9P. A Proposed Study of Corporate Performance Management (CPM) Systems from a Dynamic Capability Perspective

Ajit Thomas
Carleton University, jathomas@connect.carleton.ca

Gerald G. Grant
Carleton University, Gerald_Grant@carleton.ca

Follow this and additional works at: http://aisel.aisnet.org/confirm2010

Recommended Citation
http://aisel.aisnet.org/confirm2010/9

This material is brought to you by the International Conference on Information Resources Management (CONF-IRM) at AIS Electronic Library (AISeL). It has been accepted for inclusion in CONF-IRM 2010 Proceedings by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact elibrary@aisnet.org.
A Proposed Study of Corporate Performance Management (CPM) Systems from a Dynamic Capability Perspective

Ajit Thomas
Carleton University
jathomas@connect.carleton.ca

Gerald G. Grant
Carleton University
gerald_grant@carleton.ca

Abstract
CPM systems are a new class of enterprise application that seeks to unlock the latent potential of data generated by Enterprise Resource Planning (ERP) systems. It appears to be a foregone conclusion that the use of such systems improves organizational performance thereby leading to competitive advantage but there is little academic research to support such an assertion. Using the dynamic capability theory of strategy, this research paper explores the mechanisms whereby such systems might possibly impact the firm’s performance through altering its capability portfolio. A two-part CPM performance model is developed framing implementation outcome in terms of three capability constructs, IT infrastructure, human capital and strategic leadership. It is suggested that these capabilities, moderated by the organizational culture must be aligned and developed to produce a successful implementation outcome. We propose that a successful implementation outcome provides the catalyst for a series of transformations resulting in the creation of new capabilities that may improve organizational performance.

This paper should be considered a “research in progress”.

Keywords
Corporate Performance Management, CPM, Business Intelligence, BI, Performance Management, Organizational performance, and Dynamic Capability.

1. Introduction
CPM systems are worthy of research because they are being widely adopted by firms with a view to improve competitive position and the market for these products is increasing (Gartner Research, 2009). Leading vendors include IBM Cognos, SAP Business Objects and Oracle. Vendors claim that CPM systems create positive outcomes by adding value to processes, empowering workers, and providing strategic advantage through manipulation of data and information. However, there is limited empirical research to validate and test such claims (Busi & Bititci 2006).

This study will use the Dynamic Capability (DC) perspective (Teece et al. 1997; Eisenhardt & Martin 2000; Helfat et al. 2007) to understand how superior performance results from an investment in a CPM system. Resource heterogeneity and value creation are fundamental
tenets within strategic theory (Porter, 1980; Prahalad & Hamel 1990; Barney, 1991). How can a CPM system provide a firm with a unique competitive position despite its ubiquity and ease of acquisition? The answer may lie within its value creating potential and the skill each firm develops in integrating CPM outputs within business processes. We propose that CPM systems create value by harnessing the latent power of information, from disparate and sometimes unrelated sources in unanticipated ways, integrating them into the daily processes of firms in ways that are difficult for competitors to replicate.

Since CPM systems may be used to drive strategy, this paper looks at the underlying factors that lead to a successful implementation to provide guidance to executives. Post-implementation, the impact such systems have on firm capabilities, individual and organizational performance is also explored.

2. CPM and Dynamic Capability
The dynamic capability perspective is underpinned in theory by the Resource Based View (RBV) and is defined as “…the firm’s ability to integrate, build, renew and reconfigure internal and external competencies to address rapidly changing environments…so as to achieve congruence with the changing business environment…” (Teece et al. 1997, pp. 515-16). Dynamic capabilities are described as “…the organizational and strategic routines by which firms achieve new resource configurations…” (Eisenhardt & Martin 2000, p. 1107). More recently, dynamic capabilities have been defined as “…the capacity of an organization to purposefully create, extend or modify its resource base…” (Helfat et al. 2007, p. 1) and it is the rent-generating resource base of the firm that ultimately impacts organizational performance (Barney, 1991; Bowman & Ambrosini 2003).

