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Building and Testing Theory on the Role of IT in the Relationship between Power and Performance: Implementing Enterprise Performance Management in the Organization

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A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at Virginia Commonwealth University.

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Abstract

This research builds on the literature about power and performance, offering new theory that extends the literature by accounting for the transformational effects of information technology. The role of information technology in the relationship between organizational power and performance is unclear in the literature. Management literature offers theories describing the relationship between power and performance. IS literature investigates the relationship between information technology (IT) and power and between information systems technology and performance, but is silent on the impact of IT on the relationship between power and performance. The nature of this relationship – direct, moderating, or indirect – is unknown. Due to the ubiquity of information technology in organizations and society, it is necessary to theorize on the relationship between IT, power and performance.

This study evaluates the implementation of Enterprise Performance Management (EPM) solutions in two case study organizations. The use of the IT portion of the EPM is the event of interest. In one case, the EPM implementation is considered a success. In the other, the EPM implementation is considered unsuccessful. Findings from each organization are compared and used to determine the overall research findings. The findings demonstrate the transformational potential of IT on the relationship between power and performance and provide insights that may lead to a deeper understanding of each. The findings of this case study point the way toward development of more detailed constructs and propositions that are testable, measurable, and refutable.

Keywords: information systems (IS), information technology (IT), business/corporate/enterprise performance management (EPM), business intelligence, implementation theory, case study, power, performance measures, enterprise systems

Theorizing the Role of IT in the Relationship between Power and Performance:

Implementing Enterprise Performance Management in the Organization

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1 Introduction

1.1 Overview

This research extends existing theory in the literature on power and performance by offering new perspectives on how Information Technology (IT) transforms the relationship between power and performance in organizations. Although some existing research explores the relationship between power and performance, the role of IT in this relationship is unclear in the literature.

A relatively large body of work has developed over the past two decades in the Information Systems (IS) and other academic fields that focuses on the impact of IT on power relationships in the organization. Likewise, a great deal of research in multiple disciplines has focused on the relationship between IT and organizational performance along with its associated measures. These efforts have yielded an increasingly nuanced understanding of both power and performance.

The relationship between power and performance, on the other hand, has not been studied extensively. In the management literature, research on this relationship is nascent. When IT is brought into the discussion, there is scant research on how technology and information systems have an impact on the relationship between power and organizational performance. In the IS literature, there is some work that discusses these relationships in an indirect manner, but it is difficult to find anything that espouses a specific theoretical perspective. Given the ubiquity of IT in organizations and society, it

seems incumbent on the IS research community to explicitly address the role of IT in moderating the relationship between power and performance in organizations.

1.2 Problem Definition and Research Question

Studies on the exercise of power in an organization have a rich history in the management literature and a significant and increasing tradition in the IS literature. The relationship between power and performance has been explored in the management literature, but is not yet fully developed. Research on the topic in the IS field is just beginning to emerge. Therefore, this research makes a valid contribution to theory by arguing that IT plays a significant role in changing the relationship between organizational power and performance, as represented by the measures an organization chooses to represent its performance and the ways in which they are selected.

Although most early IT efforts focused on streamlining and automating existing operational processes, the strategic potential of IT to provide new insight into organizations and their opportunities has long been recognized (Zuboff 1985). Efforts to provide executive-level information for strategic decision-making purposes extend back several decades.

Our understanding of the relationship between IT and power is increasing, but is still incomplete. The potential for IT to increase the decision-making capabilities and business understanding of individuals at all levels in the organization is well recognized (Zuboff 1988). At the same time, power conflicts in organizations, especially among executives and professionals, can prevent IT from achieving its potential in the organization (Kohli

et al. 2004; Markus 1983). Although earlier research on power tended to focus on the controlling, political nature of power over resources and/or organizational structure, recent research has focused on the complexity of power, revealing its multi-dimensional nature (Jasperson et al. 2002).

Theoretical views on organizational performance have also evolved into more complex, multi-dimensional perspectives. Whereas earlier work on performance typically focused on economic returns or task and process efficiency, more recent studies on firm performance focus on less obvious, knowledge-based aspects of performance (Ittner et al. 1998b; Piccoli et al. 2005; Rai et al. 2006; Wu 2006).

Finding theory relating power and performance in the literature is more problematic. The topic has been studied a bit in the management literature, but the focus has been limited to power relationships at top management levels (Daily et al. 1997; Pitcher et al. 2001). Some research has hinted at how the distribution of power can relate to performance, but has also limited its view to top-level executives (Smith et al. 2006). Beyond this management literature, it is difficult to find any work that investigates the role of IT in the relationship between power and performance.

Figure 1 illustrates a representational map of the literature on IT, Power and Performance. Each oval represents one of these factors in business research. Each line connecting the ovals represents the research stream that has explored the relationship between the two factors. The width of the connecting lines represents the relative amount of literature devoted to explaining that relationship. As the figure illustrates, and as we will discuss in the Literature Review, there is a large "pipeline" of research that focuses

on the relationship between IT and Performance (Line 1). A smaller, but still significant, pipeline of research studies the relationship between IT and Power (Line 2). The pipe representing the volume of research on the relationship between Power and Performance is quite small, and represents the relative trickle of research on the subject (Line3).

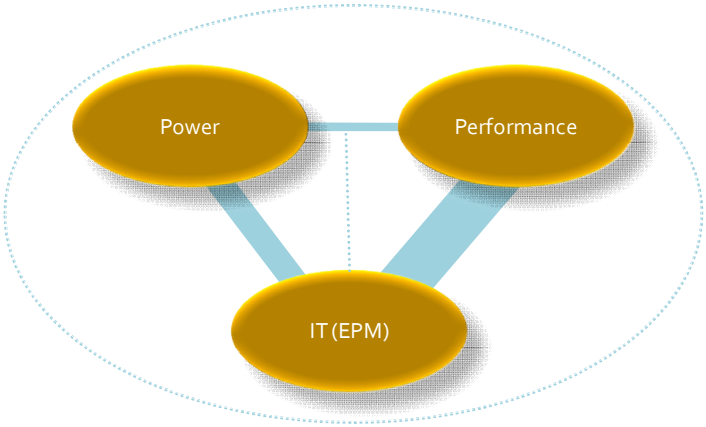


Figure 1 - A Representational Map of the Literature on IT, Power and Performance

A closer look at Figure 1 reveals yet another potential relationship that is still under construction (represented by the dashed line). This relationship (Line 4) links all three factors together by providing a greater understanding of how IT can have an impact on the relationship between Power and Performance. An alternative view of this relationship is represented by the dashed oval surrounding the three factors (line 5), representing the notion that Power, IT, and Performance all interact to create new organizational relationships.

In this intentionally simplified map of the literature, directional arrows representing causality have been omitted. Potential causality for each of the literature streams will be discussed in greater detail in the Literature Review, but it is important to note that this

research will investigate how IT, represented by Enterprise Performance Management systems in this research, plays a role in moderating the relationship between Power and Performance in both directions.

The objective of this research is to discover how the implementation of IT affects the relationship between power and performance in the organization. I believe that it is important to develop theory that helps explain the role of IT in changing the relationship between organizational power and performance because it will provide a greater understanding of the role IT offerings can play in the future shaping of our organizations. In addition, understanding the ways in which IT affects the relationship between power and performance will provide insights that lead to a deeper understanding of each.

With this objective in mind, the specific research question to be investigated is: *How does IT affect the relationship between organizational power and performance?*

1.3 Definitions

Before delving into the topic of inquiry, we must first define several key concepts that will frame the investigation. The assertions and discussion presented in the remainder of this work are grounded in the definitions presented here.

Power. There are many definitions of power, only a few of which relate to interactions between people and groups. For example, The American Heritage® Dictionary of the English Language offers the following possibilities: "4. The ability or official capacity to exercise control; authority. 5. A person, group, or nation having great influence or control

over others… 6. The might of a nation, political organization, or similar group." (_____ 2000d)

It is clear that the concept of power is based on the ability to control or change behavior; what is less clear is the means by which this is accomplished. Jasperson et al (2002) present the analogy of the word *snow*, which is but a single word in the American Language, but has a variety of words that describe it in the native language of Alaskan Inuits. Likewise, to researchers in the social sciences, the concept of power may also take on different meanings, depending on the context of the investigation. One question arising from the definitions discussed above is: Must there be a conscious effort to alter behavior for power to be present?

Another view of power can be inferred from considering a related word, *empower*. American Heritage defines empower as follows: "1. To invest with power, especially legal power or official authority. (See synonyms at authorize.) 2. To equip or supply with an ability; enable," (_____ 2000b). This view of power, notably the second definition, implies some level of personal improvement or self-actualization as part of the power process.

Armed with this perspective, one can imagine a concept of power that can change individuals' behavior not only through the overt manipulations of people in their interactions with each other, but through the subtle, constant changes in information flow and understanding that take place in an organization as new information technologies are implemented, learned, and assimilated. Of course, all of this subtle understanding and assimilation is taking place at the same time that power is consciously being exercised by

individuals and groups in an organization: the multiple aspects of power interact with each other constantly. This combination of overt control, increased awareness and individual understandings that change behavior forms the basis of the definition of power for this study.

Performance. Performance is another term that can be interpreted in many different ways. Going back to the dictionary, American Heritage gives us: "3. The way in which someone or something functions. 5. Something performed; an accomplishment." (_____ 2000c)

The business literature view of performance can trace itself back to Taylor's early 20th Century time and motion studies. Many recent studies continue the task-oriented perspective on performance, but also include a resource-oriented financial view of performance, especially for organization-level studies (Boland 1993; Mir et al. 2000; Tippins et al. 2003). Such resource-oriented studies typically use an implied definition of performance.

Another view of performance considers the level of success in implementing and using IS. Researchers have taken a number of different approaches in studying this perspective. Many of the theoretical models in IS focus on intent to use and use behavior as the primary success criteria (Davis 1989; Venkatesh et al. 2003). From an organizational perspective, it is important to go beyond the impact of IS on individuals (even many individuals) and see how an information system impacts the organization along several dimensions (DeLone et al. 1992; DeLone et al. 2003; Krieger et al. 2003;

Seddon 1997; Seddon et al. 1999). This "organizational impact" perspective of success is most relevant to the concept of performance as presented in this research.

Going back to the formal definition of performance, there is an emphasis on the *what* and *how* of the way things get done, which can include much more than task times and dollar amounts. Increasing recognition of the multiple aspects of performance has led some authors to explore the concept further. As an example, the Unified Theory of Acceptance and Use of Technology (UTAUT) model incorporates a multi-dimensional measure of performance that includes such factors as extrinsic motivation, relative advantage, and outcome expectations (Venkatesh et al. 2003). Jin (2006) recognizes three aspects of firm performance: operational, financial, and strategic. His strategic aspect, however, is measured using two financial criteria: market share and sales growth.

A further review of the strategic aspect of performance reveals the importance of strategic outcomes, including the level of innovation in developing new market opportunities and internal processes (Pitcher et al. 2001). Organizational competencies can also be linked to performance, although IS studies tend to focus on IT-related competencies (Tippins et al. 2003). Going back to American Heritage, we find the following definition of competence: "1a. The state or quality of being adequately or well qualified; ability. See synonyms at ability. b. A specific range of skill, knowledge, or ability" (_____ 2000a). Based on this definition, it is appropriate to incorporate organizational competency into the concept of firm performance.

Another perspective on performance addresses the internal measures firms use to rate their progress against strategic objectives. In this perspective, firms must strive to identify

not just those measures that are convenient, but those that best exemplify the firm's unique strategy (Frigo 2002). The measures selected may include both financial and non-financial components. Henri (2006) investigated the relationship between the internal culture of a firm and its performance measurement system, finding significant relationships between the two.

Clearly, performance relies on the competencies, innovations, and strategic outcomes of the organization and its members, as well as on the financial and efficiency factors that are prevalent in the literature. It is this holistic, multidimensional view of performance that will drive the remainder of this study.

Enterprise Performance Management. Defining Enterprise Performance Management is not a trivial endeavor, as the variety of products and services that are labeled "Performance Management" cover a wide range of capabilities. Vendors and industry groups still haven't standardized the terminology, with offerings called either *Business, Corporate, or Enterprise* Performance Management (BPM, CPM, EPM). The generic *x*PM or simply PM have also been used from time to time. In addition, vendors specializing in Business Intelligence now partner with or have merged with vendors specializing in Performance Management, making it difficult to differentiate between the categories (Brown et al. 2005). Indeed, Gartner has eliminated the distinction between the two in its 2006 set of industry reports, combining BI and PM into a single category (Bitterer et al. 2006; Hostmann et al. 2006). In the Gartner framework for BI and PM, BI is defined as both an overall set of applications and processes, and as an enabling technology platform. Gartner defines Performance Management as a metrics-based

approach to linking operational activities with business strategy. Although this is a relatively narrow, technology-oriented view of BI and PM, it does provide a good conceptual framework for relating BI and PM, as illustrated in Figure 2.

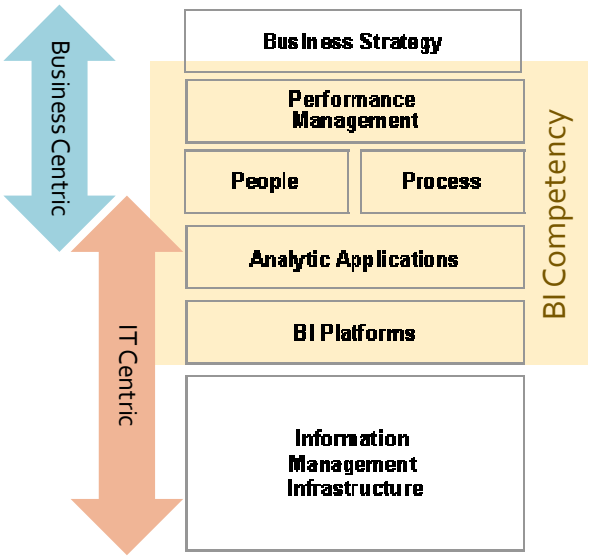


Figure 2 - Adapted from the Layers of the Gartner Business Intelligence and Performance Management Framework (Gartner 2006)

In the competitive marketplace, consolidation has reduced the number of major EPM vendors over the past several years. In 2007, Oracle acquired Hyperion Solutions (Vara 2007) and SAP purchased OutlookSoft and Business Objects (Wiesmann 2007). Microsoft has also introduced its own set of EPM tools (Hoover 2007) to compete with Oracle, SAP, and other vendors such as Cognos (Totty 2007).

Brown et al (Brown et al. 2005) define PM (BPM) as a methodological framework for measuring and managing performance in a firm. This view is consistent with the Gartner view, and positions PM as the natural successor to earlier Decision Support (DSS) and

Executive Information (EIS) systems. Wheatley (2003) emphasizes the organizational aspect of PM, citing AMR Research, which defines PM as:

> an emerging superset of applications and processes that cross traditional department boundaries to manage the full life cycle of business decision-making, combining strategic goal setting and alignment with planning, forecasting, and modeling capabilities. (AMR Research, quoted in Wheatley 2003)

This definition is somewhat vague ("emerging superset…"); however the marketplace for PM is still working itself out (Pallatto 2007), so that may be by design. Nevertheless, it captures the organizational aspect of PM and provides an initial understanding of PM for this research effort, which aims to uncover organizational factors related to power and performance for PM implementations. Packaged EPM applications currently offered by software vendors and VARs usually focus on finance-related activities, although many implementations include the development of additional custom applications. Examples of typical EPM packaged applications include:

- Business Modeling (Activity Based Management/Costing)
- Metrics-Based Goal Setting and Reporting (Balanced Scorecard, Performance Prism, other KPI-oriented approaches)
- Enterprise Planning, Forecasting, and Budgeting
- Financial Reporting and Consolidation (Statutory and Managerial)
- Strategic Financial Planning

Given the variances in the definition of the term "Performance Management," I define the term *Enterprise Performance Management*, for the purposes of this study, as follows: *A set of IT-based applications, processes and tools that organize, summarize, explore and present intra- and extraorganizational information in a manner designed to foster support for existing and development of new business strategy.* In the field, Enterprise Performance Management systems within an organization will reflect a combination of

the approach taken by their particular vendor and the organization's interpretation (and implementation) of the concept.

Information System (IS) and Information Technology (IT). It is useful in IS research to understand and clarify the distinction between the technology itself (the IT) and the system (the IS) into which it is implemented. As Lee (1999) explains, the typical phenomena of interest in organizational IS research is not the IT itself, nor the social setting into which the IT is placed, but the emerging interactions that develop between the two in what can be considered the overall Information System. Figure 3 illustrates this concept of IS with respect to generic technology placed into an organization.

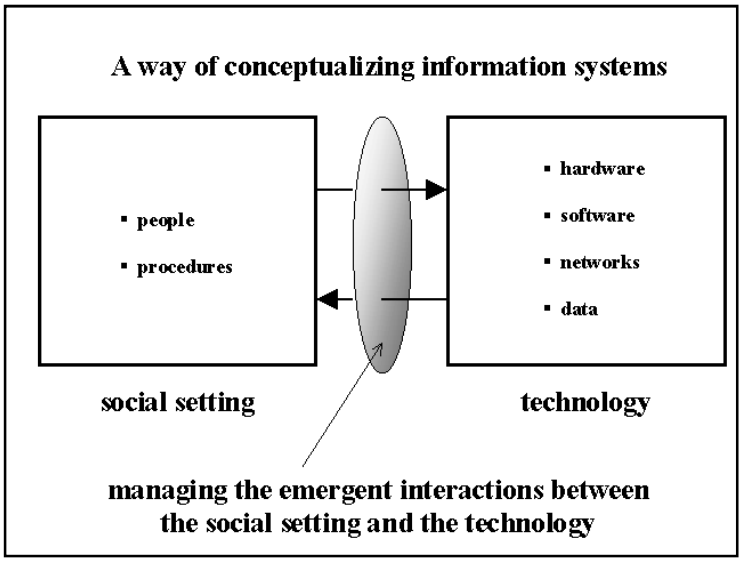


Figure 3 - Conceptualizing an Information System (IS) (Lee 1999, pg. v)

This conception of an IS is well suited for this study. In the Enterprise Performance Management domain, the technology is also a key component of the IS. EPM

implementations, much like other systems such as ERPs, CRMs, messaging, and e-mail systems, make use of hardware, software, networks and data.

The distinguishing feature of EPM is the software and processes that organizations implement to address their needs. Much like other enterprise systems, EPM utilizes operating systems, relational and OLAP (online analytical processing) database management systems (DBMS), web servers, transaction servers, data transformation tools such as ETL (extract, transform and load) and EAI (enterprise application integration), and master data management (MDM) tools. In addition, EPM solutions make use of packaged EPM software applications and custom applications built on top of the base layer of Business Intelligence (BI) tools.

Figure 4 presents the same IS conceptualization as that presented in Figure 3, except that the technology (IT) and social setting blocks of the diagram have been expanded to display the components that constitute an EPM implementation. The implementation of these components is the IT event that provides the impetus for this study. As organizations implement EPM technology, I investigate how the use of the new technology has an effect on the interactions in the social setting that is the organization.

Research on new IT products and approaches is important to the development of the IS field. Such research provides an opportunity to confirm or disconfirm existing theory in new settings. It also provides an opportunity to extend or create new theory made possible due to the changing objectives of IT and the ways organizations interact with it (Lee 2000).

In a complementary sense, the meanings attached to the representation of information as displayed through the technology in use at an organization can play a large role in determining how people interpret their roles (Stamper 1985). The use of symbols, shared objectives, and social interactions combine to create an environment of information flow.

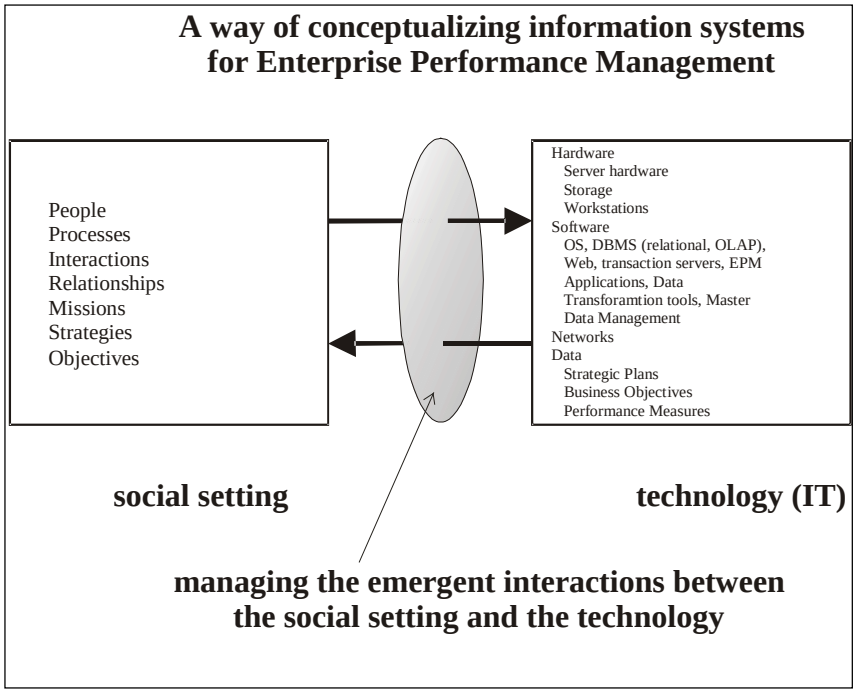


Figure 4 - Conceptualizing an EPM Information System

I will use this sense of emerging interactions between technology and the organizational setting to guide my discussions about information systems for the purpose of this study.

1.4 Organization of this Dissertation

This section outlines the structure for this research project. Chapter 1 (this chapter) has introduced the topic of interest as well as the research motivations and key definitions.

Chapter 2 reviews the literature related to IS Success, Performance Management, Strategic and Enterprise-level Information Systems. This research aims to fill a void in the IS Success literature at the organizational level for Strategic Enterprise Systems, using the vehicle of Enterprise Performance Management as the research context.

Chapter 3 outlines the theoretical justification for and the research methodology used in this study. Chapter 4 discusses the details of the empirical work performed for this study. Two major sections contain the details of each organization reviewed during the research. Within each of these major sections, subsections detail the organization, the PM implementation, and the results of the case study.

Chapter 5 presents the research findings of the case studies. The findings are examined and presented through the lens of the theoretical and methodological approaches outlined in Chapters 2 and 3.

Chapter 6 summarizes the work presented in the earlier chapters, including a review of key findings, a discussion of the contributions this research makes to the literature, methodological and domain limitations presented by this research, and opportunities for future research in this area.

2 Literature Review

This study aims to uncover the impact of IT on the relationship between power and performance. The first step in this process is to see what the literature says about the key concepts. Many studies in the business literature investigate the nature of power in organizations. Likewise, many existing studies focus on performance. In the IS literature, there are also a number of studies that focus on the impact of IT on power or performance. The literature review presented in this chapter is organized around the relationships between these three concepts.

First, we analyze the relationship between power and IT in organizations. Next, we evaluate the relationship between IT and performance. Finally, we review the relationship between power and performance. In each of these discussions, we will first review the general business literature, then focus on what has been said in the IS community. At the end of each section, I present a brief summary of the literature review for that particular relationship.

Since much of the literature on EPM is presented in practitioner publications, I also present a brief section that discusses concepts and viewpoints from this literature that will be helpful to the reader. I close this chapter with a summary of the literature.

2.1 Review of the Academic Literature

2.1.1 Power and IT in Organizations

The study of power in organizations has a rich tradition which has been applied to the study of IT implementation in organizations. Both the IS literature and the general management and business literature present a significant number of studies which present findings on the relationship between IT and power in organizations. The next two subsections highlight key studies on the subject in each body of literature, followed by a recap of significant themes, gaps and research opportunities in IT and power.

2.1.1.1 Power and IT in the Management Literature

There is a rich tradition of power research in the management literature. Vincent (1988) emphasizes the need to balance the relative power of a firm's various stakeholders so that all can benefit. In this high level view of power, strategic advantage comes from understanding the firm's organizing principles, the impact of change and the evolution of these principles, and the relationship between the firm and its external influences.

The relationship between power and technology has also been studied at length. Sisaye (2005) evaluates compliance typologies of power based on Etzioni's three approaches: normative, coercive, and utilitarian-remunerative. In this study, IT is found to be a significant contributor to changes in power relationships:

> Environmental factors, including advances in information technology, not only recently changed the composition and formation of work groups and team members; it has also revolutionized the management-labor control and contractual relationships. (Sisaye 2005, pgs. 182-183)

Coombs, Knights and Willmott (1992) note the difference between IT and other technologies. According to their study, the informational aspect of IT is linked with power relations in the organization, along with the various subjective constructs that result from these power relations. Davenport et al (1992) also equate information with power, and discuss the various political structures that can result from informational power. Their study of twenty-five organizations concludes that an "enlightened" monarchical or federalist approach to information is the best approach.

Bloomfield and Coombs (1992) also note the ways that IT can lead to changes in the ways individuals perceive and understand their business unit. In their study, they note how symbolic power leads to the development of self-disciplinary power in which the individuals change their behavior to reflect their new understanding of their organization.

Not all IT-related power changes are good, however. Thompkins (1990) illustrates how the lack of proper direction can lead to increased turmoil and power struggles in an organization. In an extreme societal example, Linstone (2003) paints an interesting picture of how technological, organizational, and personal perspectives can amplify the mythological or religious perspectives of an individual or group. This powerful combination gives organizations espousing a particular ideology (including terrorist organizations) the ability to recruit members from a much wider swath of humanity and coordinate their activities over a wider scope of geography than ever before.

There is also a gap between theoretical work on IS and what is actually found in practice (Serafeimidis et al. 1999), due in part to the underlying assumptions researchers make. Two case studies demonstrate the need for further study on the context, content

and processes related to IS implementations and their impact on organizational change. Differences between practice and theory are generally due to the changing context of culture and stakeholder power between various organizations.

Table 1 illustrates representative findings on power presented in the Management literature.

Table 1 – Representative Studies of Power and IT in the Management Literature

Article	Method	Power Perspective	Findings
(Bjørn-Andersen et al. 1980)	Case Study	Influence	Job discretion and influence are not directly related through the introduction of IS. IS does increase the opportunity to influence through formal channels, and gives direct users greater control over indirect users.
(Bloomfield et al. 1992)	Case Study	Symbolic power Self-disciplinary power	Changes in individuals' understanding of their business units based on symbolic power leads to self-disciplinary power that is consistent with their new understanding.
(Coombs et al. 1992)	Case Study	Informational power	The information dimension of ICT gives it a distinctive character, in contrast to other technologies, that remains under-theorized. 3 concepts - culture, control, and competition - provide additional insights for the study of the development and application of ICTs in organizations.
(Crawford 1998)	Questionnaire	Resource-based power Power perceptions	Strategic contingencies theory of interorganizational power. Considers power variables and power bases through the implementation of IS in a college library. Although some minor relationships were found, the overall model was found to be insignificant.
(Davenport et al. 1992)	Case Study	Informational power Political motivation for power	Information, rather than the great "liberator," has become the currency of the modern organization. Equates power as a result of IS to various political systems. Organizations should strive to move from less effective systems, such as feudalism and technocracy, to more "enlightened" ones like monarchy and federalism.
(Malmi 1997)	Case Study	Political (resource-based)	Organizational power and politics are key in the success of IS initiatives (ABC is the context here). Resistance is primarily structural, and can not be overcome only through implementation strategies.

Article	Method	Power Perspective	Findings
(Markus et al. 1983a)	Conceptual Model	Structural power Resource-based power	Resistance to IS is not due to system functionality, or user involvement, but on the consistency between
(Serafeimidis et al. 1999)	Case Study	Stakeholder power, culture	Gap between theoretical work and practice in organizations. Evaluation of multiple dimensions of IS practice. Organizational culture and the relative power of various stakeholder groups are generally not considered in research on IS.
(Sisaye 2005)	Archive search	Normative power Coercive power Utilitarian-remunerative power	Evaluates Etzione's views of power and compliance (normative, coercive and remunerative) in group settings. Considers originality and value in the exercise of management control.
(Thompkins 1990)	Case Study	Resource-based power Political power	IT can help management utilize and regulate resources, but can actually add to politcal turmoil without proper direction and use. Political power is developed and managed by individuals as a substitute for legitimate power through internal strength.
(Vincent 1988)	Conceptual model	Resource-based power (high-level)	The complicated set of relationships between the company and its stakeholders can be called an organizing principle. When developing an organizing principle, the key to realizing strategic advantage lies in balancing the relationships so that all parties benefit. A firm's organizing principles, along with its process and interaction with external factors, shape the development of its strategic advantages.

2.1.1.2 Power and IT in the IS Literature

Not surprisingly, power and IT have been studied at length in the IS literature as well. Markus' (1983) seminal study investigates resistance to IS through an interaction theory perspective. Her findings suggest that resistance increases when the power structure implied by the design of the IS does not fit with the existing power structure of the organization.

Cavaye and Christiansen (1996) developed a framework that allows the researcher to track changes in organizational power distribution over time. Their framework was supported in a case study that investigated the relationships between power and changes in the IS implementation process. This framework, while useful, limits its focus to the political, resource-based perspective of power.

Jasperson et al (2002) truly deconstruct the notion of power, breaking it down several different ways. Initially, the authors develop common themes on power: authority, decision control, influence, politics among them. They then perform a metatriangulation of the literature on power across two lenses: the technology lens and the power lens. In the technology perspective, power can be based in the technology itself, in the organization, or in an emergent dynamic that develops between the technology and the organization through the merging of technology use and social interactions.

The power perspective provides four views of power. Rational power assumes a set of rational actors using their authority and information to create their power bases. Pluralist power uses an objective view of reality in which multiple constituents are necessarily in conflict and must consciously negotiate their control over resources and information. Interpretive power views reality as socially constructed, with power belonging to those who set the agenda in determining the realities that others participate in. Radical power views power in terms of social and class structures that exist outside the organization, with power reflected in the possibility of either maintaining the status quo or creating a new structure.

Jasperson et al use the two lenses into power to create twelve different power scenarios, which they merge into eight "metaconjectures" on the nature of power. Three of the metaconjectures relate to IT Impact, where IT use can temporarily moderate power structures within a group or organizational setting. These power structures continue to evolve after the new IT is introduced, eventually leading to a new equilibrium of power within the organization. This new equilibrium may or may not be significantly different from the original power structure.

Three more of the eight metaconjectures focus on IT Management. In these findings, top management must continue to exercise their formal authority, or other parties will step in to exert influence in IT decisions. In addition, the level of IT department control over resources and organizational authority determines whether managers utilize formal methodologies or negotiation in implementing new technology and formal authority structures. The final two metaconjectures target IT Development. In these, resource conflicts or disagreement on the importance of IT efforts lead to the need for additional top management support in order to achieve implementation success.

Dhillon (2004) adapts Hardy and Redivo's (Hardy 1996; Hardy et al. 1994) work in the management literature to develop a framework for studying multiple dimensions of power in IS. In this framework, Lukes' (1974) three dimensions of power: power over resources, power over meanings, and power over processes, is merged with a Foucauldian view of power as pervasive, systemic, and knowledge-based (Foucault 1995; Introna 2003; Walsham et al. 1999; Willcocks 2004). The resulting framework considers

changes in each dimension of power across four criteria: changes in structure, changes in people, changes in systems, and changes in culture.

