also known as: strategic-performance-, corporate-performance, integrated-performance or enterprise-PM), is an integrative framework for managing an entire organisation. It emerged recently and its:

...literature...is eclectic, diffuse and confused. The definitive *general theory* of performance management remains elusive, and is unlikely ever to emerge. Important contributions can be found in field as diverse as strategy, organizational behaviour, operations management, industrial economics and accountancy. [And, the] ...concept of performance management has progressively broadened...to the extent that by the 1990s it had become closer to implying a concern with the strategic management of an entire organization... (Smith and Goddard, 2002, p. 247).

The literature analyzed in the previous section indicates that evolving PM concepts and tools of performance measurement, quality management, intellectual capital and management control have progressively broadened their functions and roles—to be more strategic, holistic, and integrative. As noted earlier, after identifying the evolutionary paths of management practices, the final step in the study of convergent evolution of PM systems is to examine the current attributes of particular management practices to ensure that their current attributes are similar in form and function. The

evolution of four management practices and their form and function are discussed in the previous section. Therefore, the narrative in this section seeks to account for the current form and function of these systems' results from a blend of their origins and convergent evolution.

The concept of convergence evolution suggests that, even though the original locations and attributes of various management systems are different, the current form and function of evolving management systems tend to be driven by competitive pressure to be similar in form and function. Form in PM systems is multi-faceted and these facets combine to shape a system's appearance. This analysis defines form as orientation of a PM system. The look of a PM system is shaped by its form, which reflects its function(s). On the other hand, function is defined as activity which a PM system performs. Functions of the PM systems are assessed in the context in which they operate. It can be observed that the function of a PM system is what it does in its evolving role and has consequences for its fitness to its current and future environment(s). It is noted that form and function are closely related—change in one affects the other.

The development and adaptation of management concepts and tools that are revealed in their form and function, are (directly and indirectly) driven by human actions, if not intent (i.e. artificial selection) (Dickson, 2003; Ghoshal, 2005). The function of a management tool may change, over its evolutionary progression, in response to a variety of specific management demands. Trade-offs, imply that it is impractical for a given management tool to evolve a solution that is optimal for all *niches*. Patterns of form and function of management systems may first vary, as the environment tunes forms and functions to fit the environment. The current forms and functions of a management concept or tool reflect a succession of outcomes of prior choices, in the search for distinct PM capabilities. Forms of PM are as follow: 1) Measurement-embedded system, 2) Horizontally and vertically integrated system, 3) Strategic-oriented system, and 4) Fact-based information system. Functions of PM are as follow: 1) Creating and maintaining strategic alignment, 2) Supporting decision making, 3) Assisting formulation and execution of strategy, 4) Influencing organizational behaviours, and 5) Facilitating a learning organization.

In summary, management concepts and tools are social constructs and there are relationships between *the form and function* of a given tool in use. As form flows from function, PM only performs strategically if it has a strategic and integrative measurement system. This measurement system is used to control and drive behaviours in the workplace and to facilitate organizational learning. Since management information is needed by both supervisors and employees, fact-based information systems add to PM by producing the information needed to make decisions and manage.

5. CONCLUSIONS

This paper gives an interdisciplinary perspective on PM. It intends to transcend the narrow perspective found in many academic disciplines, to provide a potential re-framing of the mindset of scholars and managers in their dealings with facets and forms of contemporary PM systems. The convergence of PM arises when the PM protocols (such as performance measurement, quality management, management control and intellectual capital) from differing origins are shaped by a competitive environment to perform in the same way or for the same intent—for strategy-management capabilities. As evolving PM systems mature into new functions, their initial/source attributes can fade as their evolving attributes—holistic, strategic, and integrative—dominate and crowd-out earlier ones. Performance measurement systems are expanding their attributes from measurement to strategic PM. Management control systems have broadened their role and functions to gradually become more strategic. Quality management philosophies and practices are evolving from a quality-improvement view to a wider framework of managing the entire firm. Intellectual capital frameworks are also expanding their ability from spotlighting, measuring, and reporting intangibles to be comprehensive frameworks for managing the new-form strategic competitive capabilities.

The conclusions in this paper are drawn from a review of the literature of four management themes. While that array is relatively small (in terms of size and time frame) to support general conclusions about convergence of PM, this paper and its findings provide value as a *bedrock* affirmation of the establishment of PM as an area for further academic interest and study. Specifically, if the competitive co-evolution of similar systems and knowledge within an organisation's markets is a process, then comprehension is doable for only fleeting periods, after which the organization must again strive to understand and adapt to ever-accelerating change.

This analysis suggests several directions for future research: 1) While current forms and functions of PM systems can be readily observed and documented, the effect of their original forms, that remain visible but functionless or less-useful, should be considered and mapped for potential advantages and disadvantages. 2) An examination of PM mechanisms in real settings would add empirical support to the limited theoretical understanding developed in this study.

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