COORDINATING IN FEDERATED INFORMATION TECHNOLOGY GOVERNANCE

STRUCTURES: A LONGITUDINAL PROCESS PERSPECTIVE

by

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(Under the Direction of Elena Karahanna)

ABSTRACT

Federated information technology (IT) governance structures are becoming the dominant design for multi-unit organizations. This design requires highly effective coordination between autonomous units to pursue enterprise IT initiatives such as enterprise software solutions (e.g. enterprise resource planning (ERP) or customer relationship management (CRM) systems), data integration, information security, and highly efficient and effective IT infrastructures. Traditional research on coordination has focused on understanding how specific coordination mechanisms are applied and the contextual influences that indicate successful outcomes. This research recognizes the process nature of the coordination phenomenon and explicitly defines the coordinating process as the process of integrating information, resources, activities and people across different interdependent parts of an organization to accomplish enterprise goals.

The coordinating process is explicated through inductive theory building based on results of a 40-month longitudinal, comparative in-depth study of two cases in the same public sector organization. Based on the analysis of data collected through semi-structured interviews, observations and review of archival data for the two cases, a number of significant contributions emerge. The coordinating process evolves along five stages (creation, implementation,

evaluation, adjustment and termination) that can be iterative in nature. The primary contextual influences that impact the coordinating process, the duration of the stages, transitions between stages, the number of iterations, and coordinating outcomes are identified and presented in a parsimonious framework. A core contribution of the research is identifying the central role played by the generative forces of shared understanding of the operating mode and lexicon, and unit alignment with organizational objectives in driving the coordination process and the outcomes that are achieved. Additionally, this research demonstrates that these generative influences can co-occur and interact with political, rational and other contextual influences to impact the observed coordinating outcomes.

INDEX WORDS: Coordination, coordinating process, federated IT governance, unit alignment, shared understanding, consensus, process theory, case study, critical realism

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DEDICATION

To my wife and best friend Noelle, and my loving daughters Audrey and Lilliann. Your love and support have sustained me through this "little endeavor." May this new path bring many joys and happiness for us all to share.

To my mother Patricia. You have given so much that I cannot begin to recount and for which I am eternally grateful.

To the educators and servants that showed me the way, my father John, my brother John and my sister Amanda.

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1.1   Background and Importance

Information system managers are challenged to balance global efficiencies of standardized integrated solutions and the responsiveness of customized solutions to local requirements (Bartlett and Ghoshal, 1998; Weill and Ross, 2004). On the one hand, they are seeking efficiencies from information technology (IT) and systems (IS) leading to standardized IT infrastructures (Broadbent, Weill and St. Clair, 1999) and common, integrated software systems that cross unit boundaries (Pawlowski and Robey, 2004). On the other hand, they must meet expectations of customers, suppliers, and partners, which are heterogeneous across business units leading to the need for customized, local solutions. These competing demands are driving an increasing number of multiunit organizations to adopt some form of federation for IT governance (Scott, Holub and Pultz, 2006) wherein IT infrastructure is managed centrally and systems development is decentralized (Brown, 1999; Sambamurthy and Zmud, 1999).

While balancing tensions between autonomy and synergy, federated governance also creates structural barriers to alignment between the central and unit IT groups (Brown, 1999). Decision-making and reporting relationships split between central IT and business unit management responsible for the unit-level IS function inhibit communication and collaboration between central and unit IS managers (Brown, 1999). The lack of coordination in the federated IT governance structure can lead to a number of problems including higher costs through the duplication of projects across organizational units; inefficiency and inflexibility due to implementation of incompatible technology architectures, infrastructures and business

applications by different units; and diminished value to the enterprise for investments in IS (ITGI, 2006a; Weill and Ross, 2004). Specific coordination efforts are required to alleviate these problems, to overcome the barriers to alignment and to realize the desired organizational performance objectives in federated IT structures (Brown, 1999; Sambamurthy and Zmud, 1999).

An example familiar to the author from the public sector demonstrates the nature and challenges of coordination in the federated governance structure[1]. A state agency is responsible for over two dozen autonomous units located throughout the state. The individual units range in size from an annual budget of tens of millions to over one billion dollars. Each unit delivers a variety of similar services to the public. The units focus on certain geographic areas as well as specializing in certain functions and industries though the units offer some overlapping services and frequently draw from similar customer populations. The state agency receives funding from a combination of sources including tax revenues allocated by the state legislature and direct customer fees.

The state agency desired to manage the enterprise more effectively through consolidated planning, measurement and reporting; to improve efficiency through shared services; to improve delivery at the point of service; and to provide the opportunity to each autonomous unit to tailor services to their specific market needs while supporting the other enterprise objectives. To achieve these objectives the state agency mandated that a common enterprise software system should be deployed by all the units within the agency. This common system consists of two commercial software products that when integrated provide full financial, operational, and human resource management functionality.

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[1] The author first learned of this situation while working in the private sector, prior to initiating doctoral study. The specific state agency is not identified due to the close relationship to the organization that is the subject of this study.

The software products to be used were specified and a variety of network and infrastructure services were provided by the IT unit of the central state agency. The agency provided additional funding support, general guidance, product expertise and training for the implementations. For one software product, the implementation was rigorously centralized with all aspects of the configuration established and controlled by the central agency, including hosting of system data. No customizations were permitted to satisfy local needs, only changes that were applied to all units. However for the second product, each individual implementation project was managed by the unit and with responsibility typically given to each unit's IT department. Very little coordination occurred between the autonomous units. Over time the units did develop mechanisms for sharing information regarding the software products, issues with implementation, business process challenges, and modifications required to achieve desired results. Very little was done by the state agency or the central IS unit to coordinate how the units would use the second software, the business processes required to support the enterprise goals or the way in which the software system was implemented.

The net result of the state agency's initiative is that even though common software products are being used in almost all units, the implementations are unique to each unit. The finance and accounting functions are actually split across the two different software products in response to external auditor concerns. In effect the state agency is faced with having almost completely different "systems" at each unit. This is largely due to the lack of proactive and comprehensive coordination between the central IS unit and each individual unit as well as between the various autonomous units. The use of identical software products does provide some inherent "commonality". But the lack of coordination in defining business processes to be supported, implementing the software, identifying the nature and types of customizations that

should be implemented as well as those that should not, and using the software system in an on-going basis has substantially limited the ability of the state agency to fulfill its original objectives.

The financial and performance results of this effort have been disappointing for both the individual units and the state agency to the point that a completely new IS solution is being considered. While the centralization of the first software product allowed the agency to generate cost savings through scale efficiencies, the inflexibility of the implementation approach has forced various units to implement alternative manual and technology solutions to provide required operational capabilities. And while the implementation of the second product provided significant flexibility to the individual units, almost no efficiency or scale benefits have been realized. Ultimately, the lack of coordination has made it almost impossible for the state agency to achieve consolidated planning, management and reporting through the software system. Additional tools and processes have had to be implemented to provide these capabilities, and the systems lack flexibility in terms of responding to changing conditions.

Coordination is a central concept in organizational design theory (e.g. Galbraith, 1973; Lawrence and Lorsch, 1967; Thompson, 1967) and has been studied by IS and management scholars focusing on the management of uncertainty and interdependency through the creation of lateral relations between organizational units. Prior IS research has focused primarily on assessing the efficacy of various coordination mechanisms in a variety of organizational contexts as demonstrated in Brown's (1999) literature review. Other recent work has addressed coordination in terms of mechanisms employed for intra-and inter-organizational relational networks (Gittell, 2002; Gittell and Weiss, 2004), knowledge sharing and boundary spanning

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(Kellogg, Orlikowski and Yates, 2006; Pawlowski and Robey, 2004; Tanriverdi, 2005), and IS implementations (Sabherwal, 2003).

Though prior research in this domain has yielded valuable insights on the efficacy of various mechanisms to achieve coordination in a variety of contexts (e.g. project management, inter-organizational networks), our understanding of how to achieve coordinated action to overcome the challenges inherent to the federated IS structure is still at a nascent state. Research is required that extends beyond implementation of coordination mechanisms to more comprehensively examine the process by which coordination occurs over time and in response to changing organizational and environmental conditions. This research is a step in this direction.

1.2   Research Questions

While coordination has been defined as a *process* for managing dependencies within organizations to achieve desired outcomes (Malone and Crowston, 1994; Quinn and Dutton, 2005) and a few studies have approached the coordination problem from a process perspective (e.g., Galbraith, 1994; Garvin, 1998; Kellogg et al., 2006; Sambamurthy and Zmud, 2000), only a few *empirical* studies in IS have specifically investigated the *process* of coordination (e.g. Peppard, 2001; Schwarz and Hirschheim, 2003).

To add to our understanding of the coordination phenomenon, the current research frames coordinating as a process involving: (a) a portfolio of coordination mechanisms that are (b) employed over time within an organizational context and (c) influenced by interacting social, political and environmental forces, in an effort to achieve an enterprise, collaborative outcome. Since prior research offers little guidance on how the *process of coordinating* unfolds over time, this research will adopt a longitudinal case study to inductively generate theory of coordinating

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as an organizational process within the federated IT governance structure. Specifically, this research addresses the following questions that will be investigated longitudinally:

- How does the process of coordinating occur over time within a federated IT structure?
- How do contextual influences affect the coordinating process?

1.3   Research Methods

This research adopts the philosophy of critical realism which makes the ontological assumption that the world is real and exists independently of our ability to experience it and the epistemological assumption that our knowledge is historically and socially constructed and thus inherently subjective (Bhaskar, 1978; Mingers, 2004; Pawson and Tilley, 1997; Reed, 2005; Tsoukas, 1989). In federated IT structures the coordinating process involves the sequence of activities or efforts to achieve collaboration between units targeted towards improved organization deployment, use and management of IT resources and capabilities. The focus of this dissertation is to inductively create process theory (Markus and Robey, 1988; Mohr, 1982) which identifies generative mechanisms that help to explain how the coordinating events and contextual influences combine to produce the observed outcomes.

The case study methodology is commonly recommended for the study of process phenomenon (Langley, 1999; Van de Ven and Poole, 1995; Van de Ven and Poole, 2005) and for the realist perspective (Mingers, 2004; Reed, 2005; Tsoukas, 1989). To address the research questions related to the coordinating process in federated IT structures an inductive case study method is an appropriate choice. This study was guided primarily by accepted approaches to building theory from and assessing the quality of case research (Eisenhardt, 1989a; Leininger, 1994).

The research site, known by the pseudonym LargePub, is a public institution located in the southern United States with an annual budget exceeding $1.1 billion, and over 10,000 employees. LargePub offers similar services through 15 major sub-units to over 30,000 customers. LargePub is organized following a federated IT governance model with the Central IT organization (CIT) responsible for the core network infrastructure and enterprise applications, and autonomous divisions and units responsible for local networking and hardware infrastructure, end-user support, and for unit specific application development needs.

The data were generated from the study of two "coordination efforts" at LargePub. A coordination effort is defined as a series of cohesive activities undertaken to achieve a specific, desired outcome that requires collaborative effort. Data collection has taken place over a period of 3.5 years. The primary methods included semi-structured interviews, observations, and review of archival data.

Data analysis has been conducted using accepted qualitative techniques (Eisenhardt, 1989a; Miles and Huberman, 1994; Pettigrew, 1990). The focus was on longitudinal analysis for two IT coordination efforts addressing enterprise level requirements. Prior literature relevant to coordination informed data analysis and the coding followed a stratified approach (Strauss and Corbin, 1998) to generate increasingly abstracted connections in the data through which the underlying mechanisms and contextual factors impacting the empirical events of the coordination process have been exposed.

The results of the coding and subsequent analysis, thick narrative descriptions and detailed coordination timelines have been combined inductively to generate a number of different forms of process theory output. The research has produced a framework of contextual influences that impact the coordinating process as well as an iterative stage model of the

coordinating process. Finally, the research identified shared understanding and lack of unit alignment as two key generative mechanisms that are influential in driving the coordinating process to successful outcomes.

1.4   Contributions

This study of the coordinating process in a federated IT governance structure offers a number of contributions to both theory and practice. Despite the substantive body of research on coordination and coordination mechanisms, a number of calls have been made for new research that takes novel approaches and looks at coordination from many different perspectives (Malone and Crowston, 1994), that identifies the conditions that give rise to coordination within an organization (Smith, Carroll and Ashford, 1995), and the potential to interpret the role of IS in organizations by analyzing dependencies and coordination in situations where nearly identical technologies in comparable settings lead to different consequences (Robey & Boudreau, 1999). This research responds to the need to extend our understanding of the coordination phenomenon.

This dissertation has advanced our understanding by generating theory of coordinating as an organizational process in a federated governance structure. The focus is on the overall organizational level of analysis and views coordinating as a means towards achievement of enterprise-wide objectives. Further this research provides insights about key contextual influences and generative mechanisms that impact this process and shape organizational level coordinating outcomes.

Theory of coordinating as an organizational process is important to the study of IT/IS phenomena because it provides a basis for explicating the effects of coordinating structures on the organizational outcomes that have been observed. For example, research has suggested that

organizations enact coordinating structures for speed, adaptability and learning (Kellogg et al., 2006) and that IT professionals serve a coordination role to facilitate knowledge sharing by acting as brokers across boundaries (Pawlowski and Robey, 2004). Other research has suggested that the application of a variety of coordination mechanisms is a key element for effectively structuring IT activities to nurture relationship networks (Agarwal and Sambamurthy, 2002). While recognizing the process nature of the coordination, these studies identified the structural mechanisms applied. A process theory of coordinating offers the potential to explicate the interaction of the structural mechanisms, coordinating activities, and various contextual influences which interact to produce the observed outcomes and provide insights into how and why the coordinating process evolves over time and coordinating outcomes are achieved.

Lastly, very little research has been published in the IS literature which explicitly claims a realist perspective (e.g. Kirsch, 2004) to the point of being almost invisible (Carlsson, 2003). This research has generated substantive theory answering "how" and "why" questions, the core of the realist orientation, related to the coordinating process by rigorously applying accepted qualitative methods and adhering to the precepts of critical realism. This offers the potential to introduce new research methods for IS researchers.

Practitioners have gained from prior research on coordination mechanisms and the ideas of coordination theory applied to managing processes of interdependent tasks (Malone and Crowston, 1994). The federated IT governance structure is utilized by many organizations today. This structure places greater emphasis on the need to coordinate the development and use of IT/IS infrastructure and software systems across organizational units. Yet the challenges of federated governance are significant and the practitioner literature is replete with stories of insufficient value generated from IT investments, IS incapable of supporting business strategies,

and dissatisfied users. This research has established coordinating as an enterprise process that is necessary to and can be actively managed to achieve successful IT outcomes. Awareness of the iterative, stage nature of the coordinating process, and the contextual and generative mechanisms that impact the process provides practitioners with levers that can be used to produce the desired organization outcomes.

2   Literature Background and Review

Generating theory related to the process of coordinating in a federated IS governance structure, in the absence of prior theory in the literature, is a highly inductive and emergent effort. While prior theory has been used to provide leverage in investigating the coordination phenomenon and inform the data collection and analysis, a research model or hypotheses are not proffered a priori. Rather, the elements of a process theory of coordinating have emerged inductively from an iterative process of data collection and analysis. The relevant literature was used to inform the data collection process and to develop the initial template for data coding. As such, the purpose of this section is to review relevant prior work dealing with aspects of coordination that informed the theory-building undertaken.

This section is structured as follows. First, since the interest of the study lies in understanding coordination in federated IS structures, IS governance will be discussed focusing on understanding federated structures and the importance of coordination within this structural design. Next, the relevant literature on coordination will be reviewed. This includes concepts of information processing theory and the literature on coordination mechanisms including a definition of coordination and the motivations for viewing coordination as a process. Next, elements of the inner and outer context which describe the environment will be presented to generate sensitivity to the myriad of influences that impact the process. Finally, the core aspects of the power and politics literature are presented as a key element of the organizational context that influences coordination.

2.1 Federated IS Governance Structure

In studying the role of IT in organizations the structure of interest is the form of IT governance which describes the distribution of decision making about the use of information technology between the corporate entity and sub-units of the organization (Brown, 1999). IT governance is important to research and to practice because: firms with effective IS governance demonstrate superior financial performance; organizations continue to make large investments in IT and effective governance is critical to ensure value is created; IT is pervasive in most organizations with projects and investments being initiated from all parts of organizations thus requiring effective governance processes to distribute decision making to those responsible for outcomes; and effective IT governance brings together business and technology influences into decision processes offering the potential to make better assessments of the value generated (Weill and Ross, 2004). The impact of IT governance is tangible and substantial to organizations. Organizations with effective IT governance have been shown to have over 20% higher return on assets (ROA) when compared to other organizations in the same industry that have less effective governance (Weill and Ross, 2004).

Additionally, the financial scandals in several large public companies early this decade and issues of information security have generated intense focus on corporate governance processes including IT governance, and have led to a number of federal regulations (e.g. Sarbanes-Oxley Act, Gramm-Leach-Bliley Act, Family Educational Rights and Protection Act, Health Insurance Portability and Accountability Act, US Patriot Act, California SB 1386, etc.) that require organizations to address IT governance processes explicitly and publicly (Wilhide, 2006).

The literature identifies two primary IT resources to be managed through the governance structure: Systems Development and IT Infrastructure (Brown and Magill, 1998; Dixon and John, 1989; Sambamurthy and Zmud, 1999). Three governance forms have been identified based on the distribution of decision making between corporate and the business units related to IT infrastructure and IS use – centralized, decentralized and federated (Brown, 1999; Sambamurthy and Zmud, 1999). These are described in Table 2.1.

Governance Structure	IT Infrastructure	IT Use / Systems Development
Centralized	Corporate	Corporate
Distributed	Sub-Unit	Sub-Unit
Federal/Hybrid	*Corporate*	*Sub-Unit*

Table 2.1 Governance Structures Based on Distribution of IT Responsibilities

A federated IT governance structure refers to a design in which the locus of responsibility for the management of IT infrastructure is largely centralized while the locus of responsibility for the management of systems development is largely decentralized (Brown, 1997; Brown and Magill, 1998; Sambamurthy and Zmud, 1999). This form of hybrid organizational structure is common today (Brown and Sambamurthy, 2001; Scott et al., 2006) and expected to be used by a majority of organizations by 2011 (Scott et al., 2006). Given that designing and managing a federated structure is an imperative for organizations to deal with changing dynamics of the global marketplace (Rockart, Earl and Ross, 1996), it is important to understand IT governance and the ensuing coordination concerns within this context.

IT governance has been defined "as specifying the decision rights and accountability framework to encourage desirable behavior in using IT" (Weill and Ross, 2004, p.2). Given the distribution of management responsibilities for technology infrastructure and IS use between the corporate entity and the sub-units in a federated structure, coordination is required to implement any enterprise-level information system successfully. Thus, coordination at this level is the

process by which decision rights and accountability are implemented within this federated structure. The sub-units share some degree of an organizational environment as established by and with the corporate entity and coordination is a core element of the formal and informal management decision processes within that organizational environment.

The federated governance structure highlights the importance of coordination in achieving organizational outcomes. Consistent with one of the primary drivers for federated governance, autonomous units pursue initiatives to satisfy local requirements and priorities. Resources are requested through the central organization and allocated locally to pursue these priorities. Decentralization of decision processes in the federated structure, absent the counter-balance of effective coordination between autonomous units and the central organization, will likely lead to incompatible IT architectures and infrastructures, failure to satisfy business application needs or integrate data and processes, duplication of projects and demands for resources, and failure to pursue investments with highest value to the enterprise (Weill and Ross, 2004).

These challenges are particularly relevant when organizational units in the federated structure have similarities in products and services, customers, management processes and IT capabilities which form the basis for organizational synergies (Tanriverdi, 2006; Tanriverdi and Venkatraman, 2005). The lack of or ineffective coordination typically results in conflict and intensified political processes due to competition for resources (Strassmann, 2005). Ultimately, failure to establish effective coordination in the federated governance structure can result in wasted resources through duplication and diseconomies of scale, increased costs, degrading of operational excellence through the selection of sub-optimal projects and reduced productivity (ITGI, 2006a; Strassmann, 2005).

Yet, even though the implications associated with ineffective governance are clear, a recent global survey indicated that over 50% of organizations have not implemented an IS governance solution (ITGI, 2006b). Additionally, research by the Meta Group indicated that over 80% of companies in the Global 2000 did not have a formal committee to manage IT governance (SearchCIO.com, 2005). Thus, efforts to more fully understand the role of coordination as a management process in the federated governance structures are important and offer substantial benefits to theory and practice.

2.2   Information Processing and Coordination Mechanisms

2.2.1   Foundations of Coordination

According to information processing theory (IPT) organizations are viewed primarily as information processing entities which deal with uncertainty through the processing of information (Galbraith, 1973). Galbraith (1973) defines uncertainty as the gap between the amount of information required to complete a task and the amount of information available in the organization. When uncertainty is high more information must be processed by decision makers to achieve a desired outcome. The amount of information needed is a function of the diversity of outputs (e.g., number of products, services, clients, etc.), the number of input resources, and the level of goal difficulty.

IPT suggests a progression of methods for dealing with uncertainty and increased information processing requirements (Galbraith, 1973). The simplest method is the creation of standard rules, programs, and procedures. As the number of exceptions to these standards increase, organizations evolve a hierarchy of managerial roles with the information and authority to take decisions on exceptions. To respond to increasing volumes of exceptions moving up

through the management hierarchy, organizations will seek to move decision making to the point of information creation and increase discretion at lower levels. The decision making at lower levels are framed by performance targets and goal setting which brings a degree of consistency to the decisions of various interdependent groups.

These basic approaches can handle only so much uncertainty. In high uncertainty environments, organizations can reduce uncertainty by 1) reducing the need for information processing through the creation of slack resources or self-contained tasks, or 2) increasing information processing capacity through the implementation of vertical information systems or the creation of lateral relationships (Galbraith, 1973). Creating slack resources simply reduces the level of performance required. Self-contained tasks provide work groups with all the resources needed to complete the task thus reducing information requirements by eliminating the uncertainty associated with task coordination with other groups. Vertical information systems increase the capacity of decision makers by simplifying the data collection process and conveying required information to the right decision point at the right time.

Creating lateral relationships generates additional information processing capacity within an organization by establishing lateral processes that facilitate the flow of information, communication and decision making across organizational boundaries (Brown, 1999; Galbraith, 1973). Lateral relationships are necessary to achieve organizational objectives such as the implementation of an enterprise information system, efficient and effective IT infrastructure or establishing information security. Thus the creation of these lateral relationships, through the implementation of various coordination mechanisms, is central to research on coordination in organizations.

2.2.2   Coordination Defined

Coordination has been widely discussed in the literature yet remains conceptually unclear. Coordination has been defined both as a state or condition of an organization and as a process (Cheng, 1984). A plethora of definitions of coordination have been offered in the literature. A number of widely used definitions for both the state and process orientations of coordination are presented in Table 2.2.

Definition	Source
Coordination means integrating or linking together different parts of an organization to accomplish a collective set of tasks.	Van de Ven, Delbecq and Koenig, 1976, p.322
Coordination is managing dependencies between activities.	Malone and Crowston, 1994, p.90
Coordination is the process that manages interdependencies among activities.	Fan, Stallaert and Whinston, 2003, p.2
From the perspective of network theory "…coordination [is] an activity that is fundamentally about the connections among interdependent actors who must transfer information and other resources to achieve outcomes."	Gittell and Weiss, 2004, p.132
Integration (or coordination) is "the [state of collaboration] that exists between departments and the process by which this state is achieved".	Lawrence and Lorsch, 1967, p.11
Coordination is defined as the extent to which the work activities of organizational parts/members are logically consistent and coherent. (It) concerns the degrees of functional articulation (or unity of effort) between various parts of the organization.	Cheng, 1984, p. 832-3; Cheng, 1983
Coordination is the process through which people arrange actions in ways that they believe will enable them to accomplish their goals.	Quinn and Dutton, 2005, p.36

Table 2.2 Definitions of Coordination

A number of common elements can be extracted from this spectrum of definitions. First is the concept of interdependence of tasks, activities or work. "[Without] interdependence, there is nothing to coordinate," (Malone and Crowston, 1994, p.90). Three types of task

interdependencies are traditionally recognized in the organizational theory literature including 1)

pooled interdependence – each unit contributes to the overall organization by completing its

tasks satisfactorily and is supported by the organization as other units fulfill their tasks ; 2)

sequential interdependence – one unit is dependent on the outputs of another unit before it can

accomplish its tasks; and 3) reciprocal interdependence – each unit is dependent on the other to

accomplish its assigned tasks (Thompson, 1967). Within the federated IT structure, a fourth type

of interdependence has been suggested based on the similarity of task characteristics and

environment between autonomous units which motivates coordinated action to achieve

efficiency and organizational level outcomes (Williams, 2006).

Additionally, in developing the concepts of Coordination Theory, Malone & Crowston

(1994) suggested four bases of interdependency that must be managed through coordination: 1)

shared resources – multiple activities share some limited resource; 2) producer/consumer

relationships[2] – a situation where one activity produces something used by another activity; 3)

simultaneity constraints – activities that must occur at the same time or cannot occur at the same

time; and 4) task/subtask dependencies – a group of activities are all subtasks for achieving some

overall goal.

As it relates to the federated IT governance structure, the focus becomes the nature of the

interdependence that exists between units in the organization. Clearly the concept of pooled

interdependence exists in the federated structure in that the enterprise and the individual units are

dependent on all other parts of the organization. In this view, the autonomous subunits are not

dependent at the task level as it relates to the creation of products or services. Each sub-unit

operates autonomously serving distinct markets with products or services that are created within

the unit. Yet the dependencies of shared resources must be managed across the units and central

enterprise. And the potential efficiencies of modern IT solutions in networking and enterprise software systems require coordination in implementations at the unit level thus establishing some basis of dependency.

A second common element in the definitions of coordination relates to the idea of outcome achievement. Ultimately people, resources, and actions must be coordinated for a purpose. In the context of the federated governance structure, the outcome of interest derived from coordinated efforts relates to the enterprise. Thus, the focus is achievement of organizational outcomes while simultaneously meeting the local needs of the individual subunits.

The last common element is the concept of process. The dynamic nature of environments confronting organizations today makes the idea of a state of coordination ephemeral at best. An organization may establish a state of coordination between units but that can be maintained only to the extent that the environment is stable, work tasks and activities are stable, products and services do not change, and the means of coordination are maintained (Morgan, 1986). The focus then becomes the process of establishing and maintaining coordination efforts between organizational units.

Thus for the purposes of this research coordination is defined as *the process of integrating information, resources, activities and people across different interdependent parts of an organization to accomplish enterprise goals*.

2.2.3   Reasons Organizations Coordinate

It has been suggested that one reason organizations exist is because they enable coordination to occur effectively (Gittell, 2002; Kogut and Zander, 1996). Organizations create lateral coordination capabilities to deal with uncertainty (Galbraith, 1994) and coordination

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[2] This is very similar to Thompson's ideas of sequential and reciprocal interdependence.

mechanisms are specific ways in which different parts of an organization are linked together to accomplish objectives collectively or to achieve consistency (DeSanctis and Jackson, 1994; Tsai, 2002). The level of uncertainty is impacted by the organizational environment (Brown, 1999; Mohrman, 1993) through the influences of factors such as global competition, customer demands, the economy and budgetary constraints, technological changes, and governmental regulation. The extent to which these factors change and become significant influences on the organization will motivate new and different efforts to coordinate so that requisite information is available to inform management decision processes.

Within the federated IT governance structure, various motivations underlie coordination efforts: achievement of synergies and cost reduction in IT infrastructure, enterprise solutions, and management processes; data integration; improved information security; knowledge sharing; and coalition formation. Specifically, application of common IT infrastructure, including networking technologies and software systems, and sound IT management processes across units in a multi-business organization can reduce the costs of duplication and redundancy while offering to enhance the overall value generated through any one unit (Tanriverdi, 2006). Exploiting these cross-unit synergies is a significant determinant of organizational performance in multi-unit organizations (Tanriverdi and Venkatraman, 2005).

Effective coordination is required between the central unit and autonomous subunits in the federated structure to implement shared IT infrastructure, enterprise software solutions such as ERP or CRM, and business intelligence/data warehouse systems. Organizations must balance the benefits of these solutions to integrate data and business processes across unit boundaries with the loss of flexibility to respond at the unit level and the costs of creating these enterprise solutions (Goodhue, Wybo and Kirsch, 1992b). Coordinating efforts are required to support

these enterprise initiatives and should address the interdependencies that exist between the various organizational units, and resolve any gaps in the demands of task complexity and the task environment which may impact the efficacy of an integrated enterprise IT solution.

Knowledge management has been recognized as a crucial process in modern organizations and has been widely addressed in the IS literature (see Alavi and Liedner, 2001 for a review). Sharing information and knowledge across units in an organization help to achieve a variety of objectives including strategic alignment (Rockart et al., 1996; Sabherwal and Chan, 2001), control of information systems implementations (Kirsch, 2004), boundary spanning (Kellogg et al., 2006) and collaboration (Brown, 1999), and innovations through organizational learning and the creation of new knowledge (Leonard-Barton, 1995). "Organizational learning processes inherently involve links across an organization," (Mohrman, 1993, p.110). Thus coordination of people, resources, and communications is central to any effort to manage and share knowledge across organizational units and particularly for units in a federated structure.

Lastly, organizational units seek to coordinate in an effort to exert influence or power within the organizational structure (Pfeffer, 1981; Salancik and Pfeffer, 1974; Saunders, 1981). Coalitions of organizational units form to influence decision processes and pursue common agendas (Cyert and March, 1965). Less influential units will seek to align with others perceived to possess greater power in order to express a voice in decision processes and impact decision processes (Pfeffer, 1981). Resource allocation in a multiunit organization is an inherently political process (Salancik and Pfeffer, 1974) and is very likely to impact units in a federated structure. The ubiquitous reality of politics motivates units to pursue coordination with other units throughout an organization. Additional theoretical background on the bases and

determinants of power and conditions under which power and politics are likely to emerge is presented below.

2.2.4   Prior Research on Coordination Mechanisms

A variety of structural coordination mechanisms for establishing lateral relationships between different parts of the organization have been identified (Daft and Lengel, 1986; Galbraith, 1973; Tushman and Nadler, 1978). The appropriate choice of mechanism depends on the level of internal and external uncertainty (Tushman and Nadler, 1978), the ambiguity and equivocality of information available (Daft and Lengel, 1986), and the ability of the organizational structure to process the required information (Galbraith, 1973). A continuum of coordination mechanisms have been identified to establish lateral relations across organizational boundaries including direct contact, liaisons, task forces and committees, integrator roles, teams, and matrix structures (Daft and Lengel, 1986; Galbraith, 1973; Tushman and Nadler, 1978).

Based on a comprehensive literature review, Brown (1999) proposed a framework of four mechanism categories: formal groups, formal roles, informal networking practices and cross-unit human resource practices. Though other frameworks have been offered for categorizing coordination mechanisms (e.g. DeSanctis and Jackson, 1994; Sabherwal, 2003), the Brown (1999) framework is used here due to its clarity and parsimony. The categories and example mechanisms for each are presented in Table 2.3.