Table 2 – Representative Studies of Power and IT in the IS Literature

Article	Method	Power Perspective	Findings
(Cavaye et al. 1996)	Case Study	Political power (Resource-based power)	Changes in the distribution of power help explain significant changes that occur in the implementation process.
(Dhillon 2004)	Case Study	Multi-dmensional - Resource-based - Meaning-based - Process-based - System-based	Adapts Dimensions of power (Hardy et al. 1994) framework for use in IS research, by investigating changes in structure, people, systems, and culture. The Foucaultian "power of the system" is difficult to change, so efforts should focus on understanding and managing changes in the other three dimensions.
(Jasperson et al. 2002)	Metatriangulation of an extensive literature review	Multiple power perspectives through two lenses: Technology and Power	Eight metaconjectures on power in three broad areas: IT Impact, IT Development, and IT Management. Assertion: Interpretive emergent views on power focus on the formality of authority. Management, users, and the IT all interact with each other and it takes time to reach an equilibrium in power distribution subsequent to the implementation of a new IS. Missing: A lack of focus on the factors (variables/dimensions) inherent in power. Too much focus on IT power shifts.
(Markus 1983)	Case Study	Resource-based power Information-based power	Interaction theory is presented as a way for implementers to view resistance to IS. Resistance is increased when power structure implied by the design of the IS does not support the existing organizational power structure.
(Silva 2007)	Conceptual Framework	Circuits of Power (Clegg 1989)	Reviews various perspectives on power (phenomenology, critical theory, structuration theory) – finds that Circuits of Power is appropriate for studying the nuances of political power in the organization by allowing researchers to link power concepts to data.

Using this framework, a greater understanding of the current state of and potential changes in power dimensions increases the likelihood of IS project success (Dhillon

2004). The framework is applied to a case study, which provides insight into Lukes' three dimensions of power. The pervasive Foucauldian "power of the system," which is extremely difficult to change, remains unchanged, contributing to the failure of the IS project.

2.1.1.3 Summarizing the Literature on Power and IT

It is interesting that there is a significant amount of research on the relationship between IT and power but most of it appears in the management and general business literature rather than the IS literature. Of the work on power in the IS field, a few landmark studies have provided inspiration for a generation of IS researchers. Despite the quality and number of studies on the topic, power is still considered understudied in the field (Jasperson et al. 2002).

One criticism of early work on power is that it takes a monolithic view of power, in which there is a single view of power that is roughly equivalent to political influence or control of resources. Sometimes, the definition of power is stated explicitly; other times it is merely implied. Later work on power tends to recognize the multiple aspects of power, but typically focuses on just one power dimension, frequently settling back on resources and influence for the primary analysis, with the occasional study that focuses on the cultural aspects of power. These limited views of power usually ignore vital contextual issues that help explain the results of a particular study.

The findings of work to date on IT and power can be summarized by the diagram presented in Figure 5, where IT and power have a mutual relationship with each other.

The nature of the IT and the perspective(s) on power certainly vary from study to study, and some studies may only support a unidirectional relationship. Nevertheless, I believe that the dual relationship represents a fair summary of the entire body of literature.

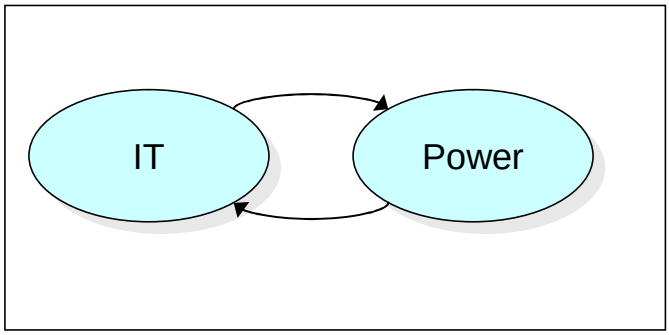


Figure 5 - Power and IT

In the management literature, more recent work on power has taken a turn toward a more nuanced, multilevel view of power, in which understanding the various types of power is key to determining how it interacts with other organizational forces (Hardy 1996; Hardy et al. 1998; Hardy et al. 1994). This multilevel perspective on power has been brought into the IS literature, both through analysis of existing research and through the explicit study of multi-dimensional power (Dhillon 2004; Jasperson et al. 2002).

Silva (2007) proposes Clegg's (1989) Circuits of Power framework as appropriate for studying power in organizations, not only because it allows for the study of power's various nuances, but because it provides a means for researchers to link those nuances to actual research data.

Despite initial efforts to understand the various aspects of power, there is much to learn about the relationship between IT and the multiple dimensions of power. Jasperson

et al's "metaconjectures" on power present a number of directions that research on IT and power can take. In reviewing the impact of IT, the interpretive view of power holds that the introduction of technology can provide an opportunity to define new language and symbols in the organization, and that the meanings assigned to these new structures can change the power structure in the organization, at least until the next introduction of new, disruptive technology. Interestingly, the literature on this perspective of power is lacking (Jasperson et al. 2002).

> Power is clearly a complex phenomenon that can be viewed and best understood from multiple layers. At a most basic level, a metaparadigmatic approach can help authors understand, delimit, and carefully describe the conceptualization of power that they are adopting when studying IT. At a deeper level, the metaparadigmatic approach can help surface anomalies and paradoxes. (Jasperson et al. 2002, pg. 427)

One of the objectives of this research is to add to the body of knowledge on the multiple facets of power in the organization and its relationship with IT. By linking IT to both power and performance, we should gain a greater appreciation for how the various aspects of power can be utilized in order to achieve organizational objectives.

2.1.2 Performance and IT

IT-related performance has been studied exhaustively in both the management and IS literatures, with generally inconclusive results. Early studies focused mainly on economic performance factors; the lack of agreement on results led to criticisms of the performance measures used in the various analyses (Brynjolfsson 1993). As our understanding of performance and its relationship to IT initiatives has improved, the breadth of performance measures has increased. Many studies now consider more than just economic measures of performance.

2.1.2.1 Performance and IT in the Management Literature

Management researchers have also spent a great amount of effort evaluating the impact of IT investments on firm performance, with mixed results. Anderson et al (2006) found that IT investments are related to increased economic performance, regardless of whether the investments were discretionary or not. Their study focuses on Y2K investments, and finds that one of the unintended consequences of modernizing IT was that firms were able to compete in new market channels that were previously unavailable to them.

On the other hand, Huang et al (2006) find that mere investment in IT infrastructure and resources does not necessarily lead to improved economic performance. In their study, they found that the intangibles related to IT, such as know-how, organizational culture, environment and reputation, have a higher correlation with firm performance.

Jin's (2006) survey of apparel manufacturers found that general IT investment was related to improved operational performance for large firms, but was not necessarily related to improved strategic (proxied through market share and sales growth) or financial performance. Instead, the effectiveness of the IT effort needed to be considered in order to draw conclusions relating to performance. In addition, Jin also found that a single measure of performance was too broad and recommends assessing multiple measures of performance when evaluating the effects of IT.

Wu's (2006) study of Taiwanese firms finds that IT resources lead to enhanced dynamic capabilities, which in turn lead to improved firm performance. Performance, in

this case, is composed of four factors: speed in innovation and market response, and production efficiency and flexibility. He concludes that IT-related capabilities are specific to the firm, and are hard to copy from one organization to the next.

Table 3 - Performance and IT in the Management Literature

Article	Method	Performance Perspective	Findings
(Anderson et al. 2006)	Statistical analysis of public records	Economic performance: earnings and shareholder value	Investments in IT (even non-discretionary ones such as those made for Y2K) result in increased firm economic performance.
(Huang et al. 2006)	Statistical analysis of questionnaire and public financial data	Economic performance: Return on Assets (ROA), Return on Sales (ROS)	Resource-based view of the enterprise. Investments in IT infrastructures and IT resources does not necessarily correspond with firm performance. It is the IT-related *intangibles* that correlate with gains in firm performance.
(Jin 2006)	Survey	Three levels of performance: operational, strategic, financial	All IT investment cannot be assumed to be made with equal effectiveness. Also, a single measure of firm performance is too broad.
(Wu et al. 2006)	CEO survey	Multiple measures: innovative speed, market response speed, production efficiency, production flexibility	IT-enabled capabilities are firm-specific and hard to copy across organizations. These capabilities can be leveraged to transform IT resources into greater firm value.
(Menachemi et al. 2006)	Survey and financial statement analysis	Financial and operational performance measures: ROA, cash flow ratio, operating margin, net margin, net inpatient revenue, net patient revenue, operating income, total income, hospital expenses, total expenses	IT adoption is consistently related to improved performance (hospital context), regardless of IT type. Expense ratios typically increase. Business case made for IT investments.

2.1.2.2 Performance and IT in the IS Literature

Bird et al (2006) evaluate IT investments with respect to economic performance measures, linking performance both to IT investment and strategic alignment. Shin (2001; 2006) takes an economic view of performance in two recent studies. His archival analysis of IT use considers performance as a combination of return on assets, return on

equity, and gross margin or net profits. Rivard et al (2006) combine a resource-based and market forces view; their view of performance includes the economic measures revenue, profitability and market share. Zhu et al (2006) note how the diffusion of technology in an organization is related to firm performance. A number of technology innovation and firm contextual factors are compared against economic performance measures: extensive usage and compatibility are the strongest technology innovation factors, and technological competence is the strongest firm contextual factor with respect to firm performance.

Duh (2006) uses a Balanced Scorecard (Kaplan et al. 1996) approach for capturing firm performance, including measures in financial, customer-related, internal process, and learning/growth categories. Table 4 summarizes the perspectives on performance and findings of a number of representative studies.

A significant amount of IS research has focused on competencies and capabilities when studying organizational performance. Li et al (2006) discuss performance in terms of capabilities – both technological in nature and organizational in nature. Pavlou et al (2006) describe how functional competencies and dynamic capabilities lead to the creation of competitive advantages for firms.

Ray et al (2005) surveyed a number of life and health insurance managers and find that the true differentiators for performance aren't the raw quantity of resources and capabilities, but the socially complex, tacit resources that make a firm unique.

Wu (2006) also goes beyond resources, but focuses on the capabilities of those resources to produce goods in an effective and flexible manner, innovate quickly, and respond promptly to market pressures in a dynamic competitive environment. Wu notes that financial measures may be particularly ill suited to represent performance, as they do not necessarily reflect the accumulation of competitive strength that positions a firm for long-term advantage.

Table 4 - Performance in the IS Literature

Article	Method	Performance Perspective	Findings
(Byrd et al. 2006)	Survey analysis	Economic performance: revenues, profits per employee	Links performance to both IT investment and strategic alignment.
(Duh et al. 2006)	Survey analysis	Balanced scorecard approach to performance: financial, customer-related, internal processes, and learning and growth	Association between strategy, extent of IT implementation, and firm performance. Focus on planning and control functions.
(Li et al. 2006)	Conceptual framework	Capabilities – technological and organizational	Technological capabilities and organizational capabilities of a firm. The study investigates the IT capability and its impact on firm performance.
(Pavlou et al. 2006)	Survey analysis	Competencies and capabilities lead to competitive advantage	Leveraging IT to competitive advantage through functional competencies and dynamic capabilities. The effect is more pronounced in turbulant environments.
(Piccoli et al. 2005)	Literature review	Resource and capabilities (technical, management, and relationship) perspective	Interdisciplinary review of IT, strategy and competitive advantage. Authors propose reviewing ways that IS and IT-related capabilities can enhance firms' abilities to generate and launch future competitive moves and initiatives.
(Rai et al. 2006)	Survey analysis	Capabilities perspective: operations excellence, revenue growth, customer relationships	Investigates the hierarchy of IT capabilities and their relationship to firm performance.
(Ray et al. 2005)	Survey analysis	Resource-based	Survey on performance of customer relationship processes Tacit, socially complex, firm-specific resources are the differentiators for improved performance, not simply IT resources and capabilities.
(Rivard et al. 2006)	Survey analysis	Market performance	Combines market view (strategy

Article	Method	Performance Perspective	Findings
		(revenue, revenue growth, market share, market share growty), Profitability (margin, ROI, liquidity)	alignment) and resource view (enterprise is a "bundle of unique resources") to see how they complement each other.
(Shin 2006)	Archival data analysis (IT budgets and Compustat)	Financial measures: Gross margin, ROA, ROE	Finds an interaction term between levels of IT use and firm performance. Also discusses the relationship of IT and strategy with respect to firm performance.
(Shin 2001)	Archival data	Performance as economic returns: net profit, ROA, ROE	IT does not directly improve financial performance. It needs to be coupled with organizational strategies to achieve improved financial performance.
(Wu 2006)	Survey Analysis	Performance as: Innovation speed, response to market, production efficiency, production flexibility	In a dynamic environment, resources are not associated with firm performance. Resource capabilities are more closely associated. Technology firm performance should be viewed in terms of innovation speed, market response speed, production efficiency, and production flexibility.
(Zhu et al. 2006)	Archival data analysis	Economic measures of performance	Diffusion of innovation perspective. Usage as an intermediate link between technology innovation and firm performance. Compatibility is the next strongest driver. Technology competence is the strongest contextual driver.

Piccoli and Ives (2005) review the literature on strategic initiatives and competitive advantage. In their discussion on performance, they make the following assertion:

> … a narrow focus on "IT" is misguided and misleading. The focus should be on IT-dependent strategic initiatives—of which IT represents a fundamental component—because technology does not contribute to firm performance in isolation, but instead contributes as part of an activity system that fosters the creation and appropriation of economic value. (Piccoli et al. 2005)

The concept of performance is certainly well represented in the IS literature. Finding agreement on just what constitutes performance is not easy, however. In studies that do not formally define firm performance, it is almost always measured using economic values. Alternatively, studies that do devote space to defining performance typically

develop a sense of performance that includes multiple factors. For example, Ittner and Larcker, along with others, have developed a significant stream of literature on the use of financial and non-financial performance measures in organizations (Ittner et al. 1998a; Ittner et al. 1998b; Ittner et al. 2003a; Ittner et al. 2003b).

2.1.2.3 Summarizing the Literature on Performance and IT

This review of the literature finds that the relationship between IT and performance has been studied extensively and from a variety of perspectives. Although much of the research simply quantifies the amount of IT investment with little regard to the type of IT and the nature of the implementation, a significant amount of effort has also gone into determining where and why certain efforts improve performance while others do not.

One stream of research focuses on how IT initiatives must match the overall corporate strategy in order to be effective. Another stream considers the extent of implementation and usage through an organization and how it relates to performance. IT-enhanced competencies and capabilities also provide a link to performance.

The definition of performance should also be considered when summarizing the literature. Although a large number of studies do not define performance explicitly, they clearly imply through their discussions and analyses that their primary focus is on financial measures, thus adopting a resource-based economic value perspective (for example, Wu 2006). Those studies that investigate other perspectives of performance typically include a definition or discussion of the term. Many of the studies that define

performance conclude that a single perspective of the concept is inadequate for organizational studies.

The findings of work to date on IT and performance can be summarized by the diagram presented in Figure 6. Although most of the research in the literature focuses on how IT affects performance, there is some support for the concept of improved firm performance affecting investments and efforts relating to IT. Therefore, like IT and power above, IT and Performance can be viewed as having a mutual relationship with each other.

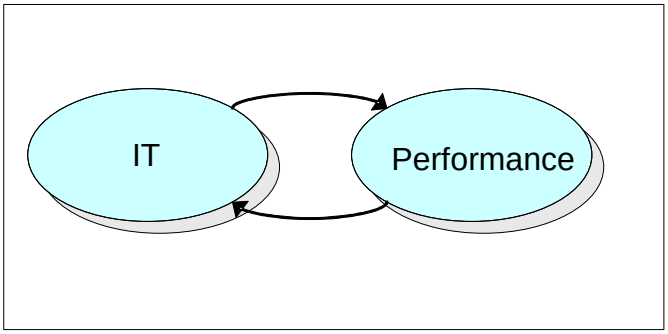


Figure 6 –Performance and IT

Despite the amount of work that has been done on IT and performance, there is room for additional research. Non-resource views of IT and performance, including those investigating multi-dimensional views, are under-represented in the literature. Likewise, there is limited work on the importance of the type of IT and its relationship to performance. Piccoli and Ives (2005) discuss the possibility of research on how IT-related capabilities can provide firms with greater opportunities to identify and implement competitive moves and initiatives.

Finally, research on IT and performance, whether it takes a resource, capabilities, or strategic perspective, typically ignores the nature of power in shaping IT decisions and performance outcomes. This research attempts to address that shortcoming.

2.1.3 Enterprise Performance Management

Despite the influx of data warehouses, OLAP, data mining, analysis, and presentation and reporting tools that are the foundation of today's Business Intelligence, there are concerns about the effectiveness of the genre. Most IS-related strategic decision aids fail because they use the wrong model, which assumes that things will stay as they are today (trend lines). A fundamental shift in how quantitative results are analyzed, how ideas are generated, and how firm and individual objectives are aligned are all required in order to reach better strategic decisions. Anticipating and imagining new approaches (and accepting wrong decisions to get to the right ones) is what really allows businesses to achieve strategic gains. (Chussil 2005).

There have been a number of studies on implementation success and failure of various aspects of PM. One study focuses on Activity Based Costing, and notes that resistance can be related to perceptions of costs and benefits as well as to the nature of an organization's power relationships and political structure (Malmi 1997).

Henri (2006) evaluates the relationship between an organization's culture and attributes of Performance *Measurement* Systems (an industry designation used prior to Performance *Management*). In this survey of manufacturing firms, the level of control and/or flexibility exhibited by a company's top management is mapped against the nature

of Performance Measurement use and the breadth of measures that are used in the organization. Henri found that organizations with more flexible cultures are likely to use a greater variety of measures.

Henri goes on to describe how "top managers use performance measures to send signals throughout the firm (attention focusing)" (Henri 2006, p. 80). The measures used in performance management can be applied four different ways: to monitor current activities, to focus attention in desired ways, to help in strategic decision making, and to legitimize previous actions.

An emerging theme from the PM literature echoes themes from the general IS literature: Even the most successful design and installation of IS does not necessarily lead to success in the implementation and use of the IS. Individual and organizational factors such as firm culture, power structures, and formal and informal objectives also interact with the implementation of IS to determine its ultimate success. Ward et al (2005) utilize a multi-dimensional framework for evaluating the impact of an IS implementation. In their approach, stakeholder perspectives and interactions are evaluated to determine whether they subscribe to a systemic rationalism, trust-based rationalism, or segmented institutionalism perspective of the organization, and by extension, the IS. At the same time, the project team's approach to managing the implementation process is evaluated to determine the approach: power-based (top down), interest-based (coalition building), or rights-based (formal negotiations).

2.2 Review of the Practitioner Literature

2.2.1 Enterprise Performance Management in the Practitioner Literature

A great majority of the literature on EPM is housed in practitioner journals; much of it announces new vendor offerings, but there are also a number of position papers, how-to guides, and descriptive case studies on the topic (Scheepbouwer 2003; Stodder 2003) (Anonymous(2) 2003; Bitterer et al. 2006; IOMA 2003; Mancuso et al. 2004a; Mancuso et al. 2004b; Rayner 2006; Wheatley 2003).

It is important to note that EPM is designed to allow an organization to express its unique strategy and competencies through the information system. In this sense, it is the opposite of the typical ERP system, which aims to lay a "Best Practices" template down over an organization's business processes. The implementation of EPM, much like that of an ERP, requires a philosophical commitment to the approach (Wheatley 2003). Like ERPs, EPM systems can take a significant amount of time to implement throughout an organization, and the process can become quite political. The political machinations that take place during an implementation can contribute greatly to the evolving power relationships in an organization, so it is important to consider them as part of this study (Silva 2007).

Rockart (2004) emphasizes the need for considering the information needs of your business processes early in the implementation cycle, and outlines four key capabilities for achieving that objective. Management of Change, one of the four capabilities, emphasizes "…ensuring that everyone in the community understands, and in many cases

contributes to, the new information capabilities…." Rockart emphasizes vision, executive backing, new levels of project leadership, and good listening and learning capabilities as the factors most critical to achieving project success.

2.3 Summary of the Literature

This review of the literature has studied the work done to describe the relationships between power and information technology, performance and information technology, and power and performance. Although a significant amount of literature focuses on the first two relationships, the concepts of power and performance are frequently seen as unidimensional. Even the information technology side of the relationship is often analyzed by measuring raw monetary investments. Jasperson et al (2002), in their comprehensive literature review on power, highlight the multiple dimensions of power and how each perspective contributes to the IS research field. Other authors have supported that perspective and have laid the groundwork for further study of power's multiple dimensions (Dhillon 2004; Silva 2007)

Research on performance and information technology provides greater variety in the notion of performance, although much of it does focus on near-term economic benefits, adopting a resource approach to performance. Piccoli and Ives (2005), in their review of the literature on strategic IT initiatives and competitive advantage, provide a capabilities-based framework for studying performance. Their emphasis on the "activity system" of the organization, of which IT is but a part of, is important for this study.

Work on the relationship between power and performance is limited at best. Work to date on the topic has focused mainly on the CEO and top executive levels of the organization. It is difficult to find anything that investigates the effect of information technology on an organization's performance and power relationships throughout its ranks. The purpose of this study is to investigate this relationship and help define how all three organizational factors interact with each other.

3 Research Approach and Design

3.1 Theoretical Positioning

Based on the literature review presented in the previous chapter, IS has been found to have a significant relationship with changes in organizational power structures and with an organization's success. Jasperson, Carte, Saunders, Butler, Croes and Zheng (2002) highlight the nuanced role that power plays in the implementation and success of IS. In their discussion of the emergent interpretive view of power, they note that IT interacts with users and management (who may or may not be "hands on" users of the IT) to become the ipso facto IS. These interactions are multidirectional nature and occur in parallel, typically resulting in changes to the distribution of power throughout the organization. It is important to note, however, that the manifestation of these power changes takes time to develop. The type of system, management and user power relationships, and organizational performance objectives are three of the factors that influence the nature of power changes and the length of time required to reach a new organizational equilibrium.

The IS, management, and economic literatures are also rich with studies on IS and organizational success. Although a large number of them focus on an economic return approach to success, others consider the ways that IS can improve other factors related to performance. Piccoli and Ives (2005) view success as a result of an "activity system," with IT as the enabling factor. The IT-enabled activity system creates an environment conducive to creating economic value. Their approach hints at the variety of factors

involved in the relationship between IT and success, but other than a brief discussion on competencies and influence, does not directly address the role power plays in the interplay of IT and competitive success.

In terms of implementation outcomes of IT projects, Peppard et al (2007) recognize that all projects do indeed have outcomes, but also that not all outcomes are automatic, or even beneficial. Nelson's (2005) lessons learned from reviewing project post-mortems reveal the need for managing stakeholder expectations throughout the implementation process. Peppard et al (2007) agree, arguing that in order to realize benefits from the implementation of new IT, the desired benefits must be actively managed, and must continue to be managed over the life of the technology.

Research is only now beginning to investigate the relationship between power and firm performance. Daily and Johnson (1997) published one of the earliest works on the subject. Their longitudinal study of 100 Fortune 500 firms researched the relationship between CEO power and the financial performance of the firm. Their path analysis of power factors on performance found a bi-directional relationship, where firm performance led to increased CEO power, and increased CEO power led to improved firm performance.

Pitcher and Smith (2001) evaluate power in top management teams based on their interactions and strategic outcomes. In their in-depth study of top management teams over an eight-year period, they find that personalities and power influence cognitive diversity in the organization, which in turn affects strategic outcomes like diversity and firm performance. Their study investigates power as it relates to relationships between

members of the top management team of a firm, with an emphasis on resources, structure, and domain. Both of the previous studies focus on top management; their emphasis can be summarized as follows: “There are few more important subjects to strategy scholars, or for that matter to practitioners, than the link between the people at the strategic apex of the organization and that organization's performance.” (Pitcher et al. 2001, pg. 1)

Markus and Robey (1983b) briefly discuss the distribution of power and its relationship with IS success, but it is a background thread to their primary focus on the relationship between the structure of the organization and the abilities of its constituents in determining the success of the IS.

More recently, Smith et al (2006) conducted a survey of top hospital management to determine the relationship between power and performance. They found that a reasonable dispersion of power in the top management team, especially where it results in the introduction of diverse viewpoints (“cognitive diversity”), leads to greater firm performance. In this study, the authors took a high-level perspective on power, focusing on the resource-based and influence perspectives. Interestingly, performance was enhanced most by power dispersion among just a very few (two or three) top managers with diverse perspectives; dispersion among many top managers was not associated with increased firm performance.

Yilmaz, Alpan and Ergun (2005) research the relationship between culture and firm performance, adopting Hofstede’s national and firm cultural factors (Hofstede 1983; Hofstede et al. 1988; Hofstede et al. 1990) to conduct their analysis. Their survey

analysis of Turkish firms found that cultural factors are related to performance factors that lead to sustained competitive advantage, namely customer and learning orientation. Power distance, one of the cultural factors, was not found to be a significant part of this relationship.

Table 5 presents a summary of representative literature focusing on the relationship between power and performance. All of these studies are from the management and general business literature; only one addresses the role of IT (MIS) relative to both power and performance (Markus et al. 1983b).

Table 5 - Power and Performance in the Literature

Article	Method	Perspectives on Power and Performance	Findings
(Daily et al. 1997)	Longitudinal path model analysis	Power variables: structural, ownership, prestige, expert Performance variables: Economic value (ROE, ROI, risk-adjusted market performance)	Method: Literature review, longitudinal panel analysis Assertion: Powerful CEOs are related to increased firm performance Finding: The CEO Power and Performance relationship is interactive. Missing: Limited to CEOs
(Markus et al. 1983b)	Conceptual framework	Resource-based and structural power Individual task performance	IS validity depends on the degree of fit between the IS and the cognitive abilities of organizational members, the structural dimensions of the organization, the power distribution within the organization, and the interface between the organization and its environment.
(Pitcher et al. 2001)	Case Study	Power: Resource-based, organizational structure, domain change Performance: Financial performance (asset growth, market to book ratio), along with innovation and diversivication are outcomes	Personality and power impact cognitive diversity, which in turn impacts strategic outcomes, like diversity and performance

Article	Method	Perspectives on Power and Performance	Findings
(Smith et al. 2006)	Survey analysis	Power perceptions, distribution (implied resource-based, influential power)	Power distribution is related to firm performance. A strong pair of executives with diverse views is associated with higher performance.
(Yilmaz et al. 2005)	Survey analysis	Power-distance as a cultural factor Customer-focus and learning-orientation as performance measures	Investigates societal-cultural factors. Found that firm cultural factors were related to firm performance in customer and learning orientation. Power distance was not a significant cultural factor in this relationship.

It is clear from the review of the literature that both power and performance are complex factors that can be studied from a single perspective or decomposed into their base dimensions for more detailed analysis. Although a large body of power research has taken a resource-oriented view, other aspects of power can play a large role in the success of IS (Dhillon 2004). Likewise, organizational success is not limited to economic evaluation.[1] Organizations are increasing their efforts to gain strategic advantages by using IT-based solutions to monitor and encourage increased performance not only through bottom line efficiencies, but also through encouraging management and employee creativity in identifying and developing new competencies and innovations.

[1] One could argue, especially for publicly traded companies, that the economic success of a firm is all that matters, and that all other measures of success are eventually reflected in the financial results. On the other hand, many non-public companies and organizations, as well as a growing number of public companies, strive to achieve an increasing variety of internally and externally communicated formal and informal non-financial objectives.

Given the ubiquity of information technology in society and the modern organization, it is important to gain an understanding of how the introduction of new IT influences the relationship between power and success. The purpose of this research is to build IS theory that addresses the relationship between power, organizational performance, and IT by studying the implementation and use of Performance Management systems at two (three?) organizations.

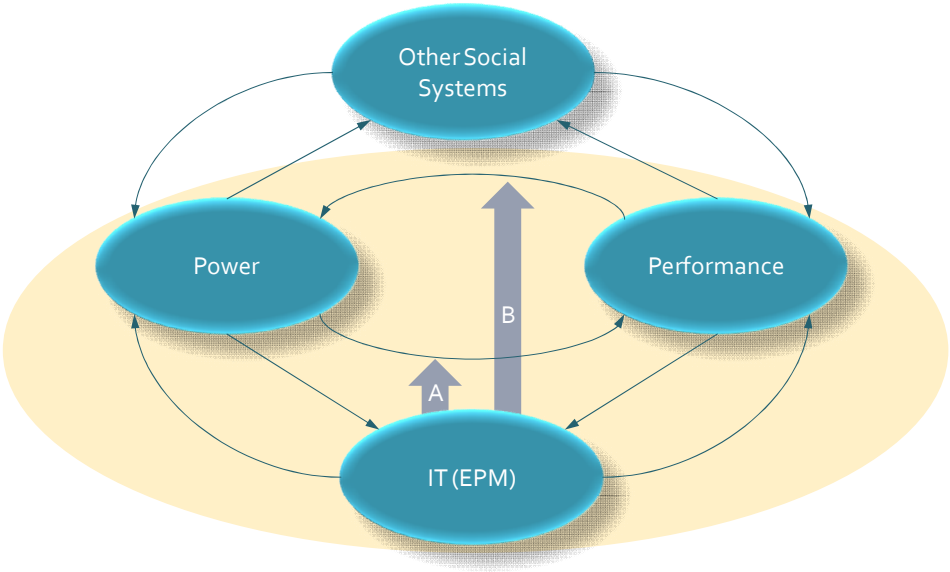


Figure 7 – A Power, Performance and IT Map of IS

Figure 7 presents a conceptual map of an Information System. If we take a systems approach to IS, we can visualize the "system" as the combination of the technology, the social setting, and the emergent interactions between the two (Lee 2001). For the purposes of this study, I propose to split out power and performance so that we can focus on their contribution to the overall social interactions that make up part of the information

system. The remaining aspects of the social system are still there, and are represented in Figure 7 by the oval labeled “Social System.”

In our emergent, interactive system, the various subsystems conduct a variety of mutual interactions with each other, resulting in changes to each subsystem and to the larger system their interactions take place in. These interactions are designated by the pairs of arrows connecting each of the subsystems.

This study’s area of inquiry will be into the relationships indicated by the larger, block arrows labeled “A” and “B”. The objective will be to answer the question: How does the implementation of IT affect the relationship between power and performance in the organization? Previous research has called for further study on the nature of power, strategic outcomes like innovation and performance, and their constructs and relationships (Pitcher & Smith 2001). This research answers that call by investigating the implementation of Performance Management systems in two organizational settings.

This study will contribute to the literature in several ways. First, it will develop theoretical propositions on how IT affects the relationship between power and performance in organizations, thus contributing to the IS literature. Second, it will provide additional insight to the multi-dimensional nature of power, which will contribute to the management and general business literature. Third, it will improve current theory on the relationship between power and performance, both by investigating the dimensions of power throughout the organization and by studying multiple facets of performance, such as innovation, conformance and strategic outcomes.

3.2 Research Propositions

This research project adopts a multi-dimensional approach to analyzing both power and performance. For power, I will adopt Hardy's (Hardy 1996; Hardy et al. 1998; Hardy et al. 1994) dimensional approach. As discussed above, this approach combines Lukes' (1974) perspectives on power with a systemic, knowledge-based perspective on power that is disciplinary in nature as espoused by Foucault (Foucault 1995; Introna 2003; Walsham et al. 1999; Willcocks 2004). Using this approach, power is viewed in four discrete ways: power of meaning, power of resources, power of processes, and power of the system. In this IT-based analysis of power, I will adopt a framework similar to Dhillon's (2004) for analyzing the changes in power relationships, as discussed above.