There are differing schools of thought among academics regarding the value of dynamic capabilities. They have been viewed as the key to competitive advantage (Teece et al. 1997; Teece, 2007) whereas others remain skeptical about the value of the concept and question the existence, usefulness and manipulability of such capabilities (Winter, 2002).

Although it may appear difficult to identify dynamic capabilities due to their somewhat intangible nature, Eisenhardt & Martin (2000) have noted that dynamic capabilities are identifiable routines and processes by which a firm develops products or accumulates technology assets. This definition allows one to study the factors that can encourage their creation and to understand the role management might play in the process. Dynamic capabilities are said to possess certain attributes including an “orchestration capacity” (Teece, 2007, p. 1320), allowing the firm to develop internal capabilities (Eisenhardt & Martin 2000) and must enable knowledge to be shared between IT and business users (Ray et al. 2007). CPM systems answer these requirements. By providing information reliably and quickly, activities can be coordinated between disparate groups and permits the firm to make better use of existing resources enabling knowledge to be distributed and shared.

Wade & Hulland (2004) have noted that IS resources, such as CPM systems, can be considered a dynamic capability by helping firms to develop, add, integrate, and release other key resources over time. We propose that it is in the use of the system that the dynamic capability is manifested. Just as a hammer can be used to build a house, it can just as easily smash one’s thumb – it depends on the skill of the person swinging it! The dynamic capability perspective suggests that it is the ability to learn from experience and to integrate this knowledge into future efforts that creates process and firm heterogeneity. We propose
that firms do not gain advantage through mere possession of resources but rather through an ability to deploy and re-configure such resources to take advantage of opportunities in a dynamic environment. This is where CPM systems may prove their worth. Through an ability to consolidate and aggregate complex information rapidly, CPM systems may provide a “sense-making” capability that offers new insight that may improve and enrich business processes making them more efficient and effective.

2.1. Overview of Corporate Performance Management

CPM is manifested as a set of management and analytic processes, supported by technology, that enable businesses to define strategic goals and then measure and manage performance against such goals. CPM systems provide a bridge between strategy and operations by measuring daily activities of the firm and presenting aggregated information to executives. Core CPM processes include financial and operational planning, consolidation and reporting, business modeling, analysis, and monitoring of key performance indicators linked to strategy. A CPM system consists of three sub-components - Business Intelligence (BI), Scorecarding and Enterprise Planning (EP) (see Figure 1).

CPM systems create a common technology platform providing unified software applications that addresses each of these perspectives. Scorecarding products deal with the present state and provide immediate feedback as to how the organization is currently performing. BI consists of reporting and analytics tends to look to the past to understand why the organization is performing as it is. EP looks to the future to set direction as to what the organization should be doing and how to move it to the next level. A symbiotic relationship exists between all of the CPM components whereby the output of each serves as input into other components (see Figure 2).
3. CPM Model
A two-part conceptual model (see Figure 3) is proposed with organizational performance as the dependent variable. The first part deals with the factors that result in a successful implementation outcome the result of which can lead to improved organizational performance through its action on firm capabilities. The model frames implementation outcome in terms of three capability constructs, namely IT infrastructure, human capital and strategic leadership. It is suggested that all three of these capabilities, moderated by the organizational culture of the firm must be aligned and developed to produce a successful implementation outcome. It is anticipated that a successful implementation outcome provides the catalyst for a series of transformations in the firm resulting in the creation of new capabilities that impact organizational performance.

![Figure 3: CPM performance model](image)

We propose that CPM systems impact organizational performance by altering the capability portfolio of the firm. They may change existing capabilities and processes by enriching them with new or previously unavailable information. They may also create completely new capabilities that the firm did not possess prior to the successful CPM system implementation. We believe that over time, CPM system outputs become entrenched into firm processes, resulting in improved decision making.

We acknowledge that attributing organizational performance to a single factor such as the implementation of a CPM system is difficult as many factors can affect this variable and attributing causality is complex. Based on our literature review, we have noted that certain firm capabilities are positively associated with organizational performance. The capabilities we have focused on should be present in varying degree in all firms. We realize that there is a vast spectrum of capabilities to consider but have deliberately limited our scope only to the following key firm level capabilities in considering how they are impacted through the presence of a CPM system.