Category	Description
Formal Groups	Bodies or groups established formally with specific integration or oversight objectives. Examples: steering committees, standing teams.
Formal Roles	Formal positions with responsibility to link activities between organization units. Examples: cross-unit integrators, corporate oversight roles.
Informal Networking	Non-structural activities to create links and relationships

Practices	between individuals in cooperating units. Examples: physical co-location, interdepartmental events, networks.
Cross-Unit Human Resource Practices	Human Resource management practices to foster and improve efficacy of cross-unit partnerships. Examples: job rotations, input to performance reviews.

Table 2.3 Categories of Coordination Mechanisms (adapted from Brown, 1999)

Prior empirical IS research on coordination mechanisms has focused primarily on identifying the particular mechanisms being used, assessing the efficacy of particular coordination mechanisms, and identifying the most influential contextual factors as was presented by Brown (1999). A review of the coordination literature is presented in Table 2.4. This review used Brown's work (1999) as a starting point and is supplemented with articles identified through a search of the management and IS literature for coordination related keywords, focusing primarily on articles published since 1995.

Recent research has investigated coordination mechanisms from a variety of perspectives including as design elements of an extended platform logic in IT governance (Schwarz and Hirschheim, 2003); in portfolios to support strategic IT capabilities (Brown and Sambamurthy, 2001); related to the success of internal and outsourced IS implementations (Sabherwal, 2003; Sharma and Yetton, 2003); within the context of relational coordination networks (Gittell, 2002); as the basis for modeling decision making in decentralized supply chains (Fan et al., 2003); and as vehicles for information and knowledge sharing (Kellogg et al., 2006; Pawlowski and Robey, 2004; Tanriverdi, 2005). As shown in the coordination literature review, this recent research has also largely dealt with the efficacy or role of specific coordination mechanisms in the context of a particular organizational objective or contextual environment.

Study	DVs	IVs	Contextual Factors	Study Methodology
Van de Ven et al., 1976	Coordination Modes: coordination by feedback – personal & group modes; coordination by programming – impersonal mode	Task Uncertainty, Task Interdependence, Work Unit Size		Survey of work unit managers (n=197) & unit personnel (n=880); interviews of mgrs
Cheng, 1983	Output Performance: Output Quality & Quantity	Coordination (consistent & coherent work activities), Interdependence (moderator)		Survey and Interview (n=127)
Cheng, 1984	Output Quality, Quantity	Uncertainty, Coordination (consistent & coherent work activities)		Survey (n=111)
Drury, 1984	Steering Committee (SC) effectiveness	SC structural and operating alternatives		Mailed Survey Senior IT Executives (n=144)
McKeen and Guimaraes, 1985	Project Portfolio (IS projects selected for implementation)	SC use	Organization politics	Field Study - Interviews MIS & business managers (n=32 companies, 92 projects)
MacKenzie, 1986			power & politics	Conceptual theory building
Doll and Torkzadeh, 1987	MIS SC, Formalized Planning Practices	Firm Size		Mailed Survey IS Directors (n=456)
Gupta and Raghunathan, 1989	IS Planning (strategic & systems planning, planning implementation)	SC use	Industry	Survey (n=178)
Blanton, Watson and Moody, 1992	IT Support Effectiveness (availability, use, perceived effectiveness of IT products and services)	IT Org Structure (groupings, coordination devices, management control)		Case study (n=2)
Clark, 1992				Structure interview of senior IS exec (n=30)
Raghunathan, 1992	IS & org strategic planning linkage; importance of IS strategic planning; strategic planning of IS resource deployment; effectiveness of IS	CEO membership on IS SC		Survey IS Managers (n=62)
Torkzadeh and Xia, 1992	Telecom planning practices, organization support for telecom	Telecom SC use, Firm Size (moderator)		Survey (n=137)
DeSanctis and Jackson, 1994				Case Study (n=1)
Earl and Feeny, 1994				Case studies, Sr. Executive Interviews
Sabherwal and Kirs, 1994	Alignment of CSFs & IT Capability; IT success	Integration (coordination) – quality collaboration between units to achieve unified effort		Survey (n=244)
Iacono, Subramani and Henderson, 1995				Non-participant Observation (n=4)

Study	DVs	IVs	Contextual Factors	Study Methodology
Brown and Ross, 1996				Case study (n=12) w/ interviews in other orgs (n=12)
Rockart et al., 1996				Case study (n=7)
Ross, Beath and Goodhue, 1996				Case study (n=7)
Clark, Cavanaugh, Brown and Sambamurthy, 1997				Case study (n=1)
Brown, 1999			IS governance structure	Positivist Case Study (n=2) with semi-structured interviews and survey
Sambamurthy and Zmud, 1999	IS governance mode (central, decentralized, federal)	contingencies (conflicting, reinforcing, dominating) related to corp governance, scope & absorptive capacity		Case study (n=35)
Andres and Zmud, 2001	Software Development Success (task process satisfaction, team productivity)	Task interdependence, coordination strategy, goal conflict		Laboratory experiment (2x2x2 design)
Brown and Sambamurthy, 2001	Strategic resource alignment, producer/consumer partnering, knowledge integration	Coordination mechanisms	Industry	Field Survey w/ semi-structured interviews (n=38)
Gittell, 2002	Relational Coordination – coordination through a web of relationships of shared goals, shared knowledge & mutual respect (mediator), Performance	Routines (pre-specify tasks) Boundary Spanners (cross-functional liaisons) Team Meetings Input Uncertainty (moderator)		Mailed surveys, telephone interviews (n=9 hospitals, 45 administrators, 338 providers, 878 patients)
Tsai, 2002	Inter-unit knowledge sharing	Coordination mechanisms (centralization, social interaction), inter-unit competition (moderator)	Multi-unit organizations, unit size, geographic proximity, unit strategic relatedness	Questionnaire surveys (n=1 org,
Sabherwal, 2003			Outsourced IS development; efficiency, equity, relational quality, uncertainty, system complexity & criticality	Two Qualitative Studies (n=7 cases, n=4 cases)
Schwarz and Hirschheim, 2003				Case study (n=6)

Study	DVs	IVs	Contextual Factors	Study Methodology
Sharma and Yetton, 2003	Implementation Success	Management Support, Institutional & Task Context - uncertainty (moderator)	Power structures	Meta-analysis (n=22)
Gittell and Weiss, 2004			Competition, Cost pressures	Case Study (n=1)
Pawlowski and Robey, 2004			Governance structure, boundary spanning shared systems	Interpretive Case Study (n=1 org, 23 interviews)
Kellogg et al., 2006			Post-bureaucratic organization form; high-speed, uncertain, and rapid-change environments	Inductive, theory-building Case Study (n=1)

Table 2.4 Relevant Coordination Literature [3,4]

Study	Formal Groups	Formal Roles	Informal Networking Practices	Cross-Unit HR Practices	Findings
Van de Ven, Delbecq, & Koenig, 1976	Group Coordination Mode (scheduled meetings)		Personal Coordination Mode (personal communications); Group Coordination Mode (unscheduled meetings)		As task uncertainty increases, impersonal mode decreases while horizontal personal and group modes increase. As task interdependence increases, overall use of coordination mechanisms increase. As work unit size increases, use of impersonal modes increase. Under norms of rationality, organizations and work units seek to minimize coordination costs.
Cheng, 1983					Interdependence is correlated with coordination, and moderates relationship between coordination and output quality and quantity.
Cheng, 1984					Higher uncertainty leads to more positive relationship between coordination and output quality, but less positive between coordination and output quantity.
Drury, 1984	Steering Committee				SC benefits depend on user representation (level of chairperson) and operational mode (how decisions reached).

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[3] Research on coordination in multinational organizations or other global organizational forms is not included in this literature review.

[4] Articles on IT Relatedness were not included in the literature review of Coordination Mechanisms (Tanreverdi, 2005, 2006). While it is suggested that IT Relatedness creates an IT-based coordination mechanism, this construct is interpreted as describing dimensions of IT that generate the need and provide the basis for cross-unit coordination.

Study	Formal Groups	Formal Roles	Informal Networking Practices	Cross-Unit HR Practices	Findings
McKeen & Guimaraes, 1985	Steering Committee				SC tends to select projects that are large, focused on lower level operation applications, with little vertical integration, supported by formal proposals with cost/benefit analysis, and demonstrating tangible & intangible benefits.
MacKenzie, 1986	Structured virtual positions (committees, task forces, forums, arenas)		Unstructured virtual positions (ad hoc groups outside formal org structure).		Propose hierarchies of interdependence uncertainty & power as the control of interdependence uncertainty Virtual positions are arenas for power struggles in organizations.
Doll & Torkzadeh, 1987	Steering Committee				Firm size & SCs related to more formalized planning processes (written plans & budgets)
Gupta & Raghunathan, 1989					SC have high to medium impact on IS planning factors: integration of IS into business, hardware integration, achieving planned goals, coordination of IS planning efforts.
Blanton, Watson & Moody, 1992	Formal Committees		Informal meetings		Formal coordinating committees between units associated with more effective IT support.
Clark, 1992	Project Steering Committees	Integrator	Advisor	Training IT in business	Dispersion of central IS resources (vs. decentralization) and SC with budget & operational project control are common. IT manager emerging as integrator and advisor.
Raghunathan, 1992	Steering Committee				CEO participation in SC improves IS alignment w/ organization plans, perceived importance & effectiveness, but no impact on IS resource allocations
Torkzadeh & Xia, 1992	Steering Committee				SC use related to firm size, integrated planning practices and top management support.
DeSanctis & Jackson, 1994	Cross-functional teams		Annual IT Conference, Quarterly Forums, IT networks		Evolution of increasingly complex design structures for horizontal coordination, utilizing various communication technologies, support more sophisticated modes of coordination.

Study	Formal Groups	Formal Roles	Informal Networking Practices	Cross-Unit HR Practices	Findings
Earl & Feeney, 1994	Executive Retreats, CIO participation in business improvement Task Forces/Working Groups	CIO as member of executive management team	Face-to-face meetings between CIO and CEO & other business executives	Formal procedures for business feedback on all IT actions, and from IT on all requests/complaints.	CIO attributes and actions lead to evaluation of IT as strategic asset or cost.
Sabherwal & Kirs, 1994	task forces, interdepartmental committees	liaison personnel			Proposed relationships between coordination and alignment and IT success not supported empirically.
Iacono, Subramani & Henderson, 1995		Relationship Manager (boundary spanner)			Relationship managers work in unstructured, decentralized environments focusing on integrating and reconfiguring processes between IS & clients. Highly focused on informal information sharing and coordinating activities.
Brown & Ross, 1996	Top Management Advisory Committees, IS Division Head Standing Committees, Standard Setting Committees	Account Managers	Colocated Staff, informal partnerships, mentors	Business input to IS evaluations, cross-function job transfers, central & division IT job transfers, Matrix Reporting, internships	Need to use portfolio approach to managing coordination mechanisms. Coordination based on structural overlays & process enhancements.
Rockart, Earl & Ross, 1996	IT Steering Committees (composed of senior business & IT managers)	Account Managers	interpersonal relationships		Emergence of federal IS governance structures. Development of strong interpersonal relationships between IT and business line managers critical to integrating both business & technology into effective solutions
Ross, Beath & Goodhue, 1996	IT Steering Committees (composed of senior business & IT managers)		interpersonal relationships	Colocation of IT staff into business units to promote trust & understanding	SCs effective in setting IT priorities & interpersonal interactions build business-IT partnerships that improve planning, implementations & use of existing systems.
Clark, et al, 1997	IS-Business Line Steering Committee; Skill Centers (Centers of Excellence); Engagement Delivery Teams	CoE Managers, Account Managers, Delivery Managers	Quarterly meetings of Account and Delivery Managers	Appraisal process for IS based on customer satisfaction & project completion, include customer input on appraisals	CoE design including SCs, skill centers, and delivery teams supported by various formal integrator roles, informal networking, and appraisal processes support IT-change readiness and to improve project delivery and increase customer satisfaction. Coordination mechanisms should be reviewed & changed as situation changes.

Study	Formal Groups	Formal Roles	Informal Networking Practices	Cross-Unit HR Practices	Findings
Brown, 1999	Steering Committees, Standing Teams	Cross-unit integrators, corporate IS oversight roles	Physical colocation, interdepartmental events, IT networks	Job rotations, Input to performance reviews	Organizationss with centralized & federal IS governance use multiple mechanisms (all types) to facilitate BU:IS and IS:IS coordination by eliminating communication barriers. SC effectiveness is dependent on governance structure - SC for IS:IS collaboration important in federal whereas CIO SC for BU:IS is not
Sambamurthy & Zmud, 1999					Multiple contingencies related to corporate governance mode, scope, and absorptive capacity acting in reinforcing, conflicting and dominating ways influence mode of IT governance.
Andres & Zmud, 2001	Scheduled Design Meetings		1-on-1 unscheduled interactions (organic mode)	Physical separation (mechanistic mode)	Organic coordination related to higher process satisfaction and productivity, and was superior to mechanistic mode for higher task uncertainty.
Brown & Sambamurthy, 2001	Executive council, division steering council, project steering council, IT mgt council, IT standing team, task force	Account manager, process mgr, enhanced systems director, client liaison, division info officer	1-1 contacts, periodic briefings or conferences, co-location	Training & development, temporary job rotation, rewards & appraisals	Constellations of coordination mechs used differ based on governance mode. Coord mechs are used to nurture strategic goals identified. Integrator roles & business councils used mainly for strategic resource alignment. Formal groups used in federal mode to link IT staff across boundaries.
Gittell, 2002	Team Meetings	Boundary Spanners, Routines	Information Systems		Relational Coordination mediates relationships between Routines, Boundary Spanners, Team meetings and performance. Effectiveness of each coordination mechanism is moderated by input uncertainty (patient differences).
Tsai, 2002	Centralized Management		Social Interactions		Formal coordination through centralized management is negatively related to knowledge sharing, while informal coordination is positively related to KS.

Study	Formal Groups	Formal Roles	Informal Networking Practices	Cross-Unit HR Practices	Findings
Sabherwal, 2003[5]	Coordination by formal mutual adjustment (e.g., coordination committees, design review meetings, status review meetings)	Coordination by standards (e.g., compatibility standards, data dictionaries, design rules, etc.); Coordination by plans (e.g., delivery schedules; requirements specs, sign-offs)	Coordination by informal mutual adjustment (e.g. co-location, impromptu communications, informal meetings, etc.)		Vendors & clients have preference for different types of coordination mechanisms. Uncertainty, efficiency and relational quality all impact choice of coordination mechanisms & changed over course of projects. System attributes of complexity & criticality found to influence coordination mechanisms. Clients prefer hierarchical structure w/ coordination by mutual adjustment, whereas vendors prefer market structure based on impersonal formal coordination.
Schwarz & Hirschheim, 2003	CIO forum, Managing Directors Committee, Global Governance Committee, technical computing councils, IS review leadership team	CIO on Management Committee, account executive		Bonuses in IT tied to BU performance	Relational architectures not related to success or BU perception of IT. Focus is not on presence of particular mechanisms, but on management of relationships so that how structures work impact success and IT-BU relationships.
Sharma & Yetton, 2003					When task interdependence is high, management support is positively related to implementation success, but has little impact for low interdependence. Coordination mechanisms are a key aspect of management support.
Gittell & Weiss, 2004	Scheduled meetings, Inter-organizational Task Force	Routines, Boundary Spanners	Information Systems, Unscheduled meetings		All mechanisms have positive impact on performance outcomes. More complex mechanisms did not replace simple ones but were made more effective by simpler mechanisms. Inter-organizational design can utilize the same coordination mechanisms.

[5] Sabherwal (2003) offered a different typology of coordination mechanisms. I have mapped this typology to the Brown (1999) categories but the categories do not match precisely due to overlaps and inconsistencies in how certain coordination mechanisms were placed in the two schemes.

Study	Formal Groups	Formal Roles	Informal Networking Practices	Cross-Unit HR Practices	Findings
Pawlowski & Robey, 2004	Scheduled meetings	Business technologists	1-on-1 interactions, unscheduled meetings		IT professionals act as brokers in organizations facilitating knowledge sharing by crossing boundaries, surfacing & challenging assumptions, translating & interpreting, relinquishing ownership of information
Kellogg, Orlikowski & Yates, 2006			Representation, Display and Assembly practices via Intranet, email system, customer extranet and various IT tools		Organization members engage in many coordination practices and enact a coordination structure to coordinate across unit boundaries while facilitating adaptability, speed and learning. Coordination causes issues of social & role identity, control of work practices, and accessibility. Metaphor of trading zone applied view coordination as performative, emergent in recurrent actions, and provisional and ongoing.

Table 2.4 Relevant Coordination Literature (continued)

A conceptual model of coordination, derived from a synthesis of the coordination literature review, is presented in Figure 2.1. The literature generally presents a variance-based view of coordination in which uncertainty, interdependence and a variety of other environmental factors determine the selection of one or more coordination mechanisms and how these mechanisms are implemented (i.e. participants, decision authority, structure). While some research has demonstrated a direct relationship between the use of specific coordination mechanisms and organizational outcome, typically the use of specific coordination mechanisms is related to the realization of a state of coordination typically interpreted as effective coordination of activities. Research has indicated that the relationship between mechanism use and coordination is moderated by the characteristics of the relationship between coordinating units (Tsai, 2002; see also Tanriverdi, 2005). The establishment of a state of effective

coordination is related to the achievement of various organizational outcomes which are
influenced by the level of uncertainty and interdependence.

While presented in variance terms, the literature clearly indicates that the impact of
environmental factors, choice of mechanisms, quality of the state of coordination and the
outcomes achieved evolve over time – that in fact the coordination phenomenon is dynamic in
nature (Clark et al., 1997; DeSanctis and Jackson, 1994; Gittell and Weiss, 2004; Kellogg et al.,
2006). The variance focus in the literature limits the ability to understand how and why the
various contextual factors influence mechanism choice and sequencing, how coordination is
achieved and maintained over time under various conditions, and how coordination efforts
produce enterprise outcomes.
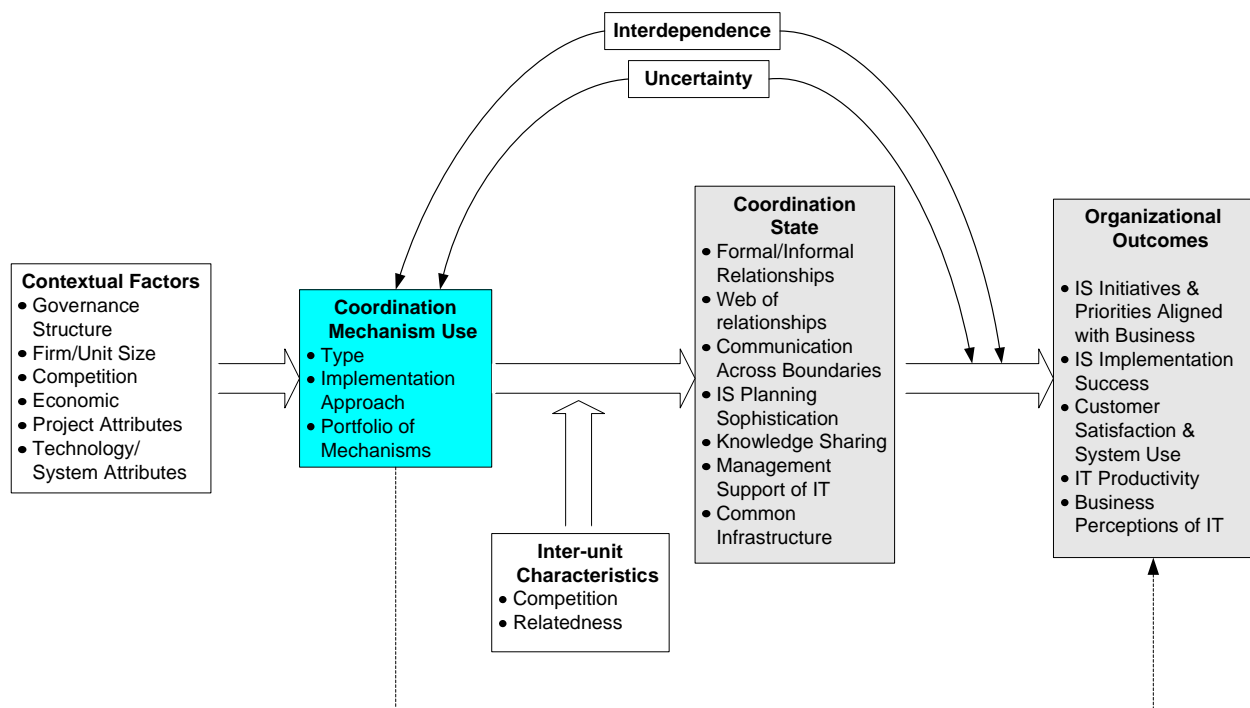
Figure 2.1 Conceptual Model of Coordination

The variance view identifies significant structural and contextual factors that influence
coordination mechanisms and the extent to which the activities between organizational units are

coordinated. Yet the literature provides limited insights into how these mechanisms operate or how the structural and contextual influences generate the coordinating outcomes. For example, management support is identified in the literature as important to the effective use of committees yet it is not clear how this support is manifest in terms of achieving the desired outcomes or under what conditions it is necessary to be activated. Coordination mechanisms are employed in combinations, yet the existing literature offers limited insights into how these mechanisms interact and how the actions of participants within the web of inter-unit relationships influence outcomes. A process view of coordination that acknowledges the evolving nature of the phenomenon is not superior to the variance perspective but rather complimentary. This perspective offers the opportunity to identify and explicate how the various coordination mechanisms operate and the generative influences that drive the outcomes achieved.

2.2.5   Coordinating as a Process

Given the dynamic and evolving nature of coordination, a focus on the use of specific lateral mechanisms does not provide sufficient perspective to understand the realization of coordinated outcomes on an enterprise basis in a federated IT structure. Any comprehensive effort at coordination will involve the use of a portfolio of coordination mechanisms which are applied in various ways over time and which are path dependent and are impacted by a number of contextual influences. The necessary perspective comes from looking across an organization at the range of coordinating activities that are utilized to achieve an enterprise outcome, how the efficacy of certain coordination attempts influences the choice of subsequent coordination activities, and how organizational and environmental contextual influences impact the unfolding sequence of coordinating activities. In other words, additional insights are available by viewing

coordinating, not just as the implementation of a variety of mechanisms, but rather as an ongoing

organization process. The prior definition of coordination specifically recognizes this aspect of

the coordination phenomenon. This research endeavors to extend our understanding by

investigating the *process of coordinating*, efforts to achieve coordinated enterprise outcomes in

the federated IT governance structure, and how this process changes over time. This view of the

process of coordinating is presented in Figure 2.2. The conceptual model of coordination is

extended to demonstrate that the coordination state is constantly changing due to the iterative

interactions between coordination activities, unit characteristics, and various internal and

external contextual factors.
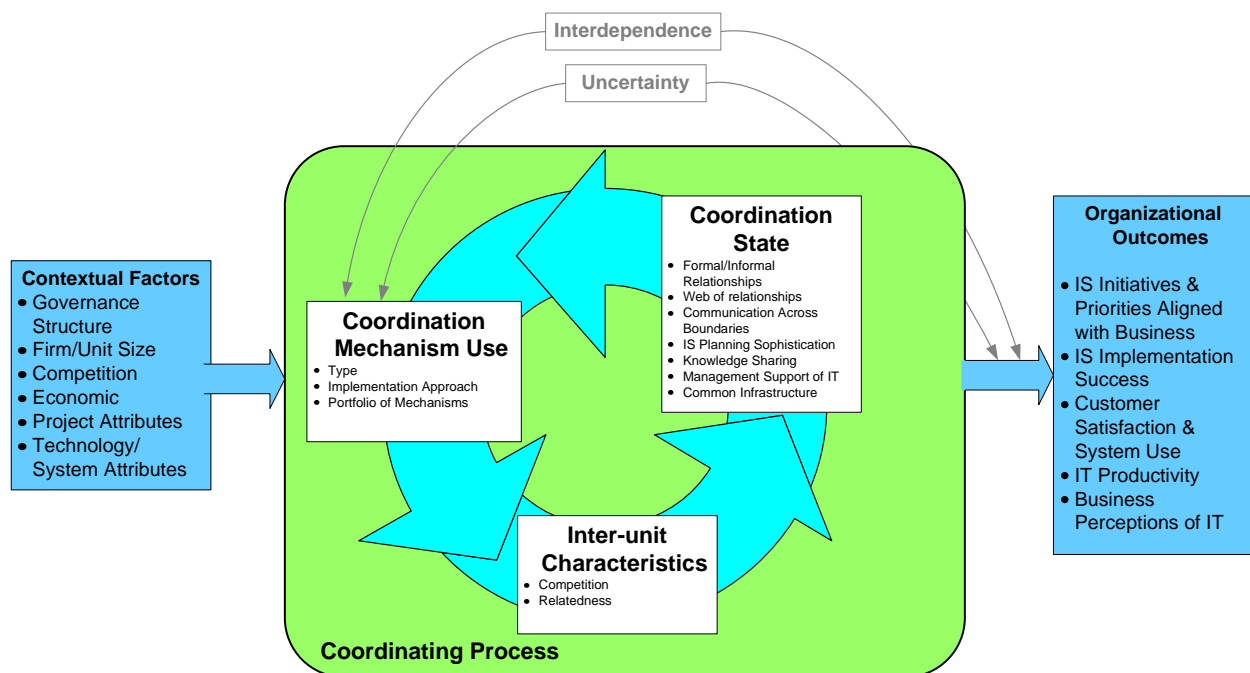
Figure 2.2 The Process of Coordinating

Organizations have been described as a portfolio of processes which include

entrepreneurial, coordination and renewal processes (Ghoshal and Bartlett, 1995). Work,

behavioral and change processes have been identified as key organizational processes within this

portfolio (Garvin, 1998). Coordination is conceptualized as an overarching organizational process that includes multiple work, behavioral and change processes that are involved in implementing and managing the development, implementation and support of IT within the federated governance structure.

2.3   Contextual Influences Impacting the Coordinating Process

As demonstrated in the literature review, a variety of contextual influences have been shown to impact coordinating processes in an organization. Political power is a critical contextual influence that can fundamentally alter rational approaches to coordinating (Goodhue et al., 1992b) and will be discussed in detail below. Many other contextual influences will impact which mechanisms are activated, how they operate, and the efficacy of coordination efforts. Thus, a variety of contextual factors must be considered when investigating the process of coordination. The literature on contextual influences is expansive and a full review is beyond the scope of this research. Rather, the focus is to become sensitized to a variety of influences that may impact the coordinating process.

The contextual influences can be divided into inner and outer organizational contexts (Pettigrew, 1992). The outer context includes economic, social, technological, legal, political, competitive and industry/sector environments (Hall, 1972; Pettigrew, 1992). These aspects of environment are external to the organization but shape the context within which the organization operates and can have a dramatic impact on how organizational processes are created and function.

"Inner context refers to the inner mosaic of the firm; the structural, cultural and political environments," (Pettigrew, 1992, p.9). The pertinent aspects of power and politics are discussed

in the next section. The structural environment is manifest into the explicit, formal reporting

relationships and decision making structures and processes established by management.

Particularly in the federated governance structure, coordination efforts are used bring together

people and parts of the organization which do not share relationships in the formal structure.

Thus it is appropriate to specify the formal structures to develop an understanding of how these

alter efforts to coordinate people, resources, and decision-making across organizational units.

Culture is the final aspect of the inner context. Organizational or corporate culture has

been studied broadly and covered extensively in the literature. A review of the culture literature

is beyond the scope of this dissertation. Rather it is appropriate to identify the basic concepts of

culture that may provide leverage in understanding the coordination process. Culture has been

defined as:

> "The pattern of basic assumptions that a given group has invented, discovered, or
> developed in learning to cope with its problems of external adaptation and internal
> integration, and that have worked well enough to be considered valid, and therefore, to be
> taught to new members as the correct way to perceive, think, and feel in relation to these
> problems," (Schein, 1984, p.3).

Identifying key aspects of the organizational culture will clarify the nature of the coordinating

process and how these efforts evolve over time.

2.4   Power and Politics

Through the lens of power and politics, decision making in organizations can be seen as

the interplay of various participants reconciling differing goals and objectives (Cyert and March,

1965; Pettigrew, 1972; Pfeffer, 1981). Power has been defined as the ability to achieve or realize

one's preferred actions when confronted by resistance and opposition to those preferences

(Pfeffer, 1981). Power is a function of individuals or groups, and is context dependent. Power is

also the potential to act or to achieve one's desires where politics is consider power in action, the

application of power to a specific situation (Pfeffer, 1981). The primary determinants of power have been identified as the importance of the role of the actor, how much others depend on the actor, the actor's ability to provide critical resources, the actor's ability to cope with uncertainty, the inability to replace an actor, and the actor's potential to affect organization decision processes (Pfeffer, 1981). Similarly on an organizational level, a unit derives power from its position in the overall workflow, the extent to which it creates information and controls its distribution, the amount of resources controlled, and it formal authority to take decisions (Robey, 1986).

These determinants of power are relevant to the federated IT structure due to the dynamic nature of interactions and relationships between the various organizational units. Central IT will take significant control of resources and decision-making for shared infrastructure and services thus creating some degree of control over and dependency by autonomous units. To varying degrees the head of the central IT function will have some influence over resource allocation decisions and priorities. Some units in the federated structure may control substantial resources or possess strategic value providing significant influence over decision processes. The extent to which the various units and leaders have power to influence the organization will depend on the specific organization context and the nature of the environment at any given point in time.

Within organizations certain conditions are likely to lead to the use of power in decision making including interdependence between actors or units, differing or conflicting goals, scarcity of shared resources, and differing beliefs about cause and effect relationships (Pfeffer, 1981). Markus applied Pfeffer's concepts to identify the conditions most likely to lead to power and politics having a significant impact on information systems in organizations. Specifically, this lens is most helpful when there is disagreement among participants about the nature of the IS

problem, in the face of uncertainty about the efficacy of the proposed IS to address the problem, and when the bases of power are valued and limited (Markus, 1983). Markus also suggested that these conditions were most likely to exist when the information system is distributed horizontally in an organization involving many different subunits and users.

While these conditions for the involvement of power and politics are helpful to assess the contextual influences at play in coordination efforts, additional leverage can be obtained by understanding the nature and sources of the power being applied. French and Raven provide the basic taxonomy for assessing power (French and Raven, 1959) and will be used here as subsequently modified (Pettigrew, 1972; Yukl, 2002). The taxonomy includes reward, coercive, legitimate, expert, referent, information, and ecological powers and is presented in Table 2.5.