I also use a multidimensional approach for performance, as suggested by Jin (2006). In addition to standard economic performance measures, the adoption of Enterprise Performance Management indicates a focus on strategic direction for a firm; accordingly, it is important to evaluate nonfinancial measures of firm performance (Duh et al. 2006; Ittner et al. 1998b; Li et al. 2006; Pavlou et al. 2006; Piccoli et al. 2005).

Replicability of research findings is a key area of concern relating to organizational case studies. It is next to impossible to duplicate an exact set of conditions from one organization to the next (or, for that matter, from one year to the next in the same organization), as one can for a controlled laboratory experiment. Therefore, the researcher must take into consideration the conditions of the case study and make predictions appropriate to the theoretical perspective based on those conditions. If the

predictions are realized in the case study, then the theory is supported (Lee 1989b). I use this approach with respect to the relative success or lack of success in implementing EPM as I develop my research propositions.

Meanings and Performance

The dimensional perspective adopted for this study leads to four sets of propositions, grouped by power dimension. In the first group, EPM implementation efforts are evaluated for their impact on the power of meanings across the two basic types of performance measures for an organization:

1a) The Enterprise Performance Management implementation effort, whether it is successful or not, will result in changes in the ways organizational meanings influence behavior and, in turn, firm performance (through financial measures).

1b) The Enterprise Performance Management implementation effort, whether it is successful or not, will result in changes in the ways organizational meanings influence behavior and, in turn, firm performance (through strategic and innovation-based non-financial measures).

Presented graphically, Proposition Set 1 can be presented as follows:

In this perspective of power, Lukes (1974) describes the exercise of power outside the realm of explicit conflict and conflict resolution. Power is realized through the

acquiescence of organization members to the prevailing symbols in use. Both Hardy (1996) and Dhillon (2004) describe the process of groups legitimizing certain symbols, demands, and decisions while de-legitimizing others.

Processes and Performance

In addition to the meanings legitimized in the organization, the ability of certain members to participate (or not participate) in the decision-making processes of the organization should be considered as one investigates organizational power (Hardy 1996; Lukes 1974). In one sense, power is exercised by excluding members from the decision process, or by members not obviously imbued with decision-making power taking advantage of political or other processes to influence decisions. Dhillon's (2004) perspective on process-based power in his investigation of IS implementation in a Division of Motor Vehicles is consistent with this view.

Another perspective holds that processes can also be used in an *inclusive* manner, extending access to decision making processes to more people in the organization (Hardy et al. 1994). In this perspective, agendas, objectives, and committees are changed to include *more* members in the decision-making process, thus bringing more perspectives into the power arena.

Both of these perspectives can be used to evaluate the implementation of a new IS in an organization. In the domain of EPM, the goal is to align vision throughout the

organization while simultaneously providing more members the means with which to participate in decision processes and agenda setting. With that in mind, the second set of propositions examines how the implementation of EPM leads to changes in organizational processes and how they interact with performance measures:

2a) The Enterprise Performance Management implementation effort, whether it is successful or not, will result in changes in the ways organizational processes influence behavior and, in turn, firm performance (through financial measures).

2b) The Enterprise Performance Management implementation effort, whether it is successful or not, will result in changes in the ways organizational processes influence behavior and, in turn, firm performance (through strategic and innovation-based non-financial measures).

Proposition Set 2 can be presented graphically as follows:

Resources and Performance

This dimension of power considers control over scarce resources in an organizational setting, and coincides most closely with the everyday perception of power held by most practitioners and the general public (Hardy 1996). Many organizational studies focus exclusively on this aspect of power. In IS research, the information in an organization is one of the scarce resources that must be controlled and allocated, and is sometimes viewed as synonymous with power (Dhillon 2004).

This view of power is the first dimension of Lukes (1974) framework, and is the foundation for the third set of research propositions, which focus on how EPM affects the relationship between organizational resources and measures of firm performance:

3a) The Enterprise Performance Management implementation effort, whether it is successful or not, will result in changes in the ways organizational resources influence behavior and, in turn, firm performance (through financial measures).

3b) The Enterprise Performance Management implementation effort, whether it is successful or not, will result in changes in the ways organizational resources influence behavior and, in turn, firm performance (through strategic and innovation-based non-financial measures).

Proposition Set 3 is depicted graphically as follows:

The Organizational System and Performance

Providing a backdrop for the three dimensions in Luke's (1974) view of power, the power of the *system* itself cannot be ignored. This power resides within the very fabric of the organization, and can be taken for granted (Hardy 1996).

> This power is often beyond the reach of tampering by organizational members. It lies in the unconscious acceptance of the values, traditions, cultures and structures of a given institution and it captures all organizational members in its web. Since it advantages or disadvantages individuals without being consciously mobilized, even those who profit from it find it difficult to change. This power is the backdrop against which all organizational actions and decisions take place. (Hardy 1996, pg. S8)

Another aspect of this dimension of power is its disciplinary nature. In this perspective the values, traditions, cultures and structures of the organization create a self-disciplining membership (Dhillon 2004; Hardy 1996; Walsham et al. 1999; Willcocks 2004). The members of the group keep an eye on, rein in when possible, and even discard when necessary, those members who choose to stray from the system.

The final set of propositions evaluate the impact of EPM on the relationship between the overall knowledge-based, disiplinary "power of the system" and measures of firm performance:

4a) The Enterprise Performance Management implementation effort, whether it is successful or not, will result in changes in the ways the overall organizational system influences behavior and, in turn, firm performance (through financial measures).

4b) The Enterprise Performance Management implementation effort, whether it is successful or not, will result in changes in the ways the overall organizational system influences behavior and, in turn, firm performance (through strategic and innovation-based non-financial measures).

Proposition Set 4 can be presented graphically as follows:

The complete set of research propositions can be categorized and summarized as illustrated in Table 6 on the next page.

Table 6 - Summary of Research Propositions

	Use of financial measures	Use of strategic and innovation-based non-financial measures
Power over Meanings	1a) EPM will lead to changes in how control over meanings influences financial measures used.	1b) EPM will lead to changes in how control over meanings influences non-financial measures used.
Power over Processes	2a) EPM will lead to changes in how control over processes influences financial measures used.	2b) EPM will lead to changes in how control over processes influences non-financial measures used.
Power over Resources	3a) EPM will lead to changes in how control over resources influences financial measures used.	3b) EPM will lead to changes in how control over resources influences non-financial measures used.
Power of the System	4a) EPM will lead to changes in how the overall power of the system influences financial measures used.	4b) EPM will lead to changes in how the overall power of the system influences non-financial measures used.

3.3 Methodological Approach used in this Study

The theoretical framework and research propositions for this study have been spelled out in the previous sections. In order to study how IT affects the relationship between organizational power and firm performance, I will conduct an explanatory case study as described by Yin (2003) and Marshall and Rossman (2006). A case study approach is appropriate for this study due to the need to study the IT of interest and the resulting social interactions in their natural setting (Benbasat et al. 1987). The rich interactions between the actors in the organization will inform my findings related to the research propositions at hand. The purpose of an explanatory case study is to identify and explain the patterns and relationships related to the research question. In this study, I will try to determine how and why individuals' beliefs and attitudes shape the relationship between

power and firm performance, and how the introduction of new IT creates new interactions that change that relationship.

3.4 Research Design

Yin (2003) presents four criteria from the literature for evaluating the quality of the research design in the social sciences. These criteria are valid for the evaluation of any empirical study; therefore, they are applicable to case study research. The four criteria are, Construct Validity, Internal Validity, External Validity, and Reliability. Figure 8 below highlights each of these criteria along with a number of tactics which can be used in case studies to address them, and when each tactic should be employed in the case study process. The next few paragraphs examine each criterion in further detail.

Tests	Case Study Tactic	Phase of research in which tactic occurs
Construct validity	• Use multiple sources of evidence • Establish chain of evidence • Have key informants review draft case study report	Data collection Data collection Composition
Internal validity	• Do pattern-matching • Do explanation-building • Address rival explanations • Use logic models	Data analysis Data analysis Data analysis Data analysis
External validity	• Use theory in single-case studies • Use replication logic in multiple-case studies	Research design Research design
Reliability	• Use case study protocol • Develop case study database.	Data collection Data collection

Figure 8 - Case Study Tactics for Four Design Tests (Yin 2003, pg. 34)

Construct Validity. This criteria relates to how the concepts under investigation are operationalized and evaluated. In case studies, it is important for the researcher to demonstrate that her findings accurately reflect the events of the case, rather than the researcher's biased impressions. Two steps are required in order to achieve construct validity. First, the researcher must specify the types of changes to be studied, and relate them to the study's objectives. Second, the researcher must demonstrate that the measures used to describe changes in the case actually represent the types of changes that have been selected for study.

Yin proposes several tactics that can be used to increase construct validity. During the data collection phase of the project, the researcher should strive to triangulate findings by using multiple sources of evidence. In addition, the researcher should build and maintain a chain of evidence that links findings to the research data and propositions. In the research composition phase, initial drafts should be shared with key informants for review and comment. Not only will this help ensure the accuracy of the final document, but it may uncover additional insight by the informants. (Yin 2003)

Internal Validity. This criteria is valid for explanatory case studies, and relates to deomonstrating a causal relationship between the concepts of interest. In the case of this research, the objective will be to demonstrate a causal relationship between the implementation of EPM and changes in the relationships between power and firm performance at the case study subject organizations. In particular, it is important to demonstrate that other factors that may explain the research findings have been considered and accounted for.

A number of data analysis techniques can be used in case studies to increase internal validity. Pattern-matching can be used to compare the predicted outcomes with actual events in the organization. One particular type of pattern matching that can be used is explanation building. In this process, the initial propositions are evaluated against initial findings and may be revised as additional case details emerge. This process is iterative in nature, and proceeds until the research findings provide satisfactory explanations for the theoretical concepts of interest.

Logic models can also be created to increase internal validity. In this approach, the activies and outcomes are depicted as a logical flow of events, with the outcome of one event providing input which helps determine the outcome of subsequent events. Such logical models can be created at various levels of analysis (i.e., individual, group, organization), each of which contributes to the overall understanding of the research proposition.

Finally, the data analysis should consider rival explanations that may address the case findings. By default, the researcher can consider the null hypothesis; that is, that the moderating subject of interest will have no impact on the proposed outcome concept. Alternatively, the researcher can consider rival theories, the quality of the implementation process, and additional, as yet unexplained, factors that may help explain the proposition of interest. (Yin 2003)

External Validity. This criteria addresses the generalizability of the research findings beyond the context of the study. It is important to note that case study research utilizes analytical generalization (or theoretical generalization), in which the findings are

generalizable to theory. This is in contrast to the statistical generalization done in much social science research, in which the findings for a properly selected sample are generalized to the overall population that the sample represents. It is implied in analytical generalization that the researcher can identify cases in which the proposed theory is applicable. The findings of a single case study provide support for (or disconfirmation of) the theoretical propositions, much as the results of a single laboratory experiment do. Replication logic using additional case studies (similar to additional laboratory experiments) is then used to create further support for (or disconfirmation of) the propositions of interest. (Lee 1989a; Lee et al. 2003; Yin 2003)

Reliability. This criteria deals with the ability of another researcher to reach the same conclusions by following the procedures and using the same data as the original researcher. In other words, the objective of the reliability criteria is to minimize errors and researcher bias during the course of the research. Two approaches to improving the reliability of case studies are using case study protocols and developing a comprehensive case study database.

A case study protocol is simply a detailed documentation of the steps taken during the course of the case study investigation. It allows the researcher (and subsequent researchers) to replicate the activities taken during the course of the research, thus improving the reliability of the research findings. The case study database contains the raw data compiled during the course of the investigation, and should be considered separately from the case report prepared by the researcher.

Based on Yin's classifications of case studies, this research will use a multiple-case holistic design that utilizes a single level of analysis. The analysis will be conducted at the organizational level, and will be conducted at two organizations. Replication logic will be used to generalize findings to theory. In the interest of expediency, the case studies will be conducted in parallel, using a variety of data collection techniques, as described below.

3.4.1 Data Collection

Data collection will take place at the two case study sites through on-site observation, one-on-one interviews with key informants, and review of documents relevant to the research propositions. Each of these data collection techniques is described in further detail in the following subsections.

3.4.1.1 Identification of Research Subject Organizations

The first step in collecting case study data is gaining access to organizations that are appropriate to the research questions of interest. For this project, studied two organizations that fit the bill. The first organization is a content management company that has over seven years of implementation experience with EPM. The second organization is a university in the United States of America that is in the fourth year of implementing a full EPM suite.

I identified a primary contact at each location that acted as a guide and monitored my research efforts. I conducted initial debriefings with each contact in order to gain background information on the EPM project, learn about the project schedule and

routines, and identify key informants for the observation and interview portions of the research. I continued to debrief with the primary contacts throughout the course of the study.

3.4.1.2 Observation

An important component of the data collection process involves observing the activities of organizational members over time. Meetings, phone calls, and informal discussions are all communication events that occur within the social setting of the organization (Schwartzman 1993). They help shape the order (or disorder) of participants' work lives; therefore they are important data points to be considered in research on organizations.

For this type of data collection, I observed individuals and groups in their everyday work environment. The objective of the observation process at my case study sites was to uncover the formal and informal social relationships and structures in the organization. During my observation sessions, I did not ask specific questions as I did during the interviews conducted as part of my data collection. In fact, it was important that my observation help uncover both questions and answers (Schwartzman 1993). It was also important for me to take an inquisitive approach through the course of the case study and ask appropriate questions even during the observation phase of data collection (Yin 2003).

I came into the fieldwork portion of the study with a theoretical perspective and set of propositions. Regardless, it was important during this portion of the research for me to

allow the individuals and groups to shape my findings through their natural activities and interactions. During my on-site visits, I set aside time blocks each day to summarize and document my findings; one near mid-day and the other after the end of the normal workday. I also took notes throughout the day as I observed organizational activities related to the EPM projects.

The observation portion of the research allowed me to formulate specific questions that I was able to ask either informally or during the interviews that I conducted at each organization. As mentioned earlier, both case studies were conducted in parallel. My approach to conducting the studies was to visit multiple sites and make multiple observations at each case organization. My time off-site was spent conducting phone interviews, reviewing documents, maintaining contact with key informants, and other organizational activities related to the research project. I collected information from one case study organization over the course of twelve elapsed months. For the second organization, the elapsed time for data collection was about seven months. The semi-structured interview and document review processes I used are described in further detail in the following subsections.

3.4.1.3 Semi-Structured Interviews

I supplemented my observational findings with more formal interviews conducted with people related to the EPM project in each organization. According to Yin (2003), there are five levels of questions that can be considered during a case study, each targeted toward the researcher, not the research subjects. Of these, only Level 1 questions are discussed directly with interviewees. Second level questions are asked by the researcher

of the case itself. In this case, the Level 2 questions are the research propositions stated earlier in this report. Questions addressing Levels 3 through 5 are applied later in the case study.

Figure 9 on the following page provides a link between the research propositions (Level 2 questions) and the related interview items (Level 1 questions). The objective of the semi-structured interview was to cover all of these items in a satisfactory level of detail. A version of the interview topics listed in Figure 9 was presented to the interviewees one or more days in advance of the interview, along with the consent form. Interviews were not conducted until the interviewee has signed the consent form.

Although the interview topics are presented as questions in Figure 9, they were used primarily as guidelines for the interviewer to follow as the discussions proceed. In the actual interviews, the interviewer encouraged open-ended responses and probed for details or asked follow-up questions as deemed necessary. The interviewer has interviewed many people about their organizational relationships and business processes as part of systems analysis and design, business process improvement, strategic IT planning, and other projects over the course of his career; he utilized this experience in his interviews for this research project.

Research Proposition (from §3.2)	Q	Interview Topic
Background	1	Describe your role in the organization. (probe for responsibilities, evaluation criteria, tenure, background, etc.)
Background	2	Describe your organization's implementation of Business Intelligence solutions. (elicit subject's definition of BI and describe further if necessary)
Background	3	Describe your organization's implementation of Performance Management systems (Corporate Performance Management, Enterprise Performance Management, Business Performance Management). (elicit subject's definition of PM and describe further if necessary)
1a, 1b, 1c	4	What are your individual short-term and long-term key objectives? Those of your group? Your organization? Have there been any changes to your objectives (i.e., greater number, different focus, etc.) over the past few years? Please describe. (probe for anticipated future changes if appropriate)
2a, 2b, 2c	5	How do you identify your key objectives? What tools/techniques do you use to help identify them? Has this changed over the past few years? Please describe. (probe for "hard"/"soft" objectives)
1a, 1b, 1c 2a, 2b, 2c	6	Do you evaluate your key objectives to determine whether they are still appropriate? Do you look for new ways to measure progress against existing objectives? How is this done? Has this changed over the past few years? (probe for anticipated future changes if appropriate)
2a, 2b, 2c	7	How do you communicate progress on your objectives to others in the organization? Describe any recent/upcoming changes in these processes. How did these changes come about?
2a, 2b, 2c	8	How do you develop strategic plans and forecasts for your key objectives? Describe any recent/upcoming changes in these processes. How did these changes come about?
1a, 1b, 1c 2a, 2b, 2c	9	How do you model the activities of your organization? Describe any recent/upcoming changes in this process. How did these changes come about?
2a, 2b, 2c	10	How do you monitor your progress against your objectives, models, plans, forecasts and strategies? How are you alerted to significant variances in these objectives? Describe any recent/upcoming changes in these processes. How did these changes come about?
3a, 3b, 3c	11	How has your role (your group's role) in the processes we've discussed so far changed in the recent past? (probe for anticipated future changes if appropriate) (probe for changes in influence)
3a, 3b, 3c	12	How have other people's roles (other groups' roles) in the processes we've discussed so far changed in the recent past? (probe for anticipated future changes if appropriate) (probe for changes in influence)
1a, 1b, 1c	13	Think of the formal ways your organization communicates, as well as the informal or implied messages that guide organizational objectives. What are the main messages from your perspective? Have they remained relatively constant over the past few years? (probe for anticipated future changes if appropriate)
3a, 3b, 3c	14	How has your access to funding, personnel and/or equipment changed in the past few years? (probe for anticipated future changes if appropriate)
4a, 4b, 4c	15	Think about the fundamental nature of your organization. Would you say it has stayed relatively constant or has undergone significant changes over the past few years? How is this so? (probe for more details if appropriate)
2a, 2b, 2c	16	How do you identify or plan to identify opportunities for efficiencies, new products or product mixes, customer service, quality improvement or other strategic initiatives that you and your team could or should undertake? How do you validate those opportunities?

Figure 9 - Linking Interview Questions to the Research Propositions

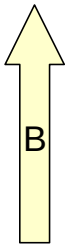
The time allotted for each interview was targeted at a maximum of one hour as a courtesy to busy professionals. Fortunately, I was able to cover all items during the initial interviews. In some cases, I followed up with questions about specific details. I was able to get a response each time. After July 2008, organizational changes took place at the university. After this time, it became more difficult to gain access for follow-up questions. This issue is discussed in Chapters 4 and 5.

I developed my initial list of interview candidates based on discussions with my contacts at each organization. I updated this list as I spent time at each organization, and solicited each interviewee for additional interview candidates that they believed would be able to provide additional insight. I was not able to conduct interviews with everybody I contacted. Some did not respond; others had schedule conflicts during my visits. I was, however able to interview people from a variety of levels and groups/departments within the organizations. In addition, a few of the people I could not interview responded to a questionnaire instead.

As stated earlier, the objective of this study is to determine the impact of Enterprise Performance Management (IT) on the relationship between Power and Firm Performance in the organization. Going back to Figure 7, we see that EPM can have an effect on that relationship in one of two ways. The arrow labeled "A" represents the moderating effect of EPM on how Firm Performance affects Power relations. The arrow labeled "B" represents the moderating effect of EPM on how organizational Power relations affect Firm Performance.

Figure 10 illustrates how data will be collected to support arrows "A" and "B" from Figure 7. During the semi-structured interviews, each of the questions that supports one of the research propositions (Q4-16 from Figure 9) also may provide support for arrow "A" and/or "B" in Figure 10. The questions designed to support each arrow are listed in the column labeled "Data Collected through semi-structured interviews." The other column, labeled "Data collected outside of interviews," lists the other means that may provide support for arrows "A" and "B."

EPM impact on Firm Performance → Power



EPM impact on Power → Firm Performance

Data Collected through semi-structured interviews	Data collected outside of interviews
• Q4 • Q5 • Q6 • Q10 • Q13 • Q14 • Q15 • Q16	• Observation • Document Review • Informal Discussions
• Q6 • Q7 • Q8 • Q9 • Q10 • Q11 • Q12 • Q14 • Q15	• Observation • Document Review • Informal Discussions

Figure 10 - Data Sources for Identifying Relationships between EPM, Power and Firm Performance

The observation and semi-structured interview portions of data collection have been described in the preceding paragraphs. The following subsections outline the document review and informal discussion data collection techniques.

3.4.1.4 Document Review

Documents that were reviewed as part of the data collection process include but are not limited to project-related documentation and e-mails, meeting agendas and minutes, and organizational status reports that are maintained in project files and archival records. In addition, publicly available documentation such as press releases, articles in periodicals, financial statements and annual reports were also considered.

It is important to note that documents are not necessarily accurate or unbiased, but they are still useful in the data gathering process (Yin 2003). For each case site, I worked with my organizational contacts and research participants to identify and obtain documents pertinent to the study.

3.4.1.5 Informal Discussion

As part of the observation process, I found several opportunities to gain additional insight from research participants during unscheduled discussions. This process may go beyond pure observation, but does not actually move into the realm of Participant-Observation, in which I actually participate on the project by manipulating the actors and making organizational decisions (Yin 2003). Instead, I used an opportunistic approach to ask additional questions, talk at length with case participants, and elicit additional information.

Despite the informal nature of these discussions, they were duly documented in the case database, and are another source of evidence that can be used when building the case

report. Each person contacted through informal discussions was also subject to coverage by the research consent form.

3.4.2 Data Analysis

My strategy for data analysis was be to focus on the research propositions stated in section 3.2. In order to make sense of the volumes of data that I accumulated, I relied on case analysis techniques as espoused by Yin (2003).

First among Yin's techniques is pattern matching, in which the researcher looks for patterns in her case study database and compares them to the patterns predicted by her research propositions. Explanation building is a specialized version of pattern matching, in which the researcher goes through an iterative process of developing and refining a set of statements designed to explain the causes and results of the phenomenon of interest. Although pattern matching can be done manually, as a relatively new academic researcher I utilized QSR NVivo, an automated software tool designed to assist in the coding and categorizing of large volumes of unstructured documents.

Since this study is interested in changes in power relations and firm performance, there is also a time element to the research. This indicates the need for analysis over time as part of the data analysis process (Yin 2003). Events in this study were evaluated chronologically over the course of the case study period and earlier in order to determine the effect EPM had with respect to the research questions.

Since this research project evaluates two case studies, I also attempted to find cross-case patterns to provide greater support for my overall findings (Dubé et al. 2003).

Findings that supported my research propositions across both cases help prevent the tendency to reach quick conclusions based on preliminary findings (Miles et al. 1994).

3.5 Summary of the Research Approach and Design

The literature review shows that previous researchers have tried to explain the relationship between power and strategic outcomes like innovation and firm performance, with limited success. In fact, they have stated the need for greater understanding in this area. In the IS literature, there is little (if anything) that bridges power and firm performance through the use of IT. As a result, I posit that the implementation of EPM (IT) does have an impact on the relationship between Power and Firm Performance and present eight research propositions in support of my statement. I believe that research on these phenomena through the context of IT will advance theory in the field, leading to further theory development and testing on the individual components of power.

In order to investigate the impact of EPM (IT) on the relationship between Power and Firm Performance, I conducted case studies at two separate organizations. Each case study was conducted using a combination of data collection techniques: observation, semi-structured interviews, document review, and informal discussions.

I believe that I increased the effectiveness of the data analysis process by keeping the focus on my research propositions. I used pattern matching, explanation building, and analysis over time to help with the data analysis.

4 Data Collection

4.1 Case 1 – Capitol State University (CSU)[2]

4.1.1 Introduction to the Organization

CSU is a medium-sized public university located in the United States of America. CSU offers degree programs at the undergraduate, masters, and doctoral levels. CSU also has a medical school. CSU has seen steady growth over the past decade and currently has more than 10,000 students enrolled in its courses. One of the main objectives for CSU over the next decade is to develop a sound financial foundation from which to provide affordable, high quality education to students in spite of anticipated funding cuts from the state.

I became aware of CSU through discussions with associates at a previous employer. They seemed like an ideal candidate for researching Performance Management. They had contracted with a major Performance Management vendor and had purchased the majority of products offered in the vendor's suite. After nearly a year of correspondence and conversations, CSU agreed to become a research site for this study.

I visited CSU in early 2008 and worked with my contact to identify interview candidates for the research project. My CSU contact sent e-mail requests and phone

[2] The names of the research site organizations have been disguised at their request. Names of individuals and their exact titles within the organizations have also been disguised in order to protect their privacy.

messages to each of the candidates. I also sent e-mail requests to the candidates. Of the thirty candidates identified, thirteen agreed to be interviewed, while two others preferred to participate by answering a questionnaire. Of those who did not participate, the vast majority simply did not respond to the phone message and e-mail requests, while a few responded but could not participate due to scheduling conflicts. I conducted five of the interviews on campus during my visit, and conducted the remainder of the interviews over the phone over the next few months.

About a month after completing the interviews, I again contacted each of the interview candidates and invited them to fill out a supplemental questionnaire. This questionnaire revisited the interview guideline topics. The purpose of the questionnaire was twofold: first, it allowed people with whom I had not been able to interview during my site visits or over the phone to participate in the study at their convenience. Second, it allowed those I had already interviewed to add thoughts not covered during the initial interview or to inform me about updates and changes to the EPM implementation status.

I received three responses to this request: two from new participants and one update from an existing interviewee. In the case of the new participants, I was able to collect information from people who were not able to participate in a face-to-face or phone interview, but were willing to submit responses at their leisure through the questionnaire. In the case of the existing interviewee who also completed the questionnaire, I was able to gain additional insight into the fate of the various projects at CSU.

In addition to the interviews and questionnaire responses, I also had seven additional meetings with CSU employees and outside consultants to gain background information

on the organization and its Performance Management efforts. Finally, I had a number of contacts with a majority of the participants via e-mail. Most of the e-mail exchanges focused on scheduling or other administrative details of the research project. The following table summarizes my contacts with CSU.

Table 7 - Recap of Contacts with CSU

Interviews	13
e-mails	92
Questionnaires	3 (2 unique, one as follow-up to interview)
Meetings	7 background meetings
Reports	18
Publications	3

4.1.2 Organizational Structure at CSU

The Finance and Administration (F&A) organization at CSU touches on a wide variety of activities throughout the university. Chuck Walker, the Senior Balanced Scorecard Director describes it:

> He has a very large organization of about 800 employees, and probably the most diverse in terms of business functions within the University. They include our Information Technology group, Human Resources, Controller, Budgeting, Accounting, Police Services, Administrative Facilities Services including the physical plant, the book stores, our credit mail shops. It's a fairly complex organization…

As the organization in charge of information technology, financial functions, and human resources activities, F&A typically takes the lead in implementing new business initiatives and their related technologies. The head of this organization is the Vice President of Finance and Administration.

Steve King was the VP of F&A during the majority of this research project. He was hired in 2002 by the university president to help stabilize the organization and update its systems and business operations. According to Mike Collins, the Associate VP of Facilities Management, the university had been through more than twenty years of turmoil and uncertainty:

> We had been in a state of somewhat continuing turnover in Presidents and leadership for us from probably about 1980 through roughly 2002. We had various Presidents and interims and so forth -- our current President came in and brought a vision…

For Steve, that vision included updating business processes and improving analytic capabilities throughout the organization. This would entail replacing the university's legacy systems with an integrated ERP system and supplementing the ERP with a full suite of Performance Management solutions. CSU selected a package geared for the education market from PeopleSoft, a leading ERP vendor. Implementation began in 2003, and Steve reorganized his division to include a BPR group leading the ERP project.

Around the same time, Steve authorized the purchase of a Strategic Finance package (HSF) from Hyperion Solutions, a leading vendor of Performance Management applications and tools. The HSF project was limited to a small group and geared toward developing a long-term financing and capital development process for the university.

Late in 2004, CSU extended its relationship with Hyperion to include the entire suite of tools and applications, which had recently been re-branded as "System 9." At this point, Steve created a Business Intelligence team within the F&A division and made plans to implement key Hyperion applications in a phased approach, starting with

Financial Management, Planning, and then several custom-developed applications built using Essbase, the OLAP database engine.

Concurrent to the implementation of the base Hyperion applications and the continuing implementation of PeopleSoft, Mike created a task force to identify and develop key sets of metrics for activities throughout the organization and across the university. The objective of this effort was to gradually roll out Hyperion's Performance Scorecard application in support of this effort.

Figure 11 depicts a partial view of the F&A organization as of mid-2008.

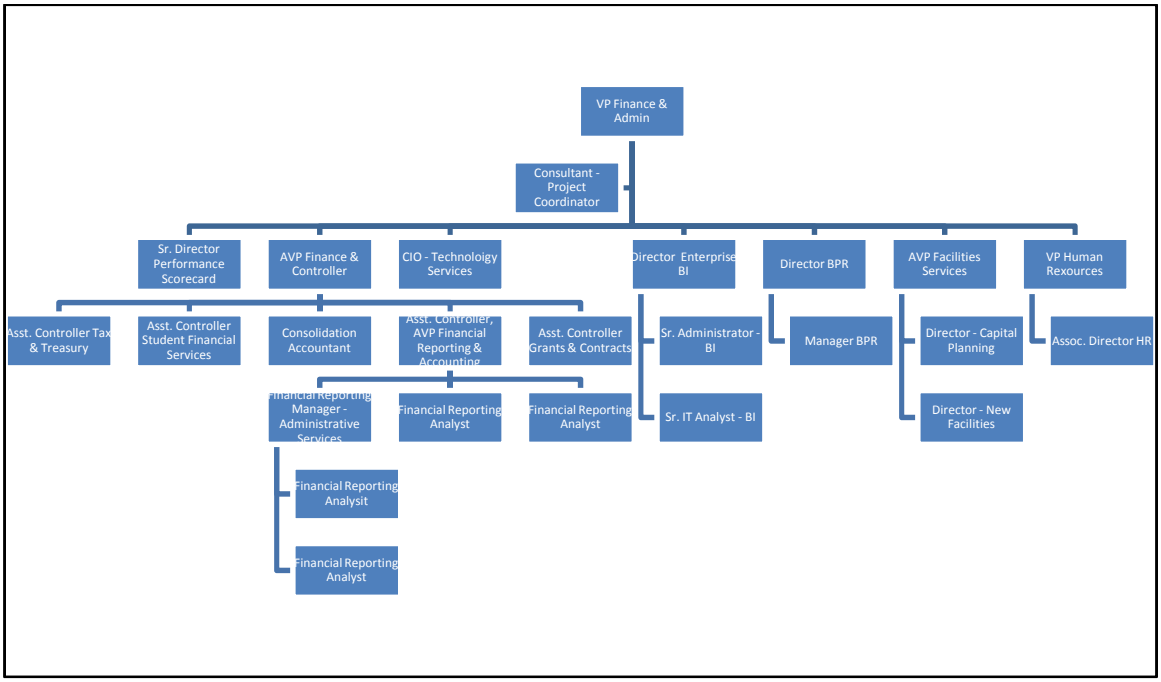


Figure 11 - Partial CSU Organization Chart - Finance & Administration

4.1.3 Implementation of Performance Management Technology at CSU

Enterprise Resource Management

CSU began their ERP implementation in 2005 with the objective of bringing up all modules within two years. It quickly became apparent that this would be difficult to achieve. One of the first obstacles that came up was the redesign of the account code block in the new ERP. As Bill Kidwell (Sr. IT Analyst in the Business Intelligence group) put it:

> Our problem was our previous set up before PeopleSoft using [our legacy system], that was our old system. Our chart of accounts was really bastardized. You could have an account and a sub code, and every department could assign a sub code to an account and use whatever they wanted. So if you had a sub code of 5555 in one department it's going to be different in another. So you really couldn't do any reporting without a year-long mapping project.