- Project Governance
- Project Competence
• Business Process Redesign
• Information sharing, communication and quality
• Information and Knowledge Management

If CPM systems can be shown to positively impact any or all of these firm level capabilities, we believe a logical argument can be made that CPM systems should then have a positive impact on organizational performance. Based on earlier work of Shang & Seddon (2002), DeLone & McLean (1992, 2003), Mirani & Lederer (1998) and Velcu (2007), improvements in organizational performance are evidenced through tangible improvements in the following areas.

• Competitive position
• Decision making
• Planning
• Process Management
• Human Resources Management

We propose that firms with successfully implemented CPM systems should improve their competitive position with respect to their peers. Although other firms might just as easily acquire a CPM system, we believe that the experiences of a firm that has successfully implemented and integrated a CPM system will provide the necessary differentiation. Performance improvements may be observed in an ability to plan more effectively and in improved decision making based on novel, enriched and integrated sources of information. Process management should get more streamlined and efficient. We believe that CPM systems may also have an impact on the HR function. Taken as a whole, changes in some or all of these dimensions could be legitimately considered as improvements in overall organizational performance.

4. Research Method

The value of using mixed methods for IS research is widely accepted (Lee, 1991; Cresswell, 2008). In this research, quantitative data is collected through an online survey questionnaire. Qualitative data is collected through interviews with managers within organizations that have implemented CPM. Collecting data in such a fashion is more comprehensive and reveals nuances that may be missed were only one method to be used. The measurement constructs are based on earlier research on enterprise systems by Grant (2003) and Chen (2004). The survey questions were developed through empirical qualitative research, including discussions with CPM consultants and a review of the extant IT literature. The survey was pre-tested by a small group of expert respondents to establish face validity and appropriateness. Survey questions related to organizational culture were adapted from earlier quantitative work on culture measurements such as Competing Values Framework (Cameron & Freeman 1991), Core Employee Opinion Questionnaire (Buckingham & Coffman 2000) and Corporate Culture Questionnaire (Walker et al. 1996). The reliability of all of the measures as a suitable proxy for the concepts under study was established through calculation of Cronbach’s Alpha which was above 0.8 for all constructs being measured.

The survey was sent out to approximately 1000 organizations that have implemented a CPM system. The names of these firms were obtained from the public web sites of major CPM system vendors and represent multiple industries. We realize that vendors are likely to highlight firms that have had successful experiences with their CPM systems. However, we
feel that this is acceptable since our research is interested in how such systems impact capabilities and evidence of such impacts is more likely to be found in firms that have been successful with their implementations. We also believe that the degree of success is relative and will vary among firms and the reasons for this variance may come through in this research.

These firms were researched using online search engines and suitable contacts were obtained through a combination of phone calls and Internet research. A 10-20 % response rate is expected (100-200 responses). Depending on the number of responses, data will be analyzed using either ordinary multiple regressions, partial least squares or structural equation modeling techniques.

5. Conclusions
Since this is a research in progress, final conclusions are currently unavailable. We are anticipating a positive relationship between implementation outcome and the capability constructs identified in the model. We are expecting firms that have implemented CPM successfully to see improvements in their performance based on capabilities that were previously undeveloped or missing.

In this research, we have attempted to draw a link between a successful CPM system implementation and improved organizational performance. It is theorized that such systems will change the resource and capability portfolio of the firm thereby impacting organizational performance. Future studies might also include firms that have not been as successful and explore the causes for failed implementations but that is out of scope of this research. They may also look at the implementation of CPM and its impact on financial performance measures although isolating such outcomes to single causal elements may be challenging due to the presence of other factors.

References
Cameron, K., and S. Freeman (1991) “Culture, Congruence, Strength and Type: Relationship to Effectiveness”, *Research in Organizational Change and Development* 5, pp. 23–58