Power Type	Description
Reward	Target person complies to obtain rewards controlled by agent.
Coercive	Target person complies to avoid punishments controlled by agent.
Legitimate	Target person complies because of belief that agent has the right to make request and target is obliged to comply.
Information	Agent possesses access to and control over the distribution of vital information providing opportunity to influence agents' perceptions and attitudes.
Ecological	Agent possesses control over the physical environment, technology, and organization of work providing indirect influence over targets.
Expert	Target person complies because of belief that agent has special knowledge about optimal way to perform requested action.
Referent	Target person complies because of admiration or identification with again and the desire to gain approval.

Table 2.5 Types of Power

The influences of power and politics interact with the adoption of IT and together are key to understanding organizational processes (Jasperson, Carte, Saunders, Butler, Croes and Zheng, 2002). The use of organizational power and the implementation of new IS have been demonstrated to influence the dynamics of coordination mechanisms (MacKenzie, 1986).

Structural barriers to alignment established as a by-product of the federated structure (Brown, 1999) are likely to lead to use of power and politics to resolve conflicts in objectives, priorities, and resource allocations between the different units. Use of the various coordination mechanisms, from informal contacts between individuals to formal structural overlays, will be both be shaped by and will alter the power bases and processes within the organization thus impacting the overall dynamics of a coordination process. This research seeks to clarify how the use of power and politics impacts the organizational environment and the outcomes of the coordinating process.

3 Research Approach

3.1 Research Orientation

Research in information systems (IS) is typically categorized into one of three approaches based on the underlying differences in ontological and epistemological assumptions: positivist, interpretivist or critical studies (Orlikowski and Baroudi, 1991). This research is pursued under the scientific research philosophy of critical realism.[6] Critical realism was developed by Roy Bhaskar as a response to critiques of empiricism on the one hand and constructivism on the other (Mingers, 2004). Critical realism was specifically created to stand between the extremes of positivism and relativism (Pawson and Tilley, 1997). At the most basic level, critical realism is based on the ontological assumption that the world is real and exists independent of our ability to experience it, and the epistemological assumption that our knowledge is historically and socially constructed and thus inherently subjective (Bhaskar, 1978; Bunge, 1993; Carlsson, 2003; Madill, Jordan and Shirley, 2000; Mingers, 2004; Reed, 2005; Tsoukas, 1989).

Positivism is the dominant orientation in the IS literature (Orlikowski and Baroudi, 1991). Very little research has been published in the IS literature which explicitly claims a realist perspective (e.g. Kirsch, 2004) to the point that the perspective is almost invisible (Carlsson, 2003). However, a number of researchers have introduced and explained the concepts of critical realism and encouraged the adoption of critical realism in our field (Carlsson, 2003; Dobson,

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[6] The philosophy of science known as critical realism is radically different than the critical theory approach described by Orlikowski & Baroudi (1991). Due to the potential confusion with and association to critical theory emancipation studies, I considered using one of the other terms for the philosophy of science known as critical realism. However, as will be explained, the term 'critical' in critical realism connotes substantive ontological and epistemological assumptions. As such, I have chosen to maintain the use of the label critical realism as derived from Bhaskar (1978, 1979).

2001; Longshore-Smith, 2006; Mingers, 2004). Contrary to the dominant claims of positivist orientation, it can be argued that most research in IS makes implicit ontological assumptions that are consistent with critical realism (Longshore-Smith, 2006). In fact most researchers claiming positivist orientation are probably scientific or critical realists in actuality (Moldoveanu and Baum, 2002). Explicitly adopting the realist orientation provides the opportunity to make novel and significant contributions to both theory and practice by identifying and explicating the generative mechanisms and structures that are related to the coordinating process.

3.1.1 Basic Tenets of Critical Realism

Ontologically critical realism is based on a stratification of reality into the real, the actual, and the empirical (Bhaskar, 1978). The concepts of stratified reality have been described by a number of researchers and I draw upon them here (see Longshore-Smith, 2006; Mingers, 2004; Reed, 2005; Sayer, 1992; Sayer, 2000; Tsang and Kwan, 1999; Tsoukas, 1989). The level of the real is all of reality that objectively exists (independent of our ability to experience it) including structures and mechanisms, events and experiences. The actual of reality consists of the events that do and do not occur including those that are experienced when the mechanisms of the real are activated. The empirical reality consists of those events that are observed and experienced. Enduring physical, social and conceptual entities, or the structures of the real have powers, "tendencies to act", or "necessary ways of acting" which interact to cause actual events to occur or not to occur, and these events may be experienced and observed.

Structures are a set of internally related elements, objects or practices that possess generative powers (Sayer, 1992; Sayer, 2000) that "when combined, are emergent from those of their constituents" (Sayer, 2000, p.14). A number of definitions have been offered for social structures (Porpora, 1998, p.339), including:

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1. Patterns of aggregate behavior that are stable or repeated over time;

2. Law-like regularities that govern the behavior of social facts;

3. Systems of human relationships among social positions;

4. Collective rules and resources that structure behavior.

Porpora (1998) suggests that the conceptualization of structure offered by Giddens' structuration theory, which is summarized as the fourth definition, is not fully consistent with realist assumptions and that a preferred view is of social structure as systems of human relationships among social positions. I do not agree with this position because the stratified concepts of reality at the core of critical realism can support both the rules and resources of structuration and social systems of relationships as the mechanisms through which human behavior is expressed in organizations. Given our limited ability to identify and describe the entities of the real that compose structures, and to distinguish between those of the real and actual realms, I define social structures to be *the rules and resources that frame and guide behavior which may include systems of social relations*.

Mechanisms are the generative powers inherent to these structures of objects enabling or limiting what can happen within geo-historical contexts (Longshore-Smith, 2006; Sayer, 2000). They "can be better thought of as the *tendencies* of structures," (Longshore-Smith, 2006, p.12, emphasis in the original) to produce events. "These powers are dispositions, capacities and potentials to do certain things, but not others," (Fleetwood, 2004, p.46). The events that are experienced in the realm of the empirical are "*co-determined* by a myriad of interacting mechanisms" (Longshore-Smith, 2006, p.12, emphasis in original). Generative powers may or may not be activated depending on the specific contextual conditions and the impacts of other generative structures, and the results will be contingent on the conditions in which they act

(Fleetwood, 2004; Sayer, 1992; Sayer, 2000; Sayer, 2004). These mechanisms are not variables but rather the means of explicating the processes that bring about these tendencies – how and/or why one thing leads to another (Anderson, Blatt, Christianson, Grant, Marquis, Neuman, Sonenshein and Sutcliffe, 2006; Pawson and Tilley, 1997; Sayer, 1992).

Within the study of organizational phenomena, social actors in organizations possess the powers of imagination, ingenuity, and creativity to conceive of actions or tasks or organizational practices (Fleetwood, 2004). These powers may be manifest in the events we seek to understand. For the critical realist, events are the product of the workings of the mechanisms, or outcomes of generative powers, which are derived from the structures of objects within a specific temporal, geographic and social context (Mingers, 2004; Sayer, 2000). The same mechanism, or interaction of mechanisms, can produce different outcomes or observable events depending on the specific context and conditions (Reed, 2005; Sayer, 2000; Tsang and Kwan, 1999; Tsoukas, 1989).

The ontological assumptions of critical realism are primary in the sense that the understanding of reality determines the nature and substance of knowledge (Dobson, 2001). The stratified view of reality limits the ability to make knowledge claims regarding the unobserved realms of structures and mechanisms. As just described, the operation of the generative powers inherent to structures is socially, historically and spatially dependent. The social construction of knowledge about mechanisms and structures makes them "fallible, contested, and revisable," (Reed, 2005, p.1632). Thus, epistemologically, critical realism is non-positivistic and recognizes the subjectivity of knowledge (Carlsson, 2003; Madill et al., 2000).

These ontological and epistemological positions suggest a view of causality that is very different than the traditional positivist view related to prediction based on the constant conjunction of events (Reed, 2005; Tsoukas, 1989). "What causes something to happen has

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nothing to do with the number of times we have observed it happening," (Sayer, 2000, p.14). For critical realists the objective is to explain how events are related, to "understand the 'continuous process' by which one event caused another" (Sayer, 1992, p.107), and assigning the generative powers to objects under specific conditions (Tsoukas, 1989). Predicting the occurrence of an event based on the regular presence or absence of another event(s) is not sufficient. Activation of generative powers "need not be regular. While regularities may be interesting and sometimes helpful for making observations, they are not essentially related to causation," (Sayer, 2004, p.11) The goal is to identify and explain the mechanisms, derived from the objects of reality, which produce the observed events within the specific context of observation (Reed, 2005; Sayer, 2000; Tsoukas, 1989). The fundamental proposition of realism is that "causal outcomes follow from mechanisms acting in contexts…. Outcomes are explained by the action of particular mechanisms in particular contexts, and this explanatory structure is put in place over time by a combination of theory and experimental observation" (Pawson and Tilley, 1997, pp.58-9).

In order to achieve this objective of explanation versus prediction, critical realism relies on a mode of inference known as retroduction (Bhaskar, 1978; Davis and Marquis, 2005; Mingers, 2004; Reed, 2005; Sayer, 1992). Using retroduction inference "we take some unexplained phenomenon and propose hypothetical mechanisms that, *if they existed*, would generate or cause that which is to be explained," (Mingers, 2004, p.94, emphasis in original). It is an effort to discover the unobservable underlying structures and associated mechanisms (e.g. generative powers) that must exist to generate empirical regularities, tendencies, or patterns of events (Pawson and Tilley, 1997; Reed, 2005; Tsang and Kwan, 1999). Thus in the view of critical realists, developing the explanations of these real structures and mechanisms within

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specific social and historical contexts is the basis of scientific knowledge (Mingers, 2004; Reed, 2005; Tsang and Kwan, 1999). The critical realist can argue for the existence of these unobservable objects by explaining observable effects that can only be produced by the generative powers of those objects (Sayer, 2000; Tsang and Kwan, 1999). Theory then takes the form of propositions of how structures and generative mechanisms can contingently produce observed outcomes in certain contexts (Carlsson, 2003; Thursfield and Hamblett, 2004). While the existence of these real objects may never be fully known, a theoretical explanation of the structures, mechanisms, and contextual influences that is sustained over time can provide confidence that the hypothesized entities, or something similar, may actually exist (Hunt, 1990).

As mentioned previously, I have been hesitant to use the moniker of "critical realism" due to the potential confusion with the research orientation of "critical theory". However, the term 'critical' in critical theory is important to understanding this research orientation and has a direct relationship to its ontological and epistemological underpinnings. Hence I have decided to retain this moniker for this dissertation. Adherents of the critical realist philosophy are "critical" in many respects. Given the contingent nature of our explanations of structures and generative mechanisms because of the influence of context on activation, our explanations will always be fallible, provisional and limited, and subject to challenge, revision and reformulation (Kwan and Tsang, 2001; Reed, 2001; Reed, 2005). Therefore theories and explanations must be subject to 'critical' testing (Kwan and Tsang, 2001) through verification and falsification (Tsang and Kwan, 1999) and by comparison to competing theory and alternative explanations (Bhaskar, 1978; Reed, 2005). The realism is critical in the sense of applying scientific methods in discriminating ways to generate better description and understanding of reality (Hunt, 1990).

3.1.2 Form of Theory

Behavioral research has typically focused on two basic forms of theory: variance and process. These forms of theory can be differentiated based on hypothesized relationships between antecedents and outcomes (Mohr, 1982). Variance theory suggests that the antecedent variables are necessary and sufficient conditions to cause the outcome; process theory suggests the antecedent is necessary for outcome to occur but not sufficient to cause it (Markus and Robey, 1988; Mohr, 1982). Process theory is used to explain how a sequence of events within a specific context produces an observed outcome - to answer the questions of "how" and "why" a change occurs over time (Pentland, 1995; Van de Ven, 1992; Van de Ven and Poole, 1995; Van de Ven and Poole, 2005). Process theory will frequently take the form of a narrative description which identifies the generative mechanisms which explain the observed events along with a detailed contextual description ("thick description") to support transference to other situations (Langley, 1999; Pentland, 1999; Van de Ven and Poole, 1995). A number of IS researchers have called for research focused on developing process models of IS phenomena (Markus and Robey, 1988; Shaw and Jarvenpas, 1997).

Process theories of organizations are consistent with the premises of critical realism. The operation of generative mechanisms is observed in sequences of connected events (Ackroyd, 2004). In other words, realist theories are likely to take the form of process models and descriptions of the generative mechanisms and contextual influences which lead to observed outcomes. While not explicitly claiming a realist orientation, Van de Ven and Poole specifically cite realist concepts of retroduction, generative mechanisms, and the contingent nature of understanding in defining process theory and recommending process methods (Van de Ven, forthcoming; Van de Ven and Poole, 2005).

As discussed previously the coordinating phenomenon can be viewed as a process – a sequence of temporally related events leading to an outcome. Within the federated IS structure the process of coordinating involves the sequence of collaborative activities between the autonomous sub-units and with the central unit leading to improved organization deployment, use and management of IS resources and capabilities. The focus of this dissertation is to identify the events related to this process phenomenon, or more specifically, to understand how these events lead to particular organizational outcomes. Not all coordinating efforts are successful in terms of leading to coordinated organizational activity in the use and management of IS within a particular context. A variety of contextual factors will influence the coordinating outcomes. A process theory orientation offers an ideal opportunity to expose and explicate the generative mechanisms that influence the coordinating phenomenon along with the contingency factors that support and inhibit their activation.

3.2   Research Methodology

The critical realist seeks to hypothesize the social structures, underlying mechanisms, and contingent factors that generate observed events (Dobson, 2001; Mingers, 2004; Tsoukas, 1989). To identify generative mechanisms, understand how they operate, and the environmental contingencies that influence their operation it is important they be studied in context (Ackroyd, 2004) with qualitative methods that expose the hypothesized mechanisms (Tsang and Kwan, 1999). Researchers should apply methods appropriate to the context of study to expose the underlying mechanisms that shape observable events, to understand the different objects of knowledge, and that recognize assumptions and limitations in research because of the ultimate fallibility of observation (Mingers, 2004). "For realists, idiographic explanatory studies shed

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light on the specific contingent conditions under which the postulated generative mechanisms combine and operate," (Tsoukas, 1989, p.555). The case study methodology is commonly recommended for the study of process phenomena (Langley, 1999; Markus and Robey, 1988; Pentland, 1999; Van de Ven, 1992; Van de Ven and Poole, 1995; Van de Ven and Poole, 2005) from a critical realist perspective (Ackroyd, 2004; Dobson, 2001; Mingers, 2004; Pawson and Tilley, 1997; Reed, 2005; Tsoukas, 1989), and has been applied widely in the IS literature (e.g., Boudreau and Robey, 2005; Goodhue, Kirsch, Quillard and Wybo, 1992a; Kirsch, 2004; Markus, 1983; Myers, 1994; Orlikowski and Baroudi, 1991; Robey and Sahay, 1996; Walsham and Waema, 1994). As such the case study method is an appropriate choice for the study of the coordinating process in federated IS structures.

As such, in order to address the research questions related to the process of coordinating in federated IS structures I have designed an in-depth, longitudinal case study within a single organization. The organization has adopted a federated IS structure characterized by a central IS unit responsible for a number of core functions including aspects of infrastructure and enterprise applications, and a number of highly-autonomous sub-units responsible for a variety of hardware and system use functions. The primary purpose of the study is to generate process theory regarding the mechanisms and underlying structures that influence the process of coordinating within the federated IS structure. This study will be guided primarily by Eisenhardt's approach to building theory from case research (Eisenhardt, 1989a). This is appropriate in that Eisenhardt adopts a realist perspective while utilizing inductive and grounded theory methods in her approach. Additionally, the theory-building approach was developed, at least in part, from and applied to a number of process theory studies (Bourgeois III and Eisenhardt, 1988; Eisenhardt, 1989b; Eisenhardt and Bourgeois III, 1988; Galunic and Eisenhardt, 2001). Additional guidance

is also drawn from the visual mapping and temporal bracketing strategies of analysis and presentation as described by Langley (1999) for theorizing from process data.

3.2.1 Site Selection

The research site, known by the pseudonym LargePub, is a large, public institution located in the Southeast United States. LargePub has an annual budget in excess of $1.4 billion, employees over 10,000 people, and offers similar services through fifteen (15) major sub-units to over 32,000 customers. LargePub has one primary location where most central and sub-unit activities take place. Additionally, LargePub and a number of its sub-units offer services through a number of smaller, geographically dispersed facilities.

LargePub is organized following a federated IS governance model (Brown, 1997; Sambamurthy and Zmud, 1999). At LargePub, the central IT organization (given the pseudonym CIT) is responsible for the core infrastructure including the data network and connectivity, computer hardware infrastructure including server and mainframe computers, as well as the development and maintenance of enterprise level applications (e.g., human resources, finance and accounting, customer service). Most of the sub-units have separate IT functions that are budgeted and managed within the sub-unit. The sub-units are responsible for networking "from the building wall to the desktop", local hardware infrastructure, end-user support, and for sub-unit specific application development needs.

Data were generated from the study of two "coordinating efforts" at LargePub. A *coordinating effort is defined as a series of cohesive activities undertaken to achieve a specific, desired outcome that requires collaborative effort across different organizational units*. A coordinating effort could involve one or a variety of coordination mechanisms utilized over time,

could be initiated by almost any actor in the organization, and could be undertaken to achieve a variety of purposes. This represents a comparative case study design of two cases nested in a single organizational context (Yin, 1989) in which a coordinating effort represents a case and the unit of analysis.

The first case was a coordinating effort known as the IT Advisory Council (ITAC). The ITAC was a standing committee of IT and non-IT managers from across the organization tasked to provide advice and counsel to the CIO on matters related to the use of IT for the enterprise and to socialize enterprise IT initiatives throughout the broader organizational community. Per the committee charter:

> At the behest of the CIO, ITAC will serve as the clearinghouse for the Information Technology Advisory Model. Unless other reporting relationships are established, ITAC will field proposals (that extend beyond internal committee operations) including compact planning initiatives from all [organization] IT committees and provide advice and/or recommendations to the committees and/or the CIO. ITAC will encourage communication, collaboration and alignment between all IT groups to avoid overlap in purpose and duplication of effort.[7]

The ITAC was formally established in February, 2004[8] and evolved through two changes in CIO from a body originally intended to support enterprise governance of IT (February, 2004 to December, 2004) to a mission of "advice and counsel" (January, 2005 to December 2006).

The second case was a coordinating effort known as the Business Process Analysis Exploratory Group (BPA). The organization currently maintains four major, independent legacy systems and associated sub-systems. The legacy systems are expensive to maintain, operate as information silos with very limited integration, and do not offer the flexibility desired for future growth and service enhancements. The BPA was established in November, 2004 by the CIO with

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[7] From the Bylaws of the Information Technology Advisory Council, updated March 31, 2005, and accessed online 4/25/06 from the Committee website.

the approval of LargePub's executive leadership. The BPA was charged to make a recommendation on the optimal approach to implement enterprise information systems to achieve improved customer services, data integration and cost efficiencies.

The BPA was composed of primarily business managers and expert users from the primary functional areas at LargePub operating as a task force but established as an informal network. It conducted its work over a period of approximately two years (November, 2004 to December, 2006). With the assistance of two external consultancies, the BPA has completed a detailed review of the major business processes in the four functional areas, conducted an extensive cost/benefit and risk analysis of the primary alternatives for enterprise systems, and made a recommendation on the proposed direction for an enterprise solution to the executive leadership of LargePub.

While a number of coordinating efforts were underway at LargePub, the ITAC and BPA were selected as the basis of this research for a number of reasons. In order to understand the process of coordinating it is important to identify key sequences of activities associated with coordinating efforts and the contextual factors that shape them. By carefully identifying two coordinating efforts that have significant commonalities as well as key differences, it is possible to expose and explicate the key elements of the coordinating process.

In terms of similarities, both coordinating efforts shared the same organizational environment so that common inner and outer contextual influences are involved. Both efforts were initiated and directed under the auspices of the CIO, and have the endorsement of the senior management team. Each coordinating effort was enterprise in scale and purpose, involved most of the autonomous units across the organization, included participants from all levels of the

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[8] The committee was originally established at the IT Council. The name was changed to IT Advisory Council (ITAC) in January, 2005.

organization including business and IT, and dealt with aspects of IT that are critical to the organization.

Key differences existed in the coordinating efforts as well. ITAC and BPA were founded on two different dominate coordination mechanisms – ITAC was a standing committee with an ongoing charge and less clearly defined deliverables whereas BPA operated as an "unofficial" task force with a limited lifespan and specific output expectations. Participants in both efforts were drawn from the IT and business communities, and while a small portion of the participants is shared, the composition of ITAC was predominantly IT while BPA was more business. Finally, the scope of ITAC was much broader dealing with almost all aspects of IT in the organization while BPA was more narrowly focused on the potential for implementing a common enterprise software system throughout LargePub.

This site was selected because of the potential to generate detailed insights into the structures and mechanisms that influence the coordinating process through the study of two cases in a comparative design with theoretical replication (Mason, 2002; Yin, 1989). It afforded the opportunity to develop an understanding of the coordinating process in the context of a federated IS structure through a very in-depth study conducted over an extended period of time. As such, the case was revelatory in that it represented a unique opportunity to study the coordinating phenomenon (Yin, 1989). This approach to site selection is consistent with recent studies in the IS literature (Kirsch, 2004; Levina and Ross, 2003; Pawlowski and Robey, 2004).

3.2.2   Data Collection

Data collection has taken place for over three years beginning in October, 2003 and ending in January, 2007. The primary method of data collection was semi-structured interviews.

These data have been supplemented by a variety of techniques including observations, review of archival data, and casual conversations with key participants in the coordinating efforts. The interview guide was modified after an initial round of interviews to focus the data collection on the key events and contextual influences associated with each case. The final interview guide is presented as Appendix A.

The data collected for this research includes 69 hours of interviews, 92 hours of observations and some 150 to 200 documents representing some 600 to 800 pages. A summary of all the data collected for this research is presented in Table 3.1.

Data Source	Number	Total Data
Semi-Structured Interviews	**36**	**49 hours**
ITAC	24	29 hours
BPA	12	15 hours
InfoSec[9]	5	5 hours
Unstructured Interviews		
Interim-CIO Discussions	16	20 hours
Observations		**92 hours**
ITAC Monthly Meetings	26	52 hours
Other ITAC Meetings	5	8 hours
ITAC Retreats (4 days)	2 (4 days)	28 hours
BPA Meetings	2	4 hours
Archival Data		
ITAC	100-150 documents	500-600 pages
BPA	25-50 documents	100-200 pages

Table 3.1 Summary of Data Collected

3.2.2.1   Interviews Conducted

The interviews conducted were selected for theoretical reasons based on relevance to the emergent process theory, that is, based on the concept of theoretical sampling (Mason, 2002).

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[9] These interviews focused on the coordinating process related specifically to information security. These interviews were not included in the data analysis but did provide additional context related to the phenomenon of interest.

The specific interviews were conducted based on emergent findings, availability of the

participants, and the extent to which theoretical saturation was achieved (Leininger, 1994;

Strauss and Corbin, 1998).

The list of interviews conducted for the ITAC is presented in Table 3.2.

Interviewee	Date	Format/Length
Interim-CIO	6/28/2004[10]	Digitally recorded (62 minutes)
CIO	11/22/2004 3/6/2006 1/31/2007[11]	Digitally recorded (52 minutes) Field notes (75 minutes) Digitally recorded (56 minutes)
ITAC Chair and major Sub-Unit IT Director	6/29/2004 11/20/2006	Digitally recorded (95 minutes) Digitally recorded (141 minutes)
Former ITAC Chair and major Sub-Unit IT Director #2	6/2/2004 12/5/2006	Digitally recorded (90 minutes) Digitally recorded (100 minutes)
Sub-Unit IT Director #3[12]	6/22/2004 12/22/2006	Digitally recorded (76 minutes) Digitally recorded (67 minutes)
ITAC PSO Sub-committee Chair #1	9/13/2004	Digitally recorded (minutes)
ITAC AC Sub-committee Chair #1	9/20/2004	Digitally recorded (104 minutes)
ITAC Admin Sub-committee Chair #1 (and AVP HR)	3/25/2005	Digitally recorded (63 minutes)
Associate CIO and ex-officio member	6/15/2005	Digitally recorded (99 minutes)
Sub-Unit IT Director #4	11/13/2006	Digitally recorded (104 minutes)
IT Managerial Coordinating Committee Rep (and Sub-Unit IT Director #5)	11/15/2006	Digitally recorded (86 minutes)
Former ITAC Chair and Major Sub-Unit IT Director #6	11/27/2006	Digitally recorded (84 minutes)
ITAC PSO Sub-committee Chair #2	11/29/2006	Digitally recorded (92 minutes)
ITAC Admin Sub-committee Chair #2	12/6/2006[13]	Digitally recorded (100 minutes)
ITAC AC Sub-committee Chair #2	12/15/2006	Digitally recorded (52 minutes)
Senior Employee Council Representative	12/20/2006	Field notes (60 minutes)
CIT Budget Director	12/18/2006	Digitally recorded (58 minutes)
Technical IT Coordinating Committee Rep	1/3/2007	Digitally recorded (79 minutes)
Chief Operating Officer	1/16/2007[14]	Field notes (45 minutes)

Table 3.2 ITAC Interviews

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[10] I conducted approximately 10 informal discussions with the interim CIO from October, 2003 through June, 2004. These discussions lasted approximately 50 minutes each on average. Extensive field notes were taken during these discussions. Topics covered included the formation of the ITAC, other IT coordinating efforts, internal and external influences, and the concepts of coordinating within the federated governance model.

[11] This interview covered both ITAC and BPA.

[12] The IT Director representing a major sub-unit on the ITAC was promoted and replaced. Both directors were interviewed.

[13] This interview covered both ITAC and BPA with primary emphasis on BPA.

[14] This interview covered ITAC, BPA, and the strategy of coordinating IT at LargePub.

The ITAC interviews targeted all participants focusing on sub-committee chairpersons, newly appointed members of the committee, representatives on ITAC from other IT coordinating bodies, and participants in the CIO's ITAC Cabinet. Additionally, long-term participants involved since the beginning of the coordinating effort were re-interviewed to gain additional insight as to how the process evolved and changed. One sub-committee chairperson and an ex-officio representative of the state regulatory agency declined to be interviewed; however data were collected from these subjects through observations of various ITAC meetings and conversations. A second employee council representative was not interviewed because, while technically a council member, the individual did not participate in the ITAC due to scheduling issues. A total of 24 interviews (with 20 participants) were conducted for the ITAC case.

The BPA interviews included all but two members of the Exploratory Group established by the CIO. The list of interviews conducted for the BPA is presented in Table 3.3.

Interviewee	Date	Format/Length
Senior Manager, Customer Information	11/17/2006	Digitally recorded (99 minutes)
Vice President, Finance	11/20/2006	Digitally recorded (80 minutes)
Director, Data Analysis and Reporting	12/4/2006	Digitally recorded (87 minutes)
HR Director	12/6/2006	Digitally recorded (100 minutes)
Director, Customer Finances	12/6/2006	Digitally recorded (77 minutes)
Director for Planning	12/7/2006	Digitally recorded (62 minutes)
CIT Budget Director	12/15/2006	Digitally recorded (54 minutes)
Associate Chief Operations Officer	12/18/2006	Digitally recorded (78 minutes)
Vice President, Human Resources	12/19/2006	Digitally recorded (86 minutes)
Controller	12/20/2006	Digitally recorded (92 minutes)
Chief Operating Officer	1/16/2007[15]	Field notes (45 minutes)
CIO	1/31/2007[16]	Digitally recorded (56 minutes)

Table 3.3 BPA Interviews

I was not able to interview one participant as this individual was promoted to the CFO position and was unavailable due to scheduling difficulties. The other member of the group was an

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[15] This interview covered ITAC, BPA, and the strategy of coordinating IT at LargePub.

infrequent participant and represented a functional area that was covered by other group members. A total of 12 interviews were conducted for the BPA case.

3.2.2.2 Observations

Observations were made as a passive participant in regularly scheduled ITAC meetings. I was typically introduced as a doctoral student conducting dissertation research. I was present at the meetings but did not participate in the discussions, ask questions, or otherwise engage in the conduct of the meetings. Notes were taken during meetings regarding the discussion and my interpretation of the events. These notes were later transcribed electronically. I observed a total of 26 monthly ITAC meetings between March, 2004 and October, 2006. In addition, I observed two offsite ITAC "retreats". The first was a two day meeting conducted October 30-31, 2003 at which the original formulation of the ITAC was developed. The second was a two day meeting held December 2-3, 2004 at which the newly hired CIO introduced a new direction for the council. Finally, I observed a number of other meetings involving the predecessors to the ITAC, broader organizational meetings related to IT to which ITAC members were invited, and presentations related to the BPA case made for the ITAC.

I was not able to observe any of the periodic meetings of the ITAC Cabinet. A request was made to the CIO to permit observation of these meetings, but due to the small number of participants, it was felt that even a passive observer would be too disruptive.

I was not able to observe any of the meetings of the BPA. While a request was made, the CIO declined to permit observations of these meetings.

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[16] This interview covered both ITAC and BPA.

3.2.2.3   Archival Data

LargePub is a public institution subject to Open Records statutes. As such the meeting

minutes and work products of all enterprise committees, task forces, and working groups are

regularly published on a variety of websites. I have had access to all the documentation related to

both the ITAC and BPA including materials posted on coordinating effort websites, materials

distributed at various meetings, presentation materials, and other materials distributed through

electronic mail. The archival data represents many hundreds of pages of materials for both the

ITAC and BPA efforts. These materials have been reviewed selectively to identify key events,

timing, participants, and related information for each case. References to these materials have

been included in the case descriptions and data analysis to enhance the explication of the

coordinating process and the generative mechanisms identified.

3.2.3   Data Analysis

Data analysis was conducted using accepted qualitative techniques (Eisenhardt, 1989a;

Miles and Huberman, 1994; Pettigrew, 1990). The focus was on longitudinal event analysis for

the ITAC and BPA cases. Preliminary data analysis was conducted as the initial interviews were

being conducted. The theoretical lenses reviewed previously were used to develop the initial

codes for the data analysis. A total of 66 codes were included in the initial template at the code

and sub-code levels.

The coding followed a stratified approach as outlined in grounded theory (Strauss and

Corbin, 1998) to generate increasingly abstracted connections in the data through which the

underlying mechanisms and contextual influences impacting the empirical events of the

coordinating process could be exposed. The initial "open" coding was performed in the

following manner. The edited transcript of an interview was re-read thoroughly. During this

reading, key points were manually highlighted with margin notes. Next, the transcript file was

opened in Atlas.ti v5.2 (Muhr, 2004) and coded using the coding template. When new concepts

were identified, new codes were added and the definition of the new code documented for each.

Also, definitions for all codes were reviewed as the codes occurred, and revised to provide

improved clarity.

Research memos were documented in Atlas.ti during the coding process to capture

instances where additional work might be required to refine a code, a new code may be required,

potential relationships between codes, potential relationships between the ITAC and BPA cases,

or something of potential significance was identified requiring further investigation. These

memos were printed, reviewed regularly, and discussed with committee members.