Data conversion, a key component of an ERP implementation, was a sticking point. According to Kate Sanders, director of BPR: "The data from the legacy system into PeopleSoft did not transform well."

The first PeopleSoft module (Human Resources) went live in April 2006, followed in July by the Finance module. The Budgeting module was delayed until March of 2007. People at CSU universally agree that the ERP modules have not been configured optimally and that the current implementations, which they are now using as their system of record, are incomplete. This has resulted in problems that start with the recording of basic transactions and continue through to a lack of required reports.

The BPR group currently manages the ongoing PeopleSoft implementation. They spend the majority of their time handling maintenance and reporting requests at the

expense of ongoing process analysis and reengineering. They have plans to "reimplement" PeopleSoft with more complete functionality and streamlined business processes, but the timeline for this reimplementation is not firm yet. People from the BPR group moved into the BI and other groups after the initial implementation of the first wave of modules. Now, the BPR group feels short-handed and lacking expertise in some of the key functional areas as it prepares for the reimplementation effort. The BPR group currently has positions open to supplement their current staffing and skills, but management in the BPR group fears that these positions may not survive budget cuts if they are not filled soon.

Performance Management

CSU developed their first strategic financial plan from HSF in 2005. The purpose of the strategic financial plan is to address capital development projects, broad revenue projections, and financing needs for the next ten years and beyond. Prior to the use of HSF, CSU's strategic plan was a series of disjointed spreadsheet-based plans developed by a variety of groups across the university and typically covering a three to five year window. Using HSF, multiple responsibility centers were able to work on and develop scenarios for their portion of the plan, which was maintained and aggregated in a single application. According to Kelly Snead, an outside consultant acting as the Project Coordinator for F&A, the 2005 strategic plan was the "first true long-range financial plan ever developed at the university." The strategic plan and HSF were an immediate hit, and F&A has led the development of university-wide strategic financial plans on an annual basis since 2005.

With the success of HSF, F&A moved to speed up the implementation of the other Performance Management applications. Financial Management (HFM) was to come next, followed by Planning and custom-built enrollment and admissions, student financial, and demographic analysis applications. This acceleration coincided with the formation of the BI group within the organization. In addition, Steve placed greater focus on the Performance Scorecard effort, hiring and assigning Chuck Walker to head the project.

After the creation of the BI group, F&A reassigned several BPR resources to BI and targeted recruiting efforts toward increasing the new group. The division also created a task force designed to enhance the F&A "brand." It developed a new logo and mission statement for the organization. The BI group also developed a logo coordinated with the new branding image, and distributed logoed paraphernalia and certificates to university personnel who participated in a variety of social events, retreats and training sessions.

Although there was much momentum behind the BI-related initiatives, there were significant obstacles as well. Despite a strong recruiting effort, CSU found that their location (not in or near a major metropolitan area) limited the pool of applicants that were both well versed in BI technologies and either already local or willing to relocate. This resulted in positions either being left unfilled or filled by inexperienced candidates who had to learn the nuances of implementing BI applications on the job.

Another obstacle was the level to which the current systems and practices were engrained at CSU. Much like Markus (1983) found, the implementation of a new system that uses a different set of assumptions about the organization than the one currently in place can be problematic. At CSU, like at many public universities, the culture and

business environment in the administrative functions was somewhat relaxed and paternalistic. Many of the employees in F&A had been with the university ten years or longer and had only known the current legacy systems. For many, the PeopleSoft implementation was the first new system implementation project they had ever experienced.

With this backdrop, the HFM implementation project met a great deal of resistance from CSU employees. Although the initial HFM plan only called for a small group of users in the accounting and financial reporting areas, this same group was still busy assimilating the initial PeopleSoft Finance and Budgeting modules as well as planning their redesign and reimplementation. As a result, HFM, which introduced a completely different approach and set of limitations to handling the chart of accounts and reporting dimensions, was met with mixed support from the user group.

A brief walkthrough of issues related to the chart of accounts provides a good example of the conceptual issues CSU faced in implementing its new systems. The legacy system allowed each department to customize account sub-codes to their liking. Various departments had taken full advantage of this capability, resulting in a variety of sub-code formats and even different meanings for the same sub-code. In contrast, PeopleSoft offers a ten-segment code block, similar to what most modern ERPs offer. The segmented code block offers great flexibility, yet requires each segment definition and code value to be consistent throughout the enterprise.

Similarly, HFM offers a dimensional code block approach to the chart of accounts, but provides four pre-defined dimensions and four additional configurable dimensions,

giving CSU eight potential reporting dimensions. CSU had recently completed a year-long project to convert the legacy chart of accounts to PeopleSoft, and still had not converted all data successfully. The prospect of an HFM implementation, requiring another conversion effort for both the chart of accounts and the data, was not appealing.

Essbase, Hyperion's OLAP database engine, provides some capabilities of interest to the BI team. An OLAP database can contain a theoretically unlimited number of reporting dimensions in the master data (although performance and user conceptualization issues typically must be considered), which made for some interesting possibilities with respect to the large code block in use at CSU. This project was in the exploratory phase, with the university considering enrollment, student financials, and demographic applications in addition to financial analytics. Bill Kidwell was the primary lead for this project, which has not gotten formal funding yet.

Planning, Hyperion's budgeting, forecasting and operational planning application, was another project that the BI group had on their schedule. Of all the applications CSU was working on, Planning had the most direct overlap with a BPM initiative – PeopleSoft's Enterprise Performance Management (EPM) module. Naturally, the BPM group favored the use of EPM over Planning. Compounding the issue, Oracle (owners of the PeopleSoft application suite) purchased Hyperion Solutions in March 2007, adding another layer of uncertainty to CSU's portfolio of applications.

On the plus side, CSU now only had one vendor to deal with in negotiating license fees and resolving software compatibility issues. On the other hand, given the status of their projects, CSU did not want to wait while Oracle determined the migration path for

their large stable of enterprise applications (Oracle Applications, PeopleSoft ERP, EPM, and Hyperion's System 9). Inevitably, some of the applications would be discontinued or de-emphasized; licensees of these products would likely be encouraged to migrate to the surviving/preferred application. CSU could only speculate on which application would provide the best path to the future.

At the time of this research, both the Planning and EPM projects were somewhat in limbo as CSU hoped to learn more about Oracle's product road map at an upcoming conference. They were considering reallocating some resources to focus on the PeopleSoft re-implementation projects.

Performance Scorecard

The Performance Scorecard project ran concurrently with the BPR and BI projects. Initially, Rebecca Johnson (Director – Enterprise BI) and Bill Kidwell (Sr. Analyst – BI) worked on the Scorecard project along with their BI project efforts, but in late 2006, Steve King hired Chuck Walker (Sr. Director – Performance Scorecard) to head up the effort. Chuck brought a background in logistics and managing large organizations to CSU, and set out to identify and/or develop key performance metrics for business functions throughout the university. Initial efforts yielded the Mission Statement presented in Figure 12.

Although the Scorecard project initially had a few team members, they moved to other BI projects just as Chuck was starting at CSU. Chuck has interacted with executives in the F&A and other university divisions and departments as he progressed with his

project, but the Scorecard effort has run fairly independently of the BI and BPR efforts. Chuck was also extremely active in developing the branding and mission of F&A during this time.

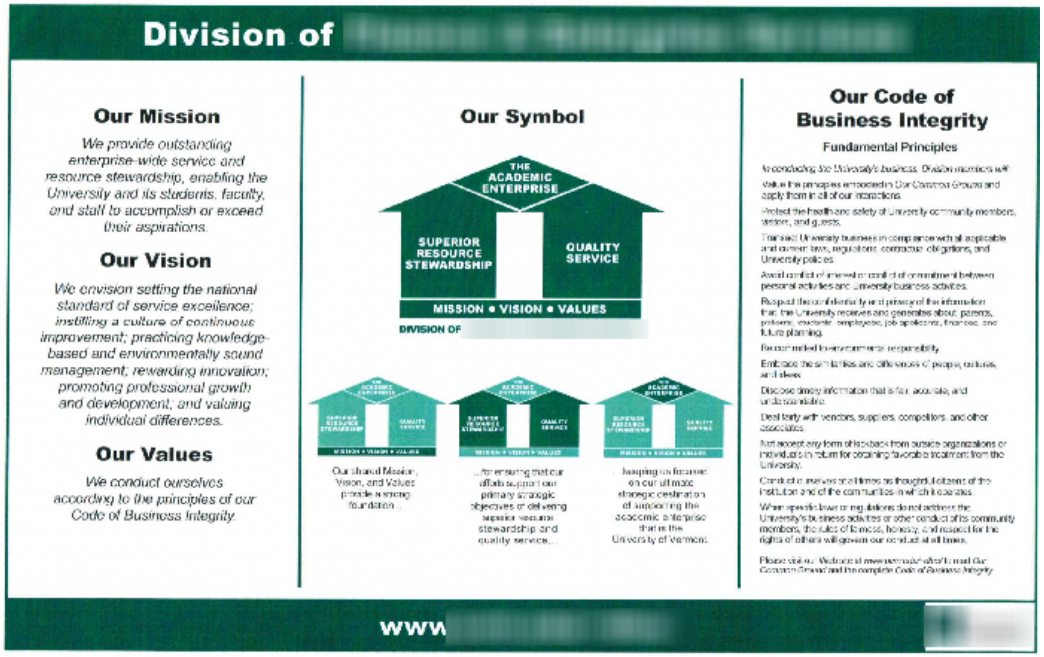


Figure 12 - Mission Statement for CSU F&A Division

As an extension to the mission statement, Chuck developed a strategy map (see Figure 13) which will serve as a guideline for the division's Performance Scorecard. The map outlines two dimensions of objectives. The first dimension outlines the scorecard categories of focus: 1) Stakeholder, 2) Financial, 3) Customer, 4) Internal Processes, and 5) Learning, Growth & Values. The second dimension outlines the two key missions of the division: 1) Stewardship of Resources, and 2) Quality Service.

Each Scorecard category contains between two and eight division objectives, each coded to indicate its relevance to one or both of the key missions. Each objective from the strategy map is then broken down further:

- Which measure(s) will be used to track the objective?
- What are the targets for the next few years?
- Which university/division initiative(s) addresses this measure?
    - Which project(s) support the initiative?
    - When will the project(s)/initiative(s) be completed?
- Do the initiative(s)/project(s) support secondary strategy map objectives (and which ones)?

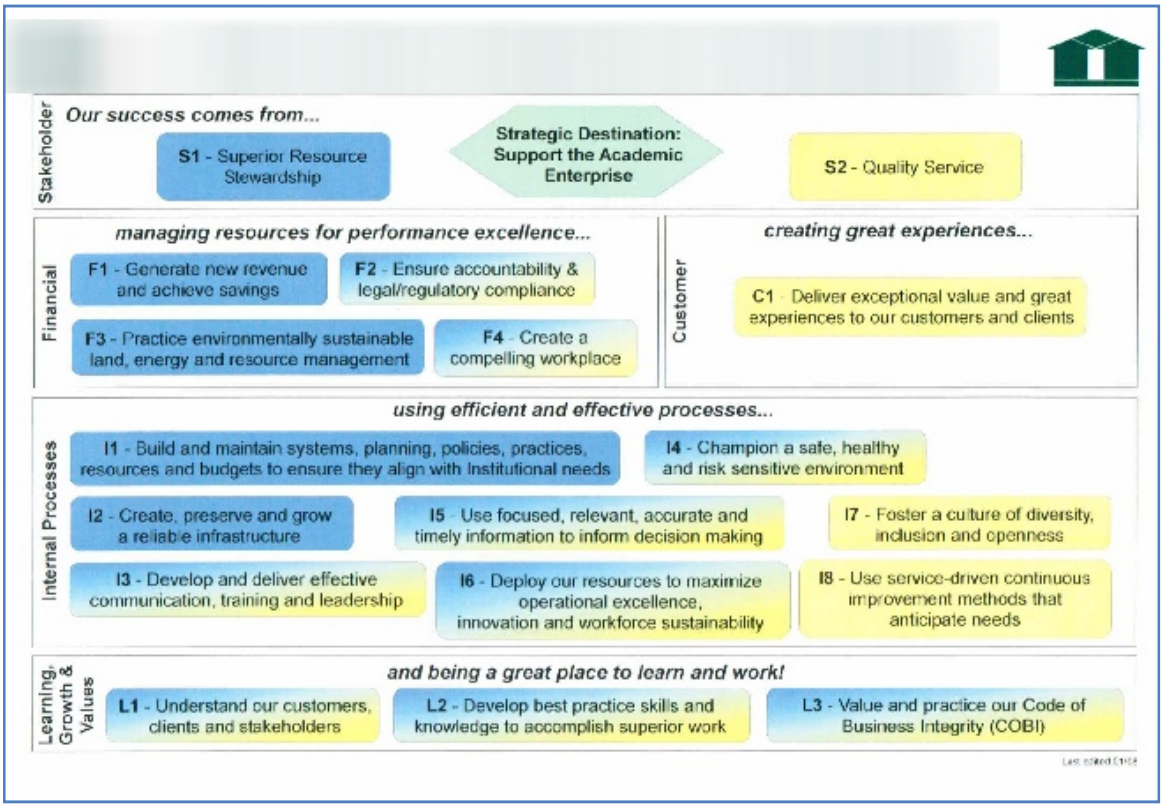


Figure 13 - CSU Strategy Map

During the course of this study, Chuck has made use of many Balanced Scorecard publications and best practices references to guide his efforts. Consultants from the Balanced Scorecard Initiative have also contributed to the project. By mid-2008, he had completed his second cut at the division's Performance Scorecard, which currently contains eighteen strategy map objectives. He was also about halfway through the process of tying specific measures, initiatives, and projects to each of the objectives. A sample page from the Scorecard draft is presented in Figure 14 below. Chuck plans to complete the development of the complete scorecard and then implement it in a pilot division for the next fiscal year. His goal is to develop a successful pilot Scorecard group, which he hopes will encourage other groups to adopt the approach. He would like for departmental participation in the Performance Scorecard effort to be optional.

Division-level Scorecard – Draft v2
November 7, 2007

STRATEGY MAP PERSPECTIVE	STRATEGY MAP OBJECTIVE	MEASURE	YEAR 1 TARGET	YEAR 2 TARGET	YEAR 3 TARGET	INITIATIVE	PROJECT	SECONDARY STRATEGY MAP OBJECTIVES	ESTIMATED PROJECT COMPLETION
STAKEHOLDER	S1 – Superior Resource Stewardship					University Operations Improvement	Strategic Financial Plan v6.0	I5, I6, C1	2.22.08 BOT Meeting
	S2 – Quality Service	% of 2013 applicant documents imaged and available to trained staff	100%			University Operations Improvement	Document Imaging	C1, F2, I5, L2, S1	01.01.09
						Marketing Plan	World-Class Customer Service	C1, I3, I8, L1	02.01.10
						Communications Plan	University Business Guide	S2, I3, L1	03.01.09
FINANCIAL	F1 – Generate new revenue and achieve savings					Strategic Plan	Revenue Enhancement	S1	03.01.08
	F2 – Ensure accountability and legal/regulatory compliance								
	F3 – Practice environmentally sustainable land, energy and resource management								

Figure 14 - CSU F&A Division Scorecard Draft

Despite the tremendous amount of effort that has gone into the Scorecard project, it remains in a detailed design stage and is not well known throughout the F&A organization and beyond. Key university executives are aware of the branding and mission statement work, but the supporting objectives and measures have been kept in development for the time being. Directors in the F&A division, although aware of the Scorecard effort, are not knowledgeable about the objectives or measures. When asked about her involvement in the Scorecard efforts taking place within the division, Kate Sanders, director of BPM, responded, "Not as much as you might think … I haven't really been involved in that."

Chuck remains determined to see the Scorecard project through to adoption throughout the F&A organization and into the wider University environment. He mentioned the need to be persistent several times during our discussion, and recognized the need to take a long-term approach to implementing a metrics-based scorecard approach in the organization.

4.1.4 Ongoing Use of IT at CSU

Enterprise Applications Going Forward

Subsequent to my research visits, CSU has hired a new VP of Finance and Administration and, like many public institutions, has experienced a decrease in state funding allocations. One of the first orders of business for the new VP has been to examine all projects for cost-reduction opportunities. The functionality overlap and

uncertain vendor direction have made the BPM and BI project prime targets for such evaluation.

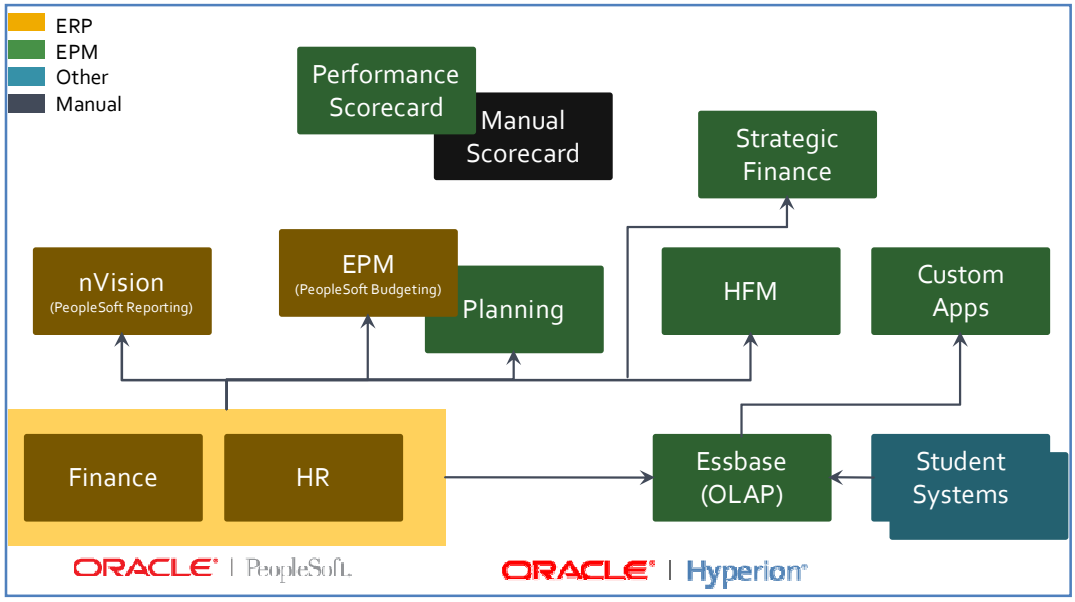


Figure 15 - CSU F&A Application Portfolio

The existing PeopleSoft modules handle basic business processes and have need for improvement. It appears that CSU will proceed with the reimplementation efforts of these currently installed modules as planned. They have halted the other large BI and BPM implementation efforts and will re-evaluate their direction as they improve core operational systems. Figure 15 presents an overview of the key application modules at CSU.

The Performance Scorecard project continues much as it has for the past two years. Chuck Walker is working with functional leaders to continue his development of measures in support of F&A's strategic objectives.

4.1.5 Analysis of empirical observations at CSU

At CSU, the implementation of Enterprise Performance Management resulted in very limited success in the organization. The unarguable highlight of the implementation was the use of the strategic finance application for long term capital planning. Although the VP of Finance and Administration came in with a bold vision for implementing EPM throughout the university, many of the efforts got bogged down in one way or another. Despite the unified branding attempted by grouping the efforts under the Business Intelligence banner, the various efforts were seen as stand-alone applications.

The Planning effort got caught up in a political struggle with legacy system and PeopleSoft proponents; Planning proponents were not able to build a compelling case for the superiority of their solution. The Financial Management effort never really got off the ground. The Performance Scorecard effort made progress over the course of nearly three years, but is still more or less in design mode, waiting to complete the initial set of measures in preparation for pilot testing. Custom analytic applications remain as ideals, possibly to be pursued at some point in the future.

The VP of Finance and Administration faced significant challenges in implementing his BI vision. Resources were limited and had little experience with BI tools. Recruiting a team of experienced BI resources was difficult due to salary constraints and CSU's location away from major metropolitan areas. The VP was forced to hire consultants to supplement his project team. Coming on the heels of a difficult PeopleSoft implementation that was still in a less than satisfactory state, he was also forced to deploy

a significant number of resources to ongoing development and maintenance of the new ERP system.

Finally, the university's organizational environment itself presents challenges distinct from those seen in for-profit enterprises or even other government-supported entities. The VP of Finance and Administration was adept at managing communications with his sponsors and direct reports, and was able to deliver a solid mission statement and high level objectives. Somehow, these overall goals were not translated into a strong, consistent message that the VP could deliver to the rest of the Finance and Administration organization and the wider university organization. Lacking a strong vision of the future, groups outside the BI project team created their own vision and objectives.

In hindsight, an observer might say that it was obvious that the VP attempted to do too many things at once. The fact that several projects languished with little discernable progress for two years or longer is an indication that resources and attention may have been spread too thinly. The VP was, however, a successful executive with a track record of success handling multi-project implementations much like what he attempted at CSU.

Regardless of the perspective taken on this issue, the BI efforts, especially in Financial Management and Planning, resulted in a significant amount of turmoil and power struggles in the CSU organization. Most people were aware of the other BI projects, but only in a somewhat vague sense. In particular, the Performance Scorecard seemed quite mysterious to many in the organization. Despite the lack of the actual Scorecard product

rollout during the period studied, some individuals in the Finance and Administration mentioned an increased attention to various performance metrics.

Lacking the organizational framework provided by a Scorecard approach, individuals and groups were left to their own discretion to identify their major objectives and which measures to track them with. These individual and departmental objectives and measures were not necessarily applied or communicated throughout the organization on a consistent basis, although Finance and Administration did have periodic meetings which included the VP and all department managers.

There was another sense that there were some covert objectives and performance measures in play. This was especially true with respect to the rivalry between PeopleSoft proponents and Hyperion product proponents. Although the official direction for the division was the Hyperion Performance Management applications for Financial Management and Planning, it was important for the PeopleSoft proponents to mention and sometimes even build and demonstrate how the same or similar processes could be accomplished using their system of choice.

The overall Finance and Administration strategy for Performance Management implementation faced serious challenges every step of the way; it was dealt a critical blow when the VP, its biggest champion, left CSU to pursue another opportunity. His departure left a leadership void in the division that has yet to be sorted out. Many of the BI and BPR managers and directors remain at CSU; it appears that the BPR (PeopleSoft) proponents have the ear of the new VP. As mentioned earlier, the division will now focus on the enhanced implementation of PeopleSoft, including PeopleSoft's financial

reporting and budgeting and planning modules. Of the Hyperion Performance Management applications, Strategic Finance is still in use, and the Performance Scorecard effort still proceeds with no firm pilot or roll-out date set. Other analytic applications (student financing, demographic analysis, etc.) considered for development on Essbase, Hyperion's OLAP engine, have been set aside for now.

In one sense, CSU is fortunate in their choice of vendors. Software industry mergers have resulted in CSU having one vendor and ongoing licenses for all its ERP and Performance Management products. It is possible that they will be able to negotiate favorable licensing fees going forward. In addition, pending Oracle's application road map for ERP and BI, CSU will have the luxury of being able to select or even switch modules from two (or more) application suites as their needs change, all without changing software vendors.

4.2 Case 2 – Content Management Corporation (CMC)[3]

4.2.1 Introduction to the Organization

CMC manages the development and distribution of electronic and published content throughout a large portion of the United States. CMC is a separate legal entity operating as a division of its parent organization, whose primary business is also the development and distribution of electronic and published content. CMC shares resources and works in

[3] As noted for Case 1, the names of the research site organizations have been disguised at their request. Names of individuals and their exact titles within the organizations have also been disguised in order to protect their privacy.

conjunction with its corporate parent and siblings to achieve common business objectives. One of these objectives is to position CMC and its related corporate entities to prosper in a changing consumer market.

I became aware of CMC through a variety of personal and academic contacts, and have been familiar with their implementation of Performance Management for a number of years. I discussed this project with a number of executives at all levels of CMC and its corporate parent, and after nearly eighteen months of discussions, CMC agreed to participate in the study.

4.2.2 Organizational Structure at CMC

CMC operates a number of business units across the United States. Each business unit mainly serves its local market, but also is able to serve a worldwide (or traveling) audience through its web presence. Division headquarters are located within close proximity to the corporate headquarters, which makes arranging face-to-face meetings between managers in the two entities relatively easy. CMC headquarters employs about 250 people, who manage centralized resources and oversee the operation of the business units. A partial organizational structure is illustrated in Figure 16.

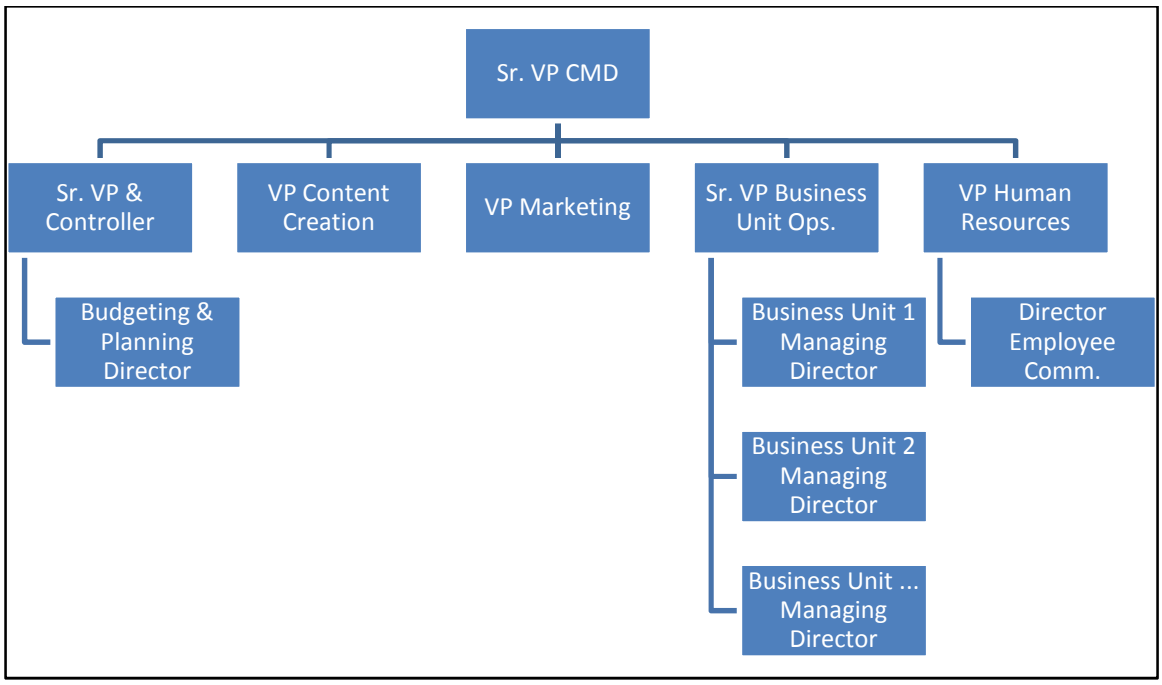


Figure 16 - Partial CMC Organization Chart

Each CMC business unit is a separate legal entity and operates relatively independently. The managing director for the business unit has complete financial statement responsibility, but must also follow guidelines set out by corporate headquarters and CMC. Business units range in size from about 30 employees to just over 100, and all have similar reporting hierarchies. Figure 17 presents a representative organization chart for a typical CMC business unit.

During the course of my investigation, I spent time with a number of managers at CMC's divisional offices. I sat in on several meetings, including the divisional quarterly scorecard meeting held just prior to the quarterly scorecard meeting held at corporate headquarters. I also sat in on one of the business unit quarterly scorecard meetings, where

business unit management presented and discussed their scorecard results with a CMC director or VP.

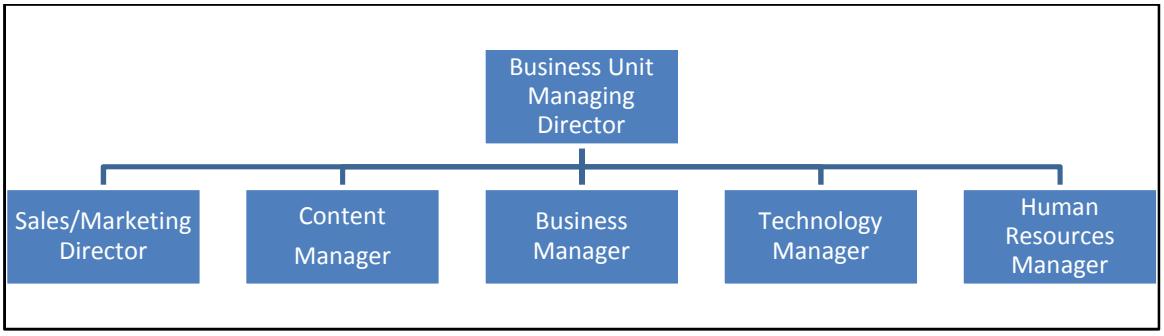


Figure 17 – Typical Business Unit Organization Chart

I also visited three CMC business units in three different states, visiting with an average of four managers during each visit. The three business units ranged in size from one of the smaller CMC business units to one of its larger units. In addition, the units ranged in tenure with CMC, from long-term properties to a recent acquisition.

During the course of this investigation, I will refer to the business units visited as Business Unit X1, Business Unit X2, and Business Unit X3. Business Unit X1 is one of the longest tenured business units in the CMC organization. It is also one of the smallest business units and serves a relatively small market. Business Unit X2 serves a medium-size market and was acquired by CMC about five years ago. Business Unit X3 serves a moderately large market and is a recent CMC acquisition.

Table 8 summarizes my contacts with CMC during this investigation. The 121 e-mails plus an unknown number of phone calls were primarily administrative in nature. I had full interviews with seventeen CMC employees, receiving permission to record fifteen of

them. I was not able to interview seven people at CMC and the corporate parent due to scheduling conflicts. I also asked all invitees to complete a questionnaire – as a follow-up for people I had already interviewed or as an alternative to being interviewed for those I had not. Four people (all previously interviewed) completed the questionnaire, treating it as a follow-up to the original interview. Finally, people at the business unit and divisional level provided eight reports and four corporate publications for review.

Table 8 - Recap of Contacts with CMC

Interviews	17
e-mails	121
Questionnaires	4 (all follow-ups to interview)
Meetings	2 quarterly performance review meetings
	6 background meetings
Reports	8
Publications	4

4.2.3 Implementation of Performance Management Technology at CMC

Beginnings

Business units in CMC's industry have traditionally been able to operate relatively independently, due in part to their origins as independently owned entities. Developments over the past two decades have resulted in a great deal of consolidation in the industry, which is now dominated by several national companies and a handful of regional players. Although many business units stay with the same ownership group for years, there is

quite a bit of movement in the industry as holding companies acquire and divest properties.

In 2000, CMC operated business units in more than thirty markets. Many of these properties were loosely affiliated with other properties in the same market that were owned by the parent corporation. Others built market affiliations with properties unrelated to the parent company. Although CMC and the parent company both recognized the threats and opportunities that the growth of the Internet represented, no cohesive strategy was in place to address them.

During this period, communications between business units and division-level executives took place in parallel. Financial managers at the units would discuss strategy and results with financial management at the division and corporate level. Likewise, content management, operations management, and sales management at the business unit level engaged in similar discussions with their respective division and corporate counterparts. Each group utilized their own operational software applications and one-off spreadsheets to accumulate information and prepare reports appropriate for their discussions.

As mentioned earlier, each business unit is a relatively small unit (ranging in size from 50 to 100 or so employees). It was certainly possible that daily interactions and business unit updates would result in the dissemination of strategies and results between functional groups, but there was no consistent approach to achieving this objective from unit to unit.

In mid-2000, CMC's parent company engaged with the Balanced Scorecard Collaborative (now part of Palladium) to develop a performance management approach that would work for their organization. The parent company finance and budgeting group were the project leaders, and the parent company CFO was the project champion, with full support from the CEO. The initial performance management implementation focused exclusively on the process; no information technology was introduced during this phase.

The scorecard implementation team spent about a year working with employees at all levels of CMC, its sister divisions, and the corporate parent to develop the base set of scorecard categories and measures. This effort resulted in three main categories of measures: Employee Engagement, Customer Growth and Shareholder Value. Each category has a number of specific performance measures assigned to it. The total number of measures has varied. As CMC's Budgeting Directors explains, "We've been as high as 40 measures in the past, but that was too unwieldy."

CMC and its corporate siblings and parent rolled out the initial scorecard to headquarters and the business units near the end of 2001 for the 2002 planning and reporting cycle. Although many individuals across the organization had been involved in the design process, the training and communication efforts were still underway. Many business unit employees were still unsure of the purpose of the new approach and complained about the number of measures. One CMC employee who was content manager for a business unit at the time said:

> I know that when we first started, we were awful. We were trying to measure everything. There are two things that will make the Balanced Scorecard fail. Over-measure. Try to put a number on absolutely everything that everybody does in every part of the process.

> You will kill your team with measuring. You'll totally lose focus of the ultimate goal. So, that's the first thing.

CMC manually prepared the first few scorecards for its quarterly reviews. As it became apparent that business unit participation was reluctant, new scorecard measures geared specifically to division and business unit level objectives were introduced. The former business unit content manager continues:

> The second thing is that the further away from the operating unit that that measure originates, these corporate measures that get allegedly pushed down into the operation, the less effective and the less meaningful they are. In my opinion, the only measures that really matter to anybody working in an operation are the ones that report, that affect them directly. If I do this, I'll be better at my job, my organization will be better, and we'll be a stronger organization because of it.

The addition of division and business unit measures greatly increased the relevance of the scorecard to those actually creating, distributing and selling product. CMC added divisional measures tailored to their approach to content creation and distribution. Likewise, business units added unit measures that were specific to product and sales strategies for their unique market.

After a pilot run with several properties, CMC initiated quarterly scorecard review meetings with all its business units at the end of 2001. CMC was also responsible for preparing and delivering a scorecard update to the corporate parent at this time. During the first few iterations, the quarterly scorecard sessions had up to forty measures to review and discuss (twelve to fifteen in each category). After fine-tuning the number and type of measures (introducing the division and business unit measures), CMC reduced the overall number of measures. As the budgeting director states, "… we found 30 seems to work pretty well." The Scorecard documentation for these reviews was created using spreadsheets, and was supplemented by comments typed up by participants in word

processing documents. This was done by design, as the Collaborative consultants and practitioner literature recommended introducing the concepts and measures prior to implementing any supporting technology (Wheatley 2003).

By the end of 2002, the performance management process had become a regular part of the routine at CMC. There was still a fair amount of friction between divisional management, the business units, and corporate, as evidenced by this comment from a former business unit content manager:

> That's why I get frustrated and focus on my part of the Balanced Scorecard -- in my opinion, the most manageable. They are very easy to identify goals. You see, we learn this, we need to do this, will get this. It's very, very easy to understand behavior. Knowledge, behavior, reaction, or result.
>
> You start getting into a lot of this other stuff and I just think it's all over the board and it starts getting really convoluted and subject to way too much interpretation. That's why, we want a… for a measure of (content updates) on the website. The accountants… came up with about six different things that they thought the (unit) should be doing and that's what we should be measuring. And they based that on what they do in our largest market. Now (our property there) is not like any other (property) we own, (in any of the divisions). Okay? That property is an island in our company; it's actually a continent!

Introducing the IT Artifact

After achieving a measure of success with their Scorecard initiative, CMC began to plan the implementation of performance management software to support their Balanced Scorecard approach. Again, CMC adopted this approach based on recommendations made by the Balanced Scorecard Collaborative consultants. CMC selected PerformanceSoft PBViews[4] as their software tool.

[4] PBViews, formerly known as Panorama Business Views, is a product offered by PerformanceSoft, now a part of Actuate. More information on the product and company are available at http://www.performancesoft.com/.

Implementation of the PBViews software was completed over the course of several months. As with many performance management software applications, data integration was a significant part of the implementation effort (Mancuso et al. 2005). Many of the financial measures were sourced directly from CMC's PeopleSoft ERP system. Other measures were sourced from sales, production, or content management systems used by CMC. Finally, many of the business unit level measures had to be entered manually as they were not collected in any formal software application.

The technical implementation details of PBViews are unremarkable. The software requires a modest OLAP engine and database, a supporting relational database, server management software, and a client or browser-based front-end application. Numerical details and metric scores are maintained in the OLAP database; application metadata, supporting comments, action plans, other textual materials, and links to documents and other content outside of PBViews are maintained in the relational database. The software provides extensive drill-down, pivot and rotation navigation capabilities, but does not provide drill-through capabilities to source systems. With roughly thirty measures captured quarterly, one to seven sub-measures for each measure, twenty to forty business units, and the supporting financial reporting and commentary details, data storage requirements for PBViews are relatively modest.

Culture Shift

With the implementation of PBViews, division and business unit activities in preparation for quarterly Scorecard review meetings changed somewhat. Business unit managers responsible for Scorecard measures now entered their explanations and action

plans directly into the PBViews software application, rather than by typing up their own word processing document.

The most drastic change was the shift to using the software as the focal point in the meetings. For business unit reviews, this means that the Scorecard is viewed on a large monitor in a conference room, either with the reviewer at the business unit location or viewing the content on another monitor and participating via speakerphone. Depending on the business unit, six to twelve top unit managers participate in the review meetings. For division reviews, the software application is projected onto a ten-foot screen in the boardroom with a facilitator leading the meeting and navigating the application from the podium. The projected software application is the only visual used for the entire meeting, which typically lasts an hour for business unit reviews and two to three hours for division reviews.

Figure 18 illustrates a sample screenshot of a home page view in PBViews (although this is not CMC's home page, theirs has a similar look and feel). The facilitator starts here in the review meeting and discusses measures highlighted on the screen. The application uses a browser metaphor, with tabs across the top for various content pages and a Windows Explorer-style hierarchical navigation window on the left. A toolbar across the top of the application window can be customized with a variety of shortcuts.

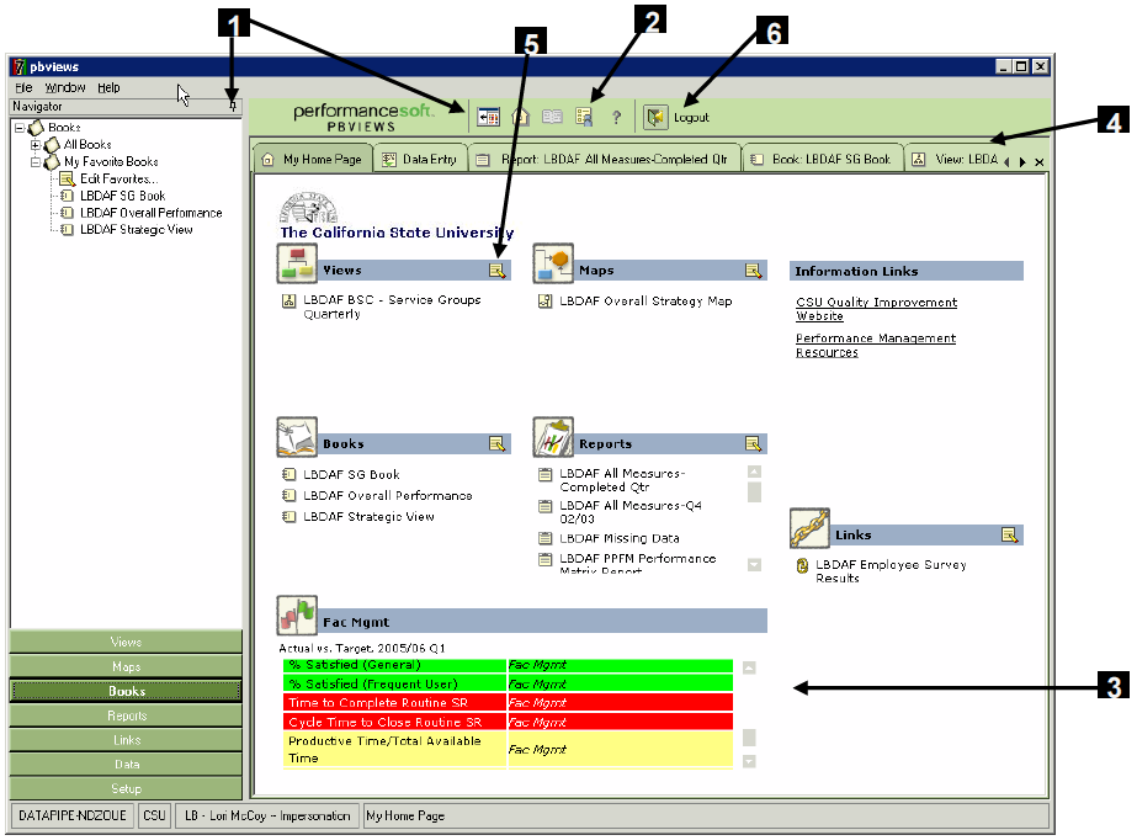


Figure 18 – Example PBViews Home Page
(from California State University, Long Beach training guide)

From the home page, the facilitator drills into measures for each of the Scorecard categories. Each category contains eight to ten measures, which are in turn made up of anywhere from one to seven sub-measures. Discussion typically focuses on measures that are displayed as red (failed to meet the objective) or yellow (marginally met objective). For each primary measure displayed in red or yellow, the sub-measures are displayed and discussed. The manager responsible for the measure then explains results, outlines the action plan to achieve objectives in the future, and answers questions from the other review participants.

Figure 19 illustrates a category view in PBViews. Color-coded category measures are displayed on the left "page." When the facilitator selects a measure, the right page displays the description, action plan, and supporting charts and tables related to the measure. Primary measures that are comprised of sub-measures are marked with a navigational triangle. The facilitator can click on the triangle to display the associated sub-measures in a hierarchical tree listing.

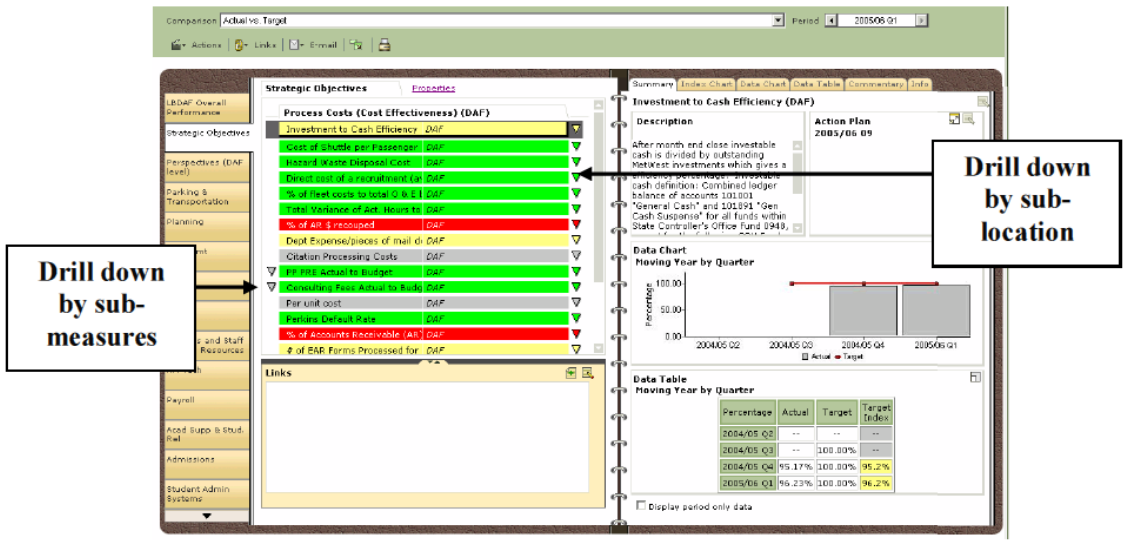


Figure 19 – Example PBViews Performance Book
(from California State University, Long Beach training guide)

As mentioned above, discussion typically focuses on measures displayed in red or yellow. In the meetings I attended, discussion was intense but congenial. Managers in charge of the measures were questioned extensively, and there seemed to be full participation by all in attendance. Discussion usually focused on factors contributing to the shortfall and ways to overcome them. In some cases, executives discussed the

suitability of a measure and whether its formula or parameters should be updated. An example of this is presented in Chapter 5.

It became evident through observation and discussions with CMC people that the Scorecard, although not universally beloved, has become a relatively effective motivational tool. As one business unit managing director stated:

> I love the tool. I really do, because it has made attempting to keep a thing -- or keep the people focused on specific things -- a little easier. And it's terribly embarrassing to me to have measures that show out as red.
>
> I mean, it's terrible because I'm kind of fixated on it and if we had a quarter full of exceptions that were red and we all have a good explanation as to why, then trust me I'm -- we're putting together a good action plan, so it doesn't happen again!

It seems clear that the PBViews tool, along with the concepts and approach behind it, has become part of the culture at CMC. Division and business unit managers are reviewed based on their scorecard results on a quarterly basis. Consultants to CMC have been briefed on their Scorecard approach and now provide content and marketing recommendations based on CMC's Scorecard objectives.

It is interesting to note that despite the acceptance of the Scorecard concept and approach to reviewing measures at CMC, the software tool itself is not seen as particularly easy to use despite several upgrade cycles since the original implementation in 2003. As one CMC VP put it, "…it went from impossible to use to moderately user unfriendly over the years."

In a similar vein, the software screens are relatively straightforward. Much of the time during the review meetings, the facilitator simply displays the Scorecard performance book for a particular measure while the group discusses the causes and action plan.

Occasionally, a participant will ask the facilitator to bring up a supporting spreadsheet or perform a query on one of the enterprise systems, but the great majority of the meeting time is spent displaying Scorecard measures.

Ongoing Performance Management

CMC is now on version 7.x of the PBViews (soon to be called PSViews) software package. Quarterly business unit and division Scorecard reviews have continued now for seven-plus years. The organization remains committed to the approach even as they face tough economic hurdles. Figure 20 presents an overview of CMC's EPM application portfolio.

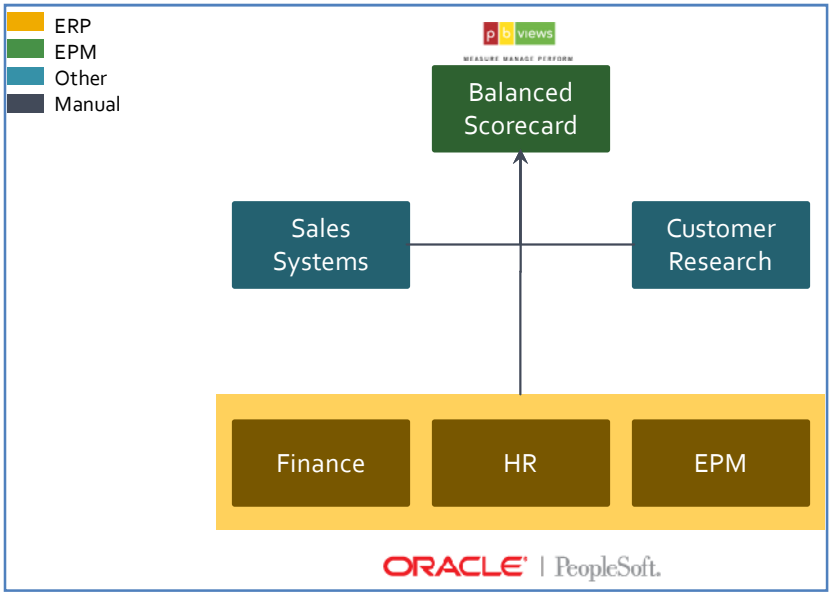


Figure 20 – CMC Application Portfolio

In fact, one VP credits business units' response to Scorecard initiative for their ability to respond quickly to today's business environment rather than scrambling to play catch-up:

> I'll use new business as an example. Our most successful business units right now, in this very tough economy we are in, are the ones that when we started pushing this new business initiative, I think it was about three years ago, they got it right away, they wrapped their arms around it. They picked it up and they ran with it. We have a number of units who are only very reluctantly coming to the new business development table because the money has finally stopped coming in over the transom. You know, for years and years and years with this industry all you had to do was keep the offices open and you got a lot of business.
>
> And there are some strong business units still that -- fewer and fewer every year in this industry -- that you know all they have to do is show up and money comes to them. Well, that form of business is rapidly disappearing and you have to go out and you (have to) develop it. You have to go find it; you just can't rely on the same old people coming back to the property, buying the same old products. And so if you look, if you dig into those numbers that you saw yesterday, the units that are truly pushing hard on the new business are the ones that are doing the best today. And, without a Balanced Scorecard measure that measures that kind of thing, you wouldn't see that success, I don't think.

Implied in the statement is the notion that not only did the Balanced Scorecard measure track business units' success with new business, but it also helped steer them (at least some of them) toward action regarding CMC's new business initiative.

CMC reviews its business objectives each year during the budgeting and planning cycle. As part of this process, CMC managers evaluate their Scorecard measures to determine their applicability for the coming year. Although the three primary categories have remained static since the initial implementation of the Scorecard approach at CMC, many of the measures have changed. Primary financial measures such as revenues and days sales outstanding have remained on the Scorecard since the beginning. Other measures have been dropped or replaced by newer measures in subsequent versions of the CMC Scorecard. Division and business unit levels are most susceptible to change from year to year, but a number of the overall measures have rotated in and out of the scorecard as well.

As an example, several business units have dropped a measure that tracks the number of consumer-identifiable errors that appear in the content produced by CMC. Business units simply got so good at reducing this problem that the measure showed green review after review, at which point CMC determined that they gained nothing by continuing to include it in the Scorecard. When CMC rolled out a new, more automated content delivery system to its business units, the measure was re-introduced on those units' Scorecards during the transition period. Early units uncovered and corrected many issues in the new delivery system – resulting in early reds followed by gradual improvement to green. Later units were the beneficiary of the early units' learning process; many of them were able to report green for this measure in their first review on the new system.

4.2.4 Analysis of empirical observations at CMC

It is clear that the CMC organization has responded to the Scorecard approach. At the business unit level, managing directors use the Balanced Scorecard as a way to help provide direction for new, many times inexperienced, personnel. Considering this use of the Balanced Scorecard, perhaps it is not surprising that division-level executives were split in their opinion of the Scorecard. It is worth noting here that most division-level executives have significant experience in the industry. It is possible that their rise to the executive level at CMC is due to a combination of their experience and an innate talent that allows them to "know" the right objectives and business strategies intuitively.

The resulting view by several division executives on the entire range of Scorecard measures is that those developed and "pushed down" from the corporate offices are well-

intentioned but not always completely applicable to CMC's line of business. Here we can note that executives in the corporate parent offices typically have experience in one of the sibling division industries or in general business and finance. On the other hand, measures targeted for specific business units have been designed to meet the needs of their unique market situation and are, therefore, spot on. Division-level measures seem to fall somewhere in between.

It became clear in discussions with sales managers at the business unit level that the Balanced Scorecard approach was not particularly useful in their eyes. One reason for this could be that sales is a relatively mature discipline with a vast array of tools, techniques, and compensation schemes designed to motivate objectives-based behavior. Sales executives are typically well versed in using sales tools to develop and close business. They are also accustomed to evaluating changing compensation schemes to determine which behavior will be rewarded. Additional focusing and motivational tools may not be necessary. The CMC sales managers that I spoke with seemed to appreciate the Balanced Scorecard's potential as a tool for communicating activities and objectives across functional areas, but did not believe that it added much value to their pursuit of individual and team targets.

Regardless of an individual's perspective on the Scorecard implementation at CMC, the use of the PBViews software application has certainly had an influence on the manner in which CMC conducts its Scorecard reviews. Similar to the content they create for end consumers, the content each manager creates for use during the Scorecard reviews bears his or her mark. Each responsible manager's measure, result, explanation, and plan are

presented and discussed in a live, interactive format that would not be the same as one presented in a slide show style presentation or in paper handouts. Despite its relatively infrequent appearance on the big screen in the quarterly reviews, PBViews and the Scorecard it presents have become a vital part of the corporate culture at CMC.

5 Research Findings

5.1 Introduction to Findings

This study uses the power framework proposed by Hardy (Hardy et al. 1998; Hardy et al. 1994) in the management literature and implemented by Dhillon (2004) in the IS literature. I have proposed to use this framework to guide my analysis of EPM implementation at two organizations. Furthermore, I have proposed that the implementation of EPM can result in organizational changes to these power dimensions whether the implementation is considered successful or unsuccessful.

In order to analyze my research findings effectively, it is important to determine how I will find support (or lack of support) for my research propositions. Yin (2003) discusses the need to develop a chain of evidence to support research findings. Table 9 displays examples of three types of evidence that can inform my findings:

1. Evidence inconsistent with my research propositions would indicate that the implementation of EPM has no effect on power dimensions and performance measures.
2. Successful EPM implementations will likely result in significant changes with regard to the power dimensions and performance measures.
3. Unsuccessful EPM implementations will also result in significant changes in power relationships and performance measures across the dimensions; however, these changes will likely be different from those found in successful implementations.

My job is to develop a compelling chain of evidence based on my findings that links back to the research propositions. In my case studies, this means connecting statements from interviews, notes from on-site observations, or information obtained from written

communications to the four groups of propositions presented in Chapter 3. In addition, because implementations of IT can be successful or unsuccessful, it is important to recognize that both positive and negative outcomes can be interpreted as change resulting from the implementation of the IT.

Table 9 - Potential Evidence and its Relationship to Research Propositions

Evidence inconsistent with the research propositions	Evidence consistent with research propositions	
	For Successful Implementations	For Unsuccessful Implementations
Meanings		
No reaction to implementation	Implementation efforts recognized, eventually embraced	Implementation efforts recognized, eventually resisted
Use of IT remains static	Explore new IT to solve problems	Search for solutions in legacy IT
No communications	Communications are open, inclusive; people feel informed	Communications are exclusionary; people feel uninformed
No change in status	Status associated with new IT	Status associated with legacy IT
Resources		
No staffing impact	People are allocated equitably between all IT efforts.	People are shifted to new IT at the expense of legacy IT requirements. People are not adequately allocated to new IT.
No budgetary impact	Money is allocated equitably between all IT efforts	Money is shifted to new IT at the expense of legacy IT requirements. Money is not adequately allocated to new IT.
Processes		
Business processes remain unchanged.	Intended business processes migrate toward new IT. Unintended business processes migrate toward new IT with favorable results.	Business processes intended for new IT are actively moved to legacy IT. Business processes intented for new IT are streamlined on legacy IT rather than being moved to new IT. Unintended business processes migrate toward new IT with unfavorable results.
System		
No change in culture	New IT becomes a guiding part of the culture and traditions.	New IT becomes a disruptive part of the culture and traditions.

Each change to the power dimensions in the organization can subsequently result in changes to the performance measures selected to represent organizational objectives. Thus, changes in the power of meanings may result in changes to the financial measures

selected to represent performance as well as to the strategic and innovation-oriented non-financial measures selected by the firm.

The overall impact of these changes effectively results in a new prioritization of business objectives. This new set of prioritized objectives collectively form the new strategy, or even identity, of the organization (Reisinger et al. 2003). It is important to note that this representation of the organization is toward its members; the outward representation of strategies and objectives to other stakeholders may be different. The internal business objectives are represented by the set of performance measures, both financial and non-financial, that the organization uses to evaluate its overall, business unit, and individual employee performance.

In each case, evidence consistent with successful or unsuccessful implementation of EPM should be accompanied by changes in the measures the organization uses to track success. It is not necessary for these measures to be explicit – indeed, in the case of unsuccessful implementations, it is very likely that some performance measures will be implicit in nature.

The rest of this chapter is organized as follows: section 5.2 presents a summary of the case findings. The case findings are presented in two parts. Section 5.2.1 presents the findings for CSU, organized by the four dimensions of power. Section 5.2.2 presents the findings for CMC, also organized along the four power dimensions. Section 5.3 discusses cross-case findings and their relative support for the research propositions. Section 5.4 discusses the implications for research and practice. In section 5.5, I discuss the significance of these findings.

5.2 Evaluating Case Findings against the Research Propositions

5.2.1 Capital State University

5.2.1.1 Meanings and Performance Measures at CSU

Legitimizing certain symbols, decisions and demands through various means is how people in organizations exercise and accept power over meanings. At CSU, meaning in the Finance and Administration Division coalesced around two sets of preferred symbols. The two main product suites, their brands, the associated project groups, and even project logoed training certificates and promotional items became symbols indicating membership with one group or the other.

Each group had the objective of creating legitimacy in the EPM effort for their preferred product set. The PeopleSoft supporters had the advantage of incumbency. Their product was already being used to support core business processes. The Hyperion supporters had the advantage of a newly hired Division VP who came in with a clear agenda and who preferred their product suite.

As the two groups competed for supremacy, the performance scorecard was initiated, but initial efforts focused mainly on interactions with Dean and VP level executives throughout the university. Many symbols were developed to support the scorecard approach, including a mission statement division logo, a color-coded strategy map, and a variety of objectives and measures, each designed to be presented in a color-coded dashboard format. For the F&A Division, the ongoing Scorecard effort was no more than a minor distraction to the struggle at hand.

With so many major initiatives underway, the Finance and Administration Division was not able to reach a consensus and legitimize a single set of meanings. In Table 10, I present several extracts from the information I gathered from CSU relating to power in organizational meanings. Each row in the "Evidence" column of the table displays an observation or exchange from the research database. In the corresponding "Finding" column, I present my analysis of that finding with regard to the research proposition. As this table merely represents some excerpts from the research database, I complete the table with a tabulation of sources, references and the number of words that reference this set of research propositions.

Table 10 - Meanings at CSU

	Finding	Evidence
1a&b) Meanings → Financial and Non-Financial Measures		
	The switch to a new ERP resulted in the inability to handle certain processes thanks to the inability to effectively communicate the meanings behind various activities. CSU was no longer able to account for a specific financial measure.	Kate Sanders (CSU BPR Director): Let's see -- on the HR side we've also struggled with a number of business processes that I don't think we communicated well to our consultant partners who were here. Retro distributions is one of the things that comes to mind there, where you have employees and you have to describe who is going to be paying for their labor and you supply a chart string to describe that. And at the beginning of the year you do your best to describe what the coming year as a whole is going to look like. Midway through the year you find out that you were incorrect and then in fact you were incorrect going back into the past, so you go back into a retro change. The system can handle that kind of fact, but only once per employee, per time period. And I think when we were working with our consultants we didn't do an adequate job of describing the frequency with which we do that. We do that all the time, multiple times over the same time period and this system (PeopleSoft) breaks when you try to do it. So I think there were some communication glitches where we tried to describe what we meant by a given term, the consultants said, yeah, the system can do that and both of us I think were well-meaning but we just totally missed one another.
	Changes to the chart of accounts resulted in changes to the ways people had to think about the organization.	Kate Sanders (CSU BPR Director): We revamped the chart of accounts which is huge and that's not even dependent on the software, but it's a whole different way of thinking about your finances, and there is a lot to that. It's been really difficult for people to get their heads around.
	Conflicting initiatives send confusing messages to organization members.	Bill Kidwell (Sr. IT Analyst): Well, my background's in Health Care, and it was a smaller university than CSU, but it was interesting, because with the Scorecarding I really understood the direction of the whole organization. I understood what

	Finding	Evidence
		people were working on, what they were having trouble with. We had a Scorecarding, similar system -- it was a quality improvement program. But we had initiatives and goals, and it was fundamental, and it became very operational. We understood what other people are doing, and we understood what our part in that was, and it really just aligned the whole business. And I don't see that at CSU yet. I think there're a lot of initiatives that, the direction might be this way, but there's an initiative going this way, and this way, and this way.
	The scorecard project was not well communicated throughout the organization, resulting in groups speculating on and defining their own performance measures independently. No cohesive effort.	Kate Sanders (CSU BPR Director): When asked about her involvement in the Scorecard efforts taking place within the division, Kate responded, "Not as much as you might think … I haven't really been involved in that."
	The organization needed to unify its vision and message before it could begin thinking about improvements to performance metrics.	Chuck Walker (Director of Performance Scorecard): We had to start at a much more basic starting point. We didn't have a Mission Statement; we didn't have a vision; we didn't have any values or code of business conduct. We didn't even know what kind of strategy to undertake to put a management system in place. We didn't have a leadership team that had been here working together for any great length of time. I, in fact, was one of three new members of Steve's senior staff the year that I arrived. Units were added from across the University, and there had not been a VP level position to oversee the units that were brought in under Steve's responsibility. We had lots of things that we had to deal with before we could even think about metrics.
	The Division VP had a vision, but was unable to convey it throughout the organization in an effective way.	Kelly Snead (Project Coordinator – Consultant), when asked about communication of key messages in the division: Poorly! Poorly! And Steve is not a good communicator. So it was -- that was another big problem -- communications were sub-optimal at best.
	Performance management initiatives are in flux. Not much is known about them outside the immediate project teams.	Bill Kidwell (Sr. IT Analyst): There hasn't been from my perspective. It's interesting because when they started this Scorecarding initiative I was actually on part of the team as a representative from the controller's office. So I was very involved in the Scorecarding and the metrics, and we had a lot of it in services, and we had a lot of plans brought up. And, to be honest, in the last year I haven't really been a part of that since I took this role. And I haven't really heard much about it. I actually asked a few months ago what the status was and heard that it's been taken off line as far as, from a computer standpoint we're not going to be implementing it right away with Hyperion or anything, but that it's still moving forward and more like a paper manual process. But that's about all I know, I haven't really been involved. And that's too bad, because I really think CSU could really benefit from Performance Management, or a Scorecarding process. I really can't think of anything that CSU needs more than a good system. And if it's not done correctly I think it could be a disaster, but I think if it's done correctly I think it's one of the most important things CSU could use.
	Conveying an overall sense of what performance management *is* to the broader organizational membership was difficult.	Kelly Snead (Project Coordinator – Consultant): Well, since we were -- hindsight of course is 20-20, but I realized mid-way into it that we were in the acute minority as far people who even understood what this was all about and where we were going with it. He (VP of F&A) and I thought alike and think alike, and so it was very easy to identify priorities and that kind of thing and in general as far as moving forward on something, if I -- if we disagreed, usually he would go with

Finding		Evidence		
		what I said because I was closer to the operations than he was, now because I was working more closely with the people. And as far as if it – we fit in with the other initiatives ongoing that it is – that would depend on the amount of resistance Mike got and so if there was a lot of resistance then he would backpedal and if there wasn't then we would have an easier time of it.		
	The organization's mission statement has been circulated to VPs and deans across the university, but is not well known within the division.	CSU F&A Division Mission Statement. This document outlines the mission, vision and values for the division, as well as a code of integrity, branding images and descriptions of the components that comprise the branding image.		
	The organization's strategy map provides visual links between major missions and objectives across four categories. It is not well known within the division.	CSU F&A Division Strategy Map: The Strategy Map links CSU's mission statement and two primary strategic stakeholder objectives to the remaining four categories of strategic objectives. The objectives are then broken down into initiatives and projects. Each individual project is assigned one or more metrics to track its progress.		
Summary of Meanings-related Coding References at CSU				
		Sources	References	Words
	IT → PowerPerf and Power (Meanings)	8	55	≈ 7,900

In all, 51 textual excerpts and four images were referenced in the research database as being relevant to the role of IT's impact on the relationship between the power of meanings and organizational performance measures.