The initial round of coding included six ITAC interviews, four from the early round of

interviewing and two from the latter round, and 3 BPA interviews. The ITAC interviews were

coded first to refine the coding template and then the BPA interviews were coded to validate the

coding template and to identify any additional conceptual gaps. The revised template included

105 codes at the code and sub-code levels. After the remaining interviews were coded, only

minor changes were made to the coding template. The final code book included 114 codes at the

code and sub-code level representing 1530 text segments. The code book is presented in

Appendix B.

Axial coding involved analyzing the open codes and data as represented by the coded

segments and grouping codes into categories. These categories relate the codes into higher level

concepts. Given the combined approach of template coding based on concepts and codes derived

from the literature and open coding in which codes emerged from the data, the axial coding

focused primarily on the codes created during open coding. Only 95 of the 114 were carried

through this phase of coding because of an insufficient number of quotations or support for the

emerging categories. The axial coding resulted in 13 categories. The final code categories are

presented in Table 3.4.

Category	Meaning	Sample Codes in Category
Coordination Mechanism - Formal	Groups created formally with specific coordinating or oversight objectives	Standing Committee Task Force
Coordination Mechanism -Informal	Non-structural activities to create interpersonal relationships	Direct Contact Networks
Operating Mode	Bases for fulfilling the objectives of a coordinating effort	Clarity of Purpose Plan & Method Defined Outputs Accountability
Engagement	Influences that impact level of engagement from participants in a coordinating effort	Relevance Importance Action Oriented Impact
Coordinating Climate	Contextual attributes which influence the efficacy and outcomes of a specific coordinating effort	Leadership Executive Involvement Trust Open Communications
Participation	Attributes of the general composition and specific actors in a coordinating effort	Representation Size Status Unit Support
Purpose - Consensus	Align effort participants and larger organizational constituencies to support and implement specific initiatives	Build Consensus Exert Influence
Purpose - Managing Relationships	Establish and maintain networks of relationships across organization units	Communication Building Relationships
Purpose - IT Context	Specific domain of the creation, implementation and use of information technology to fulfill business and operational objectives	Common Infrastructure Data Integration Shared Software Information Security Knowledge Sharing
Purpose - Strategic Direction	Efforts to establish the IT strategic direction and to align IT strategy with overall organization strategy	Strategic Planning Resource Allocation

Category	Meaning	Sample Codes in Category
Inner Context	Inner mosaic of the organization	Structural Cultural Coordinating Motivation
Outer Context	Aspects of the environment external to the organization	Economic Legal/Political Technological
Politics	Organizational conditions in which decision making is likely to involve power and influence tactics	Power Sources Power Determinants Conditions for Use

Table 3.4 Final Categories Derived from Axial Coding

The reliability was established for the codes and coding process using inter-rater assessment (Boyatzis, 1998; Miles and Huberman, 1994). A colleague familiar with the research was given the coding template, a summary the research project and a brief description of the two cases. This material was discussed and all initial questions answered. The colleague was given large segments of transcribed interviews for both cases. My colleague and I would code at least one-half of an interview representing at least 30-45 minutes of an interview. The results were compared and any discrepancies discussed until consensus was established on the appropriate code. After the initial round of coding, the percentage of total matches (# of matches / (# of matches + # of mismatches)) was 54%. The next two rounds resulted in a percent of matches close to or greater than 80% (79% and 83% respectively). This provides strong support for the reliability of the data coding (Boyatzis, 1998; Miles and Huberman, 1994) and is consistent with existing IS research (Lapointe and Rivard, 2005).

Additionally, the case data has been used to construct a model of the coordinating process for both the ITAC and BPA cases. This analysis was guided by the literature on visually analyzing and representing case data (Langley, 1999; Miles and Huberman, 1994). These models identify timelines of critical events along with additional contextual information which highlights the key aspects of the coordinating efforts, and are presented in Chapter 4.

The focus of the data analysis has been to detect patterns in the data and to explicate the structures, mechanisms, and contextual factors that generate those patterns. The comparative case design provided the opportunity to analyze each case in isolation and then to compare across coordinating efforts. As discussed previously, the two cases have a number of similarities which serve to draw out several key differences. These differences can be viewed as "polar types" (Pettigrew, 1990) that offered the opportunity for detailed comparison through which the underlying generative influences were exposed.

3.2.4   Resulting Theory

This dissertation has been an effort to build theory related to the process of coordinating within a federated IS governance structure. The approach is theory informed but highly inductive. The resultant theory presented in Chapter 4 focuses on explaining why the empirically observed events occurred (Mingers, 2004; Reed, 2005) in the ITAC and BPA cases at LargePub and describing the underlying mechanisms derived from the "intersection of social structures and human agency" (Archer, Sharp, Stones and Woodiwiss, 1999, p. 12) operating within the context of the specific environmental factors that influence the observed outcomes.

Timelines of key events for each case are supported with narrative descriptions of the events and the contextual factors influencing the observed outcomes. The results of the data coding are combined with the detailed analysis of critical events to create a process model representing multiple levels of coding simultaneously (e.g. Langley and Traux, 1994; Miles and Huberman, 1994; Orlikowski, 1996).

3.2.4.1   Assessment

Assessing the quality of case study research is crucial to ensure the value of the contribution. Depending on the nature of the case study and the research approach, a number of evaluation approaches have been offered and used in the IS literature (Dube and Pare, 2003; Eisenhardt, 1989a; Klein and Myers, 1999). Given the nature of this dissertation and the critical realist orientation, the appropriate approach is to identify assessment criteria that support the creation of emergent and qualitative theory based on positivist ontology while accepting subjective, contextually dependent knowledge claims. Leininger (1994) offers a well established set of criteria for evaluating this type of qualitative research. These six criteria (Leininger, 1994), described in Table 3.5, have been used as the primary basis for conducting and assessing this dissertation. Additionally, due to the inherent subjective and emergent nature of the theory building methods used, additional insights are drawn from Klein and Myers (1999) to further ensure the quality of the resultant theoretical contribution. Specifically, it has been important to iterate between considering the specific events and actions within each case and the overall impact of that coordinating effort to develop an understanding of a more general coordinating process (e.g. apply the hermeneutic circle). Additionally, Klein & Myers extend the ideas of contextualization as presented by Leininger to explicitly identify the social and historical background of the research setting. The addition of this background information enhances understanding of the observed coordinating events.

Criteria	Meaning	How Applied in this Research
1. Credibility	The researcher has captured the "truth" as felt, known or experienced by those being studied.	The longitudinal nature of this study and multiple data collection methods provided "prolonged observations, engagements or participation with informants" (p.105) and the setting to establish credibility.
2. Confirmability	The researcher has obtained repeated affirmations of findings and interpretations.	This criterion requires "repeated direct participatory and documented evidence observed or obtained from primary informant sources" (p.105). This has been achieved by interviewing the majority of key participants in each coordinating effort, verifying data with informants, and cross-checking findings and interpretations with other informants, observations, and archival data. Informants were given the opportunity to review and provide comments/edits of interview transcripts and field notes. Key points raised by informants were validated with other participants and through re-visiting points in multiple interviews.
3. Meaning-in-Context	The researcher must seek to understand the data within the specific context of the study and in light of meanings held by study participants.	This requires capturing "situations, instances, life events, or lived-through experiences with particular meanings" (p.106) as part of the data collection. The internal and external contextual factors impacting the organization, units and participants have been captured in data collection and incorporated into analysis.
4. Recurrent Patterning	The researcher seeks to identify "repeated instances, sequence of events, or experiences that tend to be patterned and recur over time in designated ways and in different or similar contexts" (p.106).	Each coordinating effort involves repeated uses of mechanisms to achieve outcomes. The longitudinal nature of the study has provided the opportunity to identify recurring patterns of events within each case. Additionally, the comparative design provided the basis for comparisons across coordinating efforts to identify recurrent patterns and common

Criteria	Meaning	How Applied in this Research
		contextual influences.
5. Saturation	The researcher should demonstrate that the data collection and analysis is sufficient – that additional data does not add to the understanding of the phenomenon.	The iterative and exhaustive process of concurrent data collection and analysis permitted the identification of process theory elements to the point that additional data collection was unnecessary.
6. Transferability	The extent to which the findings can be transferred to similar or different contextual settings to aid in understanding while preserving the meanings, interpretations, and inferences of the original setting.	Transferability is related to the "generalizability" of the resultant theory and is always challenging in qualitative research. Clarity in presenting theoretical concepts and "thick" descriptions of the contextual setting have been used to satisfy this criterion.

Table 3.5 Criteria for Assessing Qualitative Research

The final criterion of transferability warrants additional discussion. Transferability is related to the concept of generalization within the positivist orientation. The basic idea centers on the extent to which we can leverage understanding in one context with other contexts. Explicating structures and generative mechanisms which produce observed outcomes is highly contextual. The focus has been on developing sufficient understanding of how mechanisms work to generate outcomes. Thus the effort is to generalize to theory about the structures and mechanisms with deep understanding of the contextual influences (Ackroyd, 2004; Pawson and Tilley, 1997; Tsoukas, 1989) so that we might gain insight into how and why those mechanisms may operate in different contexts.

4   Research Findings

This research seeks to understand how the coordinating process unfolds over time within a federated IS governance structure as well as how contextual factors influence this process and its outcomes. Understanding the process entails investigating the events that define that process. By analyzing the conditions in terms of the various contextual influences prior to and consequent to key events in the process, we can develop an understanding of how these contextual influences impact the process and the generative mechanisms that produce the observed events. This antecedent – event – consequent analysis of events is consistent with the various recommendations for building process theory (e.g. Langley, 1999; Miles and Huberman, 1994; Pentland, 1999; Strauss and Corbin, 1998).

Key events in both the ITAC and BPA cases were identified by the interview respondents, observations[17] and review of archival data. These events were identified as having had a significant impact on the coordinating effort of interest in terms of its purpose or the ways in which the purpose was to be accomplished. The identification of these key events was validated across multiple respondents. Each event was analyzed in terms of the different categories of contextual conditions identified through the coding process including coordinating characteristics, inner context, outer context and power and politics. Coordinating characteristics are attributes of coordinating efforts that are related to how the primary activities of the effort are performed and successful outcomes are achieved. The coordinating characteristic categories, identified through axial coding, include operating mode, engagement, coordinating climate and participation. The approach to event analysis is depicted in Figure 4.1.
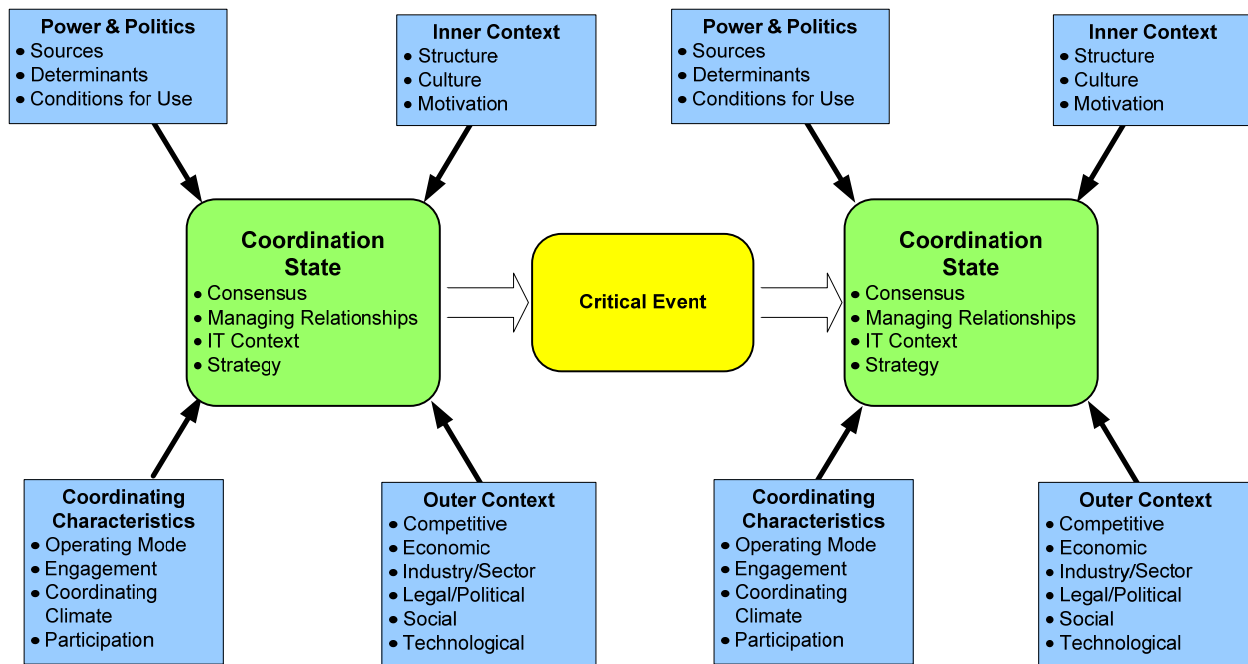
Figure 4.1 Critical Event Analysis Process

4.1 Information Technology Advisory Council (ITAC) Case

The Information Technology Advisory Council (ITAC) was a formal standing committee

of IT and non-IT managers. This coordinating effort evolved over a multi-year period and can be

directly related to an informal networking group of division Information Technology Directors

(DIT) that started meeting in early 2002. An Information Technology Task Force (ITTF)

convened by the Chief Operating Officer (COO) in early 2003 recommended the evaluation of

the formal IT governance structure for LargePub.[18] At the behest of the COO, and under the

direction of an interim-CIO, the ITTF developed an IT decision-making model which was based

on an Information Technology Council (ITC). This model was conditionally approved by the

COO (February, 2004). The purpose of the ITC was to:

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[17] Observations were used to supplement the ITAC case only.

- Develop a strategic vision and plan for IT at LargePub
- Build consensus and buy-in from the LargePub community
- Serve as a liaison to other IT related groups
- Develop metrics to measure success of the model
- Meet periodically with an executive review board. [19]

The COO appointed the Chair of the Committee. Membership was approximately 20 and included the interim-CIO and several senior managers from Central IT (CIT), DIT from major service delivery and support divisions, representatives from two other IT bodies, and representatives of the service delivery employees.

The ITC was supported by four functional committees – Service Delivery Computing, Administrative Computing (includes traditional business, accounting and human resource functions), Public Service, and High-Performance Computing. Two of these committees, Service Delivery and High-Performance Computing, had existed prior to the creation of the ITC and were incorporated into the decision-making model. Chairs of the functional committees were appointed by the Vice President of each functional area and served as members of ITC.

The functional committees had participants drawn from across the organization that had experience or interest in that specific computing domain. Functional committee participants included service delivery and administrative staff and included IT as well as non-IT personnel. The functional committees are intended to perform a majority of the tactical activities associated with identifying the IT needs, establishing priorities, and building the strategic plan within that area.

The ITC met on a bi-monthly basis through December, 2004. In January, 2005 the committee was restructured and renamed ITAC by the newly appointed CIO. The ITAC was tasked to provide "advice and counsel" to the CIO on the use of IT for the enterprise, provide

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[18] IT Task Force Findings, March 31, 2003.

recommendations to the CIO on initiatives that were to be forwarded to LargePub's executive management for consideration, and to socialize enterprise IT initiatives at LargePub to generate support from a wide range of constituencies. ITAC membership was determined by the CIO as was the Chairperson. The membership was intended to be representative of the primary constituencies at LargePub and included representative service delivery employees, IT management, non-IT management, administrative staff, and customers. The ITAC included 22 participants and met on a monthly basis. The ITAC retained the four functional committees as originally formulated in the ITC. There was a fifth functional committee, Information Security, which had quasi-formal status in that the committee actively worked to generate deliverables and regularly reported to the ITAC.

In addition to the ITAC, the CIO created a Cabinet in December, 2005. The ITAC Cabinet was composed of four functional committee Chairs (excluding Information Security), the Chair of the ITAC, a representative of a state regulatory board, and a representative of the CIO's senior management. The Cabinet was intended to promote more direct and open dialogue regarding topics passed from the ITAC to the CIO, make specific recommendations to the CIO regarding the work product of the functional committees, and support the CIO's decision process related to initiatives to be addressed to the senior management of LargePub.

ITAC activities were terminated by the CIO as of November, 2006 with a plan to completely reconstitute the committee charter, structure and membership in early 2007.

A complete timeline of the ITAC coordinating effort is presented in Figure 4.2.

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[19] Proposal – LargePub Information Technology Decision-Making Model, 11/17/2003.

Events along the timeline (Jan, 2002 to Dec, 2006):

- **DITC Group Forms (Jan, 2002)**
- ExecuDITS Group Forms (May, 2002)
- COO IT Task Force Established (Jan, 2003)
- COO Assigns Governance to ITTF (May, 2003)
- IT Management Forum Revitalized (June, 2003)
- **Interim CIO Appointed (Sept, 2003)**
- IT Governance Offsite Meeting (Oct 30-31, 2003)
- **COO's Conditional Approval of ITC (Feb, 2004)**
- NAPP IT Strategic Planning Started (Jan, 2005)
- BPA Exploratory Group Formed (Jan, 2005)
- BPA Project Started (June, 2005)
- New ITAC Chair Appointed by CIO (July, 2005)
- CIO Institutes ITAC Cabinet (Dec, 2005)

Below the timeline:

- CIO Announces Resignation (July, 2003)
- ITTF - Starts IT Governance Model (Sept, 2003)
- ExecuDITS - DITC/CIO becomes core of ITC (Nov, 2003)
- Permanent CIO Hired & Starts (Oct, 2004)
- **CIO Introduces new model, changes name to ITAC (Dec, 2004-Jan, 2005)**
- CIO Reappoints ITAC members & changes membership (Oct, 2005)
- New ITAC Chair Appointed by CIO (Nov, 2005)
- **CIO Refined Charge to ITAC & Committees (Jan, 2006)**
- New ITAC Structure & Objectives Introduced (August/Sept, 2006)
- **ITAC Activities Suspended (Nov, 2006)**

Figure 4.2 ITAC Coordinating Event Timeline

4.1.1 ITAC Event #1 – Informal Foundation

The model of the critical event analysis for ITAC Event #1 is presented in Figure 4.3.

Power & Politics
- Major units excluded from IT Governance model
- CIO rejects efforts at inclusion
- IT decision-making driven by CIT
- CIO limited access and influence with Senior Management

Inner Context
- Low coordination intensity
- Reduced IT budgets drive need to gain efficiencies
- DIT isolation creates duress
- Strong incentives to find alternative means to collaborate

Power & Politics
- CIO isolated from Executive Management
- Major IT Units establish new voice in enterprise IT decision making
- Units represent significant percentage of IT spend

Inner Context
- Increasing coordination intensity
- Deepening budget cuts increase need to share resources

Coordination State
- Major IT units operating independently
- Limited influence in enterprise decisions
- No enterprise IT Strategy
- Ineffective governance structure focused on information dissemination

Critical Event
Informal Foundation of Coordinating Effort – Four Major Unit DIT create informal network (DITC)

Coordination State
- Increased information & knowledge sharing
- Efforts to share software applications between units
- DITC spawns new formal and informal mechanisms

Coordinating Characteristics
- Directive CIO leadership limits engagement
- Customer Service and Administrative IT units limited engagement in cross-unit activities
- Communications primarily information push from CIT
- CIO specifies participation in governance groups
- Large numbers with limited activity

Outer Context
- General economic downturn
- Significant State budget cuts

Coordinating Characteristics
- DITC - informal network
- Clear focus on relationships, sharing, consensus and creating a common voice
- High importance & relevance, clear impact
- High trust, open communications, shared leadership
- Small group, external perspectives

Outer Context
- General economic downturn
- Significant State budget cuts

Figure 4.3 ITAC Event #1 – Informal Foundation

Antecedent State

The ITAC coordinating effort can be directly related to an informal coordinating effort by a small group of Directors of Information Technology (DIT) that represented the four largest customer service divisions at LargePub.

> I think the IT governance model, if you trace its roots back, it will go right back to that four person informal group (Large Unit DIT#2 Interview 6/22/04).[20]

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[20] In order to maintain confidentiality, the division names in LargePub have been dropped. Additionally, participants have not been named.

These IT Directors initiated an informal network in early 2002, meeting monthly for lunch and discussions. The group named itself DITC (Directors of IT Collaboration). The DITC met for the purposes of establishing relationships with peers, having an opportunity to discuss operational concerns with others that were in similar situations, and exploring ways to leverage efforts and resources across their units.

Prior to the establishment of the DITC, the decentralized DITs were somewhat isolated within LargePub, operating independently on local priorities, and with little opportunity to provide input into let alone influence IT strategy and direction at an organizational level. The CIO had previously established a governance structure that consisted of two standing committees. However, the membership of these governance bodies was determined by the CIO and, although quite large, a number of the larger division DITs were not included.

The CIO had a directive and confrontational management style that alienated many across LargePub in both IT and business, and which tended to stifle communication and engagement.

> And he was kind of an authoritarian kind of guy. So he was in to telling people what they ought to do and not all that responsive to people asking him for things. So his relationship with the rest of LargePub was not that great in my opinion (Technical Body ITAC Representative Interview 01/03/07).

One effort by a large division DIT, working with the division manager, to convince the CIO to open the governance structure to greater participation by the large units was rebuffed.

The governance structure that existed was dominated by the senior management of CIT and was considered to be ineffective in terms of generating initiatives that had meaningful impact on the autonomous units. It became simply a vehicle for information dissemination from Central Information Technology (CIT) to the DIT and IT Managers representing various decentralized divisions across LargePub. The CIO was perceived to be excluded from the

Executive Management of LargePub and had very limited success in gaining approval and funding for CIT initiatives at the enterprise level.

LargePub, as a public institution, receives a large portion of its revenues from state funding as determined by the governor and general assembly. The general economic climate was declining dramatically at that point in time. In 2002 LargePub faced significant budget cuts that were to last many years. The budget cuts limited the ability of the individual divisions to fund IT initiatives at the local level. The individual service delivery, administrative and support divisions are highly decentralized. The budgeting process at LargePub re-enforced the decentralization leaving control of division IT spending as the exclusive purview of the individual divisions.

> I think there is …what everyone refers to as the silo mentality and we all have separate budgets and we tend to be very territorial about our budgets and…at the same time this is something that is very culturally engrained (Large Unit DIT#1 interview 6/2/04).

> The number one thing that I've come to very much understand about coordination between…between the various groups is that the budget, where the money comes from-the source of the funding, is the fundamental driver (Large Unit DIT#2 interview 6/22/04).

Thus the DITs were forced to seek ways to improve efficiency and service delivery through their own individual efforts.

Critical Event and Related Activities

The isolation, lack of influence and budget pressures created a real sense of duress for the large unit DITs, and motivated the DITs to seek out opportunities to collaborate.

> [I] felt sort of left out of the IT decision making process at the senior level [of LargePub]. And those relationships started, I guess, under duress, somewhat. Because I personally felt we were being left out of the process and I wanted to have some means of input from [customer service divisions] into LargePub level IT decisions (Large Unit DIT#1 Interview 6/2/04).

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This led one large division DIT to reach out to peers that were dealing with similar issues. The

DIT queried a number of peers to gauge interest in convening a small discussion group.

> And I sent an email out and I still have the email. It was kind of a longish email where I sort of said what I had in mind and inviting [three DIT from the other large divisions]…. I was sort of thinking [customer service divisions] even though I know LargePub is more than [customer service]….Plus the idea of leveraging with the divisions, bringing together the [customer service divisions], would have [Division Managers] to leverage and I thought that being the largest we would certainly have some common issues and concerns. But also we'd be a significant voice and if you had four [Division Managers] coming to the COO from the four largest [customer service divisions], it would be much more compelling….So I was thinking size and influence to a certain extent…I was thinking power and influence. And I thought that the big four [customer service divisions] were the places to look for it. And as it turns out, if you look at IT budget figures, a lot of the IT budget, it happens to be in those four [divisions] (Large Unit DIT#1 Interview 6/2/04).

The other DITs responded quickly and positively to the opportunity for informal networking.

> There were no holdouts. I think I may have even spoken to [DIT#2] and [DIT#3] about it saying 'Oh wouldn't it be nice for us to get together and sort of talk about how we might work together.' And, I think I got email back from [DIT#4] within, within a day at the most. Maybe even hours later he responded that he was interested (Large Unit DIT#1 Interview, 6/2/04).

The DITC started meeting on a monthly basis for lunch followed by extensive

discussions typically lasting several hours. The group would discuss a range of issues that related

to the situation in their individual divisions. Given the similarity in technology needs, the number

of employees and customers served, IT budgets, etc. the DITC had a range of common issues to

discuss including web development, network infrastructure, application development,

information security, help desk support and incident tracking, and staff training and

development. The setting was very open and discussions focused on how to leverage each other

to improve services and efficiency in each division and to exert greater influence in strategic IT

decision-making at LargePub. The DITC continued to meet on a monthly basis for

approximately 18 months.

The DITC developed a level of comfort with each other over time and a foundation of

trust which enabled the group to pursue new types of collaborative efforts including initiatives

that could involve shared resources and financial commitments.

> It was an informal group. It was meant to share and one of our goals was to see
> first of all to get to know each other, what we were doing, build relationships, talk
> about what we were doing, and then we started kind of focusing on, because we
> all have too much to do and not enough resources, 'where can we collaborate?' I
> think we were smart also. But it was a very focused look at collaboration because
> at that time, resources were getting slim (Large Unit DIT#3 Interview, 6/29/04).

Consequent State

The DITC informal network had a wide range of impacts at LargePub. The most

important impact seemed to be the value of the effort to the primary participants.

> I will say that it took championing by each one of us to sort of keep it going….We
> all wanted that to continue and go and saw the value in it as we participated.
> That's a good point. I think seeing the value in something as you participate is a
> key (Large Unit DIT#2 Interview 6/22/04).

The DITC shared information and knowledge on subjects that were directly pertinent to each of

the participants and that allowed each unit to improve operations within the units. The challenges

of the budget cuts became worse, reinforcing the need to find ways to operate more efficiently.

> I think the mutual nature of the interest. When we when we got together and
> discussed issues we had true common ground. It was not contrived….Whereas
> knowing where I related in terms of my peers was important. Knowing that there
> wasn't some magic bullet that [Division X] had found for some particular
> thing…or maybe they had. I think that that common ground is probably the
> biggest driver for the participation of the groups (Large Unit DIT#2 Interview
> 6/22/04).

> The benefits of that, the informal group, was I felt like it was a risk-free
> environment to just talk, to ask questions, to figure out on our own what was the
> best fit for anything, to learn informally…. That said, that group became a very
> influential force (Large Unit DIT#3 Interview 6/29/04).

> The DITC was trying to figure out how we could help each other. Obviously, we
> all have similar issues. The big [divisions] are certainly more alike than the

smaller organizations. We all have personnel to manage. We all have common infrastructures that we have to manage. Life for us was very similar, and we could share experiences and knowledge, and we attempted to look for areas where we could share products and services….We found that difficult, but it was also a recognition that if we could all agree on a common direction, then we had better chances of sharing these kinds of things (Large Unit DIT#4 Interview 11/20/06).

The group was very small which enabled the interpersonal communications to develop easily. The participants spent significant time together in the small group, getting to know one another and understanding the key issues. Two of the four participants were new to LargePub and introduced the new perspectives based on their external experience. And the participants represented a potentially significant political force as combined their divisions controlled a significant portion of the IT resources at LargePub.

That said, because of the size of those four units, they make up 75 percent roughly of the entire LargePub technology when you just count the number of [customers, the number of service employees], that type of thing (Large Unit DIT#3 Interview 6/29/04).

Specific efforts were made to share software applications between units. Success in directly implementing shared application code was limited. In some cases the units had incompatible technical infrastructures. Other units had compatible infrastructures but business process differences made any modification efforts to complex. Nonetheless, the sharing of applications provided some efficiency gains in application development efforts.

We shared the code, we shared the documentation but we had to let it stop at that point. Now that said, you're cutting off a couple years development time but still it was the modifications to make it work (Large Unit DIT#3 Interview 6/29/04).

The DITC directly impacted both formal and informal efforts to coordinate activities in IT at LargePub. Shortly after the group started meeting, it was decided that the CIO should be informed. The CIO incorporated the DITC participants into a new formal committee along with a

couple of other large unit DITs as well as the senior leadership of the CIT. This steering

committee was formed in May, 2002 and was known as ExecuDITS.

> We let the CIO know that we were meeting as a group. We got an invitation from
> the CIO…to sit down for lunch and discuss what is going on. He then later asked
> that group to take a formal role as the ExecuDITs….We would actually meet once
> a month with the CIO and all the Directors of CIT and discuss issues….The note
> to the CIO to tell him we were meeting was a defensive posture. There was
> actually concern when we initially got going by a couple of the members [of
> DITC] that if we were seen working together, some folks would consider it a
> threat and wondering what we are up to. So we decided to just come out front
> with it. And say "Here, just want to let you know, we are meeting periodically
> just to discuss issues," as a defensive posture, so people would not speculate and
> wonder and go on some subversive attacks. That is where we got the invitation to
> lunch. The ExecuDITs I think that was his attempt to bring our influence and
> input into the management team of CIT, hearing from some of the customers that
> might not all be singing in unison to whatever tune they were marching to (Large
> Unit DIT#4 Interview 11/27/06).

This committee opened direct communications between the large service delivery units, the CIO

and CIT thus providing the opportunity for the DITC to influence the overall direction of IT at

LargePub.

> One of the biggest values was the recognition that between the four of us we
> could have a significant influence on things that happen at LargePub in terms of
> IT and we were pretty quickly recognized and talked to by the CIO. And, by
> virtue of the size, we represented you know 80 percent of the LargePub
> constituency (Large Unit DIT#2 Interview 6/22/04).

The DITC also encouraged informal networking across the organization by supporting efforts by

unit managers and technical staff to meet on a regular basis.

> [W]e even built in opportunities for our staff to get together. We said okay here's
> our project people and introduced them so that they could meet and I think they
> go off and informally have meetings and lunch and stuff you know just to talk.
> Again, no formal expectation other than just networking and building
> relationships (Large Unit DIT #3 Interview 6/29/04).

Implications

The voluntary, informal networking represented by the DITC initiated a sequence of

events that had a significant impact on LargePub and represents the earliest step in the creation

of what became ITAC.

> I think that one of the things that was going on [at LargePub] before there was the
> formal body was that informal group of key IT folks that were meeting for lunch
> once a month … and discussing issues. And they were coming voluntarily to
> lunch to discuss issues. That was one of the healthiest things I saw when I came
> here a year ago. Gosh these folks are getting together to discuss mutual needs
> without any formal body at all. And that evolved into the development of the
> formal body (Interim CIO Interview 6/28/04).

The motivation for participants was very clear and compelling to the participants. The operating

mode was characterized by complete clarity of purpose aligned with an appropriate vehicle of an

informal network for achieving the strong personal relationships and trust necessary to create

value from collaborations. The participants were fully engaged because the purpose and potential

outcomes were of critical importance and they were able to see almost immediate and far ranging

impacts. The participants held sufficient political clout to find a means for giving input to

organizational direction for IT decision-making. In this instance, the range of contextual

influences aligned with the critical event to achieve a dramatic positive change in the

coordinating state.