It is apparent that the implementation of EPM at CSU has initiated a struggle between competing factions. Unfortunately, the struggle has led to people expending a great deal of effort in trying to legitimize meanings ("my product is good; your product is bad,") and in developing binary measures of success (i.e., "Product x wins," and "Group z disbanded," etc.) unrelated to furthering the mission of the division and university.

5.2.1.2 Processes and Performance Measures at CSU

As mentioned earlier, the F&A Division has multiple products that can address its EPM application requirements. The budgeting process is particularly problematic, as both

PeopleSoft and Hyperion offer budgeting tools and both are now owned by Oracle. When asked about their interactions with Oracle on a "road map" for future product development and integration, Kate admitted that it has been difficult:

> One of the places we've asked that question specifically is in the area of the budget-building module. We use EPM – PeopleSoft's tool – and we really struggled with it. In fact, we missed our first go-live date. That should have been April 2006 and then ended up being March of 2007. So this past year we've looked hard at the Hyperion product, thinking that they are now in the same home, we own the site licenses and maybe we should consider making a switch. And we asked the question at that point to the Oracle people: 'what is the plan to merge these two together and should we think of them as two separate products, is there an advantage to moving now, is there an advantage to moving later?' We didn't really get good feedback. They just didn't seem to know. So as a result of our analysis we've concluded that we'll sit with EPM for at least this budget cycle, probably the next one, and could be the one after that too as we kind of watch to see what happens as the products merge.

When asked to discuss issues with the current budgeting process, Kate continued:

> A lot of them actually were the application itself. We were – in fact we still are one of the only customers in the education market using EPM planning and budgeting. So we were one of their first customers to try it. We ended up debugging the code extensively for them, found a lot of errors. So it's a more stable product than it was, but it still has some technical issues.

The decision-making process to determine which set of tools to use for the EPM applications was not clear-cut. The VP of F&A preferred the Hyperion suite, but delegated evaluation of several EPM business processes to people in the BPR group, who preferred PeopleSoft. It was unclear how the final decision would be made, and by whom. At the same time, the EPM group continued implementation and pilot testing of Hyperion products. Table 11 displays excerpts of my findings regarding the power of processes and performance measures at CSU.

Table 11 - Processes at CSU

	Finding	Evidence
2a&b) Processes → Financial and Non-Financial Measures		
	The transition to new business processes has resulted in difficulties in preparing statements and assessing financial status.	Bill Kidwell (Sr. IT Analyst): I think it was such a drastic change that we're still dealing with it. I'm not sure how much you know about the whole PeopleSoft project, but we ended up replacing HR and Financial Systems all within four months. And we went live on both of those. And we intended to go live with our budgeting system, EPM, on PeopleSoft also, but I think that was delayed about a year. So not only were you going from green screens to web based software, it was also a massive chart of account change. So a whole new way of thinking. And at the same time trying to re-design processes. And I think all of that change at once was pretty hard for the university. And I think we're still in that implementation. They're closing months on this year; I think they closed three months this week to get us caught up to December (the interview took place in March). So there's still a big learning curve, and there're a lot of mistakes that were made in the implementation, the ways things were set up. So it's still not a smooth running machine. So it's hard for me to say if it was better or worse. I think in another year we'll know. And I think one of [VP of Finance & Admin]'s goals was to improve reporting, and I don't think we're there yet. I think there're some good reports, and there's some good functionality in PeopleSoft, but I'm not sure if it's getting out into the user base. I think people are struggling with all the change that they're still trying to get back to where they were where they had a steady job and not take on any more. So it's hard to say if it's been a good thing or a bad thing.
	An ongoing initiative has been stopped to re-evaluate and compare budgeting and planning products.	Bill Kidwell (Sr. IT Analyst): I think what I've heard is EPM had some limitations. I guess there were some technical issues with the chart of accounts, because it was so large it actually broke some tables on PeopleSoft. And I think they've resolved that issue. They're moving forward, but there are some problems with the process, it's not as smooth as they want. So [BPR Team Director], who works in the Business Process Re-Engineering Team BPRT, she agreed to do a proof of concept, kind of like a pilot, with Planning, which is underway. There were a few initial meetings before the budgeting season started. Now that we're in the budgeting season it's kind of been postponed till October. So we're looking, this summer, at really doing a proof of concept to say, here's our chart string, this is a real rough application, this is what it's going to look like, and does it really work, and it's not going to break? She wanted to do that before investing too much time in it. [BPR Team Director] can probably give you a better explanation of what the issues were with EPM. But she said there's some issues with Hyperion, there's some things it does really well, and there's some things that she looks at and says, boy, that's going to be a lot of work, or she's just not sure if it's going to be better or not. So it's in the early stages, and I think, probably by the end of the summer we'll have a better idea about if we're going to go forward with Planning. That's when the decision will be made. …I'm hesitant to move forward too fast on any of these products, because I don't know what the future is. So we did go to a road map discussion at the conference last week.

	Finding	Evidence
	Process changes are resulting in frustration rather than learning opportunities. CSU is missing opportunities to improve business processes.	Kate Sanders (CSU BPR Director): (What) we're coming to realize is that perhaps the system doesn't handle that sort of thing well because we are doing something that we might not want to continue to do. Not just because the system can't handle it, but because this is not good business practice. … there are some learning opportunities for us here, but they've been very painful learning opportunities and it would have been better had we known in advance of the implementation that this isn't a good way to do business. You really have to think about (processes) to handle (them) in a different way.
	Use of system tools to track requests for ERP and EPM systems.	Sushma Rajamaran (Financial Reporting Analyst): We have the system called footprints where people can actually log their questions or requests or whatever. And out of all those footprints the most common question that I get is how to use something or that there is something that needs to be implemented and we write up a tech document and the manager looks at it and we decide if we want to implement it and stuff like that or else the report that somebody wants - we see if we can create it.
	Lack of guidance on objectives for non-favored projects has led to experimentation and uncertainty with respect to performance metrics.	Kate Sanders (CSU BPR Director): We don't have a great way of doing that, and in part I think it's because of our split responsibility. We're first supposed to stabilize and then supposed to do redesign. To be honest, I don't really think having the same group of people responsible for those two activities is a good choice. … So there aren't great metrics, there really aren't. We have a system that we use to track problems called footprints, where end-users login and they can in a lot of cases basically of things that are working well on new requests. And for a while we used counts of those incidents as an indicator of how stable the system was, kind of moved away from that a little bit. It has improved to where it's become useful.
	Performance measures initiative still focused on high-level executives. The process does not include most of the F&A Division at this point.	Chuck Walker (Director, Balanced Scorecard): We want to start by doing a performance review of the previous year, assessing the outcomes. Of course, without metrics that's hard to do. We took our strategy map, and created a three code System. We asked ourselves, for example, looking at F1 and providing a subjective response, would we say that this is a best practice, are we just meeting expectations, or are we underperforming with regard to our objectives? So it's a very basic evaluation criteria set of metrics. We define the three categories and I can get them for you. That only gave us a starting point for evaluating our outcomes. So here we are in step one, basically doing a performance evaluation and looking in the past. Then we need to look at our environment, look at our strengths, weaknesses, opportunities and threats, and bring a new fresh understanding of our environment, both internal and external, having assessed our past, looking at where our environment is today, what is it that we need to provide our management team and understanding of where we want to go next. Based on that, we draft a document called the Annual Guidance Memo. This is basically a memo from (names the VP of F&A) and business leaders on campus, both in and outside of our division, that tells them, "we've thoroughly assessed our position in the previous year. Here's what we came up with. We're best practice in a few of these areas, we're not so good in others. We're going to focus on those. Here's my guidance to you on the plans that we are going to focus on -- which operations,

Finding		Evidence
		initiatives, and projects are critical to us. We're just talking about key projects here, not a laundry list. Easily, you might a list of focus areas, and I might have a different list. What we're talking about here is just those focus areas that are important at the university level. That this point, all business leaders across the University know that this unit is going to accomplish these three or four things -- we're not going to be all over the map. It alerts everybody to our plans, provides guidance for budget and resource allocation decisions, provides major milestones for events that are coming up, what meetings and retreats, etc., are coming up, what project charters are we developing, with what project metrics, objectives, timelines, and budgets. It also includes an education and training plan. For example, our project managers don't know how to plan projects. We need to have project management education for our management team. So this year, we are going to get everyone into a project management course. Our memo includes this kind of information, along with what reporting changes we plan to make. For example, instead of the 50 things we used to report on, we're going to focus our reporting on fewer, more strategic things. Putting out a little bit of "here is what we've done in the past - here's where we are at, environmentally, and here's where we want to go." This goes out as a draft document.
	The notion that the BPR group should be working on the redesign of business processes is not being realized. There is need for a measure here, but none exists.	Kate Sanders (CSU BPR Director): …there is a growing sense that our department has been around for going on two years and now, a year and a half. And there is a sense that we ought to be moving into redesign. So there is some frustration on campus with us because we haven't really moved there. But we haven't really felt able to. So I'd say we are a group that's really kind of struggling to find its way.

Summary of Processes-related Coding References at CSU

		Sources	References	Words
	IT → PowerPerf and Power (Processes)	9	72	≈ 10,500

The ERP project was also subject to organizational issues. Sushma Rajamaran (Financial Reporting Analyst) had this observation on processes as the ERP implementation progressed:

> PARTICIPANT: Earlier people were looking for shortcuts and they want to get out of this implementation and they wanted to do what they are (have been) doing and --.
>
> INTERVIEWER: Try to figure out how to do it the way they were doing it before?
>
> PARTICIPANT: Yes, without any changing, but I think now, you have to do it this way and there is no other acceptable way.

At this point, CSU can point to the Strategic Finance initiative as its major success. This initiative has changed the university's capital budgeting process into one geared much more toward long-term planning horizons. Other EPM implementation, and to a certain extent, the ERP modules, have not been nearly as successful at CSU. They have, however resulted in changes to decision processes in the F&A Division. Decision processes have become more faction-oriented, as proponents of the two main software suites have adopted somewhat of an "us vs. them" mentality. While Steve King was the VP of F&A, the Hyperion group had a nominal advantage. The ERP groups did not participate as much in the official decision processes as they would have liked, so they resorted to political maneuverings and resistance to influence decisions.

5.2.1.3 Resources and Performance Measures at CSU

CSU embarked on a number of projects over the course of their ERP implementation, including the installation, pilot testing, and implementation of a variety of EPM applications. It became clear early on that Steve King preferred to use the ERP system for transaction processing and standard reporting. He hoped to use the EPM applications such as Strategic Finance, Financial Management, Planning, Performance Scorecard, and custom-built applications as the foundation for strategic analysis and reporting. Although Steve had fairly broad latitude with respect to prioritizing projects, the resources at CSU were limited.

CSU had a limited ability to attract personnel experienced in either ERP or EPM implementation due to a combination of salary constraints and their location away from a major metropolitan area. Likewise, their financial budget would not accommodate the

full range of consulting help required to implement all projects simultaneously. As a result, the shift of resources to EPM projects was readily apparent. The following excerpt from my interview with Sushma Rajamaran, a Financial Reporting Analyst, is illustrative:

> PARTICIPANT: Well I know about the resources but I can't talk about it. What I know is we had a fresh team, finance team, and then we were all -- we were actually split apart. Some of us continued on in the business performance management group you were talking about.
>
> INTERVIEWER: Right.
>
> PARTICIPANT: And others like me and couple of my colleagues were put in the accounting department. But we are still continuing to work on project kind of stuff.
>
> INTERVIEWER: Right.
>
> PARTICIPANT: Like implementation, testing, upgrade and helping the users and stuff like that. So that's all I know. And we had PeopleSoft consultants working with us earlier.
>
> INTERVIEWER: Okay.
>
> PARTICIPANT: And they were all rolled off.

Other people in the organization expressed similar concerns about the availability of personnel resources. Table 12 displays excerpts of my findings regarding the power of resources and performance measures at CSU.

Table 12 - Resources at CSU

	Finding	Evidence
3a&b) Resources → Financial and Non-Financial Measures		
	Personnel and information resources allocated to the Strategic Finance initiative have been able to develop longer range capital allocation plans.	13-year strategic finance projections for balance sheet and income statements.
	Financial resources as well as personnel resources are scarce. Allocating both types of resources to favored projects has become an implied measure of success.	Chuck Walker (Director, Balanced Scorecard): And that actually was a very good reference. And it's a step-by-step journey but we don't -- the senior leadership team was not ready quite yet to say, we're going to assign a metrics team leader. We're going to take someone from all of our units, because there were other things that we had to do, we're in that $32 million PeopleSoft implementation and that is really, really not only taking existing resources, but we're having to get consulting help.

	Finding	Evidence
	Resources have been shifted to EPM projects, and are not available to fill current ERP needs. It is even difficult to hire for an existing open position.	Kate Sanders (CSU BPR Director): I think it's definitely a resource issue. I mean, I think if I were to design this, I'd have two separate teams going, each of them staffed comparable to what we are (now). …resources, though are very tight. In the last budget go-round within Steve's division, the open position we had for HR we almost lost, because it was open and the division was taking a look at everything that was open, it was on the table and it was just teetering on the edge there. And the sense was that if you've gotten along without it for almost a year, how badly can you really need it? Well, we really need it. So I feel like I was just able to hold on to that one and there just isn't an opportunity to get additional ongoing resources to make things better. It's very frustrating.
	Everyone is acutely aware of the limited personnel resources. The objective is to steer these limited resources toward preferred projects.	Bill Kidwell (Sr. IT Analyst): Again, the Scorecarding implementation I think is important. I just don't know how we're going to do it with the resources. I don't know what the timetable is, but I think in the next year it would be a good thing. We have a pretty good investment in time in it already. Investment in resources, too; we've done product evaluations, we've done training for senior management and the direct reports for the AVPs. So there has been a big commitment, and I hope it doesn't go away. I think it would be real beneficial.
	New personnel resources are more likely to align themselves with the newer EPM initiatives.	Chuck Walker (Director, Performance Scorecard): Not surprisingly, two of the three other organizational leaders that are putting considerable effort into the initiative are new. One of the others is very well versed in the Baldrige approach, which is well entrenched in nine of the service groups in the division. Baldrige is good – an effective way to manage, and they're doing good things with their resources. We didn't want to mandate – this is not a mandating kind of organization. So the main message is: be successful at what you do – others will see it, and eventually we'll win everybody over to our approach, our model.

Summary of Resources-related Coding References at CSU

		Sources	References	Words
	IT → PowerPerf and Power (Resources)	8	50	≈ 6,900

It is clear that control over personnel resources is an issue at CSU as the F&A Division struggles to maintain momentum for its many initiatives. They have achieved some success in redefining long-term capital resource planning measures with the Strategic Finance project, but have not been able to make headway with other projects to the extent that they are able to define formal measures. This has resulted in the development of resource-related objectives for the various project participants. As an

example, it has become important to achieve staffing levels adequate to build and maintain project momentum. Secondly, project groups need to gain control over information resources to the exclusion of competing projects in order to help ensure success. These performance measures will not show up on a Scorecard, but they have become primary objectives for F&A Division employees.

5.2.1.4 The CSU System and Performance Measures

As a state university, CSU operates in many ways like a government entity. The organizational culture in administrative departments is relatively staid and resistant to change. Employees who were well-versed in the legacy financial systems at CSU were resistant to both the ERP and EPM efforts. As the PeopleSoft implementation gained traction and new staff was brought in to support it, the ERP project teams were able to develop new ways of doing things.

With regard to the systemic change embodied by the new ERP, Kate Sanders (CSU BPR Director) said:

> We turned on HR in April of 2006, so just about two years ago, and finance in July of 2006, budget in the following April. But it was meant to be really pretty much right at once. It's really hard to underestimate what a huge change it was. It wasn't just the software change; culturally we have people doing things they've never done before.
>
> … if I think back over the implementation, I think the speed really with which we did it probably was not a good idea. Too much, too fast, because so much was changing at one time, it was hard to know what the impact would be of the decisions we were asked to make. So we were doing, for instance, a new chart of accounts, trying to think how does that mean we should think about our finances and at the same time trying to make decisions about how to configure the finance system. And it seems as though had we spread it out a little bit, spent a lot of time on the chart of accounts first, gotten ourselves comfortable with those concepts, and then started to take things in chunks, it might have been a little smoother.

As the EPM projects ramped up prior to the completion of the full PeopleSoft implementation, the ERP (now BPR) team members adopted the stance of the legacy financial system proponents. They strove to find ways to use the PeopleSoft system and tools to create solutions that would compete with the EPM (Hyperion) solutions for favor in the organization, even as their project team staff members were moved to operational departments or the EPM team.

In talking to one of the analysts who was moved from the PeopleSoft BPR team to the Accounting department, she stated, "Yeah, my world has changed." What had been a stable system with a common base of knowledge had become a triad of competing factions, each with a unique perspective on how the organization should proceed, and each eyeing the others with suspicion. Initially, several key members of the PeopleSoft/BRP team were hired from outside the university. Later, key members of the EPM team were also brought in from the outside. Steve King was also relatively new to CSU. That, coupled with the sourcing of project team members for the ERP and EPM projects, led to a clustering of membership in the three groups based in partly on their employment tenure at CSU.

It was clear that the outcome of the power struggle would hold consequences for those on the losing side. Even though the risk of job loss was small, the chance to claim visible roles and work with the best technology was dependent on being allied with the winning group. At the time I started my study, it was evident that the EPM group was considered the most prestigious group of the three. Cups, certificates, and event memorabilia with the EPM project logo were displayed prominently in the Finance and Administration

executive offices. Managers and directors associated with the EPM project were located close to the VP's office, while those associated with the BPR projects were located in another part of the building. Legacy proponents, typically represented by those near retirement age, were scattered throughout the departments. With their system fully replaced, their next best option was the PeopleSoft implementation, which most nearly matched their transaction-based system.

The final resolution came via an unexpected event. Steve King, the VP of Finance and Administration, who was the primary executive champion of the EPM initiative, left CSU. His departure, coupled with increased economic uncertainty, led CSU to look for ways to reduce the costs of their IT initiatives. The resulting re-prioritization has resulted in the termination of all Hyperion EPM projects with the exception of the Strategic Finance application, which has been universally hailed as a huge success. Remaining resources will re-focus their efforts on re-implementing the existing PeopleSoft modules and beginning efforts to implement additional modules. Table 13 summarizes the research findings at CSU with regard to the power of the system.

Table 13 - Power of the CSU System

	Finding	Evidence
4a&b) The CSU System → Financial and Non-Financial Measures		
	The organizational system remains the same.	There has been much turmoil regarding the preference of the PeopleSoft vs. the Hyperion applications. First, PeopleSoft became the favored solution over legacy systems. Next, Hyperion became the favored solutions for Performance Management activities over PeopleSoft. Finally, the Hyperion champion left CSU, allowing the PeopleSoft group to regain favored status. Despite all this, the overall nature of the organizational system at CSU remains relatively steady.
	No major changes to the CSU organizational system.	There are continued efforts to develop individual departmental measures, but there is no coordinated division-wide effort to convert overall mission statements into actionable measures as yet. The scorecard effort continues behind the scenes with no set roll-out date or preferred

Finding		Evidence
		software tool. Non-financial measures are still under development.
	Recognition that it is difficult to implement change in this organization.	Chuck Walker (Director, Balanced Scorecard): We don't believe that you can manage an organization effectively without all three (strategy, initiatives, metrics). Again, this is an evolving document -- at this point they're only a few of us who have conceptualized how to bring all those three components together. Once we do that, getting buy-in here will be a daunting task. Change management in this type of organization can be a slow thing.
	The organizational system can swallow up intentions and efforts.	Kate Sanders (CSU BPR Director): It was always slower than we wanted it to be because of political and organizational pressures. Me, as an outsider looking in, it's completely illogical, but that's where the whole issue of human resources and passive aggressiveness and resistance to change and political pressures and all of that nonsense comes in. It's greater than just IS. It's greater than finance. It's just bigger than they can handle and that's why (VP F&A) stepped down. He just can only go so far and then he has to just say, listen, I give up, I am gone.
	The organizational system at CSU does not reward change.	Kate Sanders (Director BPR): It's been a painful couple of years. And I think too when you talk to some of the people in the units you'll hear more specifically about how it's impacting not just the central organization, but people who didn't have a whole lot of interface with the legacy systems. So it's been a struggle. And I don't know how much anger you'll hear now, but there was quite a bit of extreme anger, not that long ago. And some of it directed toward Steve personally. And again, I don't know how much of that you'll hear, but it was there.
	The organization's disciplinary approach was that there isn't one. Punishment was meted out to those who wished to introduce accountability and consequences.	Kate Sanders (CSU BPR Director): And provide consequences if it doesn't happen because -- and I mean that because at some point you have to say this is not a democracy, I am in charge, you are not, and this is what we are going to do. And so I think a lot of that was lacking because there wasn't -- Mike didn't have adequate support structures beneath and above him to support the level of resistance in the organization as a whole.

Summary of System-related Coding References at CSU

		Sources	References	Words
	IT → PowerPerf and Power (System)	4	12	≈ 1,700

One could take the view that the power of the CSU system played a role in the relative lack of success for the initial PeopleSoft implementation and the later lack of success for the Hyperion EPM implementation. In an environment that doesn't overtly reward new initiatives and risk-taking behavior, staying the course can be the most desirable path.

After the partial success of the initial PeopleSoft implementation was succeeded by the purchase and implementation efforts of the Hyperion EPM applications, the PeopleSoft solution and project team was able to adopt the role of the relatively safe fallback option that was a known quantity.

5.2.1.5 Summary of CSU Findings

I found this to be an interesting organizational study because it seemed as if I spent time with several distinctly different groups rather than members of a single entity pursuing shared goals and objectives. There was also a marked shift in attitude toward meeting with a researcher and sharing information once the VP of F&A announced his departure and the subsequent jockeying for position in the soon to be restructured organization began. It became apparent that F&A members were starting to focus inward at this point.

Much of the time spent in my discussions with people at CSU focused on resources and processes related to the two primary projects. Many participants seemed somewhat uncomfortable discussing specific performance objectives, especially financial ones. Instead, discussion of performance measures focused mainly on conceptual issues. On the other hand, most participants were extremely free with their diagnoses of various issues related to availability of resources or changes in processes within the division. Some were also able to articulate their perspectives on the difficulties in changing organizational traditions and culture.

Implementation of EPM did result in changes to power and performance relationships at CSU, but not uniformly across dimensions, and not in ways that EPM project leaders would hope.

5.2.2 Content Management Corporation

5.2.2.1 Meanings and Performance Measures at CMC

It is obvious that EPM has become part of the culture at CMC through the implementation and prominent use of their version of the Balanced Scorecard. CMC, its corporate parent, each business unit, and each major area within the business unit have an overall scorecard as well as specific measures for which they are responsible.

Each business unit meets with one of three CMC Vice Presidents or a director to go over their scorecard results. Five to ten or more people represent the business unit at each meeting, and each discusses his or her personal measures and results. The business unit managing director and CMC representative guide the discussion, handing off to various managers as needed. The CMC representative rotates between traveling to the business unit for the meeting and holding it via teleconference. In both cases, the scorecard measures are presented on a large display screen using PBViews software. The CMC representative and the business unit managers both navigate the system as needed to display desired content while they address the various measures. The meetings typically last an hour.

Preparation for the quarterly scorecard meetings begins more than a week in advance, as each measure must be accompanied by a detailed written explanation. Measures in

caution or alert mode (signified by being displayed in yellow or red on the screen) must also be accompanied by a detailed action plan designed to bring the measure back toward its target.

In a process similar to the business unit scorecard meetings, the CMC executive team also holds both an internal scorecard meeting and another scorecard meeting with corporate each quarter. The internal meeting generally lasts two to three hours, and is held in preparation for the corporate scorecard meeting. CMC presents for twenty minutes at the corporate scorecard meeting, which lasts between one and two hours. The other two divisions also present their scorecards at the corporate meeting.

Scorecard measures and details during the CMC and corporate meetings are projected onto large screens and presented directly within PBViews, the scorecard software application. Meeting facilitators handle navigation of the software while the executive team members discuss their scorecard measures. The meetings are held in the divisional and corporate board rooms, underscoring the importance of the scorecard approach to the organization. Table 14 illustrates excerpts of my findings regarding the power of meanings and performance measures at CMC.

Table 14 - Meanings at CMC

Finding		Evidence
1a&b) Meanings → Financial and Non-Financial Measures		
	The importance of the scorecard and its financial measures is reinforced to all employees through regular communications.	One page in each corporate newsletter (a sixteen page oversized glossy magazine published six times per year) highlights key financial results from the corporate and division scorecards.
	The formalization of the measures and color-coded display of results can result in emotional responses.	Elizabeth Cooper (Business Manager, Business Unit X3): We've – we never had a formalized measure (at my previous employer). And I personally really like it here. Because, for me for example with the shareholder value, let's just use that. I know what I committed to do, and I know what the station

	Finding	Evidence
		committed to do when we prepared that budget last year. But, what I like about the balanced scorecard is, balanced scorecard once a quarter reminds us of what we committed to, it's a reminder and you're either going to see red, yellow or green. And when it's green, it feels really good that you know to have that measure to know that we accomplished it. So, in sort of a reinforcement, but it's also a reminder when you're not doing so good that, hey you committed to them. I mean because the bottom -- the way that we -- and maybe this is (the Business Unit Managing Director's) leadership that makes it feel this way. But the way that I feel about it is that if we all go in there and somebody is in the red on something, it is not just their problem, it is our problem. And the same is true when it is green. When we've had a success and like for example at the end of the first quarter, we were in the green as far as shareholder value is concerned. If the revenue was green for the first quarter, you know, it's a group effort, it isn't one person. So I realized that part of that is (the Business Unit's Managing Director's) leadership.
	Even though sale managers are focused on revenue targets and minimize the importance of the other targets, they recognize the use of the tool. There is also some concern over whether the different types of measures are comparable.	George Cooper (Sales Director, Business Unit X1): Honestly, the other measures, a lot of times -- I don't see a lot of bearing in my world. We're so separate in the marketing versus sales, knowing that they are working on achieving so many TSR's or so many topics, (content items), whatever -- it just doesn't interrelate with my world very much. So I can say honestly I don't go back in, I don't use the tool other than when it's time to go back in and enter some comments, I mean -- I've got my targets in millions of other places and it's not somewhere I go to find out what I've got to hit this quarter. Having said that, just sitting in a meeting as the department head, I think we had a lot of good things happening and see everybody else in these -- I'm sure you've seen our tool. Everybody else is in the greens and all the sales things are in the red. I don't think the story has been told quite fairly, even though it's a pretty black-and-white, did you achieve yourself, what the budget is telling you. It's not -- I feel like it doesn't accurately show some of the extras that maybe you're able to do and when we have limited exposure with other departments, it's sort of a -- I don't, and that's our exposure, so okay, here's what sales really was doing for first quarter and I don't think they get a very good feel for that and if something gives them a very good sense of inter-department only, okay. I mean if you're seeing green or yellow or red in this thing, okay. 'Sales is all in the red, they must really not have been able to do a very good job.' I mean and I think that when I feel like a lot of their measures are -- they are not really a reach there. What they do on an everyday basis, I mean they are expected to do a certain amount of marketing campaigns a year. They are expected to develop a certain amount of (new content) on the web or a certain amount of (special event content) whatever that is and the targets are set to exactly that. So they are pretty much in the green and which gives for them they are doing their job, but we don't feel like -- I don't feel like the sales portion is apples-to-apples with the other portions of the balanced scorecard.
	The importance of the scorecard and its non-financial measures is reinforced to all	One page in each corporate newsletter (a sixteen page oversized glossy magazine published six times per year) highlights key non-financial measures and results from the

Finding		Evidence
	employees through regular communications.	corporate and division scorecards.
	The importance of the scorecard approach is consistently reinforced to business unit management.	Quarterly business unit scorecard meetings with scorecard measures prominently displayed.
	The importance of the scorecard approach is consistently reinforced to CMC and corporate executives.	Quarterly division and corporate scorecard meetings held in board rooms with scorecard measures prominently displayed.
	The symbolism of displaying the Scorecard colors causes managers to reflect on whether they are (or should be) weighted equally.	Alan Freeman (Managing Director, Business Unit X2): But probably the most interesting thing for me was in this corporate meeting was there were 25 measures that go across all divisions. It's may between 18 or 25 or something like that. And they're all -- there is a bridge for profitability to draw your attention to draw (customer share), to page views, to whatever. And the funny thing is a red or yellow or a green doesn't matter if profitability is OK for a publicly traded company. Employee retention or number of training hours? A red is red and yellow is yellow and green is green, it's like, you count those all equal, those are not equal things. If you look at the colors, we got 18 or 25 green, what about the set of red ones? Wait a minute - we hit profitability and we hit audience growth, we didn't care about the rest of the things.
	Tieing the Scorecard to local business unit needs provides greater meaning.	Jeff Harrington (VP Content Creation): And, as a result, we weren't growing the way we want to see. Its kind-of, it's…there're two parts of the Balanced Scorecard that make a lot of sense. The more hyperlocal it is and the more that it is tied to a local operation's strategic plan, the more effective it is.

Summary of Meanings-related Coding References at CMC

		Sources	References	Words
	IT → PowerPerf and Power (Meanings)	23	83	≈ 8,600

CMC creates a sixteen-page newsletter that is distributed six times per year to all employees and to a number of other parties. The newsletter is prepared in a highly produced, glossy, oversized magazine format. In each issue, two pages highlight CMC performance on various measures. One page highlights financial measures. The other page highlights non-financial measures. The measures highlighted vary from issue to issue. A page of a 2007 newsletter highlighting non-financial measures is presented in Figure 21.

Figure 21 - CMC Corporate Newsletter Excerpt

This newsletter, along with the resources required to produce it, is certainly a symbol of CMC's dedication to their performance management approach. More than one interview participant pointed it out to me. The use of Scorecard terminology throughout CMC, the ways measures are displayed, and the use of PBViews as a reference during quarterly review meetings all convey meaning to CMC employees about the importance of the Scorecard approach in their strategic decision-making activities.

5.2.2.2 Processes and Performance Measures at CMC

CMC made significant changes to its decision processes when it implemented PBViews as part of its Scorecard process. Corporate and division executives, although still keenly aware of financial results, spent more time evaluating longer-term strategic objectives and determining appropriate measures for them. By making the EPM tool the highlight of the Scorecard review process, they accomplished two things. First, they forced managers at all levels of the organization to make explicit their measures, results, explanations, and plans. This created alignment on the decision process throughout the organization. Second, this new exposure increased the number of participants in strategic decision-making processes – more managers than ever now participate in quarterly reviews.

Table 15 displays excerpts of my findings regarding the power of processes and performance measures at CMC.