4.1.2   ITAC Event # 2 – New IT Leadership

The model of the critical event analysis for ITAC Event #2 is presented in Figure 4.4.
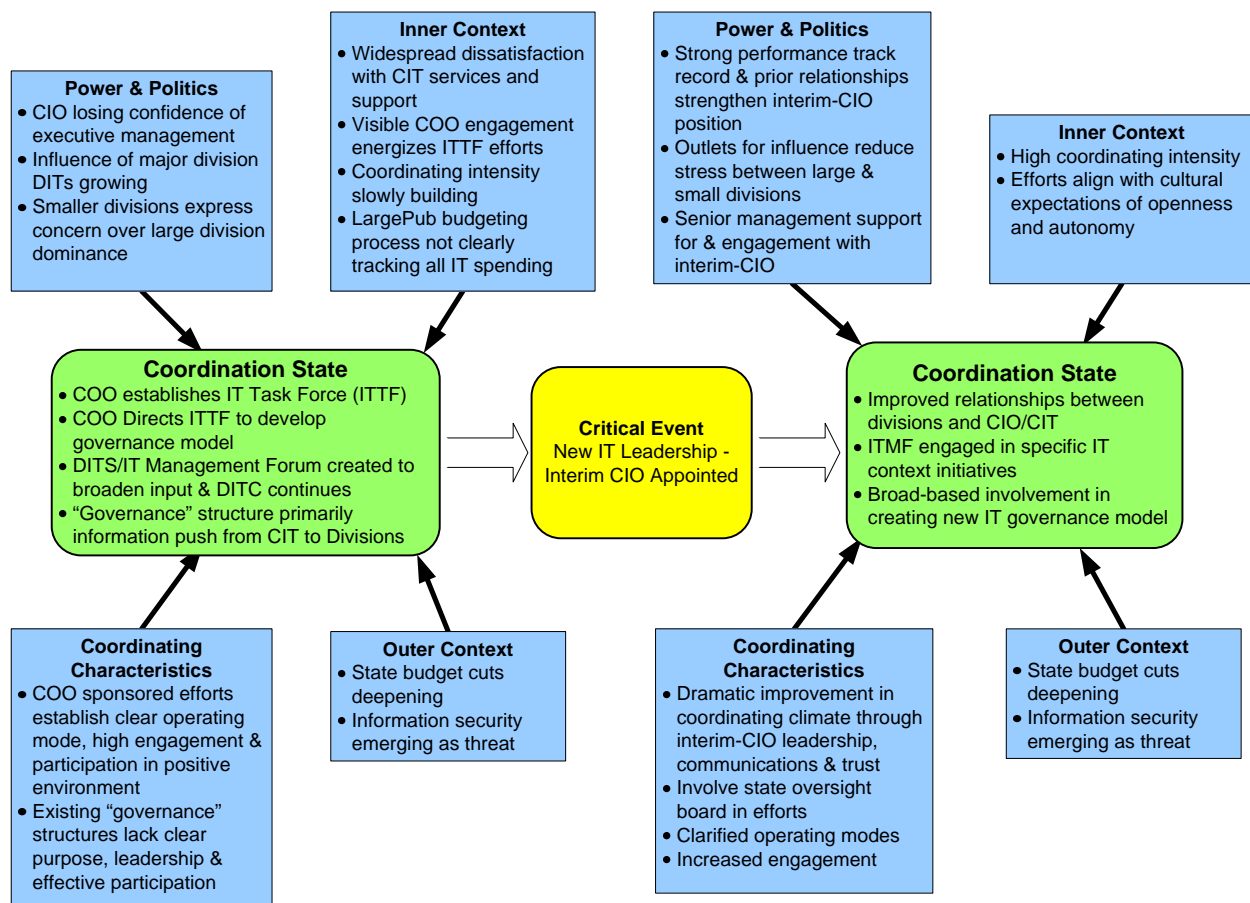
Figure 4.4 ITAC Event #2 – New IT Leadership

Antecedent State

The activities and influence of the DITC group became much more prominent at LargePub. In response to the perceived influence of the larger divisions through the DITC and ExecuDITS groups, an effort was made to broaden the participation of IT directors and managers to include representatives from other, smaller divisions and units. In Fall 2002 the CIO established an informal group, based on the concept of the ExecuDITS, to meet on a periodic basis to provide input to the CIO and promote communication between the various units and CIT. This informal group was known as the Directors of IT (DITS).

> And we decided that the DITC model, that there were other leaders of technology and while we did represent 75 percent, there was 25 percent not at the table and

we were "big" and had "big issues" but there were other [divisions] or units that needed to be at the table (Large Division DIT #3 Interview 6/29/04).

The CIO formalized the group into standing committee in June, 2003 and renamed to the IT Management Forum (ITMF). This reflected the desire by many in the group to more accurately identify the group's composition as many of the participants did not have the official "director" title. The ITMF encouraged participation by as wide an audience as possible in the group's meetings. However, the DITS/ITMF did not achieve significant results.

> You know at first it was very much an information dissemination vehicle and really it was driven by CIT. They just sort of came and told us what they were doing. They gave us some opportunities to talk about their tactical plan. But other than that we weren't doing a lot (Large Division DIT#1 Interview 6/2/04).

> Likewise the efforts of the ExecuDITS group failed to produce significant results. Shortly

after convening the group, the CIO discontinued participation and delegated the responsibility to

the senior managers in CIT.

> Then, there was the "ExecuDITs" where we would go and meet with [the CIT Executive Director] and that group…. When we went over there, it was an information dump. It was an agenda that [CIT] had… I just went over and said, "Okay, so these are the CIT directors"…. It was just - "we are doing this, this, this, this." It was kind of like . . "this system is going to be live this. We are talking about this. We are looking at the calendar system, blah, blah, blah," it was just, 'Dump!' and we would leave. I did not really get all that much out of it. (Large Division DIT#3 Interview 11/20/06)

> The CIO's interpersonal style and approach had further alienated the LargePub

community and weakened his position in the organization.

> [The CIO] kind of . . . he was just going his own way and anybody that tried to stop him or tell him to do something different, he just pushed them out of the way or didn't care. I think at some point he lost the ear of the COO because of that kind of behavior…(CIT Budget Officer Interview 12/18/06).

> [He] was a very directive sort. He was not afraid to make a decision and push forward. I think that if people just allowed it a little bit more, he could have accomplished a lot. But this environment is one that demands consensus and debate. That is not what he was good at. He was good at making a quick decision

and pushing forward come hell or high water. That put him off with a number of people, and so he could never get the support to carry through with a lot of these things. There was distrust of him mainly because of his style (Large Division DIT #4 Interview 11/27/06).

The net result was that the CIO had negatively impacted the climate related to coordinating activities.

[The CIO] had basically I think gotten things into such a disarray within CIT. . .there was a lot of resentment and a lot of anxiety about going forward with any type of collaboration because several people had been burned in the past. And so it was the type of thing that the collaboration was low (Public Service Committee Chair/Division DIT Interview 11/29/06).

In January, 2003 the COO convened the IT Task Force (ITTF). This task force included prominent and influential members of both the IT and business communities at LargePub. The ITTF was charged to:

- Assess the information technology organizational requirements to support cost effective infrastructure management and quality support for the LargePub's mission of [Customer Service], Research, and Service and Administrative Services/Support. Review opportunities for service improvements through centralized resources.
- Develop recommendations to achieve a significant improvement in the value generated by LargePub's information technology investments.[21]

After a three month effort, the ITTF returned a report with 21 recommendations to improve the effectiveness of IT at LargePub. The ITTF started to generate a higher degree of motivation related to IT coordinating activities at LargePub by elevating the level at which IT was being discussed in the organization.

[I] think another significant thing would be the [COO's] IT Taskforce. And, I think that that was significant for a number of reasons. A - it meant that IT was on the radar of the senior management which is something that in the recent past I don't think I'd seen any kind of action on their part….So I think that was an encouraging sign. It was kind of another wake-up call I think to people that looked like issues like centralization and cost-effectiveness and so forth were going to be addressed (Large Division Director #1 Interview 6/02/04).

One key ITTF finding related to tracking LargePub's IT spending. An analysis of the IT budgets across LargePub identified a gap of approximately $10 million in spending that could not be specifically traced. The inability of the budgeting system to track this hidden IT spending has made it extremely difficult to eliminate redundancies and allocate resources to the highest priorities.[22]

The focus and impact of the ITTF is represented by this exemplar comment from one of the participants:

> I think there were two main points of focus for that group. One was to try to point out … the need for coordination. I think the bigger issue was trying to identify the IT expenditures and that was…there was a lot of effort spent trying to identify how IT resources are used not only centrally, but I think more importantly, beyond the central IT. So I think that was the main advantage to that is that we came closer to getting our hands around that than we had before (Administrative Computing Committee Chair#1 Interview 03/25/05).

Based on a key finding in the report, the COO charged the ITTF develop an IT Governance Model for LargePub. The ITTF delegated this task to the ExecuDITS. And with some support of the DITS, this group began preliminary work on creating a governance mode.

> [T]hey really kind of delegated that task to the…Executive DITS or the DITS. So it began that sort of informal brainstorming process that occurred from July 2003 up until October 2003 (Large Division DIT#1 Interview 06/02/04).

Critical Event and Related Activities

The CIO resigned from LargePub in July, 2003. An interim-CIO was appointed in September, 2003. The interim-CIO had retired from LargePub a few years earlier after a long and successful career in the CIT division. During retirement the interim-CIO had worked on a part time basis with a large customer service division at LargePub. The COO made an interim

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[21] ITTF Initial Report (March 31, 2003).
[22] ITTF Initial Report (March 31, 2003).

appointment while a national search was conducted for a permanent replacement. The interim-CIO expected to be in the position for only 6 to 9 months[23] but stayed in the position for 13 months.

> [H]e had been involved in IT [at LargePub] for a long time, and he had also been a [part of the customer service delivery]. So, he had some different connections and some different relationships that I think aided them a little bit, plus the COO was seeking how to improve these processes. [The interim-CIO] was in the final component of whatever that picture was (Large Division DIT#6 Interview 11/13/06).

> The interim-CIO had an immediate and positive impact on the climate surrounding the

coordinating efforts at LargePub.

> From the day the new interim-CIO was appointed, there was a different atmosphere. There was a conscious effort made by him to meet people, learn what was going on, have conversation (Large Division DIT #3 Interview 6/29/04).

The interim-CIO focused on opening communication channels throughout LargePub and

building strong relationships with key constituencies.

> [The interim-CIO's] focus was not on big initiatives although we did tackle a couple there but it was all on reputation, relationships, getting out there, building bridges, building trust because [the former CIO] kind of…didn't help us out in that area. (CIT Budget Director Interview 12/18/05)

> [The interim-CIO], the fact that he was "interim" [verbal emphasis], and the fact that he is very collaborative. And when I mean collaborative, it is not just collaborative as in the old sense of the word that you are thinking. He pulls people to the table, and they do great work together. I think he is a thinker, a researcher. He wants to hear other ideas. He wants to have different people at the table … [H]e wants to hear the negative, the positive, the person he knows, the person he does not know. That is his style…is to listen. (Large Division DIT #3 interview 11/20/06).

And the interim-CIO recognized the value and necessity for creating the communication paths to

provide feedback and establishing the means for developing broad-based support for IT related

initiatives.

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[23] Personal conversation with interim-CIO (September, 2003)

And so, as a CIO I think it is mandatory you have some sort of mechanisms in place to pull … that cut-across organizational parts of LargePub…And to get buy-in and get all the talk that is mandatory. I mean I can't imagine any other way for a CIO to succeed if he doesn't have some sort of broad-based interaction and feedback (Inter-CIO Interview 6/28/04).

And he re-enforced the importance of increased communication and collaboration.

[The interim-CIO] seemed more receptive to input from anywhere. And I think he seemed . . . maybe because he [had been part of service delivery] and he had the collegial culture that can exist [in this industry] as part of his style, so I think he was much more receptive. And then he would just say, "Okay, these are really great ideas coming from the [divisions]." He'd really validate the input coming from the [divisions] (Large Division DIT#1 Interview 12/05/06).

To fill this requirement the interim-CIO encouraged the existing coordinating groups and

challenged each to become more action-oriented and focused on producing tangible results.

Well with the ITMF I think at one point I said 'you know you folks need a charter'-didn't have a charter. So you need some sort of, and that generated some discussion. I said you know 'I'd like you to look at a few things' (Interim-CIO Interview 6/28/04).

[The interim-CIO] sort of challenged [ITMF] to take ownership of itself, even though the group had been I think trying to find itself you know in some of these exercises like governance brainstorming and so forth. That, I think, was kind of a turning point for the group when [the interim-CIO] said CIT isn't driving this car anymore. You are responsible for your destiny. We value you as advisors and so forth but you need … this is your group and your outlet so you need to make something of it or this probably isn't worth your time (Large Division DIT#1 Interview 6/2/04).

He started coming to the DITC meetings-the informal DITC meetings and through those discussions we started talking about the governance and what we needed to be doing (Large Division DIT #3 Interview 6/29/04).

Consequent State

The interim-CIO had an immediate impact on the evolution of the ITAC because he

became involved with the effort of the ITTF to create a governance structure for LargePub. The

interim-CIO met with the ITTF and ExecuDITS to understand the preliminary work completed

towards satisfying the directive from the CIO. The interim-CIO convened a two-day offsite

retreat in late October, 2003 where a group of 9 participants (primarily the ExecuDITS) formalized the basic structure of the governance model for LargePub. The interim-CIO also invited an Executive Vice President for IT from the State Regulatory Board to participate in this effort.

> We kind of expanded the Executive DITS group to include some other folks which also included [regulatory board] input, which I thought was kind of a significant departure for us and an important one because there are so many [regulatory board] mandates and we're always sort of operating you know …LargePub is kind of a silo unto itself that even though we have this important relationship with the [board and state system], we don't always cooperate and collaborate with them in the same way we don't cooperate and collaborate with each other (Large Division DIT#1 Interview 6/02/04).

The product of the retreat was a draft model that was widely distributed throughout LargePub, and after input and revisions, became the basis for the ITTF recommendation to the COO on a governance model.

In addition to encouraging the work of the ITTF, the interim-CIO's challenge to the ITMF energized that coordinating body and generated a number of initiatives touching on several core IT domains.

> This was kind of a golden heyday, I think, for IT at LargePub in some ways because there were a lot of projects [ITMF] were working on like the central backup project….We had the IT Jobs thing which kind of has been extensive and ongoing which did transform all the job descriptions and create the technical and leadership matrices and levels… We gave the COO a white paper on wireless … saying that we supported the basic wireless for the [enterprise] and thought that was a good direction. Then he actually came out to say that was like a three year goal for LargePub [Large Division DIT #1 Interview 12/05/06].

The overall impact of the New IT Leadership is captured by the following exemplar comment:

> [The interim-CIO] was very collaborative, open, very friendly, and he pulled the [organization] together. That was a wonderful fifteen months where we were all…I felt like we were at the cusp of a real cultural change. We were right there. Between the activities of the DITC, [the ITTF], follow it then by the fifteen

months with [the interim-CIO] actually pulling the group together, asking their opinions, asking them to do things. The environment had changed dramatically from the distrust and uncoordinated activities under [the prior CIO], and I think we had the chance to solidify it. People were getting comfortable with the concept of sharing information and talking to each other, and working together on a common platform (Large Division DIT #4 Interview 11/27/06).

Implications

The importance of leadership, demonstrated at two levels, enabled the creation of the IT governance model to continue. The COO's clear direction and visible support motivated the ITTF to overcome the negative environment created by the then CIO to engage the broader community of LargePub in a discussion of IT and in developing the governance model. This demonstrates how operating mode – primarily in this case expressed through clarity of purpose, defined outputs and accountability – reinforced by a positive climate created by strong leadership, executive support and open communications can facilitate improved coordinating outcomes.

At the more tactical level, the interim-CIO provided strong leadership which dramatically changed the engagement in the coordinating activities, broadened participation, and refined the operating mode of existing coordinating bodies. The change in IT leadership dramatically improved the coordinating climate. While the immediate outcomes focused on the development of the governance model and generating organizational consensus and support for it, with limited progress on specific IT domain initiatives, the new climate created the opportunity for dramatic changes based on the emerging governance model.

Because, I have to say, the leadership that … the interim-CIO brought, his biggest gift to us was empowering the DITC and other folks at LargePub to create these wonderful opportunities for collaboration (Large Division DIT #3 Interview 6/29/04).

4.1.3 ITAC Event # 3 – Decision-Making Model Established

The model of the critical event analysis for ITAC Event #3 is presented in Figure 4.5.

Power & Politics
- Sponsorship of COO
- CIO perceived to have access & influence
- Influence of Large Division DITs very high

Inner Context
- Highly decentralized IT units
- Strong commitment to autonomy
- High motivation due to shared desire for change, budget pressures
- Strong executive support perceived

Power & Politics
- Uncertainty leads to less than full engagement
- Large Division DIT leadership & influence decreased
- CIO pushing for ITC activation

Inner Context
- Momentum of ITC process & ITMF activities maintain coordination intensity
- Motivation undermined

Coordination State
- ITC model vetted across LargePub establishing broad consensus
- Network of relationships growing
- "Unofficial" ITC meetings initiated
- ITMF continues specific IT context initiatives

Critical Event
IT Decision-Making Model Established (COO Conditional Approval)

Coordination State
- ITC begins "formal" operations
- Limited staffing of council & regular meetings
- Focus on information sharing increases

Coordinating Characteristics
- ITC operating mode established and supported
- Participants highly engaged in positive climate
- Participation balanced for representation and size
- Decision-making model fits LargePub culture

Outer Context
- Budget pressures increasing, plans for severe short-term cuts
- Increased involvement from state oversight board

Coordinating Characteristics
- ITC Chair's limited involvement weakens leadership
- Impact limited to creating the ITC
- No on-going executive involvement

Outer Context
- Budget pressures increasing, plans for severe short-term cuts
- Increased involvement from state oversight board

Figure 4.5 ITAC Event #3 – IT Decision-Making Model Established

Antecedent State

Following the October, 2003 retreat, the full ITTF reviewed the proposed governance model. After some revisions the group set about a process of communicating the proposal to as many groups and key constituencies as possible across LargePub. Through out this process, the model was refined and the supporting explanations were clarified. A broad-based and general consensus emerged in support of the governance model. Several committees and councils at LargePub gave formal endorsement to the proposal.

> And that was something . . . we brought that model around to a lot of groups [at LargePub]…and got pretty good buy-in on it from a lot of constituents.... We

probably did 6 or 8 presentations of that model in front of all those groups …
(Large Division DIT#1 Interview 12/05/06).

[We] actually had a broad base of consensus surrounding the structure. Even the
existing committee made up primarily of [very influential staff], that was going to
be disbanded [by the ITC], endorsed it (Large Division DIT#6 Interview
11/27/06).

The interim-CIO strongly supported the development of the governance model based on

the Information Technology Council (ITC). He encouraged broad-based participation and

providing many different communication channels to both solicit input into the decision-making

process from, and to build support for initiatives in, the broader organizational community. He

broadened support by encouraging the ITC participation to include representatives from ITMF

and ITnet[24].

The ITMF existed, I believe they did exist in some form. But it was not clear how
they interacted with the CIO and what impact they had...ITnet existed really as a
coordination body among themselves with nobody to listen to them in many
ways. They just worked for themselves. And, I … you know, having worked and
seen the need to get some sort of broad-based, not really just support, but just
interaction among the IT parts of LargePub, you need to have some sort of
structure in place and there was not really one (Interim-CIO Interview 6/28/04).

And back then ITnet was . . . they called it ex officio, you know we weren't really
a voting member or anything like that. When [the interim-CIO] took over, he
made ITnet a full member on ITC…(ITnet ITAC Rep Interview 01/03/07).

The ITTF submitted the proposed governance structure to the COO in late November,

2003. There was some delay due to scheduling challenges in formally presenting the proposal to

the COO. However, the COO provided some meaningful support for the proposed structure by

identifying a Division Manager to become Chair and working with the various functional vice

presidents of LargePub to identify potential functional committee chairs and participants.

In December, 2003 the core participants in the proposed ITC made up of the ExecuDITS group and other standing members started meeting unofficially. The participants were highly energized and eager to begin the process of implementing the proposed structure. The initial meetings centered on ways to accelerate appointments to the ITC and the creation of the operating committees.[25]

Critical Event and Related Activities

In late January, 2004 the interim-CIO, ITTF Chair, and a key Division Manager[26] formally presented the proposed governance model to the COO. The decision-making model presented to the COO is shown in Figure 4.6. The COO provided conditional approval for the decision-making model and authorized the interim-CIO and ITC Chair to proceed with implementing the proposal. However, the COO withheld formal approval and announcement of the creation of the ITC to LargePub. Based on the work of the ITTF, the COO recognized the need for change in the governance structure. However, a search for a permanent CIO was underway and the COO wanted to provide the new CIO input into the structure, purpose and role of the proposed decision-making model. The rationale was captured in the following exemplar comment:

> I think the reason the COO would not officially endorse the group before a CIO was hired, was that he recognized that whoever is brought in is going to want to shape that group to how they think would be most effective to work with them…(Executive Director CIT Interview 06/15/05).

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[24] ITnet (pseudonym) is a self-formed and self-sustaining network of technical IT employees that meets regularly to discuss topical issues related to IT infrastructure and operations. The group operates under published bylaws but does not have formal sanction as a part of LargPub's organizational structure.

[25] Based on personal notes made during meeting observations and email correspondences.

[26] This Division Manager was appointed by the COO to be the Chair of the ITC.
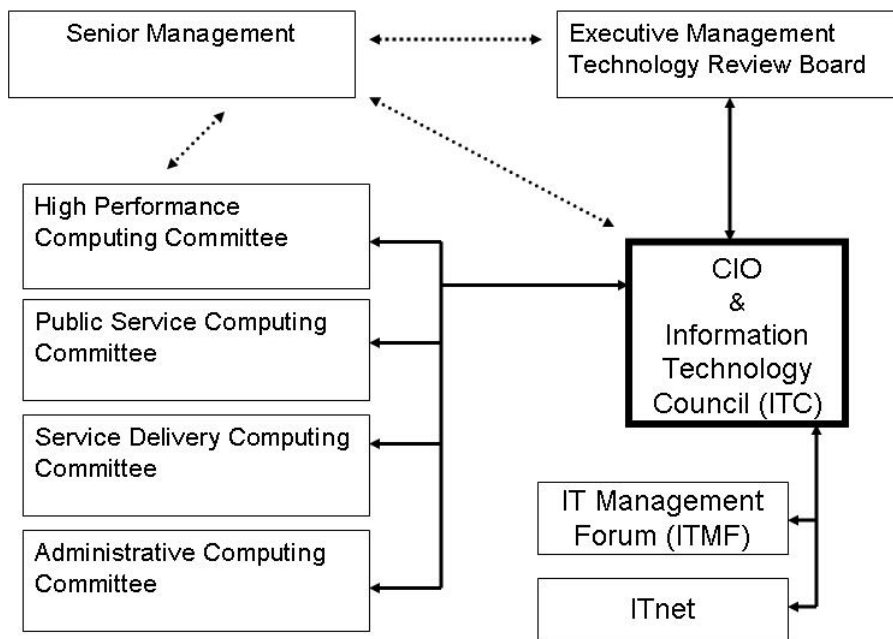
Figure 4.6 Initial LargePub IT Decision Making Model[27]

Consequent State

The conditional approval offered by the COO had two primary impacts on this coordinating effort. The first was more immediate and obvious. Immediately the core participants began meeting formally on a scheduled basis. Bi-monthly meetings started in January, 2004. Chairs for the four functional committees were appointed and began the process for taking nominations for committee participation.[28] Two of the functional committees, High-Performance Computing and Customer Computing, existed prior to the creation of the ITC. These committees continued to operate as before. However, the focus of these committee chairs became one communicating status of existing efforts to the ITC and understanding how the

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[27] Adapted from LargePub Information Technology Decision Making Model (November 17, 2003) and as presented to COO in January, 2004.
[28] ITC Meeting Minutes 3/10/04 & 4/12/04.

objectives of the ITC were to be implemented in relationship to existing responsibilities[29]. This

issue is represented by the following exemplar comment:

> (A)nd I agree that the model has the general support of the group…but the
> question of whether [the committee] should take on the gap analysis and priorities
> task hinges to some extent on the [overall] scope of the Committee [at LargePub]
> (Customer Computing Committee Chair Email to ITC Listserv 11/19/03).

> The second impact of the COO's conditional approval was less immediate but quite

dramatic. The lack of public support and formal introduction of the ITC by the COO to the

broader community of LargePub caused varying degrees of uncertainty.

> [The COO] gave conditional endorsement of the concept. He had said, "Before
> we finalize it, I want the new CIO to weigh in on it." He did not have any other
> involvement. The fact that we were meeting, what we were discussing, he did not
> know . . . he probably did not even know we were meeting (Large Division DIT
> #4 11/27/06).

The objectives of the ITC were clearly presented in the proposal accepted by the COO. Yet

efforts to develop the communication plans, begin the process of strategic planning, or engage in

specific IT technology domain initiatives were undermined by the recognition that final action

would have to wait for the permanent CIO.

> I think that the COO has kind of put the brakes on things. One of the things I
> think that he has and he hasn't. I think he's kind of vacillated a little bit on that. I
> think he wants…you know initially he wanted us kind of go forward then he sort
> of thought well gee we should get a new…you know a new CIO should be
> involved in this (Large Division DIT#1 Interview 6/2/04).

> And the lack of a clear mandate from the COO also impacted the leadership of the ITC.

The committee chair missed most of the initial formal meetings of the ITC.

> I mean it's not, ITC's not operating, it's not operating. It's you know operating on
> an informal basis right now. The chair doesn't even show. I, you know, we're
> having meeting where the chair can't be there. I mean this seems bazaar to me …
> (Customer Computing Committee Chair #1 Interview 9/20/04).

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[29] As evidenced by discussion lead by Administrative Computing Committee Chair at an ITC Meeting (ITC Meeting
Minutes 3/04).

The interim-CIO was directly involved with the ITC and made conscious efforts to

activate the group. While the interim status caused some challenges, the interim-CIO believed

the role of the ITC was important and necessary for improving IT at LargePub.

> [T]he structure that we're evolving or something like that is key. Now whether or
> not this particular structure that we're trying to build is going to work or not, to
> me you take a fairly practical approach and you say let's try to do some things to
> make it work. Let's start feeding some decisions into this engine, let's prime this
> pump and push things along…Part is it needs to be formally endorsed by the
> upper management, by the COO and the executive management. It has not been
> done. They are, in all fairness, waiting for a new CIO. You know, but to me that's
> no reason really why ... you need to pump some decisions like the email policy,
> like a couple of things through that group…Or maybe I mean one good one that I
> know that's been on the agenda is how about during the next fiscal year that we
> develop a strategic IT plan? I think we need to have one for LargePub. And I
> think it needs to go right through [the ITC], maybe that's the first critical thing is
> the strategic IT plan (Interim-CIO Interview 6/29/04).

Despite the efforts of the interim-CIO, the work of the functional committee chairs to put

the committee representatives in place and begin working, and the efforts of the major division

DITs to bring the ITC into full operation, very limited progress was made. The impacts of the

COO's conditional approval are aptly captured by one of the DITC/ExecuDITS members:

> We were ready to put it in place. The COO said, "Wait, I want the new CIO to
> have a say on this, so just hold." We actually had a place…we met as the ITAC
> for a year as they were going to search but there was really no charge. We were
> just trying to keep the engine lubricated in hopes that we will be able to take off
> once the CIO came in. But it became pretty clear right about that time, as we
> were starting to mimic the process, that there really was not a clear purpose. [My
> Division Manager] asked me once when I was telling him what we were doing,
> "What is the purpose of this group?" "I am not really sure I can articulate that."
> It was really more about trying to get them together, to have the discussions, and
> try to agree on a direction, trying to bring disparate groups together and create a
> common movement. That was the purpose of it (Large Division DIT #4
> 11/27/06).

Implications

As the participants finalized the creation of the ITC and moved to begin fulfilling its operating mode, many of the contextual influences would seem to provide confidence that the overall effort was poised for success. First, the operating mode was clearly defined and broad-based support indicated general consensus for the approach to IT governance. The momentum of the efforts to create the ITC model and the on-going initiatives of the ITMF created an environment ripe for progress and generating highly energize participation.

Yet this was undermined by the actions of the COO. The ITC was designed as a formal committee with independent standing within LargePub. Yet the conditional support provided by the COO denied the ITC the formal standing upon which the model was based. And the primary objectives of the ITC, in particular creation of an IT Strategic Plan for all of LargePub, depended on full implementation of the model. Creating an IT Strategic Plan would involve engaging the entire LargePub community. This would have required formal endorsement of the ITC by the COO and senior management to establish the organizational status necessary to conduct a meaningful strategic planning process. Thus the lack of executive support from the COO in terms of formal endorsement created a conflict in the operating mode. And the lack of formal endorsement brought the ITC into conflict with the organizational culture in that the LargePub community had an expectation for formal sanction and status for this type of enterprise-wide coordinating effort. Ultimately the lack of formal endorsement sapped much of the coordinating motivation that had previously existed.

> It was probably because we were in a holding pattern. We did not have a permanent CIO, and we were instructed not to get carried away until a new CIO weighed in on things. Right there you are neutered. You are a place-holder. There is no real authority, no charge, no…nothing terribly motivating to get behind (Large Division DIT #4 11/27/06).