Table 15 - Processes at CMC

	Finding	Evidence
2a&b) Processes → Financial and Non-Financial Measures		
		George Cooper (Sales Director, Business Unit X1): I mean, you don't see like (consumer) trends on the balanced scorecard, which to me, I mean how do you measure, how your (content) is doing, I mean look at some (totals) and it's not (good). There is nothing that's there to say okay and your (volume consumption) has been down, going down for four years, but you are all -- you've been green every quarter in the last four years, but every (content measure), your (totals) are still sliding , I mean where is the validity of where the measures stand?
	The Scorecard process is emphasized at CMC.	Elizabeth Cooper (Business Manager, Business Unit X3): I know that this is the first company that I have ever worked for, To be honest with you, that is using the full Balanced Scorecard (approach), even (my previous large content creation company) didn't, not at (the business unit) level.
	Getting financial and non-financial information into the Scorecard.	I'd say half of the information that gets loaded into PBViews is done automatically through uploads, because it's financial, pure financial data. But there are a lot of subjective items in the Balanced Scorecard that aren't easily translatable into upload

	Finding	Evidence
		formats, so we have to manually key that data in. Yes, yes all the commentary is manually done.
	The Scorecard review process is not always well understood.	George Cooper (Sales Director, Business Unit X1): And it's tough, because it's (the review) going to have a pretty static report like that and not have a context with and that's what, but I guess your comments are supposed provide context but if people are just going looking it as simple as red, yellow, green, they're not seeing it in context. So, it's whatever, but either it's a different time when you know he is lined up for scheduling and well, I guess that I don't understand. I certainly don't understand the call because, you've been through it before sort of. I think anybody's preparation for it is like we're really going before the review board and -- it is our time to define and explain ourselves or whatever. But it's like, we're there and sort of reading the comments that are already in there and, I mean I guess they can ask for a little -- more in-depth explanation and they want some clarification on a point, but not everybody is always there. So, they usually only want to get some clarification on it (a point). So I just – I guess I don't understand what the purpose of these recap calls are totally for.
	Evaluating and replacing measures should always be part of the CMC process, but sometimes gets shortchanged.	Jeff Harrington (VP Content Creation): Well, the year before, we got busy and what happens, since I've been in this role, every November and December, I typically and (the VP of Marketing) would do the same – we'd do a round of conference calls with the Content Manager, the Sales Director, and often the Managing Director would participate, where we would review their strategic plan, we would review the progress they made in achieving the goals and objectives in the year that's coming to an end, determine which of those goals and objectives need to be carried over into the next year or which of them have pretty much been accomplished and how do we kick it up a notch and go to the next level and bury it. And the year before that, (the Budgeting & Planning Director) was kind-of new to his job, so he didn't push us. We allowed ourselves to become too busy and didn't stop and really plan due to we had just acquired (a number of) new business units, there was a lot of work involved with them; just getting them up to speed. And so it just fell through the cracks for 2007 and we wanted to make sure that that was not the case for 2008. Now, prior to 2007, we'd had a pretty good year over year consistency of you know, using the program. It's a matter of we allowed ourselves to get busy and didn't do that. It's crucially important that at the end of the year, you kind of have these round of calls because what you don't want is you don't want to just keep carrying the same goals and initiatives to the next year. Every goal and objective, every initiative, needs to have a very specific purpose and if you're doing this right and they are not so broad and overreaching, then you should be able to mark them off as accomplished and come up with new goals and objectives that will take the organization up another notch or two and basically, what we allowed to happen in '07 is because we didn't come back, an awful lot just kind of got carried over into the next year. We'll also go in, like, we… our research doesn't get delivered all at the same time, and our research gets staggered through the course of the year. You may put your strategic plan together, tied to your budget in, roughly, June, July, and August and you work on that and then we come around the following March and do a (marketing) research project. Well, we may learn things in that research project that tells us we have to make changes. You know, we're pushing too hard on this one thing and

	Finding	Evidence
		it's now having a negative effect or it's clear we're not pushing hard enough in this area, so we have to change how it is we're going about it. So we'll make changes midstream based on what we've learned in research.
	The process of identifying and selecting objectives and measures is deliberately deliberate.	Jeff Harrington (VP Content Creation): Well, we typically build the original, the (content department); we typically build the initial strategic plan off of the first (marketing) research project. And then at least a portion of future research projects involve a degree of tracking. We're always looking for new questions and new things to learn and research. But a portion of the research is always going to be tracking, so we can kind of make progress…keep an eye on whether or not we're moving the needle. And so, when we deliver a research project and we're done with the analysis and everybody's comfortable with what it's told us, we will rework a (business unit's) strategic plan at that point and that could be March, could be January, could be June or July, it's really kind-of dependent on when the research is delivered. If it's a market where we only do research every other year, we kind of watch for a lot of other indicators other than just the research we did. Let's say a market like (names a coastal market) is going to go through a huge conversion with the addition of a new (competitor in) the market. Well, up until now, it's been a two-(player) market; now there is a third one there. We'll probably get together with these guys sometime this summer and take a very close look at their strategic plan and figure out whether or not we have to make any adjustments or changes, based on the fact that there is now a brand new competitor in the market. RESEARCHER: All right. So there is no…there is not necessarily any set schedule? Jeff Harrington (VP Content Creation): Let's put it this way: when they… they build their budgets every year between June and August. It's a drawn out process because we look at things a couple of different ways and it's a three-year budget plan, is what they put together… One of the very first things they'll do is they'll go back and they'll review their strengths and weaknesses. They'll go through a SWOT and all of that. We don't want them making wholesale changes to their strategic plan they've been working off of unless they have something very, very specific as to why they're doing that. In other words, you can't have a new (managing director) come into the (business unit) and say, "yeah, we're throwing this plan away, I've got a new plan"… "This is how I did it at my old place; we're going to change it". We don't do that because that would be -- that would fly in the face of our research-based approach. So, we're very… there's typically, for most of our (business units), there is not a lot of major changes to the (content) or marketing operational plan, strategic plan, going forward year to year. Mainly because…this is a long…we're a long term player. We don't look for quick solutions. We want to build equity that is going to have a long standing in a community and we're talking about building trust and immersing ourselves in the community values and that's not something you can do fast.

Summary of Processes-related Coding References at CMC

		Sources	References	Words
	IT → PowerPerf and Power (Processes)	18	103	≈ 12,000

Increased participation by business unit managers in the review process has resulted in greater sharing of ideas and content throughout the organization. This unexpected benefit has resulted in significant cost savings.

5.2.2.3 Resources and Performance Measures at CMC

Taking the perspective that information is one of the scarce resources in an organization, then overall objectives, performance measures, results, and action plans are the information resources of a performance management system. The use of PBViews at CMC has opened up these resources to the entire organization in a way that was not possible before. Users at all levels of the organization now have access to the entire Scorecard, from top-level corporate objectives down to the most detailed business unit measures, results, explanations and action plans. Table 16 displays excerpts of my findings regarding the power of meanings and performance measures at CMC.

Table 16 - Resources at CMC

	Finding	Evidence
3a&b) Resources → Financial and Non-Financial Measures		
		Jeff Harrington (VP Content Creation): No, my role is really to go in and review, particularly with the emphasis on (content and our content) objectives. My role is to go in and observe the kind of progress or lack of progress that (business units) are making in their objectives and their initiatives and if they're not showing the degree of progress that we need to see, then it's my responsibility to interact with that (content manager) and that (content department) to try to figure out where the problems are, what are the obstacles, what do we need to do to move this forward. Because we do have very clear evidence where, if you set the initiatives and the goals properly and the (business unit) holds itself accountable to attaining the measures, we'll grow the product. We can point to very direct correlation of the system, that is, do the research, analyze it, agree on what the goal and target is, design some measures that will track progress, successfully meet those measures, go back and look at the product, and you'll see the growth. I don't know if that made sense…
	People feel free to air their opinions and recommendations for Scorecard measures	Richard Morris (Director, Budgeting & Planning): I think most of them get it and one of the best things of our group -- maybe it's just the business but very few of our managers are shy. Meaning,

	Finding	Evidence
	and objectives.	if they think this measure is crap, they'll tell you. It doesn't make any sense and why the hell are we doing it? And we will say okay, then what do you propose -- what works better for you? But they are not shy about differences of opinion.
	Some questioning from sales about who is actually using the Scorecard.	George Cooper (Sales Director, Business Unit X1): "But, yeah, obviously that's okay. So, I don't know. I don't think it in any way matters to me in the least and I'm not sure all the people know what the balanced scorecard is really used for at the corporate level. I mean, they are taking it to the shareholders or they just sort of recap to make sure that they, because I mean, I think our corporate VPs are (business unit) people and (division SVP) -- I feel like they are pretty in tune with their (business units) at least on a revenue standpoint, because they're rated on a weekly, monthly basis. I don't know who the – I feel like they know their (business units), head and shoulders without ever seeing a balanced scorecard. So, I don't know who the balanced scorecard exactly serves." "Well, I'm sort of new on it. But at the same time, like I said, I know the people in our division, (Division X) are very into every (business unit) in what they do on a weekly basis. So obviously to me having to serve maybe somebody that is not in that on a weekly basis, maybe I march (into corporate) or wherever so that you can just see a nice color-coded sheet. RESEARCHER: "So it's not anything that you necessarily saw during a new employee orientation…?" George Cooper (Sales Director, Business Unit X1): "You come as new (sales) manager, there is no manager who is one-on-one with you in (this company), and I don't know what all the stuff is."
	Measures can inhibit innovation.	Larry Peterson (VP Marketing): I mean, for example, we've done this grading of the marketing spots. Well, in some ways it's hindered innovation, because guys were producing spots that they wanted to grade well, not necessarily, and so they felt stifled in everything and as opposed to speaking up saying, this is kind of counter-intuitive. And then later on they would admit, well we -- I wanted to be more creative on that, but I didn't think I'd get a good grade for it.

Summary of Resources-related Coding References at CMC

		Sources	References	Words
	IT → PowerPerf and Power (Resources)	10	23	≈ 2,600

There is some concern that the scorecard can stifle innovation, as when creative talent "goes for the grade" instead of exercising full creative license in developing new content. Richard Morris' earlier comment on the willingness of managers to critique and update Scorecard measures demonstrates that CMC understands that measures may not always be appropriate and are subject to change.

5.2.2.4 The CMC System and Performance Measures at CMC

There are proponents and detractors of the scorecard approach throughout CMC. The following exchange I had with Debora Thompson, Managing Director of Business Unit X1, is typical of scorecard proponents:

> PARTICIPANT: That's what I love about the tool, plus it's all compact and in one time and place (the measures), and shows the measures for the people you work with. I didn't love it at first. It was very confusing. It was very difficult. We couldn't get a good explanation. I mean, when we -- when first presented it three years back, I hated it. But (?) that it's kind of a bit refined and we're kind of getting in this rhythm with it. I have come to love this tool.
>
> INTERVIEWER: Okay. Now would you say that's because you've gotten more familiar with it or have they actually improved the software itself – or a combination?
>
> PARTICIPANT: I think a little bit of a combination, but the majority of it is because I have become more comfortable with it and I now understand what we're trying to do now by utilizing this tool.
>
> INTERVIEWER: Okay. So as far as the biggest benefit of using the balanced scorecard you would say it's less the tool itself and more sort of the mindset and the whole emphasis that the organization places on it?
>
> PARTICIPANT: I think so. I mean -- it's a very important thing and we all take it very, very seriously.

This represents the view of one business unit manager, who views it as a valuable tool in the context of her business unit. Others are not as enamored with the scorecard approach. In particular, those in sales and marketing don't find the scorecard process all that useful. Additionally, executives at the division level may feel as if many of their measures are simply pushed down to them from corporate, leaving them little room to determine and negotiate their own measures. They also don't find much personal use for the business unit measures, as they typically have significant business unit experience. They do, however, acknowledge the usefulness of the scorecard process at the business unit level, where there is a consistent need to deliver corporate messages due to relatively

high personnel turnover rates and the frequency with which business units are added to the CMC organization. Table 17 outlines some of the key findings regarding the influence that EPM has had on the power of the system at CMC and its performance measures.

Table 17 - Power of the CMC System

	Finding	Evidence
4a&b) The CMC System → Financial & Non-Financial Measures		
	The disciplinary nature of the public display of the scorecard has become part of the CMC culture.	Debora Thompson (Managing Director – Business Unit X1): I love the tool. I really do, because it has made attempting to keep a thing -- or keep the people focused on specific things -- a little easier. And it's terribly embarrassing to me to have measures that show out as red. …I mean, its terrible because I'm kind of fixated on it and if we had a quarter full of exceptions that was red and we all have a good explanation as why, then trust me I'm -- we're putting together a good action plan, so it doesn't happen again.
	Scorecard performance can affect performance reviews.	Jeff Harrington (VP Content Creation): I don't know that anybody has ever lost their job because of what showed up in a Balanced Scorecard… But I do know that people's reviews have been affected. I know of (Managing Directors) who have gotten very poor annual appraisals because they didn't take it seriously.
	Scorecard is emphasized at the highest levels of the corporate hierarchy.	Alan Freeman (Managing Director, Business Unit X2): "And the fact that they really do look at these things at corporate meetings when all the important people are there, so many division people participating and they're all drawn through this meeting with them; '...are you doing any balanced scorecard?' So I saw that side too which I see why the division people emphasize it, because they're getting drilled about it."
	New employees not yet well-versed in the Scorecard concept immediately have a negative response to seeing their measures in red.	George Cooper (Sales Director, Business Unit X1): "You come as new (sales) manager, there is no manager who is one-on-one with you in (this company), and I don't know what all the stuff is." "I've got red. I don't want it red. But, maybe a red is perfectly understandable."
	There is recognition of the disciplinary nature of the Scorecard.	George Cooper (Sales Director, Business Unit X1): "I think that's more the negative comes into effect that I mean maybe you can get some praise for something that you did really outstanding and I'm not going to say that. They just sit there and beat you up and that's all we do, but I definitely think there's more exposure especially on the sales side to get a real negative tick by your name much more than there is for the upside…"

Summary of System-related Coding References at CMC				
		Sources	References	Words
	IT → PowerPerf and Power (System)	23	56	≈ 5,300

5.2.2.5 Summary of CMC Findings

This exchange with a divisional VP encapsulates much of what I found with respect to the role the scorecard approach plays at CMC:

> (Researcher): One of the things you mentioned yesterday, walking up here from the end of the meeting was the, I guess the contrast between the financial and non-financial measures in your Scorecard and the efficacy of the various measures. Can you speak to that a little bit more?
>
> (Interviewee): Well, as a publically-held company, you know, profitability is job number one and so there are, by that very nature, there are a lot more measures that deal directly with the revenue side of what we're doing and they look at that from every way possible. Some of those things, most of those things, a local property has a fair amount of control over. How well they're going out and developing new business. I'll use new business as an example. Our most successful business units right now, in this very tough economy we are in, are the ones that when we started pushing this new business initiative, I think it was about three years ago, they got it right away, they wrapped their arms around it. They picked it up and they ran with it. We have a number of units who are only very reluctantly coming to the new business development table because the money has finally stopped coming in over the transom. You know, for years and years and years with this industry all you had to do was keep the offices open and you got a lot of business.
>
> And there are some strong business units still that -- fewer and fewer every year in this industry -- that you know all they have to do is show up and money comes to them. Well, that form of business is rapidly disappearing and you have to go out and you develop it. You have to go find it; you just can't rely on the same old people coming back to the property, buying the same old products. And so if you look, if you dig into those numbers that you saw yesterday, the units that are truly pushing hard on the new business are the ones that are doing the best today. And without a Balanced Scorecard measure that measures that kind of thing, you wouldn't see that success, I don't think.

Performance Management clearly plays a major role in CMC's overall approach to business. Even though the implementation of the Scorecard process and supporting IT are generally considered successful at CMC, it has not been flawless. Some still see shortcomings in details of the process, the IT tool, and the measures.

As an example, one manager spoke about the difficulty of meeting some objectives that sound noble but are impractical in reality. The corporate-wide target for filling job openings internally is one that can be especially difficult for geographically dispersed

business units to meet. Many positions require specific industry and technical experience that may be in short supply within the company. Even if available, many employees are part of dual-income families and are not eager to relocate, even within the company. Pay scale can be an issue too, as employees transferring from lower cost-index markets to higher cost-index markets have internal limits on the pay adjustments that can be made, even for promotions. New hires coming in from outside the organization have no such restrictions. Of course, lower paying positions with more generally available skills are even more difficult to fill with internal employees from other CMC locations, as they are frequently the second (and lower) income in their household. Regardless of the obstacles, the target rate for the business units is the same as the target rate at the division and corporate levels. Challenges remain, and not all friction related to corporate mandate has been eliminated, but is an overall sense that the people at CMC approve of their performance management approach.

The implementation of EPM at CMC is the result of the organization's desire to create a new environment for decision-making. CMC has instituted new symbols and demands of employees at all levels. They have introduced new processes that both focus decision-making activities and include more members of the organization in the strategic decision-making. They have made strategic information resources widely available. These changes have resulted in new decision processes that result in more review and change to financial performance measures. The changes have also resulted in the formalization of many strategic non-financial measures that did not previously have wide visibility. These non-financial measures are now reviewed and updated regularly as CMC achieves key

objectives or incorporates the activities represented by the measures into its culture. The resulting information system has become part of the tradition and culture at CMC. The new IS drives behavior in the organization. In short, it has become part of the CMC organizational system.

5.3 Cross-Case Findings

As part of the analysis using the case study approach replication logic is used to determine how the findings apply to the research propositions. In this case, the two organizations represent two different outcome scenarios for an EPM implementation. Accordingly, I approach my findings for each organization as follows: I conclude that CMC has successfully implemented EPM through its use of the Balanced Scorecard approach and the PBViews tool. I conclude that CSU has not been successful (or has yet to be successful, depending on one's perspective) in their implementation of EPM. I reach this conclusion despite the success of their Strategic Finance initiative, mainly due to the ongoing issues and potential withdrawal of Financial Management, Planning, and Essbase applications from further development and implementation. Although the Strategy Map and associated Scorecard initiative continue, CSU has yet to achieve a successful implementation of a performance management approach to date, whether manually or supplemented with a Scorecard IT application. There is a possibility that the Scorecard effort will eventually be a success, but it appears that the time horizon for that potential outcome is still distant.

In the previous sections of this chapter, I discussed findings at each of the case sites independently of each other. In this section, I discuss the overall implications of these findings to the research propositions. Foremost in the discussion points is the overall finding with respect to the research propositions. Were they supported? Were they supported completely, or only partially? Were they not supported? In addition to the overall findings, I will also present my rationale for reaching these conclusions.

5.3.1 IT, Meanings and Performance

As discussed in Chapter 3, this perspective on power is based on the ways various groups in the organization legitimize some symbols, demands and decisions to the exclusion of others. Power is realized as members of the organization accept and acquiesce to the meanings that have been legitimized while rejecting those that have been de-legitimized (Dhillon 2004; Hardy 1996; Lukes 1974). The two propositions pertaining to power over meaning that have been considered during field work for this study are:

> 1a) The Enterprise Performance Management implementation effort, whether it is successful or not, will result in changes in the ways organizational meanings influence behavior and, in turn, firm performance (through financial measures).
>
> 1b) The Enterprise Performance Management implementation effort, whether it is successful or not, will result in changes in the ways organizational meanings influence behavior and, in turn, firm performance (through strategic and innovation-based non-financial measures).

Both CMC and CSU used a combination of new symbols, terminology, management decisions and demands on employees as a way to legitimize the new approach to strategic decision-making. CMC began using scorecard terminology in its quarterly reviews and in

everyday activities. The meaning of the red, yellow and green scorecard measures were intuitively obvious to those interacting with the Scorecard process. What's more, the color-coding of the measures elicited emotional responses from Scorecard participants. These changes in meanings at CMC began with the genesis of the Scorecard project, but really became entrenched throughout the organization once PBViews was implemented and used to drive Socrecard review meetings at all levels of the organization. PBViews came to symbolize the Scorecard approach and was a visible, consistent message of overall strategy. Users throughout the entire organization had access to the entire message, from the highest level corporate measures to the most detailed business unit measures, results, explanations, and action plans.

In addition to PBViews, CMC began highlighting key financial and non-financial measures in their company newsletter, which is a highly produced, oversized. glossy magazine that goes out to all employees and other key stakeholders on a bi-monthly schedule. One full page of each 16-page issue is devoted to a few key financial measures, with another page devoted to two or three non-financial measures.

As CMC gained experience with Performance Management, they started realizing that some of their measures were green time after time. This observation led to the conclusion that those measures were no longer providing new information (in essence, the objective had been internalized by the organization), and should be replaced with new measures that will continue organizational growth. Many non-financial measures enter and leave the CMC scorecard through this process of learning and discovery. Although there is less

turnover in financial measures, CMC has made several changes to the financial measures present on the Scorecard.

CSU's Finance and Administration Division developed a similar set of Scorecard-style missions and objectives, and has used a color coding scheme to link objectives back to the primary missions. The initiative has achieved a modicum of success at the dean and VP level throughout CSU, but remains in development mode as projects, initiatives and performance metrics are identified and prioritized.

Lower level managers in the organization are aware of the performance metrics effort, but either ignore or are confused by the wide variety of electronic communications they receive regarding the effort. Their primary focus is on the ongoing efforts to implement core ERP modules, implement and integrate EPM applications, and navigate through the political intrigue that has arisen with the departure of the VP of F&A.

In essence, two competing groups emerged, each attempting to position their tools of choice as the symbols of power, where information and decision-making authority would soon reside. Aligning oneself with the appropriate team thus became more meaningful in the short term than understanding and participating in an organizational objectives-building and measures-defining exercise with no obvious link to decision-making authority was. Those newer to the organization tended to side with the EPM products (more radical change – greater opportunity to advance), while longer-term employees tended to favor the ERP products (change, but closer to the status-quo – greater likelihood of protecting current status).

Because CSU F&A has not distributed a complete set of performance metrics to the entire division for measurement and analysis, departmental managers and employees tend to determine their own objectives and metrics with some guidance from the executive team. There also appear to be some implicit measures in place at CSU, the most obvious being the binary measure of making one's software application of choice the CSU standard for various EPM activities. For Strategic Finance and possibly Performance Scorecard, this issue has been settled, but for Consolidation and Financial Management, Planning and Forecasting, custom OLAP application development, and end-user reporting, the "winners" have not yet been determined. The purchase and implementation of the EPM tools was a catalyst for increased friction in identifying meanings and resulting measures of success within the division.

Based on these findings, Propositions 1a and 1b are both supported at CMC. At CSU, there is no evidence to support Proposition 1a, but the implementation of EPM at CSU has resulted in unintended changes to non-financial performance measures, many of them implicit and/or unintended. This indicates support for Proposition 1b.

5.3.2 IT, Processes and Performance

This power dimension considers the participation (or non-participation) of various organizational members in strategic decision-making processes (Dhillon 2004; Hardy 1996; Lukes 1974). Within this power dimension, other considerations must be taken into account. The exercise of power over processes can be demonstrated by excluding certain members from decision processes. Power over processes can also be demonstrated by

members who have no obvious affiliations that would signal power in decision processes, but are still able to use less noticeable means (i.e., behind-the-scenes political connections, access to alternate or secretive processes) to influence decisions.

It is also possible to have an *inclusive* approach to decision making processes, in which agendas, objectives, and committee memberships are changed to include more members representing a broader range of perspectives. The two propositions pertaining to power over processes that have been considered during field work for this study are:

> 2a) The Enterprise Performance Management implementation effort, whether it is successful or not, will result in changes in the ways organizational processes influence behavior and, in turn, firm performance (through financial measures).
>
> 2b) The Enterprise Performance Management implementation effort, whether it is successful or not, will result in changes in the ways organizational processes influence behavior and, in turn, firm performance (through strategic and innovation-based non-financial measures).

It is clear that the implementation of EPM technology had an impact on decision-making processes at both CMC and CSU. The corporate parent and division executives at CMC changed their process for evaluating and determining strategic objectives and their metrics to highlight their Scorecard approach. They also changed the ways meetings were conducted to feature PBViews, the EPM application supporting their Scorecard approach. These actions changed the decision-making process in two distinct ways. First, the new process actually increased the number of participants in strategic decision-making activities, as suggested in the literature (Hardy et al. 1994). Managers faced increased

exposure and scrutiny for measures they were responsible for; more business unit managers now participate regularly in quarterly reviews than ever before.

Second, the change in process brought alignment to the decision-making process in a way that CMC had not previously seen. Prior to their Scorecard effort, CMC's business units operated as a loose confederacy, with each unit acting more or less independently. Subsequent to the implementation of Scorecard, the units follow a more consistent methodology in developing strategic plans and objectives. As an added benefit, the increased exposure to all units' Scorecards, objectives and measures has resulted in a marked increase in sharing ideas, resources, and content elements across business units, resulting in cost efficiencies.

CSU realized benefits from its EPM implementation through the Strategic Finance (HSF) application. Although used by only a small number of planners, the introduction of HFS to the long-term planning process gave CSU financial analysts greater flexibility in analyzing a variety of scenarios. As a result, the F&A Division has been able to help CSU develop rolling ten- and fifteen-year strategic capital plans, rather than the shorter term plans they used previously. This shift in process to longer-term financial objectives is a direct result of the implementation of EPM.

CSU's other EPM implementations have not been as successful, but have also resulted in changes to decision-making processes. In this case, the changes have been of the exclusionary and back-door variety, as factions have formed around the two major product suites at CSU. With Steve King as VP of F&A, the EPM product suite was foremost in the plans. Decision processes favored those associated with that set of

applications. The ERP groups, even though they participated in division meetings and activities, felt left out of the process to an extent. Their attempts to influence decision processes were different.

Based on these findings, Propositions 2a and 2b are supported, both at CMC and at CSU.

5.3.3 IT, Resources and Performance

This power dimension focuses on the control over the financial, people and information resources at an organization's disposal (Dhillon 2004; Hardy 1996; Lukes 1974). This dimension is the one most consistent with the everyday notion of power held by the public.

The two propositions pertaining to power over resources that have been considered during field work for this study are:

> 3a) The Enterprise Performance Management implementation effort, whether it is successful or not, will result in changes in the ways organizational resources influence behavior and, in turn, firm performance (through financial measures).
>
> 3b) The Enterprise Performance Management implementation effort, whether it is successful or not, will result in changes in the ways organizational resources influence behavior and, in turn, firm performance (through strategic and innovation-based non-financial measures).

If information is considered a scarce resource in an organization, the strategic objectives, measures and results for the various levels of the organization are the scarce resource contained in a firm's Scorecard. At CMC, users at all levels of the organization have access to the entire Scorecard, from the highest level corporate measures to the most

detailed business unit measures, results, explanations, and action plans. This access has led to healthy change in Scorecard measures, both financial and non-financial.

At CSU, access to skilled personnel resources is a concern; in an environment of competing factions, it is important to have the most talented people associated with your preferred projects. With ongoing implementation efforts of both ERP and EPM applications, the two key success measures have become access to the top personnel resources and control over information resources. On the other hand, CSU's success with Strategic Finance has led to greater information availability for analyzing long-term planning scenarios. This has led to a shift toward longer-term financial objectives in capital planning.

Based on these findings, Propositions 3a and 3b are supported, both at CMC and at CSU.

5.3.4 IT, the Organizational System, and Performance

The power of the *system* itself resides just behind the first three dimensions of power, and should not be ignored. This power is endemic in the values, traditions, cultures and structures of the organization (Hardy 1996), and is disciplinary in nature (Dhillon 2004; Walsham et al. 1999; Willcocks 2004). The two propositions pertaining to the power of the system that have been considered during field work for this study are:

> 4a) The Enterprise Performance Management implementation effort, whether it is successful or not, will result in changes in the ways the overall organizational system influences behavior and, in turn, firm performance (through financial measures).

4b) The Enterprise Performance Management implementation effort, whether it is successful or not, will result in changes in the ways the overall organizational system influences behavior and, in turn, firm performance (through strategic and innovation-based non-financial measures).

At CMC, as mentioned earlier, users at all levels of the organization have access to the entire Scorecard, from the highest level corporate measures to the most detailed business unit measures, results, explanations, and action plans. Not only did this allow business unit managers to explore corporate objectives in order to develop better local objectives in support of them, it also raised awareness that division and corporate executives now had more transparent access to their activities and outcomes. This transparency, coupled with the quarterly reviews held using the PBViews tool, acted as a new, disciplinary aspect of the Scorecard approach.

Of course, managers have always been held accountable for their results at CMC. What the Scorecard adds to the relationship between managers and their executive supervisors is real-time access not only to current activities and alerts, but also to historical objectives, results, and action plans. In essence, the Scorecard in PBViews acts as a Foucauldian panopticon, keeping managers in line with corporate objectives (Elmes et al. 2005; Willcocks 2004). Up to this point, this phenomenon could be considered merely another, albeit elaborate, perspective on decision-making processes. At a certain point, however, the Scorecard process at an organization matures, and like so many things before it, seems to blend into the woodwork. It just is. This seems to be the case at CMC, where everyone is aware of the Scorecard process. Even though some may criticize one or another aspect of the Scorecard approach, there seems to be universal

agreement that it provides much-needed alignment between the business units, division executives, and the corporate office.

At CSU, an ambitious agenda has resulted in a number of initiatives reaching varying levels of implementation success. Several ERP modules, four EPM applications, an analytic platform, and at least two data integration tools have been in use or under evaluation over the past five years. The ERP modules have resulted in major changes to business processes at CSU. Both the ERP and EPM systems have led to changes in resources allocations. Changes in meanings are evident in the ways division members position one product suite or the other.

Despite this broad range of power-related activities, the overall culture and traditions at CSU remain unchanged. In this case, it appears that the power of the system was able to absorb the processes and meanings inherent in a pair of major system efforts supported by a new VP and other new leadership within the division. The resulting organization looks like it will be very similar to the organization that existed prior to the implementation of the new enterprise systems.

5.4 Implications

5.4.1 Research Implications

The case studies presented in this research provide support to the idea that information technology has an impact not just directly on power, and not just directly on firm performance, but also on the relationship between the two. Consistent with the notion that power is more than just the wielding of resources in order to compel others to do as we

demand, this study takes a multidimensional perspective on power (Dhillon 2004; Hardy 1996; Jasperson et al. 2002; Lukes 1974), examining each dimension in the context of the case study organizations. Similarly, the notion of firm performance is deconstructed into a combination of economic, strategic, and innovative initiatives. The combination of these initiatives, expressed in terms of financial and non-financial performance measures, constitutes the unique essence of the organization's competitive strategy (Ittner et al. 1998b; Piccoli et al. 2005).

Studies in the literature emphasize that the success of information systems implementation efforts should be evaluated based on the intent of the effort (DeLone et al. 1992; DeLone et al. 2003; Seddon 1997; Seddon et al. 1999). In the case of EPM, as noted earlier, one could view the implementation objective as enhancing the ability of the organization to express its strategic vision, competencies, and strategy through the information system (Wheatley 2003). These case studies were conducted to determine whether this can or does, indeed, happen in organizations that implement EPM.

As noted earlier, we should note that EPM is designed to allow an organization to express its unique strategy and competencies through the information system, and requires a philosophical commitment to the approach. As both cases demonstrate to varying degrees, EPM systems can take a significant amount of time to implement throughout an organization, and the process can become quite political. This provides a wonderful opportunity for a researcher to obtain a great deal of rich data from those participating in the implementation effort. It is particularly useful to uncover the experiences of those in the case study organizations who gain not only greater awareness

of overall firm objectives through the implementation effort, but greater awareness *of* their awareness and their desire to know, understand, and take part in shaping those objectives.

5.4.2 Implications for Practice

It is interesting to note that both organizations, at the recommendation of their highly regarded Performance Management and Scorecard consultants, began their pursuit of performance objectives and measures using a manual system. CMC switched to the use of an IT artifact to support their performance management approach after about a year. CSU continues its pursuit of its first complete set of objectives and measures to manage.

Executives leading the Performance Management charge in both organizations recognize the long-term, strategic approach required to make such a system successful. They also recognize that the actual objectives and metrics used to measure success will change dynamically within the structure of their overall performance management framework. Both organizations were subject to resistance and/or indifference during their period of manual Scorecard use.

CMC, however, began using their performance management IT tool fairly early, recognizing that the Scorecard was not "finished," but determined to make it a key part of their organizational culture. Although the quarterly reviews held using PBViews remained similar in structure to those conducted using paper handouts of Scorecard measures, the approach formalized the Scorecard process in the organization to a greater degree. In a sense, managers were now under the watchful eye of a Foucauldian

panopticon (Elmes et al. 2005). Buy-in throughout the organization has not been complete or automatic, and some members question the usefulness of at least some of the Scorecard processes or measures, but there is no doubt that CMC's approach to Performance Management has had a profound influence on the way business is conducted, power is exercised, and performance is measured throughout the organization.

CSU faced a different set of challenges than CMC: the organizational structure is less formal and less authoritative; the ERP implementation is immature or even incomplete; they attempted a much broader implementation of EPM applications and components; and the culture is not as receptive to change. It is tempting to consider, however, the changes that might have occurred had CSU implemented an early version of their Strategy Map in an IT tool that then became part of the organizational fabric. By starting with their basic categories and a small number of manually entered measures, they could grow and develop the Strategy Map, objectives, initiatives, and detailed metrics as organizational needs developed and as supporting IS initiatives matured.

These findings raise the question of whether the initial implementation of metrics-based applications within an EPM framework *should* be manual. During the manual stage of development (which continues at CSU), the Scorecard projects in both organizations were seen as somewhat mysterious. There was a level of concern over the significance of the approach and its potential ramifications. Upon the implementation of the tool at CMC, managers gained greater control over their presentation of scorecard results (in particular the comments and action plans) and it became a valuable component of the performance management process. People are concerned about looking good on their

portion of the Scorecard or whether their measure accurately portray their contributions, but the tool, the processes, the meanings, and the measures are resources being used by people throughout the organization. In short, the organizational system at CMC has changed through the use of Performance Management.

5.5 Significance

In evaluating the results of a case study, Yin (2003) proposes a set of five criteria: significance of the case study, completeness of the case study, consideration of alternative perspectives, display of sufficient evidence, and an engaging composition of the case study.

This study is significant from a research standpoint in two ways. First, it explores the relationship between IT, power and performance in a way that has not been explicitly addressed in previous studies. By linking multiple dimensions of power to organizational performance measures, we gain greater insight into the ways firms define themselves. Finally, by uncovering the impact that IT can have on the relationship between power and performance, we increase our understanding of the role of technology in the organization.

Second, this study demonstrates that IT can be a catalytic agent in the transformation of an organization, where the very *system* itself emerges in a new and different state. This is possible only when strategic IT, such as EPM, is embraced and supported throughout the organization. Our two cases show that this is not an inevitable outcome, nor is it an immediate one. It can happen, however.

It is hard to judge how complete a case study is. A combination of factors come into play, and certain questions must be answered: Do additional participants provide new information? How amenable is the organizational environment to continued observation, interviews, discussions, requests for reports, etc.? Is the organization a good fit for the topic of inquiry? What time constraints are imposed by the organization? By (or on) the researcher? In evaluating these questions, it is hard to be *completely* satisfied that one has gained all the insight into an organization that it has to offer. On the other hand, one could make the same argument even for someone who works full-time at the organization.

My experiences with CMC go back to 1997. I have known several of the actors (not all of whom participated in this study) throughout the course of their EPM implementation. I began pursuing the company as a case study site in February 2007, and had background and access discussions with several key players over the course of a year. I finally gained formal access in March 2008 and completed my data collection in August 2008. I have been able to bring some of my own historical perspective to the study based on my experiences with the firm and the research participants over the years.

At CSU, my experience with the organization is very different. I became aware of this case in March 2007 through a former professional colleague who was providing consulting services for them through the software vendor. We had several discussions about the case and agreed that it would make an interesting academic study. Discussions with CSU began in May 2007; they granted research access in August 2007. I began

conducting preliminary phone meetings then, and began formal data collection interviews in March 2008. I completed data collection in October 2008 with the most recent questionnaire response. I believe that I have been able to write a useful and meaningful case study based on my discussions and observations, but believe that I can learn still more about the organization and my research propositions as their EPM implementation matures.

This study focused on three things: IT, power and performance. For power, I used the dimensions of power framework for this study in contrast to a single-dimension, resource-based view of power (Dhillon 2004; Hardy 1996). For performance, I likewise focused on a multidimensional perspective that includes both financial and non-financial measures. In addition, I focused on measures that an organization uses internally to express its strategy, rather than external-facing measures (Ittner et al. 1998b; Piccoli et al. 2005). This contrasts with the use of external-facing measures used in many studies. This study evaluates strategic EPM implementations in contrast to many studies which evaluate operational systems. Finally, this study investigates the impact of IT on the relationship between power and performance, which is an extension of previous IS studies that have evaluated the relationship between IT and power, or IT and performance, but not both explicitly.

I believe that I have displayed sufficient evidence to support the conclusions I have presented. Rather than overwhelm the reader with every comment or observation in support of a particular finding, I have tried to display representative highlights that

support key perspectives in the organization and provide a solid chain of evidence to the findings. This sampling represents excerpts from 937 pages of interview transcripts and meeting notes, 67 pages of publications, 14 pages of questionnaire responses, and 180 pages of reports collected from the case study organizations. The research database is available for review upon request.

The fifth Yin criteria is whether the case studies are presented in an engaging manner. I will leave it to the reader to determine whether that criteria has been met. I believe that these cases present interesting studies for the research propositions at hand, and found myself immersed in the implementation stories at each organization. I can only hope that some sense of the struggles, frustrations, triumphs, and changes at each organization came through to the reader in the narrative.

Lincoln and Guba (Lincoln et al. 2002) have also set out four criteria groups which are applicable to evaluating the quality of case study research: resonance criteria, rhetorical criteria, empowerment criteria, and applicability criteria. These cases certainly resonated with me, as the IT of interest in each case is the type sold and implemented by my previous employer. I believe that the cases were also appropriate to the area of study: organizational impacts of strategic IT. My experience with many of these types of implementations gave me a perspective on the tools and the organizations that only a handful of researchers likely possess. I believe that the presentation of the cases in this study provides a good fit for the evaluation of the research propositions as presented.

Lincoln and Guba's rhetorical criteria relate to whether the case narrative demonstrates unity of purpose, organization of thought, clarity of expression and craftsmanship in writing. Although I hardly bring a neutral perspective to a review of this study, I believe that this report does meet these objectives to a great degree. I hope that the reader agrees.

Empowerment criteria relate to whether the case has the air of authenticity. In other words, did the researcher present all sides of the story fairly? In this case, I believe that I was able to achieve this objective. In both cases, I was able to meet with participants at all levels of the organization. In the case of CMC, this meant talking to people with varying responsibilities at the division and business units levels. At CSU, this meant talking to people within F&A at various levels in the hierarchy as well as from competing interest groups.

Finally, applicability criteria relate to whether the reader of the case study can draw some inferences from the description that can subsequently be applied to her own situation. In this case, I believe that many readers interested in organizations, the implementation of IT, or both, will find applicability to research, practice, and/or teaching opportunities.

6 Conclusion

This paper argues that the implementation of IT can have an impact on the relationship between power relationships in the organization and the objectives and measures used to define success for the organization.

6.1 Review of key findings

This study investigates the implementation of Enterprise Performance Management systems and their impact on the ways power and performance are expressed in the organizations that use them. Each organization in the study took a different approach to Performance Management, but a common theme in the study was the desire to present organizational objectives and metrics in a dashboard-type setting using a version of the Balanced Scorecard methodology.

It seems appropriate, then to present a summary of my findings in a dashboard format. Table 18 displays my research findings in a grid. The rows represent the four major research propositions, and are organized by power dimension. The columns represent the two types of performance measures (financial measures and non-financial measures), and are presented in three groups: 1) Content Management Corporation findings; 2) Capitol State University findings; and 3) Overall findings.

The findings show full support for Propositions 2a and 2b: EPM implementation does have an impact on the relationship between changes in decision making processes and changes in performance measures whether the implementation is successful or not. Both CMC and CSU experienced significant changes leading to the re-evaluation of

performance measures. At CMC, the implementation led to both a narrowing of process focus and an increase in the number of participants. At CSU, the implementation led to a more fractious set of decision-making processes which is still being sorted out.

Table 18 - Scorecard of Findings

Scorecard of Findings							
	CMC		CSU		Overall		
	FM (a)	NFM (b)	FM (a)	NFM (b)	FM (a)	NFM (b)	PM
1) EPM → Power(Meanings) ↕ Performance	✓	✓	✗	✓	◆	✓	✓
2) EPM → Power(Processes) ↕ Performance	✓	✓	✓	✓	✓	✓	✓
3) EPM → Power(Resources) ↕ Performance	✓	✓	✓	✓	✓	✓	✓
4) EPM → Power(System) ↕ Performance	✓	✓	✗	✗	◆	◆	◆

CMC = Content Management Corporation
CSU = Capitol State University
FM = Financial Measures
NFM = Non-Financial Measures
PM = Performance Measures
EPM = Enterprise Performance Management
✓ = Proposition supported
◆ = Proposition partially supported
✗ = Proposition not supported

Propositions 3a and 3b are also supported: EPM implementation has an impact on the relationship between changes in resource allocation and changes in performance measures whether the implementation is successful or not. At CMC, alignment of strategy up and down the organizational hierarchy has led to a more fluid (although currently very tight) allocation of resources to responsibility managers. At CSU, implementation of EPM led to a competition for resources by the two major factions.

Control of those resources (financial, people and information) is currently in flux, as are the stated and implied performance measures throughout the organization.

The findings for Propositions 1a and 1b are mixed. The propositions are supported for the successful EPM implementation at CMC, whose use of EPM has had an impact on the relationship between changes in meanings and changes in performance measures, both financial and non-financial. At CSU however, the EPM implementation resulted in unintentional changes and friction in defining meanings for the organization. The emergence of two camps supporting the different application approaches to EPM processes resulted in the development of binary measures of performance related to the success or failure of one's preferred approach. The focus on these binary measures came at the expense of energy and attention that could have been spent evaluating and possibly updating financial objectives. As a result, financial objectives related to new meanings at CSU remained relatively unchanged from what they were prior to the EPM implementation.

One could argue that the shift to longer-term financial objectives through the use of the Strategic Finance application should be considered here. Given the small HSF user population, however, it appears that changes in meanings that can be traced back to HSF are relatively minor and directed mostly toward executive-level people at CSU. Throughout the F&A division, changes to financial measures that can be linked with HSF should be considered more process driven than meanings driven.

Finally, Propositions 4a and 4b were supported at CMC (a successful implementation), but were not supported at all at CSU (an unsuccessful implementation). The successful

implementation of EPM at CMC resulted in changes to the overall culture and traditions at what was already a very research- and metrics-driven firm. The knowledge-based, disciplinary nature of the Scorecard approach at CMC has given everyone in the organization greater visibility into detailed strategic plans at all levels. At the same time, it has also raised awareness that the performance of one's group, business unit, or division can be held up to detailed scrutiny throughout the organization. In a broad sense, this is nothing new for CMC; they have analyzed performance based on consumption of their content for a long time. In a narrower sense, however, the exposure of small group and even individual detailed measures, explanations, and plans to the wider audience has changed things dramatically. As CMC has gained experience with their Scorecard approach, they have adjusted their use of the process and tools to fit their unique business requirements. CMC employees have also become used to the Scorecard process as part of their regular routine, to the point where it has blended into the woodwork of everyday activities.

At CSU, the organizational system was not changed by the EPM implementation. For that matter, it was not really changed by the ERP implementation, either. One might say that the organizational system absorbed not only the EPM implementation, but also the concurrent ERP implementation. Despite several years of turmoil and uncertainty, it appears that the CSU organizational system remains largely the same. It is hard to say whether this is an inevitable conclusion, or whether the ongoing implementation efforts will eventually result in changes to the system at CSU.

6.2 Contributions of this Research

This research makes a number of contributions that can be categorized as either contributions to research and theory, or contributions to practice. The following discussion highlights the contributions in each category.

6.2.1 Research Contributions

This study contributes to the research community in the following ways:

Enhanced Understanding of the use of Power in organizations: Power is one of the most intriguing aspects of life, and manifests itself in interactions between people ranging in scope from a small group of childhood playmates to entire countries, ethnic groups, and civilizations. In information systems research, understanding the multi-faceted nature of power is critical to understanding how technology, people, and the resulting system of information interactions develops in the social system that is the business organization. This study adds to that body of knowledge by analyzing dimensions of power in the context of EPM, a relatively unexplored application area. It also enhances our understanding of power and the potential for information technology to play a role in its interaction with organizational performance. By revealing the potential for IT to play a part in changing the power of the organizational system, a new avenue of research opportunities opens up with regard to EPM, Business Intelligence, and other information systems that focus on expressing and managing organizational strategies.

Enhanced Understanding of the use of Performance Measures in organizations: As is true for power, organizational performance goes beyond strict financial measures of

success. This research investigates the ways organizations go about identifying and defining those performance objectives and resulting measures that they believe will best advance their strategy and its likelihood of success. This research adds to the existing body of knowledge on performance criteria and measures by analyzing multiple perspectives on performance within organizations. It does so in the context of EPM, a relatively unexplored domain in IS research. This study also enhances our understanding of performance within the organization and of how information technology plays a role in its interaction with organizational dimensions of power.

Theory building on the Role of IT organizations: This study builds on existing theories on the relationships between IT, power and organizational performance. Studies in the literature have shown the relationship between IT and power in organizations. Likewise, existing studies highlight the relationship between IT and various aspects of firm performance. There is even a developing stream of research on the relationship between organizational power and firm performance. This study contributes to and adds to these streams of research by making explicit what may seem apparent, but has not been addressed directly: the role of IT in influencing the relationship between power and performance in organizations.

6.2.2 Contributions to Practice

This study contributes to the advancement of practice in the following ways:

Transformational effects of EPM: The CMC case study demonstrates the potentially transformational effects of IT in an organization; transformation that includes improving

operational processes and streamlining resources, but also goes beyond that. With appropriate direction and organizational persistence, information technology and its interactions with the organization's members can create opportunities for increased participation in strategic decisions, greater levels of responsibility and accountability through the entire organizational hierarchy, and even a new set of traditions, values, and cultures that replace the existing ones.

Comparison of EPM implementation approaches: This research study presented two EPM implementation cases: one successful and one unsuccessful (or not yet successful). A comparison of the two implementation efforts provides useful information for practitioners considering or attempting similar implementations. In particular, the timing and use of the IT component of EPM is an area that bears closer consideration. Although it was not a primary focus for this study, the introduction of the IT artifact into the EPM process is one major difference between the two case organizations. This leads to the third contribution to practice.

Seeds of Best Practices for EPM implementation: Prevailing wisdom for EPM implementation, echoed by both case study organizations, is that the core ERP systems and base EPM applications should be in place prior to attempting to implement the dashboard and metrics (Scorecard) component of the EPM suite. During this time, development of the Scorecard objectives and measures should proceed in a deliberate manner, and be piloted using a manual, paper-based approach. Both case entities used this approach, and CSU continues into its third year of Scorecard development using it. CMC rolled out its Scorecard somewhat faster than that, but the effort didn't really gain

traction until the IT artifact became the focal point for all Scorecard-related activities. This argues for a re-thinking of EPM approaches to the dashboard and metrics component. Perhaps implementations of EPM should follow the best practices of many other IT domains, focusing on iterative development, more frequent milestones, and maintaining organizational momentum.

6.3 Opportunities for Future Research

This research project is an explanatory case study as described by Yin (2003). The case studies were prepared by analyzing a combination of interview transcripts, meeting notes, reports, publications, and observations compiled during the course of the case studies. Findings emerged through the processes of identifying major themes and coding of data sources.

It is worth noting that the research approach taken is designed to generalize findings to theory, not to general populations. Each organization is a unique combination of people, structures, traditions, culture, meanings, technologies, and interactions. It would be fruitless to generalize findings from a case study to another setting without testing and confirming the theoretical propositions in the new setting (Lee et al. 2003).

Of course, there are limitations to this research study. The methods used to evaluate case study data are self-referential, as the researcher becomes part of the social interactions that he is studying. It is important to recognize that fact; researchers interact with the world, including the social phenomena they study. As a result, their personal judgment becomes part of the research and analysis process. I have attempted to

overcome that potential weakness by using accepted, systematic approaches to data analysis. These approaches have allowed me to build support for my findings.

The findings of this study suggest several opportunities for further research. Studies on the relationship between power and performance are nascent in the literature and have been limited to high-level concepts of each. Expanding the reach of such research throughout the organizational hierarchy holds the promise of many rich sources of data for study.

This study also adds to the qualitative research on dimensions of power. As this research stream matures, there may be opportunities to develop instruments for each of the power dimensions that can be used in quantitative studies on the topic. This could be a fruitful area of study.

The research stream on EPM (and on overall business intelligence) is also relatively sparse. There is room for a variety of studies on organizations that are consolidating their strategies and enhancing their capabilities using these technologies.

This study illustrates the role IT can play in the transformation of organizations. In the study, one organization had success in transforming their power of the system, while another one did not. Although it is clear that the IT played a role in the transforming organization, it is not clear what the other distinguishing factors for success were. Certainly top-level commitment and organizational persistence played a role. But were other factors, such as the structure of the organization, the type of people the organization attracts, or something else, key to their success as well? Further studies in different

organizations, each with its own unique set of parameters, will help provide additional insight into the topic.

6.4 Summary

This research study investigated the catalytic role that information technology plays in the interaction between power and performance in organizations. I argue that it does play a role and changes that relationship. That change can be for the better or for the worse, depending on the success of the implementation. For my information technology domain, I chose Enterprise Performance Management, a set of tools and applications designed to help an organization express its unique strategies and objectives through its information system.

I chose to investigate power using Hardy's Dimensions of Power framework (Hardy 1996). I similarly investigated performance across multiple dimensions, focusing on the general use of financial and non-financial measures within an organization's performance management framework. My investigation took the form of two case studies: one at the Finance and Administration Division of a public state university employing approximately 800 people, the other in a division of a publicly traded content creation and distribution company employing approximately 1000 people.

I evaluated the case results using replication logic to compare results across cases, replicating to the theoretical propositions. I used explanation building, triangulation, and pattern matching techniques to inform my findings and subsequent conclusions. I developed a chain of evidence back to the research data to support these findings.

Based on my findings, I found support for the research proposition in the successful case study across all four dimensions of power, including the transformational *power of the system*. In the unsuccessful case study, I found support for my proposition across two of the four dimensions and partial support across the third. I found no support for the proposition in the *power of the system* dimension.

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Appendix A

Interview Protocol used by researcher:

Interview Protocol for Case Study

(Researcher version, without using "xPM" terminology)

1. Describe your role in the organization. (probe for responsibilities, evaluation criteria, tenure, background, etc.)

2. What are your individual short-term and long-term key objectives? Those of your group? Your organization? Have there been any changes to your objectives (i.e., greater number, different focus, etc.) over the past few years? Please describe. (probe for anticipated future changes if appropriate)

3. How do you identify your key objectives? What tools/techniques do you use to help identify them? Has this changed over the past few years? Please describe. (probe for "hard"/"soft" objectives)

4. Do you evaluate your key objectives to determine whether they are still appropriate? Do you look for new ways to measure progress against existing objectives? How is this done? Has this changed over the past few years? (probe for anticipated future changes if appropriate)

5. How do you communicate progress on your objectives to others in the organization? Describe any recent/upcoming changes in these processes. How did these changes come about?

6. How do you develop strategic plans and forecasts for your key objectives? Describe any recent/upcoming changes in these processes. How did these changes come about?

7. How do you model the activities of your organization? Describe any recent/upcoming changes in this process. How did these changes come about?

8. How do you monitor your progress against your objectives, models, plans, forecasts and strategies? How are you alerted to significant variances in these objectives? Describe any recent/upcoming changes in these processes. How did these changes come about?

9. How has your role (your group's role) in the processes we've discussed so far changed in the recent past? (probe for anticipated future changes if appropriate) (probe for changes in influence)

10. How have other people's roles (other groups' roles) in the processes we've discussed so far changed in the recent past? (probe for anticipated future changes if appropriate) (probe for changes in influence)

11. Think of the formal ways your organization communicates, as well as the informal or implied messages that guide organizational objectives. What are the main messages from your perspective? Have they remained relatively constant over the past few years? (probe for anticipated future changes if appropriate)

12. How has your access to funding, personnel and/or equipment changed in the past few years? (probe for anticipated future changes if appropriate)

13. How do you identify or plan to identify opportunities for efficiencies, new products or product mixes, customer service, quality improvement or other strategic initiatives that you and your team could or should undertake? How do you validate those opportunities?

Interview Protocol for Case Study

(Researcher version, using "xPM" terminology)

1. Describe your role in the organization. (probe for responsibilities, evaluation criteria, tenure, background, etc.)

2. Describe your organization's implementation of Business Intelligence solutions. (elicit subject's definition of BI and describe further if necessary)

3. Describe your organization's implementation of Performance Management systems (Corporate Performance Management, Enterprise Performance Management, Business Performance Management). (elicit subject's definition of PM and describe further if necessary)

4. What are your individual short-term and long-term key objectives? Those of your group? Your organization? Have there been any changes to your objectives (i.e., greater number, different focus, etc.) over the past few years? Please describe. (probe for anticipated future changes if appropriate)

5. How do you identify your key objectives? What tools/techniques do you use to help identify them? Has this changed over the past few years? Please describe. (probe for "hard"/"soft" objectives)

6. Do you evaluate your key objectives to determine whether they are still appropriate? Do you look for new ways to measure progress against existing objectives? How is this done? Has this changed over the past few years? (probe for anticipated future changes if appropriate)

7. How do you communicate progress on your objectives to others in the organization? Describe any recent/upcoming changes in these processes. How did these changes come about?

8. How do you develop strategic plans and forecasts for your key objectives? Describe any recent/upcoming changes in these processes. How did these changes come about?

9. How do you model the activities of your organization? Describe any recent/upcoming changes in this process. How did these changes come about?

10. How do you monitor your progress against your objectives, models, plans, forecasts and strategies? How are you alerted to significant variances in these objectives? Describe any recent/upcoming changes in these processes. How did these changes come about?

11. How has your role (your group's role) in the processes we've discussed so far changed in the recent past? (probe for anticipated future changes if appropriate) (probe for changes in influence)

12. How have other people's roles (other groups' roles) in the processes we've discussed so far changed in the recent past? (probe for anticipated future changes if appropriate) (probe for changes in influence)

13. Think of the formal ways your organization communicates, as well as the informal or implied messages that guide organizational objectives. What are the main messages from your perspective? Have they remained relatively constant over the past few years? (probe for anticipated future changes if appropriate)

14. How has your access to funding, personnel and/or equipment changed in the past few years? (probe for anticipated future changes if appropriate)

15. How do you identify or plan to identify opportunities for efficiencies, new products or product mixes, customer service, quality improvement or other strategic initiatives that you and your team could or should undertake? How do you validate those opportunities?

Appendix B

Survey Questionnaire – Balanced Scorecard version (CMC):

Use of Balanced Scorecard in Organizations

Introduction and Consent

Thank you for participating in this Virginia Commonwealth University research project. Ongoing research such as this helps identify the impact of computerized software systems on organizations and their employees, and can help in the design of future systems.

Please be assured that all appropriate measures will be taken to protect your confidentiality as a participant in this survey. Your name, organization, and other identifying information will not be associated with any published manuscripts resulting from this study. This online survey is encrypted to provide secure data transmission. All printed research materials will be maintained in appropriate locked offices or other storage facilities until no longer needed, at which time they will be securely destroyed. Likewise, all electronic research materials will be stored on password protected media until no longer needed, at which time they will be securely deleted. Despite these precautions, there is a small risk that your information and answers to these questions could be made public.

This questionnaire consists of 9 open-ended questions and should take about 30 minutes to complete. You do not need to answer all the questions, but I do hope you will spend some time with it and share your thoughts. Your participation is voluntary (and, of course, there is no penalty if you do not participate).

If you have any questions or concerns about completing the questionnaire or about being in this study, you may contact me at wengermr@vcu.edu, or call me at (804) 512-2611. If you have any questions about your rights as a participant in this study, you may contact:

Office for Research Subjects Protection
Virginia Commonwealth University
800 East Leigh Street, Suite 113
P.O. Box 980568
Richmond, VA 23298
Telephone: 804-827-2157

You may also contact this number for general questions, concerns or complaints about the research. Please call this number if you cannot reach the research team or wish to talk to someone else. Additional information about participation in research studies can be found at http://www.research.vcu.edu/irb/volunteers.htm.

By clicking "Next" below, you indicate that you understand your rights and the protections being offered to you as a participant, and agree to participate in this questionnaire. Please click "Submit" below the last question when you are finished with the questionnaire.

Thank you,
Mitch Wenger
Virginia Commonwealth University

Use of Balanced Scorecard in Organizations

Survey Questions

1. Name (Optional)

2. What is your perception of your organization's use of the Balanced Scorecard? Consider both the tool itself (Scorecard software and associated reports) and your organization's application of the concepts underlying the Balanced Scorecard approach.

3. Describe how your Scorecard objectives and measures have (or have not) changed in the recent past (e.g., addition of or elimination of measures/objectives, changes in how objectives are measured).

4. In addition to your periodic use of Balanced Scorecard software tools to identify and track your objectives, what other tools/techniques do you use (i.e., paper notes, day-planner systems, spreadsheets, memos/e-mail, other corporate systems)? Have these tools/techniques changed for you over the past few years? Please describe. Also, please consider how you use these tools/techniques in evaluating both financial and non-financial measures.

Use of Balanced Scorecard in Organizations

5. Are your scorecard reviews and discussions useful in identifying new objectives and/or new ways to measure existing objectives? How about for re-evaluating existing objectives for their current appropriateness? Has your use of Balanced Scorecard tools had an impact on these activities? Please describe.

6. Describe the process of adding/removing/changing Scorecard objectives and measures for your area of responsibility. Who is involved in the decision process? How long does the process take? Is the process different than what you experienced prior to the use of Balanced Scorecard? Please describe.

7. Has the use of the Balanced Scorecard helped with respect to your development of strategic plans and forecasts for your key objectives? Please describe why or why not.

Use of Balanced Scorecard in Organizations

8. Do your Balanced Scorecard reviews result in the identification of any of the following:
- new efficiencies
- new products or product mixes
- customer service improvements
- quality improvement
- other initiatives that you and your team could or should undertake?

Please describe.

9. For your key Scorecard objectives, what tools do you use to monitor progress on an ongoing basis (i.e., between periodic Scorecard reviews)? How are you typically alerted to potential problems with your objectives?

10. Please describe what you consider to be your organization's main themes, messages, or core values. Please consider both formal communications (memos, reports, e-mails, meetings, etc.) and informal communications (activities, traditions, openness, etc.) in your response. Have these themes, messages or values changed over the past few years? Please describe.

Survey Questionnaire – Enterprise Systems version (CSU):

Use of Enterprise Systems in Organizations

Introduction and Consent

Thank you for participating in this Virginia Commonwealth University research project. Ongoing research such as this helps identify the impact of computerized software systems on organizations and their employees, and can help in the design of future systems.

Please be assured that all appropriate measures will be taken to protect your confidentiality as a participant in this survey. Your name, organization, and other identifying information will not be associated with any published manuscripts or presentations resulting from this study. This online survey is encrypted to provide secure data transmission. All printed research materials will be maintained in appropriate locked offices or other storage facilities until no longer needed, at which time they will be securely destroyed. Likewise, all electronic research materials will be stored on password protected media until no longer needed, at which time they will be securely deleted. Despite these precautions, there is a small risk that your information and answers to these questions could be made public.

This questionnaire consists of 10 open-ended questions and should take about 30 minutes to complete. You do not need to answer all the questions, but I do hope you will spend some time with it and share your thoughts. Your participation is voluntary (and, of course, there is no penalty if you do not participate).

If you have any questions or concerns about completing the questionnaire or about being in this study, you may contact me at wengermr@vcu.edu, or call me at (804) 512-2611. If you have any questions about your rights as a participant in this study, you may contact:

Office for Research Subjects Protection
Virginia Commonwealth University
800 East Leigh Street, Suite 113
P.O. Box 980568
Richmond, VA 23298
Telephone: 804-827-2157

You may also contact this number for general questions, concerns or complaints about the research. Please call this number if you cannot reach the research team or wish to talk to someone else. Additional information about participation in research studies can be found at http://www.research.vcu.edu/irb/volunteers.htm.

By clicking "Next" below, you indicate that you understand your rights and the protections being offered to you as a participant, and agree to participate in this questionnaire. Please click "Submit" below the last question when you are finished with the questionnaire.

Thank you,
Mitch Wenger
Virginia Commonwealth University

Use of Enterprise Systems in Organizations

Survey Questions

1. Name (Optional)

2. What is your perception of your organization's use of ERP (Enterprise Resource Planning - i.e., PeopleSoft) and BPM (Business Performance Management - i.e., Hyperion) systems? Consider both the tools themselves (ERP/BPM software and associated reports) and the application of the concepts underlying your organization's strategic approach.

3. Describe your use of ERP/BPM software. Which products/modules do you work with most frequently? Less frequently? Please describe.

4. Describe how your business objectives and measures have (or have not) changed in the recent past (e.g., addition of or elimination of measures/objectives, changes in how objectives are measured).

Use of Enterprise Systems in Organizations

5. To what degree do you use various ERP/BPM software tools to identify and track your objectives? What other tools/techniques do you use (i.e., paper notes, day-planner systems, spreadsheets, memos/e-mail, other corporate systems)? Have these tools/techniques changed for you over the past few years? Please describe. Also, please consider how you use these tools/techniques in evaluating both your financial and non-financial objectives and measures.

6. Do you use ERP/BPM reports or other tools when discussing and identifying new objectives and/or new ways to measure existing objectives? How about for re-evaluating existing objectives for their current appropriateness? Has your use of ERP/BPM tools had an impact on these activities? Please describe.

7. Describe the process of adding/removing/changing strategic objectives and measures for your area of responsibility. Who is involved in the decision process? How long does the process take? Is the process different than what you experienced prior to the use of ERP/BPM tools? Please describe.

8. Has the use of the ERP/BPM tools helped with respect to your development of strategic plans and forecasts for your key objectives? Please describe why or why not.

Use of Enterprise Systems in Organizations

9. Does your use of ERP/BPM tools result in the identification of any of the following:
- new efficiencies
- new products or product mixes
- customer service improvements
- quality improvement
- other initiatives that you and your team could or should undertake?

Please describe.

10. For your key performance objectives, what tools do you use to monitor progress on an ongoing basis (i.e., between aanual reviews)? How are you typically alerted to potential problems with your objectives?

11. Please describe what you consider to be your organization's main themes, messages, or core values. Please consider both formal communications (memos, reports, e-mails, meetings, etc.) and informal communications (activities, traditions, openness, etc.) in your response. Have these themes, messages or values changed over the past few years? Please describe.