4.1.4 ITAC Event # 4 – Council Mission Changed

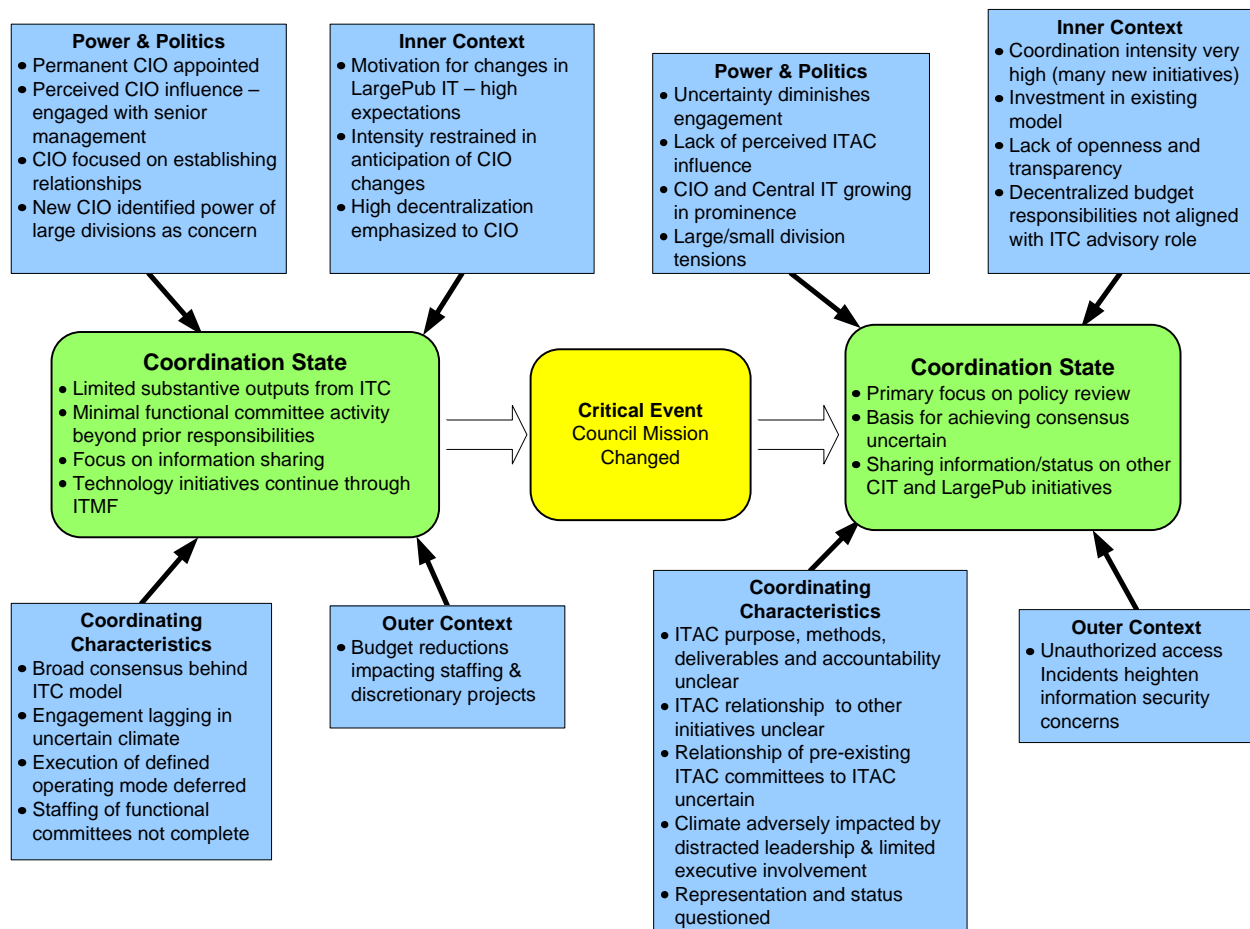The model of the critical event analysis for ITAC Event #4 is presented in Figure 4.7.

Power & Politics
- Permanent CIO appointed
- Perceived CIO influence – engaged with senior management
- CIO focused on establishing relationships
- New CIO identified power of large divisions as concern

Inner Context
- Motivation for changes in LargePub IT – high expectations
- Intensity restrained in anticipation of CIO changes
- High decentralization emphasized to CIO

Power & Politics
- Uncertainty diminishes engagement
- Lack of perceived ITAC influence
- CIO and Central IT growing in prominence
- Large/small division tensions

Inner Context
- Coordination intensity very high (many new initiatives)
- Investment in existing model
- Lack of openness and transparency
- Decentralized budget responsibilities not aligned with ITC advisory role

Coordination State
- Limited substantive outputs from ITC
- Minimal functional committee activity beyond prior responsibilities
- Focus on information sharing
- Technology initiatives continue through ITMF

Critical Event
Council Mission Changed

Coordination State
- Primary focus on policy review
- Basis for achieving consensus uncertain
- Sharing information/status on other CIT and LargePub initiatives

Coordinating Characteristics
- Broad consensus behind ITC model
- Engagement lagging in uncertain climate
- Execution of defined operating mode deferred
- Staffing of functional committees not complete

Outer Context
- Budget reductions impacting staffing & discretionary projects

Coordinating Characteristics
- ITAC purpose, methods, deliverables and accountability unclear
- ITAC relationship to other initiatives unclear
- Relationship of pre-existing ITAC committees to ITAC uncertain
- Climate adversely impacted by distracted leadership & limited executive involvement
- Representation and status questioned

Outer Context
- Unauthorized access Incidents heighten information security concerns

Figure 4.7 ITAC Event #4 – Council Mission Changed

Antecedent State

As discussed in the prior event, the COO's conditional approval had created issues in making substantive progress operationalizing the ITC. The budget challenges and general executive support for improving the efficacy of IT investments at LargePub provided significant motivation for various initiatives. And broad consensus existed around the general approach to IT governance and the decision-making model that had been developed. This consensus was

described just prior to the change in IT leadership at LargePub by a Division DIT that had served

on both the ITTF and the ITC.

> …[R]ight now the people involved with the ITC, everybody has a very thorough understanding of the decentralized nature of things [at LargePub] but there seems to be a lot of enthusiasm and willingness to participate in the idea of a… it's not that the IT Council is going to dictate things, it's a mechanism to form consensus around and then suggestions are brought to [LargePub's senior management]. Hopefully there will already be broad buy-in you know. We're recommending this as a policy mandate by [senior management] but the grass roots is already there. They already understand or are accepting of it and are enthusiastic about it which hopefully will provide the CIO a much more effective means to encourage and drive change than starting with a top-down suggestion … (Public Service Committee Chair #1 Interview 9/13/04).

After an extended search, LargePub appointed a new CIO in October, 2004 to replace the

interim-CIO on a permanent basis. The new CIO came from another organization within the

same industry having served as CIO in that state government organization. The newly hired CIO

had extensive experience in IT strategic planning and implementing large enterprise software

systems. During the interview process the CIO had been given materials describing the decision-

making model and the ITC and these were discussed. Also, at the invitation of the interim-CIO,

the new CIO attended and observed one ITC meeting in August prior to officially joining

LargePub.[30]

While a broad consensus existed regarding the ITC internal to LargePub, the

communications regarding the ITC to CIO candidates interviewed on site lacked clarity in

expressing the purpose and role of the ITC.

> But for whatever reason, in our initial documents that we had ready, when the CIOs were doing interviews two of the candidates, [the person we hired] was not one of them I might add, two of the candidates took great note of that process. And one of them was really vocal in that, because they asked what do you think of our ITC? We were so proud of it…and I said, "Okay, what do you think about our IT model, our ITC?" [One candidate] came right out and just said, "I think there are a lot of people trying to tell me how to do my job." So there was

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[30] ITC meeting notes.

something in the way we did that, that was raising flags (Large Division DIT#3 Interview 11/20/06).

Upon arriving at LargePub, the new CIO made a concerted effort to create relationships and engage members of the LargePub community. Over a period of approximately 6 weeks, this involved direct contacts with key personnel as well as networking with various groups and organizations throughout LargePub.

> Well, I just I'm thinking about again what I've over the last six and a half, seven weeks that I've been here, talking to all these different groups and I don't know about 65 groups. Sixty-five that I've talked to in six weeks and many of them were these governing, or what has been called governance groups (CIO Interview 11/22/04).

> [I] sat down and talked to the [division managers] and the department heads and the administrative side of the house to find out exactly where we were. Because you've got have a benchmark. You've got to be able to know where you are, have a sense of where you're headed and what is it going to take to get there. So you've got to have some benchmarks or some points in time from which to compare and we didn't have that. So I did that first (CIO Interview 1/31/07).

However the new CIO appears to have met individually with only two of the division IT directors participating on the ITC and both of these meetings were initiated by the DIT.[31]

During the first six weeks at LargePub, the CIO developed an assessment of the governance/decision-making model at LargePub. The CIO identified the lack of progress in bringing the ITC into operation as a real short-coming of the existing approach.

> The other thing that we don't have is any kind of discipline in these groups. We don't have membership criteria, we don't have a rotation schedule, we don't have key initiatives that they need to be working on, we don't have a charter or a set of by-laws. I actually think a charter is more effective, but I'm not sure the colleagues will. A blueprint about how we're going to operate. We have not communicated any of this to the colleagues at large so they don't know where I'm coming from on this IT Council (CIO Interview 11/22/04).

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[31] This is based on a review of all interviews with ITAC representatives serving in the capacity of division DIT or functional committee chairperson that also held the position of a division DIT.

This represents an early and strong indication that the CIO and members of the ITC were having

difficulty finding a common frame of reference from which to link prior efforts at developing

and implementing the ITC with the new direction desired by the CIO.

In addition the CIO expressed doubt regarding the extent to which the existing decision-

making model provided leverage through the ITC to rationalize the flow of information moving

to and from the CIO from across LargePub. This indicates another point of insufficient

communication between the new CIO and the leaders of the ITC. The role which the ITC was

intended to play relative to other IT bodies at LargePub was not articulated with sufficient

clarity, thus leaving the CIO uncertain as to its real purpose.

> But I can't have 16 groups trying to feed me what they think are the best, their
> best recommendations, but I can work with an advisory group who hears. There's
> representation on that council – there will be – from all the groups (CIO Interview
> 11/22/04).

And the CIO expressed further doubt about the representative nature of the existing group

and whether the participants had sufficient status to fulfill an advisory and advocacy role. The

CIO was looking for a group that represented the full spectrum of the organization and not just

IT. And the participants needed sufficient status to help the CIO advance initiatives to senior

management so that when the advisory group recommended an initiative, senior management

would know it enjoyed the full backing of the broader organization.

> [T]his advisory council or advisory board, whatever it ends up being called is no
> good if we don't have the players in place. Absolutely, I mean they may think
> they are, but I'm here to tell you they're worthless because they do not get the
> user community input the way we need it. And, Directors sitting at the ITMF level
> get one sense for all of it. It was really clear we had six big players – six
> [divisions] – six big players and then we've got all the rest of the people…. I can
> feel the power struggle or power the concern from [Large Division]. I mean it
> is…and I know a lot of work has been done by the personnel there, that is one
> among several [divisions] who need to be at the table to provide leadership, but it
> isn't the only one. And I think there's some sense in the larger community that
> everything's driven by one or two divisions – which is not where I'm coming

from. Because I'm here responsible for, as we move the organization, LargePub's Information Technology arena (CIO Interview 11/22/04).

Through the CIO's initial meetings with the ITC and a 2-day retreat convened in early December, 2004, the CIO started to layout a new perspective on the purpose and role of the ITC. The CIO sought to use the retreat to establish "the structure for an advisory body to the CIO who is responsible for the infrastructure of the IT core (network, enterprise data, voice, regulatory requirements) for LargePub" (ITC Retreat Notes 12/04). The CIO established the purpose for the council was not a decision group that forwarded things to the CIO to be carried to senior management, but rather advisory to the CIO providing information to support the decision-making process. The CIO was positioned as being responsible and accountable to the COO and senior management for decision-making related to the IT core at LargePub (from comments by interim-CIO and CIO, ITC Retreat 12/04).

> So the IT Council, what I'm hoping to do is have them be the principal, let's see, I'm looking at them as being the advisory body to the Chief Information Officer, but not in a vacuum. The alignment of all these groups into that advisory council is what I'm counting on because there's no way I can get to every one of these all the time. There's no way I can help them focus. I can't do that, I don't have enough time (CIO Interview 11/22/04).

During the retreat, many issues related to the uncertainty surrounding the ITC were discussed. Consensus was not reached on how to resolve many of the issues but in the end, the ITC established a revised role and scope statement (presented in Table 4.1).

1. **Provide Strategic Business Direction**
   - Serve as a vehicle for gathering input for organization-wide strategic IT planning. Recommendations will be collaboratively developed, data-driven and reflect LargePub goals.... The objective is to develop a truly integrated organization-wide strategic IT plan.
   - Develop recommendations for a LargePub IT service model that addresses core services, the appropriate blend of central and local IT services, and standards. Participate in the annual review of the LargePub IT model.
2. **Act as a Change Agent**
   - Create opportunities and rationale for people to change.
   - Focus on constructive reinvention; avoid duplication/redundancy.
   - Foster partnerships between IT committees and the LargePub community. These partnerships will increase opportunities for shared resource contribution, innovation and increased return on IT investment.
   - Create movement around a mission and sustain momentum.
3. **Ensure Alignment**
   - Participate in institutional IT planning activities.
   - Help align IT planning model with the institutional planning model so that IT initiatives roll up into the accomplishment of the LargePub goals and objectives.
   - Analyze and advise on issues that assist in delineation of clear roles, responsibilities, and priorities for and within the institution.
4. **Analyze Policy**
   - Aid the CIO in identifying the consequences of policy implementation, advise on implementation strategy, and assist in communicating the need for the policy (assuming implementation proceeds) to those affected.
   - Use the following criteria when analyzing policies:
     a. Policy should be succinct, understandable, practicable, cooperative, auditable, measurable and dynamic.
     b. Policy should be linked to the "strategic business objectives" of the enterprise.
     c. Policy development should follow a defined process.
5. **Advocate for what is Best for LargePub through CIO**
   - Be an advocate for value-added LargePub initiatives that support the changing operational needs of the LargePub and most effectively utilize limited budgetary and human capital resources.
   - Ensure that key information technology decision-makers and stakeholders understand organizational IT challenges and the business drivers for IT policies and procedures.
6. **Support the CIO/Act as a Resource for CIO**
   - Assist the CIO by promoting balance between unit autonomy and enterprise effectiveness.
   - Act as a conduit and sounding board for customer-focused IT issues (customers, employees, external constituencies).
   - Support institutional priorities and strategies through advocacy and action (personal and unit level) that:
     a. Are consistent with the strategic directions and priorities
     b. Support enabling standardizations
     c. Promote the institution's success.
7. **Be a coordinating resource for IT groups**
   - Give action committee members and other participants the tools and support they need to accomplish goals. (Participants include standing and ad hoc committees.)
   - Help define roles, expectations, scope, deliverables (e.g. gap analysis), processes and assessment tools for action committees and other participants. Review and revise periodically.
   - Provide opportunities for two-way communication and education among stakeholders.
   - Create opportunities for input and participation by selected vendors and consultants.
   - Respond to submissions, issues and concerns of action committees and other participants.

Table 4.1 ITC Role/Scope Statements (ITC Retreat December, 2004)

The lack of understanding regarding the direction, purpose and mission of the ITC as expressed by the CIO was exemplified by one influential ITC member:

> I think one of our very first meetings with [the CIO] we kind of pitched the ITC model…. And it was very clear from the beginning that [the CIO] didn't have a high level of comfort with it. It wasn't more like . . . I think [the CIO] had a sort of … toleration for it, perhaps. We used to call it the IT decision-making model and we then shifted it to IT advisory model because [the CIO] wasn't comfortable with the idea of it being other decision makers. I think that, this might be crazy on my part, but I really think [the CIO] sort of thinks that there is one source of IT leadership on at LargePub and that's [the CIO's] organization…. So I think that was sort of . . . it was clear [the CIO] wasn't receptive to the model as created (Large Division DIT Interview 12/05/06).

Ultimately, the CIO was given the responsibility by the COO for establishing the desired committee structure to assist in implementing required changes in the management of IT at LargePub.

> The COO said to me "put it together the way you want, let me know how you're going to do it, get going." And, so I got a list of…that I'm going to share next week or at the retreat…I've got a list of what I believe this group needs to do to help move the organization through me….But I want to be careful that we don't just put a new window dressing on the IT Council. And I think some of the colleagues who are so vested in it are having a hard time imagining from historical documents from last year's retreat that we might twist it a little bit this way instead of this way. And, I'm not sure rationality will even prevail. I mean there's a lot of emotion in there (CIO Interview 11/22/04).

Critical Event and Related Activities

The CIO had clearly expressed a view of the existing model to the ITC by stating "I am not comfortable with the word 'governance' and I am not sure LargePub is ready for a 'governing body'" (11/18/04 ITC Meeting Notes). Following the retreat and consultation with the COO, the CIO formalized the standing committee as the Information Technology Advisory Council (ITAC) in January, 2005. The objective of the ITAC was presented as to fulfill the Role and Scope Statements previously developed.

At the time the ITAC was formalized, the CIO appointed a new chairperson to lead the committee. Concurrent with this the CIO formally appointed members to the ITAC to serve for a period of 9 months. In making these appointments, the CIO firmly established that membership on the ITAC was at the invitation of CIO and not based on other organizational roles within LargePub.[32] The fundamental nature of participation on the ITAC had been changed.

Concurrent to formally establishing the ITAC, the CIO also initiated two other major enterprise IT efforts. The first was a formal strategic planning effort for IT at LargePub. The Negotiated Agreement Planning Process (NAPP) was a strategic planning process based on the creation of negotiated agreements between CIT and the various users of the IT core of LargePub. The process involved soliciting IT initiatives and priorities from various units across the organization. Through rounds of clarification and revision, the top priorities would be negotiated across all the units involved. Specific agreements would be established between CIT and the each unit related to the implementation of the identified priorities. The expectation was for the NAPP to generate some 12 to 20 priority initiatives annually across all of LargePub. These negotiated and prioritized initiatives provided the basis for the annual IT budgeting process thus aligning resource allocations with business driven priorities.[33] The NAPP was driven by the CIT organization and involved a major commitment in time and effort involving hundreds of participants and meetings.

The second major enterprise initiative established by the CIO involved an effort to assess the business process needs of LargePub and make recommendations regarding the future of enterprise information systems for the organization. This initiative was known as the Business Process Analysis Exploratory Group (BPA). This coordinating effort, which is the second case

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[32] From text of ITAC Appointment Letters by the CIO to previous ITC participants on the ITAC.

study in this research, was intended to make specific recommendations on how best to approach the implementation of new enterprise operational systems to achieve data integration, efficiency and support future needs of the organization.

Both of these initiatives were of critical importance to almost all aspects of the way in which information systems were to be utilized at LargePub. These initiatives were enterprise in scope and magnitude. And both were highly important and relevant to the membership of ITAC and the organizational units these members represented.

Consequent State

After the ITAC was formally established early activity centered on operationalizing the revised scope and purpose. Bylaws for the ITAC were established (April, 2005). The functional committees continued to meet, fill open positions, and assess priorities in response to the changes to the ITAC, however not all committees were engaged. The monthly ITAC meetings were primarily focused on updates related to other LargePub initiatives and ITMF projects, and status updates from the functional committees.

The operation of the ITAC was impacted by a lack of clarity in terms of the role of the functional committees. The chairs of each committee were members of the ITAC and regularly reported the status of the committee's activities. Yet the relationship between ITAC and the functional committees was not clarified nor were processes established about how the ITAC and committees would interact on specific initiatives. Membership of the Administrative Computing Committee of the ITAC was never established as existing efforts dealing with the BPA and the replacement of social security number as the personal identifier were considered the priorities in

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[33] Pseudonym used for confidentiality reasons. Description of the process based on comments by the CIO and the Executive Director of CIT charged to leading the process during several ITAC meetings in early 2005.

this functional area. And the Customer Computing Committee continued to operate independently with its own responsibilities, structure, processes and outputs.

In the 9 months following the formal creation of the ITAC, the primary tangible outputs were the review of several IT policies (e.g., email use, telecommunications, website disclaimer) and forwarding these to the CIO with supporting recommendations that the policies be approved by senior management for implementation at LargePub. The ITAC also established a standard policy development process and a policy template that were endorsed by senior management. Yet even the responsibilities related to creating policy were not fully established within the ITAC as exemplified in the comments of an ITAC representative from the service delivery employee's council:

> ITAC should be vetting policy if not creating it. I may differ from the CIO on this in terms of the role of the ITAC. The CIO takes the position that the Office of the CIO is the creator of policy (Senior Employee Council Representative Interview Notes 12/06).

In the months following the formal creation of the ITAC, a great deal of confusion continued on the part of the members regarding the purpose and role of the ITAC. This confusion centered on how to fulfill the advisory role to the CIO, identifying specific initiatives that were to be the focus of the ITAC and the functional committees, and defining how the ITAC related to other coordinating bodies and IT initiatives at LargePub. Council members questioned whether the ITAC was in fact a formal or an informal group and the extent to which the ITAC could effectively influence the organization given the lack of independent standing apart from the CIO (ITAC Meeting Notes 2/05 and 3/05).

As part of the presentations related of various enterprise initiatives, the CIO communicated the significant role that the ITAC would play in many of these initiatives[34]. Yet

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[34] Comments from ITAC meeting notes, e.g. CIT 5-year spending plan & BPA (5/06) and BPA (10/05).

the members of ITAC and the functional committees were not engaged in these efforts based on

their membership in ITAC. The limited participation by members of the ITAC in the NAPP and

BPA initiatives was based on the role these members played within their division and not as a

representative of ITAC.[35] The communications to ITAC related to status of these major

initiatives with little input or feedback from the ITAC other than short discussions during the

ITAC meetings. One member expressed confusion over the relationship of the ITAC to the other

institutional initiatives such as BPA, ITMF, Customer Computing, and NAPP (Senior Employee

Council Representative Interview Notes 12/06). This confusion and lack of involvement

generated significant frustration as exemplified by the comment from one participant:

> When those initiatives were announced, there are assurances from the CIO that,
> "You are all going to be involved. You are an important part of this. We need
> your advice on this. Blah, blah, blah." Never in that process did we get any
> substantial information or had any opportunity for input…as a group or
> individually. There may have been some members of the team that were part of
> an interview. I do not know of anybody. Essentially, every meeting we had, there
> was the same to rhetoric about, "All is progressing well. You will be involved.
> We need your input. Blah, blah, blah." Then when it comes down to, "Okay we
> are finalizing the report. After the [senior] management team has seen it – the
> COO, etc. – then we will present it to you." At the point where there is no longer
> any chance to influence it, we will let you know (Large Division DIT Interview
> 11/27/06).

In one instance the ITAC was given information on the NAPP initiatives that had been

identified, consisting of over 35 pages of short project descriptions, and asked to give input to the

CIO. One member asked for guidance on what exactly the ITAC was supposed to do with the

NAPP deliverable. The CIT leader of the NAPP process expressed a desire for recommendations

to the CIO on the projects, priorities and desired outcomes. However, no structure was put into

place about how to evaluate the NAPP initiatives or to assess priorities (8/05 ITAC Meeting

notes & minutes). Thus the ability of the ITAC to engage in this "advisory" effort was limited.

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[35] Based on responses from all ITAC participants interviewed after 10/04.

The ITAC and CIO spent much time discussing the need for and attempting to identify a "strategic initiative" that could be the focus of ITAC activities (ITAC meeting minutes for 7/05 & 8/05). The CIO assigned the IT Classification and Integrated Staffing model as the strategic initiative for 2006 (9/05 ITAC minutes). However, no other initiatives where identified by the CIO, the ITAC or its functional committees during this period of the committee's work.

Throughout the months following the formalization of the ITAC, the CIO expressed a desire to change the membership of the ITAC. This was positioned as an attempt to broaden the participation by adding customer representatives, representatives of senior service delivery employees, and to reduce the level of participation from the IT community. Some of the discussions indicated the re-emergence of past concerns that the large divisions were dominating the process of providing input to the CIO and senior management. In response the CIO expressed the need to reduce the number of large division DITs on the ITAC (ITAC Meeting Notes 5/05 & 7/05). This was reinforced by the CIO in reporting feedback from an executive management meeting to adjust representation to be more inclusive of all divisions not just large units, increasing service delivery employee representation, reduce IT leadership representation, and reduce the overall size of the committee (9/05 ITAC Meeting Minutes).

The frustration over the lack of a clear purpose and tangible progress was captured during an ITAC meeting discussion related to the committee's purpose, role and membership:

> This is all on paper. ITAC has no history. ITMF and ITnet have been more active
> than ITAC. Let ITAC do something for real before changing things.
> (Large Division DIT Comments at ITAC meeting 7/05).

And after many months, the fact that consensus had not emerged around the role and purpose of ITAC was expressed by this exemplar comment:

> I think that there were varied expectations by the participants about the role and
> nature of that committee. And I think you had some on the committee that

probably deep down really felt like that group was a policy setting, you know, that was part of what they were going to do was develop policy and probably that's not a majority opinion, but I think there were at least some that had that level of expectation about where the group would be going. I think you had some that probably felt the group should be a very active group in carrying forth initiatives and things of their own volition, you know bringing those through, you know grass roots or whatever you know area. I think most people recognized that there would be a certain percent of what they do as advisement…(CIT Executive Director Interview 6/05).

Implications

One of the fundamental issues that caused confusion and limited the progress of the ITAC in fulfilling the CIO's objectives related to the nature of the decisions that were required to move LargePub in a new direction and what role the ITAC, and its participants, would have in those decisions. The highly decentralized and autonomous nature of the organization established the need to incorporate the various units into any strategic decision-making process, particularly as it related to initiatives that had the potential to impact the decentralized units significantly. However, as a result of the changes implemented by the new CIO, the primary purpose of the ITAC shifted from generating consensus for the organization regarding priority IT initiatives at LargePub to generating consensus in support of the CIO for initiatives carried forward to senior management. Yet the full impact of this disconnect in understanding the purpose of the ITAC was not addressed in sufficient detail to evolve an effective operating mode. This fundamental issue was openly identified by an ITAC participant:

> The desire is to align resource allocation with strategic initiatives through CIT that are presented by the CIO to executive management for approval and additional funding. However, this does not fit with the 70% of IT spending that is not managed by CIT. The process needs to include managers responsible for the larger portion of the IT budget into the decision-making process as they are needed to enact many of the strategic initiatives (Large Unit DIT#3, 11/04 ITC Meeting Notes).

Ultimately the operating mode of the ITAC remained unclear and undefined. The language used by many of the original ITC members and the permanent CIO spoke to the need for the ITAC to provide support to the CIO in carrying forward initiatives to the senior management of LargePub for approval and resource. However the meaning of advice and advocacy was not developed to the point that the ITAC members understood what the CIO actually needed. The CIO did not provide sufficient guidance regarding the nature of the outputs needed. And the ITAC chair and members did not raise the issue in a way that reached the CIO. Thus the means for producing the desired outcomes could not be established.

The relevance and importance of a coordinating effort like the ITAC were widely accepted. However, the lack of a generally accepted mode of operating supported only minimal results in terms of influencing IT policy and did not provide the means for the ITAC to generate substantive impact. As a result the level of engagement declined and activities focused on information dissemination.

The intensity of coordinating at LargePub was very high as evidenced by the variety of enterprise initiatives initiated by the new CIO and the engagement of the broader organization in those efforts. Yet this did not translate into a positive climate within the ITAC. The CIO appointed a DIT as the new chair who, though widely respected and responsible for many successful initiatives within LargePub, did not have the stature of the Division Manager previously appointed by the COO as chair of the ITC. The CIO was highly leveraged during the period during which the ITAC was being operationalized and did not attend a significant percentage of the meetings. Thus the ITAC lacked the leadership appropriate to its stated purpose. The COO delegated responsibility for the ITAC to the CIO and was not involved with

the effort in a visible way after that. And the communications within the ITAC did not

fundamentally address the issues related to its operating mode.

4.1.5 ITAC Event # 5 – New Charge from the CIO

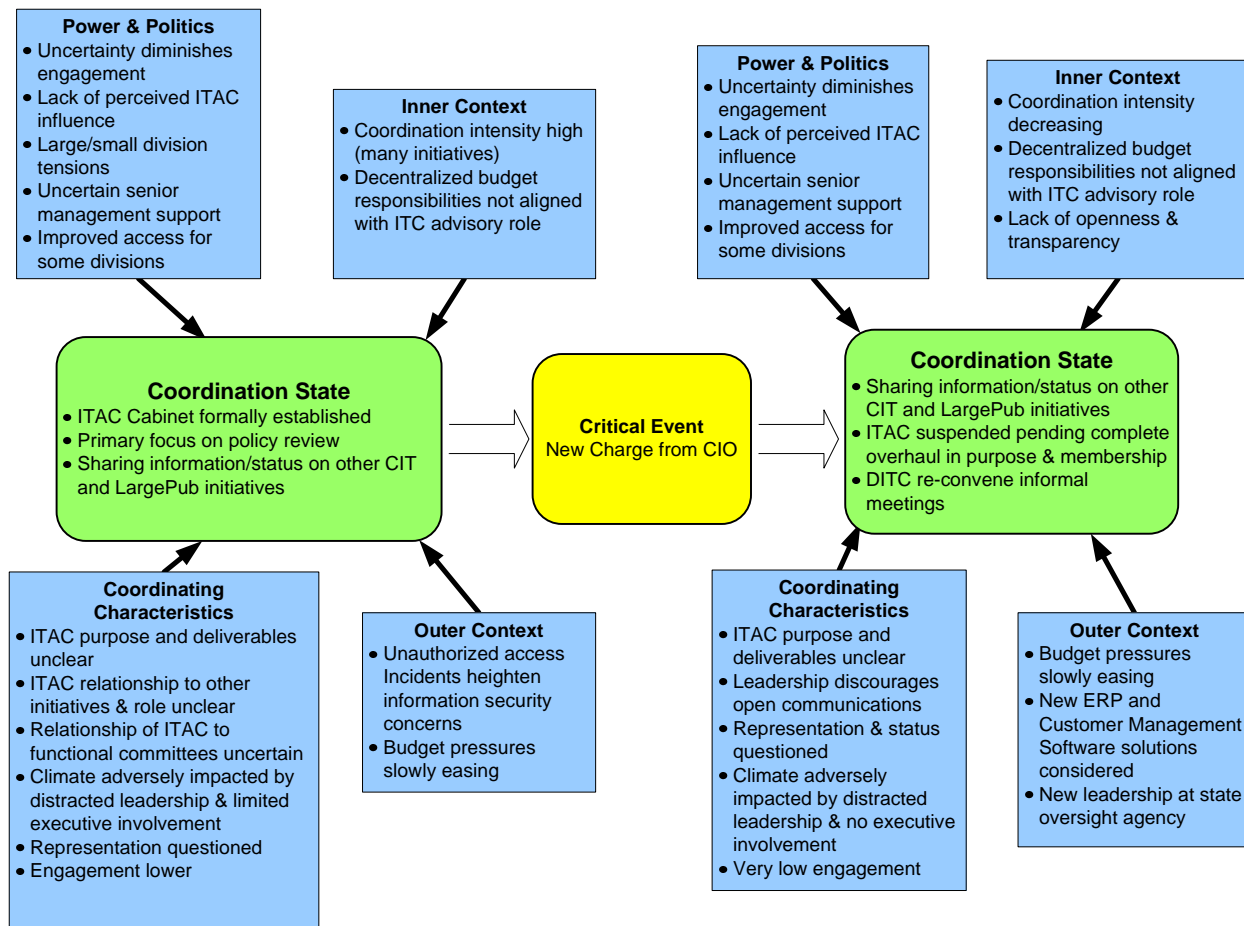The model of the critical event analysis for ITAC Event #5 is presented in Figure 4.8.

Figure 4.8 ITAC Event #5 – New Charge from CIO

Antecedent State

The ITAC activities continued for some time along the same declining trajectory as

described in the consequent state of Event #4. The CIO selected and appointed a new chair

person in October, 2005[36] and announced additional members to the committee representing the customer service employees and customer groups (10/05 ITAC Meeting Notes and Minutes)[37]. After an informal meeting in July, the CIO initiated a formal ITAC Cabinet in November, 2005. This Cabinet was established as a steering committee composed of the ITAC chair, four functional committee chairs, a state regulatory agency representative, and an executive director from CIT. The CIO looked to the Cabinet to help energize the ITAC, focus the efforts of the functional committees to generate more tangible outputs, and provide more direct interaction and decision-making support than was possible in the larger ITAC meetings (11/2005 Cabinet Minutes and ITAC Meeting Notes).

The lack of a specific purpose and clear objectives continued to hamper the functioning of the ITAC. The CIO sought to generate greater focus from each of the functional committees and to generate meaningful outputs through the ITAC. At the same time, the CIO made general requests for "advice" on various topics during the course of regular meetings of the council. One example occurred when the CIO asked the ITAC to gather information and provide feedback on a Central IT Disaster Recovery initiative (11/05 ITAC Meeting notes). This request was not directed to a particular functional committee, a sub-committee of ITAC members, or any specific individuals. Nor did the CIO provide specific parameters regarding the information to be gathered or the desired feedback. It appears that committee members did not register a specific request for action as there are no indications in subsequent meetings of this topic being discussed by the ITAC other than occasional updates from CIT representatives. And the CIO was confronted with a further example of lack of progress. The implications were identified by a frequent contributor in ITAC meetings:

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[36] The new council chair was also a division DIT who had been involved through out the coordinating effort.
[37] Other new members joined the committee from standard rotations of ITMF and ITnet chairs.

I am not sure whether [the CIO] has ever communicated it that clearly to the ITAC, what is wanted from them. Because I think you can make suggestions in a meeting and think that you are providing advice and [the CIO] is just looking for more (CIT Budget Director Interview 12/18/06).

Further actions from within and outside the ITAC demonstrated a lack of clarity in the purpose of the ITAC and its relationship to other IT efforts at LargePub. In response to a potentially significant network security breach, the COO established an initiative know as Protecting Sensitive Information (PSI) in October, 2005.[38] This initiative was intended to identify all IT resources at LargePub on which sensitive information was maintained and any remediation required to enhance the security of this information. The task force was directed by senior level managers within LargePub including the CIO, CISO, Controller, Internal Auditor, and Legal Counsel. The task force included both technical and business objectives and included the entire LargePub organization. Yet the membership of ITAC was not invited to the kick-off meeting; any ITAC members attending the kick-off meeting received notification as part of the ITMF (COO email announcement and Meeting Notes 10/05). Further, the ITAC played no role in the effort. Periodic updates were provided during monthly ITAC meetings.

The ITMF had established an Information Security Committee (InfoSec) that focused on developing and analyzing information security policies, and identifying areas of concern related to information security policy and practices. The CIO had charged this committee with developing an overall plan for addressing information security at LargePub based on requirements established by the state regulatory board. Recognizing the importance of information security to LargePub, the CIO shifted the InfoSec committee out of the ITMF and incorporated it into the ITAC. At the request of the CIO, the InfoSec Committee began reporting status at the monthly ITAC meetings. However, the InfoSec committee was not formally

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[38] Pseudonym used for confidentiality.

established in the structure of the ITAC (ITAC Meeting Notes, 11/05) through a change to the ITAC bylaws nor was it added to the organizational charts which showed the committee structure of the ITAC. The InfoSec chairperson was not included in the ITAC Cabinet along with the other functional committee chairs. As part of ITAC, the InfoSec Committee was active in creating and reviewing IT policies.

Although the CIO frequently identified information security as a very high priority for LargePub, the InfoSec Committee did not have a relationship to or participate in the PSI initiative (CIT Project Manager of PSI from ITAC Meeting Notes 11/05). And when it was suggested at a later meeting that the InfoSec Committee circulate its work on network security best practices to the ITAC for formal review, the CISO recommended that the ITMF and ITnet might be more appropriate forums for this review (ITAC Meeting Notes 12/05). Thus this "pseudo" functional committee that was addressing a domain deemed critical by the CIO had an unclear role and relationship within the larger ITAC. And the CIO did not establish a role for or relationship between the InfoSec Committee and a critical external initiative. If the ITAC and its functional committees were to advise the CIO on issues of enterprise importance but it was not included in a major, high profile enterprise initiative, the fundamental role and purpose of the ITAC was cast into further question.

Engagement in the ITAC effort was low and challenges of participation continued. At the monthly meetings, typically one-half of the members attended the scheduled meetings. And the CIO continued to communicate the desire to change the membership of the committee to include representation from business and industry, senior service delivery staff and customer groups (ITAC Meeting Notes 10/05).

Critical Event and Related Activities

After preliminary communications during monthly meetings, and discussions within the ITAC Cabinet, the CIO sought to engage the ITAC through specific initiatives. Some changes had been made to the membership of the committee to create broader representation of service delivery employees and customer groups. In an effort to focus and energize the work of the ITAC, the CIO directed the functional committee chair persons, including the InfoSec committee, to identify two priority initiatives that would be the focus of the committee's activities for the coming year.

The CIO charged the committees to define the initiatives using a standard template that included a description of the opportunity, deliverables, budget impact, team leader, project plan, strategies for input from the LargePub community, due date and current status.[39] The template identified several organization-wide initiatives that could be selected by the committee as a strategic initiative in lieu of or in addition to an initiative identified by the committee. Also, an abbreviated example was presented in the template to help guide the committees. The committee chairs were to begin reporting status of these initiatives to the ITAC in January, 2006. And it was expected that the two initiatives would be the primary drivers for each committee.

Consequent State

The overall impact of the renewed charge from the CIO on the work of the ITAC can be seen in five areas. First, in response to the CIO's charge to the ITAC and functional committees to identify two priority initiatives, begin working these as the primary focus of committee activity, and report status monthly to the ITAC, only three groups within the ITAC fulfilled the

request (review of ITAC Meeting Notes and Minutes through 5/06; CIO Interview Notes 3/06).

The Public Service Committee identified three initiatives of long-standing importance to this functional area (Public Service Committee Chair#2 Interview 11/06). The committee actively worked the initiatives and regularly reported status. The InfoSec Committee also submitted a report on two initiatives. Finally, the sub-committee of the ITAC involved with the IT Job Re-classification also submitted a strategic initiatives report.

The Customer Service Computing, Administrative Computing and High-Performance Computing committees did not respond to the CIO's request. In the case of Administrative Computing, the committee chair was focused on other initiatives in this functional domain including the work of the Business Process Analysis Exploratory Group and the ID Management Task Force. A committee of the ITAC was never established separate from these initiatives. Customer Service Computing and High-Performance Computing continued to operate as they had done prior to the establishment of ITAC working to fulfill their previously defined objectives. Their relationships to ITAC focused on status reporting and information dissemination.

Although the CIO attempted to focus the work of the ITAC and the functional committees on specific strategic initiatives, this adjustment to the work of the ITAC was diluted by frequent requests or suggestions from the CIO in terms of the advice or input needed. The CIO indicated the ITAC had an important role to play in the process of evaluating and setting direction for a enterprise customer services portal, but the CIO was unclear on the process for engaging the ITAC and its relationship to other committees involved (4/06 ITAC meeting notes). The CIO indicated a role in LargePub budget planning by stating the ITAC "will get more involved in budget planning next year as we got caught between cycles of the NAPP this year,"

[39] From ITAC Functional Committee Strategic Initiatives document posted to ITAC web site.

(CIO 3/06 ITAC meeting notes). The CIO indicated that the broader ITAC must play a role in information security education and training at LargePub through the functional committees and other groups based on communications and building awareness (4/06 ITAC meeting notes). Yet this proposed role for the ITAC and its committees was not positioned as a strategic initiative, tied to the initiatives of any of the functional committees, or presented as a specific charge. These potential topics for advice needed by the CIO further confused the purpose and role of the ITAC.

The lack of clarity as to the meaning of "advisory" was highlighted in a statement by the CIO. The CIO indicated that a subset of the High Performance Computing (HPC) committee was developing a position paper regarding a sustainable funding model for HPC. The CIO stated that the ITAC needed to review this position paper once finished and give "advice on how this hits you," (7/06 ITAC meeting notes). This request for advice provided no guidance for the ITAC members to frame what type of feedback was being requested. The request was not made explicit nor given a specific timeframe. Nor did the CIO offer an explanation as to how input from individual members of the ITAC would be used in moving the position paper forward. The level of understanding as to what the CIO wanted and how it was to be provided was low.

The second impact relates to the extent that the ITAC fulfilled the CIO's objective of advice on key topics. Ultimately, the total tangible output from the ITAC included two IT policies dealing with passwords and network devices. These policies were developed by the InfoSec Committee, approved by the ITAC after review and input from several other groups, and forwarded to CIO with a recommendation for approval and implementation by executive management (June 20, 2006 ITAC Meeting Notes). At the time the final policies were brought to the ITAC for "action", the Chair indicated uncertainty about exactly how to present the policies

to ITAC for endorsement. And a council member even questioned what the ITAC was doing by

giving "approval" to the policies (6/06 ITAC meeting notes).

Next, given the lack of engagement in the revised charge, the majority of the ITAC

activities, occurring primarily in the monthly meetings of the council, was focused on status

reporting from other LargePub initiatives and some of the functional committees. The overall

ineffectiveness of the ITAC was captured by one long-time participant:

> So I think that that . . . yeah, it really got to the point where, I mean I can't . . . in
> the recent past I can't really see much of anything that's come out of ITMF or
> ITAC, to be honest. I think there are still good intentions and I think there are
> people who still have some optimism and hopefulness about getting to the point
> where you can kind of dig in and start having some forward movement again
> where we're not there now (Large Division DIT Interview 12/05/06).

The fourth impact on the ITAC was not related specifically to the refined charge from the

CIO but rather to the fact that the ITAC continued to function. Although the tangible outputs

were minimal and the focus on ITAC meetings was on status reporting, ancillary benefits did

accrue from these activities. The information dissemination was of value to many participants as

exemplified by the following comment:

> I mean for me, one of the main purposes from my perspective was the information
> share, as a way of going and finding out things that were happening elsewhere in
> the computing…concerns of information security for instance. It was a place to
> get together and find information that otherwise was very hard to come by
> (Customer Computing Committee Chair#2 Interview 12/06).

Additionally, the informal interactions that took place surrounding the formal ITAC

meetings also generated benefits to the participants. This was exemplified through an example

offered by a division DIT:

> But because there is this event called the ITAC meeting, all these parties come
> together. So once the meeting is dismissed and prior to the meeting, is where a lot
> of the real business gets done. And it may be related to something that was
> discussed at the ITAC, for example, video conferencing. Video conferencing
> is…we are geographically disbursed and we're missing out on collaboration and

communication…And for us it's very important because we are trying to do business [across the state]. And I was frustrated at trying to figure out how do we get this done since we don't have control of all of the pieces of the puzzle…So that was a topic of discussion on more than one occasion in ITAC and my getting to know the folks at the [IT group at the state regulatory board]…eventually because of the ITAC gathering we pulled together a team … that involved all the players and it included the appropriate people at CIT, the appropriate people at our division, the actual video conferencing vendors…to look at how we would improve the quality of service of this technology…That emerged out of . . . you know, outside of the meetings of ITAC. That kind of thing is just a real success story that probably would . . . it could have happened but it would have been more difficult to happen, I think, in a different way. In other words, if you have the opportunity to be at the table with the people who are in positions to make things happen and you state the importance of something that you think is invaluable to the entire enterprise, then that lays the foundation in to begin the real nitty-gritty discussions that you have to have with everybody to get it done. If it had not been for ITAC then how would we have done it? (Division DIT#3 Interview 12/06)

Finally, the on-going ITAC meetings offered some participants and the LargePub units they represented a level of access and influence that had not previously been available. This is shown in the following exemplar comments:

Let's say that a . . . well, you take the new networking standards they're coming up with. If we are a part of that planning process . . . so we can provide input from our end . . . I consider that successful. Even if the end product of that is not necessarily favorable from the Public Service side, as long as we were involved in the process I consider that a success. Because prior to that, the entire process would have taken place and then we would have been told this is how it's going to be (Public Service Committee Chair#2 Interview 11/06).

And so we started this process about a year and a half ago and for the first time ever we got someone here at LargePub at a very high level and CIT to go on site [at a distant facility]. And we met, face to face, with the clientele. I'm talking about [the CIO]. [The CIO] agreed to go to both [major off-site locations] . . . and [continue to go] on a quarterly basis. I told [the CIO] that was not necessary. But that started this whole process of understanding what the matter was, what the challenges were there (Division DIT#3 Interview 12/06).

Despite the CIO's attempt to revitalize the ITAC through a focus on specific strategic initiatives, three aspects of the CIO's leadership undermined climate of the effort. First, the leadership of the ITAC from the CIO was limited. Due to the other major initiatives underway

such as the BPA, NAPP, PSI and efforts to realign the staffing of the CIT organization, the CIO

was very time constrained. After announcing the charge to the ITAC and functional committees

regarding focus on specific initiatives, the CIO missed about 40% of the monthly ITAC

meetings.[40] This lack of engagement by the CIO was paralleled in the general participation of the

ITAC membership. Typically, only about one-half of the members of ITAC attended the

monthly meetings.

The second aspect of leadership negatively impacting the climate and further

undermining the work of the ITAC was the messages from the CIO regarding the need to

reconfigure the council. The CIO expressed the need to increase further the representation of

service delivery employees and customer groups (3/06 and 7/06 ITAC meeting notes). The CIO

established a customer liaison effort through CIT and not as part of the ITAC. While the CIO,

and feedback from executive management, urged greater customer representation as key for the

ITAC, many council members questioned the value that this would bring. The reactions are

exemplified by the following comments:

> In terms of [customer] participation, I have struggled on what we can get from
> [customers] in that environment [within the ITAC structure]. We can ask
> [customers] about their needs – can they get resources they need? Are the services
> easy to use? Are they getting adequate training? But we will not get useful
> information/input as it relates to vetting policy. [Customers] lack the context and
> incentives to provide input on policy (Senior Employee Council Representative
> Interview notes 12/06).

> So, I mean, to me, I look at [the customers on the ITAC], and I do not recall
> hearing them ask any questions. I think they are just kind of there. I do not know
> that we are being pointed enough in our . . . because this is our profession, and
> for them, it is just a committee … [ITMF Chair#2/Division DIT Interview 11/06).

> There is also a [customer] group now that is on this committee. [The CIO] has
> pulled in more customers because [the CIO] has really always said, "Where are
> the customers in all of this?" Again, one of the disappointments has been the
> service delivery employees never came, and the customers never came. So, [the

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[40] ITAC meeting minutes and notes.

CIO] is looking at what changes we can make that they will come (Large Division DIT#3/ITAC Chair#2 Interview 11/06).

The CIO discussed with the ITAC Cabinet the need to add a customer committee and the InfoSec Committee to the ITAC structure (6/06 Cabinet Minutes). The third element of the CIO leadership that undermined climate occurred when the CIO addressed the July ITAC meeting about plans to work with the council chair and Cabinet to restructure the committee (7/06 ITAC Meeting Minutes and Notes). The message was very clear that the existing structure was not meeting the CIO's needs.

The CIO presented a draft plan to reconstitute ITAC and Cabinet for 2007 at the August, 2006 meeting. The focus of the changes was on much greater participation from senior management, industry, service delivery employees, and customers with limited participation from division IT Directors. The plan focused on the need of the public-sector CIO to "**use the advisory group for meaningful discussions and as a sounding board for decisions**," (LargePub ITAC Process and Procedure Recommendations – Draft, distributed at 8/06 ITAC Meeting; emphasis in the original). The proposed plan indicated that the CIO sought:

> [T]o establish an advisory model focused on the forecasting, strategic planning, project management, and identification of funding sources in support of the [enterprise computing requirements].

In presenting the proposed ITAC model, the CIO emphasized the need for the advisory council to focus on LargePub as a whole.

> The focus needed to be on the core systems beyond the existing divisional orientation, and pursuing alignment to eliminate redundancies within systems, services, applications and staffing (8/06 ITAC Meeting Notes).

Yet the fundamental challenge to the goal of the advisory function due to decentralization and lack of fit with the LargePub budgeting process was identified by the CIO:

The CIO at LargePub was hired to be accountable for the use of all IT at LargePub. But in reality, the CIO only has responsibility for maybe 60% of IT at LargePub and budget responsibility for a lot less than that (8/06 ITAC meeting notes).

Introducing the draft plan effectively ended the work of the ITAC as it was configured although two more monthly meetings were held. The ITAC held its final meeting and all related activities stopped in October, 2006. The CIO ended the participation of all committee members serving at that time, indicating that some may be invited to participate in a reformulated ITAC in 2007 while most would no longer be participating. A reception was held in November, 2006 at which time all participants were recognized for their service to LargePub.

The CIO had planned to reconvene the ITAC in January, 2007 with almost entirely new participants, a much more clearly defined purpose, and clearly identified deliverables. The new ITAC had not yet been convened by the CIO as of April, 2007.

What had become the ITAC started as the informal networking of four large division DITs. As the ITAC effort foundered, an interesting aspect of the coordinating process re-emerged. Three of the four original DITs began meeting again in the informal DITC network[41]. One of the participants summarized the situation succinctly:

> We have started to meet again. It is not the original four. Now, it is three of the four. We are getting together monthly. So far, it has mostly been…we are talking politics. We have not really defined what we want to accomplish…mostly it is just reestablishing ourselves. But there is a general agreement that we feel like we are back to the starting point. We are right where we were during our initial formation of the DITC team, where there was a CIO in place that people did not believe in, and there was no coordination across the [organization] (Large Division DIT Interview 11/06).

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[41] The fourth DIT had been promoted and was no longer working at the main LargePub location.

Implications

The CIO had evaluated the efforts of the ITAC and found the advisory council was not adequately fulfilling the stated purpose and role. In formalizing the Cabinet, the CIO started the process of adjusting the structure and methods by which the desired advice and advocacy would be created. This smaller group offered the potential for more direct and focused activity, leverage for the CIO to work through the functional committees, and engagement with a select group that could support decision-making.

By giving a specific charge to the functional committees to focus on a very limited set of strategic initiatives, the CIO made a final effort to adjust the operating mode of the ITAC. Focusing on a very limited set of strategic initiatives narrowed the potential scope of activities. The structure provided for defining the strategic initiatives sought to further clarify the work of the council by defining the drivers of the initiatives and the specific outputs/outcomes to be generated. Allowing the functional committees to identify and define the strategic initiatives to be pursued also provided a means to re-engage the ITAC participants. And the use of the strategic initiatives supported by an implementation plan sought to establish greater accountability for the committee chairs to make substantive progress.

The refined charge could not overcome the impact of council member confusion regarding the fundamental purpose of the ITAC within larger context of IT initiatives at LargePub. The "purpose" of the ITAC was to provide advice to the CIO on issues critical to the organization. Yet even with the refined charge, a gap existing between the CIO and ITAC participants in terms of what this actually meant, how the advice was to be created and presented, and how it was to be used. The role of providing advice on important issues was not clearly established in relationship to other enterprise initiatives. A common baseline was not established

to shape the work and processes of the ITAC. The clearest statement on what the CIO wanted in terms of "advice" came only with the introduction of the revised purpose and structure of the ITAC in which advice was tied to developing a business case for a specific initiative (LargePub ITAC Process and Procedure Recommendations – Draft, distributed at 8/06 ITAC Meeting).

The CIO was not able to bridge the gap to create a shared understanding of the coordinating purpose and operating mode of the ITAC. At the core of the issue is clarity in defining what was needed and then working through various mechanisms to ensure the participants internalized this understanding. Related to the clarity of the purpose and operating mode, throughout the process the CIO presented conflicting messages. At issue were the differences in tactical and strategic focus for the ITAC and the Cabinet. Shortly after charging the ITAC committees to focus on specific initiatives, the CIO described a vision of the ITAC and its key shortcomings as structured:

> ITAC is a group of business professionals, service delivery employees and customers. Orientation is 18-60 months out. The objective of this group is to provide input on direction – what are the technology trends that will have the greatest impact, what are business organizations doing related to these trends and technologies, and what does LargePub have to plan for to be where it wants to be. This is bringing in outside information, not focused exclusively on the IT perspective, that can impact the longer term planning and setting priorities…(Yet) the CIO needs a *tactical focus* (emphasis added) and that is not what the CIO is getting. All the CIO gets is "tell us what you want us to do." The current ITAC is sharing a lot of information but not doing anything. There is a lack of focus and initiative from the committees and participants. [The CIO] feels there is no clear understanding of what they should be doing or why (CIO Interview Notes 3/07/06).

This highlights the apparent contradiction in the desire for strategic input from the broader ITAC council on issues with a much longer time horizon with an expectation for tactical focus to create business cases related to high priority initiatives. And both aspects of advice coming from a large, representative group that meets only quarterly. This dichotomy of purpose was reiterated

by the CIO after the original ITAC activities had been suspended. In describing the purpose for the new ITAC, the CIO said:

> So ITAC has become . . . it will continue to be advisory but it will be advisory representing business, industry, the state government, the [state regulatory board], LargePub, [service delivery employees], customers. And it will meet quarterly. And it will be a reality check - give me what's coming down the road, help me know the red flags. And then I will have a Cabinet . . . a small subset of that meets monthly - helps me make decisions, helps me take recommendations forward, will go to bat for the Office of the CIO in decision making. I can use their name as clout when we meet. And so that group is a pretty heavy-hitting (CIO Interview 1/31/07).

4.1.6   ITAC Case Insights

Based on prior theory as discussed in Chapter 2, the characteristics of the ITAC as it was established and evolved would indicate both positive and negative consequences for the outcome of the coordinating effort. Coordination outcomes have been related to the complexity of the work to be done, type of mechanism used, representation, size of the body, executive involvement, and CIO attributes (e.g. Andres and Zmud, 2001; Doll and Torkzadeh, 1987; Drury, 1984; Earl and Feeny, 1994; Raghunathan, 1992; Sharma and Yetton, 2003; Van de Ven et al., 1976). On the positive side, the ITAC coordinating effort evolved from an informal network into a formal standing committee sanctioned within the organizational structure. Initially, the coordination involved activities between the IT directors of a number of large divisions at LargePub. The informal network known as DITC was the appropriate mechanism within the highly decentralized organizational structure because it was a bottom-up, self-motivated group effort where the participants were seeking a new means of collaboration outside of the formally established governance bodies established by the CIO. An informal network supported the purposes of the participants – find ways to share with and learn from each other,

gain efficiencies by sharing resources, and create a voice in strategic IT decision making within

the organization. The participants represented large and influential units and controlled

significant IT resources. The very small group developed a high degree of trust and very open

communications which enabled the participants to establish consensus and largely speak with a

single voice. The informal network was very successful in exerting greater influence in the IT

decision processes and for generating a much higher degree of engagement and intensity across

the organization in collaborative efforts.

As LargePub first moved to establish a formal IT decision making model, a formal

standing committee was established as the core coordination mechanism to implement this

process. The IT Council (latter renamed the IT Advisory Council as the primary objective shifted

to advisory to the CIO) was intended to be a representative body that included many of the

primary constituencies. The ITC and decision-making model had been thoroughly vetted across

the organization and enjoyed wide-spread support. The initial ITC enjoyed strong leadership

from an active and highly collaborative interim-CIO which energized the participants and created

an environment that conducive to coordinating activities. Finally, the original formation of the

ITC did enjoy some degree of executive support which did allow the structure and basic

operation of the committee to be established.

There were also some deficiencies in terms of how the ITC/ITAC was established as

addressed in the literature. The ITC membership was large and this caused some issues with the

ability of the full council to act collectively. Also the actual membership originally established,

due to the uncertainty associated with the COO's conditional approval, was predominantly from

IT and did not include sufficient representation from constituencies considered instrumental to

establish organizational consensus for enterprise IT initiatives. The primary objective and

purpose of the ITAC changed with the hiring of a new CIO yet the basic structure and membership was not substantively altered. The new purpose of advisory to the CIO was never reconciled to the original assumptions and objectives of the committee and this caused on-going challenges for the efficacy of the effort. The leadership of the ITAC was limited because the CIO had a fundamentally different perspective on the role and purpose for the council and did not have the bandwidth to drive the group towards the new vision due to over-commitments. Finally, executive support was almost completely absent as the executive management of LargePub was never actively engaged with the ITAC once the new CIO was hired even to the point of not including the ITAC in the Protecting Sensitive Data (PSI) initiative.

The activities of the ITAC coordinating effort over a 4 year period demonstrate that the evolution of the coordinating process involves the interaction of a multitude of influences. Some of the influences can have an overwhelming impact on the process at specific times and in relationship to different objectives that the coordinating effort is being used to achieve. Furthermore, different influences are activated at various times in the process and the coordinating process is impacted by the interaction of such influences.

The ways in which these varying influences interact affects the efficacy of the evolving coordinating process. A state of coordination is established and assessed based on the extent to which the coordinating process fulfills the primary purpose(s) of the coordinating effort at any point in time. The ITAC case demonstrates that aspects of the coordinating characteristics (primarily operating mode and coordinating climate), inner context (primarily budgetary alignment/decentralization, coordination intensity, investment, and executive support), power & politics (primarily access and ability to influence decision processes), and external context

(primarily economic conditions and funding) interact to generate a state of coordination. This relationship, first presented in the Chapter 2, is updated here as Figure 4.9.
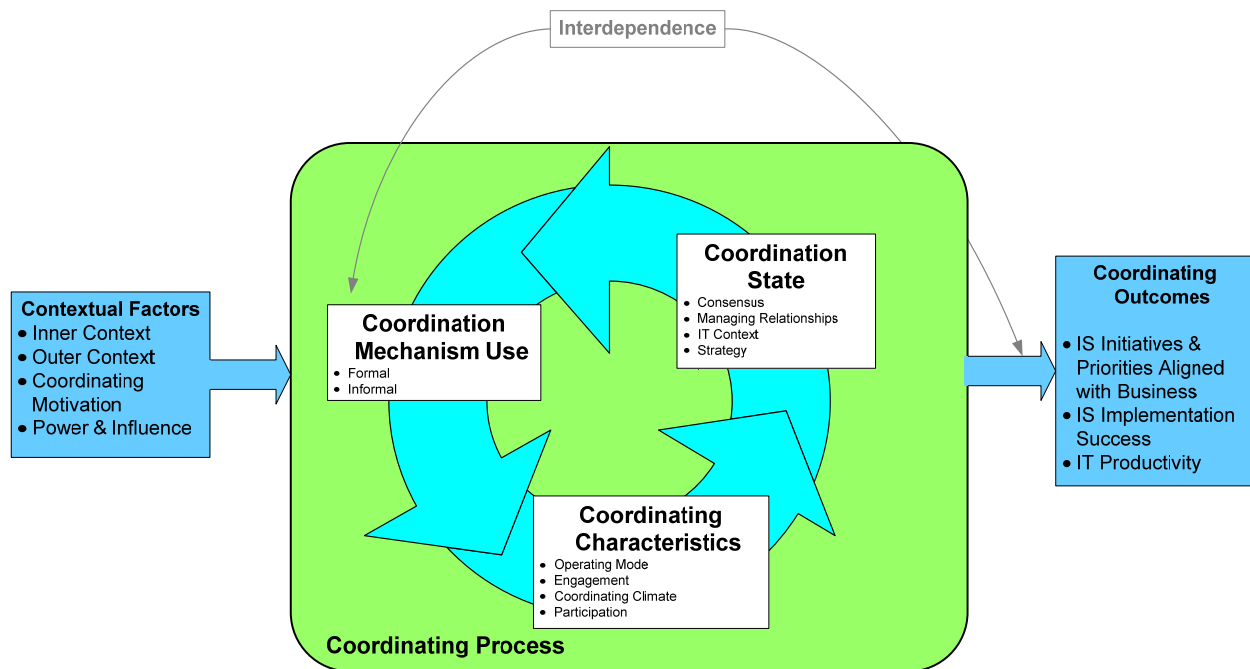

Figure 4.9 Coordinating Process Model

This case demonstrates that certain key events can dramatically change the dynamics of the coordinating process. Critical events may activate different attributes within the operating mode, coordinating climate, participation, and engagement, or aspects of the structural, cultural or motivational context of the organization. Critical events will impact the dominance of coordinating characteristics, inner context or organizational politics, within changing external environment influences, to create different interactions and a new coordinating state. This case yields five primary insights into the coordinating process: 1) unit alignment with organizational objectives supports the coordinating process, 2) executive support can be a dominant influence, 3) shared understanding is critical, 4) formal and informal coordinating activities interact throughout the process, and 5) how political influences interact with the coordinating process and

how the interaction and interplay of the two influence the evolution and outcome of the

coordinating effort.

The first insight drawn from the ITAC case relates to the role of unit alignment. The

original purpose of the LargePub IT decision making model was to create a process to identify IT

priorities from across the primary functional areas and then through the ITAC prioritize the IT

investments to support organizational strategic goals. Confronted with declining state funding

and severe budget limitations, LargePub sought to improve efficiencies and eliminate

redundancy in IT investments while improving core services to the various units. The

decentralized structure, in which the majority of the IT spending occurred outside of the control

of Central IT (CIT) and the CIO, necessitated that the disparate units were aligned with

organizational goals and initiatives in order to achieve them. This alignment would be manifest

by the decentralized units providing support for the decision-making process of and initiatives

emerging through the ITAC, and more importantly by contributing funding to support the

initiatives. This logic is demonstrated by an exemplar comment:

> There comes a point though, where ITAC… being a part of that discussion, being
> a part of the. . .agreeing on appropriate direction, that if you do have resources,
> you might contribute to them. You may contribute to the institutional outcome.
> For example, if we were to have discussed creating a premium email/calendaring
> service that we paid for, I would have contributed my dollar, my budget to the
> creation of that. It would benefit me. It would have established an institutional
> resource. I would have contributed budget towards it (Large Division DIT
> Interview 11/06).

The new CIO changed the purpose of the ITAC to focus on providing advice to the CIO

on priority initiatives which the CIO would then decide to carry forward to executive

management for approval. The CIO also sought for the ITAC to perform advocacy to the

organization to generate support for those priority initiatives. The primary source of IT initiatives

was to be the CIO's strategic planning process (NAPP) that was executed by CIT and focused on

the IT core central services as defined by CIT. The role of the IT departments in the autonomous units, and the large customer service units in particular, was de-emphasized in the restructured ITAC. The opportunities for many units to help determine and provide meaningful input into the strategic initiatives through the ITAC were significantly reduced. Thus the potential to create the unit alignment needed to develop broad-based support for organizational initiatives and to align unit level IT resource allocation with those initiatives was significantly undermined. As the ability to exert influence on the process diminished and lack of unit alignment increased, engagement by many of the primary participants was dramatically reduced. In effect, these participants began to withdraw from the ITAC which significantly impacted the potential efficacy of the process and the ability to achieve the desired organizational outcomes.

The second insight deals with the potentially dominating role of Executive Support in the coordinating process. As was observed in Events #2 and #3, the impact of executive support can dominate the coordinating process and realization of a coordination state at any point along the way. The support and involvement of the COO was instrumental in allowing the IT Task Force (ITTF) to complete its original mission and then respond to the COO's follow-up charge to develop an IT decision-making model. The support of the COO allowed the representatives of the ITTF to engage the appropriate constituencies to craft an approach to IT governance that aligned with the decentralized and autonomous culture of the organization. And ultimately the proposed model gained endorsements and broad-based support from across the organization.

Once established, however, the COO only provided a "conditional approval" of the IT decision making model, authorizing the council to form and begin working. The COO withheld formal and public endorsement of the ITC and the IT decision making model pending review and potential modification by the permanent CIO. And though the interim-CIO had an extremely

positive impact on the organization and made significant efforts to activate the ITC, the lack of executive support for the ITC in terms of the "conditional approval" by the COO proved to be too great a barrier to overcome. Although at the time the operating mode was well developed, participation strong with positive engagement, and the overall organization motivation extremely high, the ITC could not overcome the lack of support from the COO to fulfill the objectives of the council.

Informal, self-actualized efforts may not be hampered as greatly by the lack or even absence of executive support as can be seen by the impact of the DITC network. However, formal initiatives pursuing enterprise scale outcomes need to have commensurate executive support and involvement regardless of the other characteristics and contextual influences that may support realization of the coordinating effort purpose and objectives.

The third insight drawn from the ITAC case demonstrates how shared understanding is critical to the coordinating process. The original ITC was created based on an operating mode (purpose, method, output, accountability) for implementing a governance/decision-making model in a highly decentralized organization and incorporating input from a variety of IT units into the process to achieve both organizational and unit outcomes. The new CIO sought to create an advisory body based on a different set of assumptions about the operating mode such that the advisory council would not be directly responsible for decision-making but rather act as a conduit for information to be used by the CIO and senior management to take organizational level decisions. The differences in the assumptions were subtle but significant. It appears that the primary participants in the ITAC did not recognize the different assumptions impacting the coordinating effort, or if recognized, did not establish a process by which the discrepancies could be resolved.

Both the participants that created the ITC and the new CIO played a role in the break down in communications and lack of shared understanding. The individuals driving the ITC were heavily invested in the process and working to implement the decision-making model and did not take sufficient steps to bring the new CIO into the effort. This is captured by the comments of a long-time participant in the ITAC initiative:

> I think [the CIO] came on board, and [the CIO] was looking at what this group was doing, and was trying to figure out where [the CIO] would fit into this. And it was not clearly defined. Because it was not clearly defined, I think it was a relatively immediate concern. How does this relate to what my responsibilities are and what -- and I do not think we did a good job of addressing that at that time. I think, unfortunately, those of us who have of sort been in the process had been focused on how do we communicate to LargePub that there is a new environment, new opportunities for input for what central IT is doing. . . what kind of support and what the needs are. Our focus had been on trying to sell the LargePub in that we have got a new environment here. We have got new opportunities. We have got a new structure that will provide you some input that you perceive you have not had, and you probably have not, although some people have…I think we sort of had blinders on, and we were looking at 'how do we take this forward now that the CIO is on board?' We just completely missed the fact that we were not relating to how [the CIO] fit into this. I mean, and I do not think it was perfectly clear to [the CIO] that this was an advisory group, although the group thought of itself as an advisory group (Large Division DIT #6 Interview 11/06).

The new CIO had very different expectations for the purpose and role of an advisory group. The CIO had established an advisory council at the previous state agency prior to coming to LargePub. The CIO believed that the COO and senior management had given a clear mandate to move LargePub to an enterprise perspective in managing IT and IT investments, and that the CIO's accountability extended to the use of all IT at LargePub. The CIO made a very fast assessment of the situation upon arriving at LargePub. After just 6 weeks the CIO, for all intents and purposes, dismissed the existing decision-making model and the years of time invested in bringing it about. The CIO introduced a new model, based on new terminology and a different organizational perspective.

Ultimately, the CIO and members of the ITC did not give sufficient time and energy to activities that would help resolve the differences in assumptions and expectations about an advisory body within the highly decentralized environment of LargePub. The primary elements of the lexicon surrounding the ITAC – advice, advocacy, decision-making, governance, IT core – continued to have different meanings and little if anything was done to create common meanings for the various participants. As time progressed, the lack of shared understanding continued to re-emerge as the participants struggled to grasp what "advice" was, how it was to be created, how it was to be used by the CIO, and what impact and value the advice would have for the various units involved with the ITAC.[42] The repeated efforts by the CIO to adjust the ITAC proved unsuccessful at least in part because the changes introduced, and explanations for how these related to the primary purpose of the group, did not provide a basis for overcoming the lack of shared understanding.

The fourth insight demonstrates the dynamic and recursive interaction of informal and formal mechanisms within the coordinating process. Rarely do informal and formal mechanisms operate independently and in isolation. Rather the coordinating process involves informal mechanisms impacting formal mechanisms and formal mechanisms impacting informal mechanisms. This was demonstrated by the way in which the DITC informal network led directly to the creation of a formal advisory committee to the CIO and ultimately the creation of the IT decision-making model based around the ITC. Informal interactions by the interim-CIO and permanent CIO through direct contacts and personal networking influenced the creation and adjustments to the formal structure of the ITAC. The formal ITAC meetings offered a venue for informal networking which spawned specific initiatives (e.g. video conference standards) which

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[42] As described in Event #5, the CIO provided the most detailed explanation of what "advice" meant in the terms of a documented business case only after ITAC activities had been suspended. Of all the ITAC participants interviewed

created value to the ITAC participants and LargePub. And finally, as the ITAC effort foundered, the original DITC participants turned again to the informal network in an effort to achieve coordinating outcomes that were not being realized through the formal effort.

A fifth insight generated from the ITAC effort shows how political influences interact with the coordinating process and how the interaction and interplay of the two influence the evolution and outcome of the coordinating effort. The coordinating process becomes the ground in which politics and control are played out and negotiated both shaping and being shaped by the coordinating process. With this framing, the evolution of the ITAC coordinating effort can be briefly summarized.

The original four large-division IT directors started meeting in an effort to gain influence and control and have a voice at the enterprise level. The former CIO formalized this group in an effort to establish some control over the process. The DITC became more influential and drove the creation of an IT governance model. The COO's conditional approval of the proposed model undermined this effort. A new CIO was hired who wanted complete control over IT decisions at the enterprise level. This created conflict between the CIO and ITAC related to influence and control over IT decision making. Due to increased influence with executive management, the CIO had the greater power base and in effect won the "political struggle" with the founding members of the ITAC. Ultimately, the CIO disbanded the advisory council. From this perspective the coordinating process reinforced the CIO's political power and reduced that of members of the ITAC. This framing of the ITAC coordinating effort and the interaction of political influences and the coordinating process is elaborated below.

The informal DITC group emerged as a means for unit IT directors to deal with budget challenges created by reduced state funding and to exert influence and some level of control at

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after the permanent CIO was hired, only one (the ITAC Chair) described "advice" in these same terms.

the organizational level regarding IT priorities. The need was generated by the lack of credible leadership from the CIO and ineffective coordinating bodies that excluded many of the IT directors with significant resource control. The DITC group emerged as a highly influential group in the broader IT organization. This influence was due in part to the significant percentage of resources controlled by the four participants. Additionally, the four directors created consensus for and operational alignment for the objectives of finding collaborative solutions to common problems and gaining a voice in organizational level IT decision making. As the COO instituted the IT Task Force and initiated the creation of an IT governance process, the political influence of the large division IT directors was significantly enhanced.

The conditional approval of the IT Decision Making Model (DMM) by the COO changed the political dynamics within the organization which fundamentally altered the coordinating process. The conditional approval appeared to have two significant impacts on the coordinating process. First, the conditional approval undermined the legitimacy and magnitude of the large division IT directors' influence along with the others involved in creating the IT DMM. Without the formal and public support of the COO, the interim CIO and leaders of the ITC lacked the influence and decision authority to bring the coordinating effort into full operation. The second impact of the COO's conditional approval for the IT DMM was to establish quite clearly the importance of the role of the CIO in terms of setting the IT agenda at LargePub and directing the manner in which the various divisions and units would be incorporated into the process. The COO chose to defer the final approval of the IT DMM so as not to impose a solution on a newly hired CIO and to provide the new executive with flexibility to establish whatever support structures deemed necessary to improve the efficiency and effectiveness of IT investments at LargePub.

As demonstrated by the comments presented in the detailed event analyses indicate, the new CIO joined LargePub with a perceived mandate from executive management and a specific agenda for pursuing enterprise IT solutions to improve the return on IT investments. Given prior experience implementing IT strategic planning processes and enterprise software solutions the new CIO enjoyed significant influence, at least initially, based on this perceived expertise. The increased importance associated with the role of the CIO has already been discussed. And the CIO possessed legitimate influence over the IT strategic planning process and any support structures established as the COO delegated full responsibility for these to the new CIO. Thus the CIO started from a strong political powerbase in terms of influencing the ITC.

The CIO clearly articulated a belief that the CIO was solely responsible and accountable to executive management for IT strategic planning and decision-making at LargePub. Thus the original mission of the ITC was not consistent with the agenda presented by the CIO. The mandate from the COO afforded the CIO full leverage to restructure the coordinating effort as deemed appropriate. The CIO also possessed near exclusive access to LargePub's executive management as the representative of the organization's IT community. From this position, the CIO restructured the ITAC as an advisory body supporting rather than driving the decision process. The CIO acknowledged the investment by the primary participants in creating the existing body. This was manifest in incremental changes to the operating mode of the ITAC within the redefined purpose. The net impact was to marginalize the work of the coordinating effort and minimize productive output of the council. Through repeated incremental changes, the CIO continued to communicate a need for a completely different type of advisory body. The existing coordinating effort was terminated with the promise of a completely new coordinating initiative, aligned with the CIO's requirements, to be implemented in the short-term. The voices

of the original DITC and others involved with creating the original DMM were largely muted

and the CIO left to decide when, or even if, the new advisory council was to be implemented.

Thus the political influence of the CIO inhibited the evolution of the ITAC coordinating process.

The framing the coordinating effort in terms of assessing the impacts of political

influence provides a useful lens to explicate the evolution of the ITAC coordinating process, and

as will be discussed in the cross-case analysis, the transition of the process through a stage

model.

4.2   Business Process Analysis Exploratory Group (BPA) Case

The Business Process Analysis Exploratory Group (BPA)[43] represents a very different

type of coordinating effort. Whereas the ITAC was very broad in scope relative to the types of IT

issues to be addressed, the BPA was focused one specific IT context and creating consensus on

how to move LargePub forward within that context.

The BPA was an informal network of senior-level managers established by the CIO[44] in

January, 2005 to address long-standing issues at LargePub regarding its core business processes

and operational information systems. The participants in the BPA represented the four primary

operational functions at LargePub along with a division focused on analysis and reporting. The

operational groups included finance and administration, payroll and human resources, customer

information, and customer accounts. The division responsible for analysis and reporting was

known as institutional effectiveness.

Each of the four operational groups was supported by mainframe legacy systems using

technology that was in many situations close to 30 years old. And the operational systems had

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[43] As was customary with the participants interviewed for this study, the terms BPA and Exploratory Group (EG) are used synonymously.

been highly customized to fit the unique business processes at LargePub. These systems did not

share common databases (many were not developed using relational database technology) and

were not integrated except through a limited number of custom-developed middleware

interfaces. The net result was that the core information systems frequently could not provide

accurate data, particularly related to business processes that crossed system and divisional

boundaries, and did not have the flexibility to support the creation of enhanced and new services

expected by LargePub's customers.

In prior years, two significant initiatives had been undertaken to address the challenges

posed by the existing legacy systems. The COO and Senior Vice Presidents (SVP) of LargePub

initiated a Data Integration Task Force (DITF) in November, 2003 to develop a plan, timeline

and cost estimate to achieve the following goals:

- Key institutional databases need to be identified (and the cost of maintaining those databases needs to be estimated);
- Once identified, these key databases must be integrated;
- In the future, newly created LargePub databases must be integrated with the existing databases;
- All key data elements in the integrated data system shall be commonly defined;
- The unit responsible for day-to-day management of the area reflected by a key data element should ordinarily be responsible for entry and update of that data element;
- Every unit with a need must have ready access to appropriately identified institutional data in the integrated institutional data system;
- Institution-level standards and definitions must be determined and adhered to for any derivative applications purchased or developed for an individual unit's internal needs.[45]

The Task Force submitted the final report and recommendations in July, 2004 with two primary

recommendations: the conversion of all mainframe based data to relational databases and the

completion of an enterprise data warehouse to support executive decision-making.[46]

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[44] This is the CIO appointed by LargePub in October, 2004.

In the Summer/Fall of 2004, the COO instituted the Identify Management Task Force (IDMTF). This task force was composed of 24 representatives from divisions and units across all of LargePub. The IDMTF established two subcommittees working to define the scope of identity management and explore interim options to protect social security numbers.[47] The IDMTF also participated in the detailed business process analysis associated with the BPA effort. As the broader BPA initiative continued, the work of the IDMTF was suspended at the urging of the task force members pending the final recommendation of the BPA Exploratory Group.

In an effort to move the organization forward, the CIO convened a small working group of senior managers to address the issues of data integration and the core enterprise systems for LargePub that had not be satisfactorily addressed by the prior initiatives. The BPA was an informal group in that the COO and SVPs of LargePub knew of, supported and provided funding for the work of the Exploratory Group but it did not receive a formal charge from the executive management of LargePub.

The BPA was tasked by the senior management to make a specific recommendation to regarding the best approach to create true data and process integration and to establish core operational information systems to support the organization in the 21st century. The BPA worked with two external consultancies to conduct an assessment of key business processes, identify the viable alternatives for new operational systems, and to conduct a business case analysis with risk/benefit assessment of the various alternatives.

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[45] Database Integration Initiative Charge (October 2003).
[46] DITF Report (July, 2004). The two primary recommendations were supported with 11 addition steps required for the proposed solutions to work.
[47] ITAC Meeting Minutes March, 2005.

The BPA completed its work and made a final recommendation to the senior

management in November, 2006. As of April 2007, the decision is currently pending regarding

the status of the project to implement the Exploratory Group's recommendation.

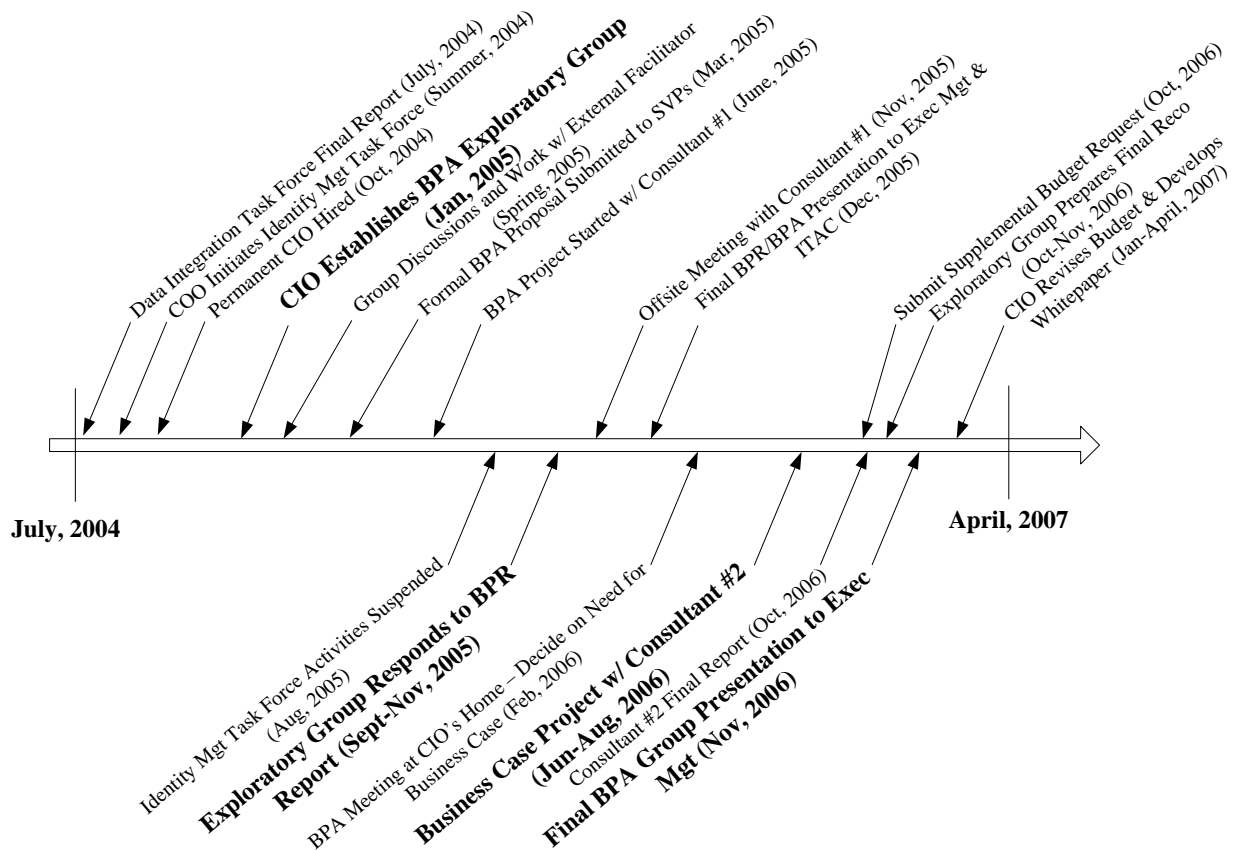A complete timeline of the BPA coordinating effort is presented in Figure 4.10.

Figure 4.10 BPA Coordinating Event Timeline

4.2.1   BPA Event #1 – CIO Establishes BPA Exploratory Group

The model of the critical event analysis for BPA Event #1 is presented in Figure 4.11.
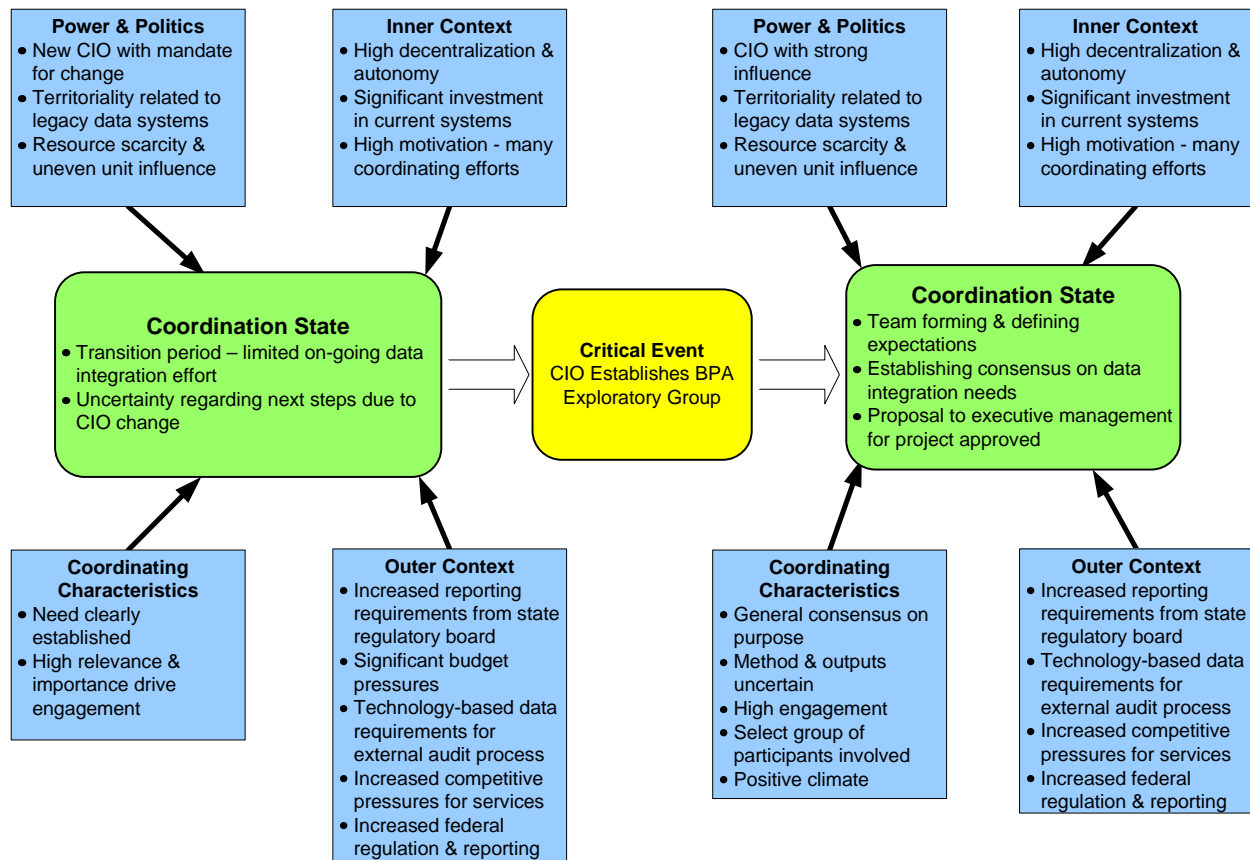
Figure 4.11 BPA Event #1 – CIO Establishes BPA Exploratory Group

Antecedent State

As mentioned in the BPA case overview, LargePub had undertaken a number of
initiatives related to data integration and the ability of the existing legacy systems to support the
operational needs of the organization. The Data Integration Task Force (DITF), after 9 months
work, had recommended LargePub complete a technical solution based on in-house development
to convert existing mainframe data to relational databases and implementing a data warehouse to
support executive decision-making. The DITF also recommended a number of additional steps
required to increase likelihood of success such as executive support, project management,
improving communications, and data integrity policies and procedures.[48] One of these items

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[48] Data Integration Task Force Report (July, 2004).

involved communicating the importance of data integration during the interview process with the

candidate for the permanent CIO position.[49] The potential importance of the DITF report for the

new CIO was identified by the chair of the task force:

> And sort of my feeling at that point in time was I was really feeling this
> imperative - we've got to get this report done before the new CIO is hired,
> because I want the new CIO to come and have this sort of a report from a broadly
> representative committee which can then become the mandate for that CIO …
> And frankly I didn't care whether the technique was an off-the-shelf solution,
> updating our legacy systems . . . honestly, I couldn't have cared less. But to me
> the need was for recognition of the problem and a solution to get started right
> away (Assoc COO Interview 12/06).

Near the end of the DITF work, the COO initiated the Identify Management Task Force

(IDMTF) focused on issues of identity management and specifically eliminating the use of the

social security number (SSN) as the unique identifier for customers and employees. While the

task force was established in June, 2004, the first meeting took place in October, 2004[50]. The

task force was charged to:

- Develop a social security number replacement strategy/plan.
- Identify the issues regarding development of a comprehensive ID
  management system at LargePub.
- Recommend ID card policies and procedures that address issues ascertained
  by the task force.
- Supply time lines, costs projections, and an implementation structure and
  other documents attendant to the development of a SSN replacement system.[51]

The task force initiated its work but soon found that its efforts were overshadowed by the work

of the Exploratory Group (EG) and that the recommendation on an enterprise solution for the

operational information systems was needed before the COO's charge to the IDMTF could be

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[49] LargePub was nearing the end of a national search for a permanent CIO as the final recommendations from the
DITF were prepared.
[50] Email communication from Large Division DIT and IDMTF participant (May, 2007).
[51] COO Letter to requesting participation on ID Management Task Force (June 7, 2004). The first meeting was held
in October, 2004.

fulfilled. The IDMTF decided to suspend its activities in August, 2005 after providing an interim

status update to the COO.[52] One of the co-chairs summarized the decision:

> Do we wait for the business process review to take place, and see what comes out
> of that, or do we try to change the soc numbers at that point? It was decided after
> a great deal of discussion, because there were very strong feelings on both sides,
> that it was better to wait because a lot of institutions, when they move away from
> the soc numbers, do it when they are implementing a new software package
> (Senior Manager Customer Information Interview 11/06).

As discussed in the ITAC case, a new CIO was appointed by LargePub in October, 2004.

The CIO had extensive experience implementing enterprise software systems in a prior role as

CIO for a public agency in anther state. The CIO was brought into the organization to help create

the core systems required to support the organization in the 21st century. The COO challenged

[the CIO] to move in a timely fashion to create a plan for putting into place an integrated system

to serve LargePub (COO Interview Notes 1/07). As the CIO stated:

> Well, the charge to me when I came here was to move this institution forward and
> a solution to manage this data in an integrated environment. The common practice
> in 80% of the institutions in this country, and particularly our peers, is to be on a
> commercial enterprise platform" (CIO Interview 1/07).

The DITF Report identified many of the issues and contextual influences that

were confronting LargePub and the newly hired CIO in the effort to create data

integration through the improvement of its core operational systems[53]. The inability of

the legacy operational systems to support the needs of various units and divisions lead

them to create their own separate data systems further exacerbating issues of data

integrity and availability. The reliance on these stand-alone and single purpose data

systems was cited as the reason for a climate of territoriality. A number of divisions, in

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[52] Personal email communication with one IDMTF co-chair (May, 2007).
[53] This discussion of issues and contextual influences is drawn from the Data Integration Task Force Report (July, 2004).

particular Finance & Administration, had implemented major upgrades to the operational systems thus generating a high degree of investment in the legacy system.

LargePub was confronted by increasing demands at the state and federal level for regulatory reporting. LargePub was subject to an external audit by an industry review board and faced the requirement to present the data and analytical capabilities for review through an integrated, web-based system. Finally, LargePub was facing increasing competitive pressures from other institutions using integrated operational systems to provide superior services to customers and employees.

Many of these same issues were identified by the COO as being critical drivers for LargePub. In particular the COO cited the lack of CIT support leading units to create standalone systems, increasing state regulation and accountability, the lack of organizational consensus regarding a plan forward, insufficient funding, and customer demands as the primary contextual influences impacting LargePub (COO Interview 1/07).

Just as was described in the ITAC case, LargePub was confronted with significant budget pressures due to reductions in state funding. This heightened the internal focus of the organization as described by the Controller: "And I can't say for sure, but I think that at least at this institution, the dollars are the overriding reason for doing things around here" (Controller Interview 12/06).

The need for integrated operational systems had been clearly established. And the high degree of importance and relevance for constituencies across LargePub generated a high degree of engagement. Yet LargePub was in a period of transition and uncertainty

waiting for the new CIO. At this point, limited activities were underway to deal with the

issues of data integration and improving the core operational systems.

Critical Event and Related Activities

The new CIO undertook an extensive networking effort to engage key personnel and

various groups throughout LargePub. During this effort the CIO learned of the DITF's proposed

solution for data integration, the IDMTF, as well as a host of other IT related initiatives.

> …(T)here was a Data Integration Task Force and there was a group working on a
> data warehouse and there was a group working on the whole issue of data
> integration…data warehousing…administrative data management would be what
> I would call it… And so this is not about the IBM mainframe, this is about the
> business processes that LargePub would like its [customers] to be able to take
> advantage of and the reconfiguration or realignment or reorganization of human
> capital, infrastructure, architecture to enable that to happen. And using technology
> as best we can or doing it differently…just because we've done it for 30 years
> doesn't mean that's the best way to do it (CIO Interview 11/04).

The limitations in the recommendations from the DITF report became apparent to the CIO.

These limitations were recognized by a senior manager in the finance and administration

division:

> Some of the recommendations put forth by the Data Integration Task Force were
> viewed as really not recommendations that would result in a type of improvement
> that needed to occur on the customer side (VP Finance Interview 11/06).

The CIO introduced the idea of focusing on the business processes required to support the

business and customer service objectives of the organization rather than applying a solution

based on the existing technical infrastructure.

> So, there are a group of us who have started a discussion about rather than
> jumping on moving everything out of the IMS system to DB2 platform … before
> we make that decision, it's a multi-year decision. Let's back off a little and let's
> maybe let's ask…let's get somebody in here who can walk us through a business
> process analysis of those processes that are required to do the business to serve
> the [customers] … And let's find out what we've really got, and then let's look at

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is the best thing to do to go to a relational database and just go on from IMS to DB2? Or should we look at one of those off the shelf packages? That would enable us to do this and it could be integrated with…so it's not about the IT arena it's about the business process (CIO Interview 11/04).

The CIO initiated an informal group of the key participants in prior data integration efforts including the chair of the DITF, the senior managers from a number of key operational divisions in finance and administration, customer services, and institutional effectiveness. In response to a request from the COO for a plan on how to use incremental budget to push forward in administrative data management, the CIO and this small group of senior managers developed a proposal for the executive management that involved a business process review (CIO Interview 11/04) as the best next step in the effort to provide an integrated enterprise system for LargePub. The informal nature of the Exploratory Group was addressed by one participant:

> [The CIO] set up this Exploratory Committee, very unofficial group, that was never blessed by the [executive management]. It was put together, the COO was very much aware of it. At that that time, the Senior VP for Finance, was very much aware of it, very supportive of this occurring, but not an official appointed group (Senior Manager Customer Information Interview 11/06).

Consequent State

The proposal to conduct the business process analysis effort took some time to be formally approved by the executive management. The COO and SVPs approved the proposed initiative early in 2005. The informal network was expanded to include a total of 10 key senior managers representing the major operational areas.[54] As described by the CIO, this Exploratory Group was seeking to:

> (T)he goal was to bring a set of recommendations to the [senior management] for the actions they should take in order for us to move into a web environment, in a 21st Century environment, for data management. And they were the players who had the most . . . I mean they were the critical players in terms of the systems and

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[54] The new VP of HR was included in the group in December 2005, and the CIT Budget Director was added to the group early in 2006.

so my goal was to assess what we had, assess the information we knew, take a look at where we ought to be going in order to meet LargePub's objectives, and the right steps we'll have to take to get there. That's what we were trying to do. That was the initial charge (CIO Interview 1/07).

The chair of the DITF and exploratory group member summarized the purpose of the new effort as:

It set out, as I understand it, originally to come up with a specific recommendation to senior administration, being the senior vice presidents, COO and the CEO, about the need for data integration and the specific method, timetable, and cost of accomplishing it. That would be the way that I understood it (Associate COO Interview 12/06).

In relatively short order, the CIO leveraged expertise, prior experience and executive support to change the nature of the dialogue regarding the implementation of an integrated enterprise system. The exploratory group, under the leadership of the CIO, quickly converged on the general purpose of the effort and, at least at the conceptual level, agreed on the method of a business process analysis to help identify the best path forward.

The CIO pulled together a very small group of highly influential participants that represented the "business side" of LargePub; the CIO was the only member of the network from the "IT side" of the organization. As described by the CIO, the members brought a variety of perspectives to the work of the group:

I think it had individuals on it who had a relatively broad background who knew something about what was happening out in the other part of the world outside [the state] and inside [the state]. That can also work against you because you get very . . . the longer you're with something the more you own it and are attached to it and so it's hard to think about changing it (CIO Interview 1/07).

The internal pressures generated by the ineffectiveness of the existing systems combined with the growing demands of customers and external reporting created high motivation and engagement in the emerging process.

Implications

LargePub moved from an uncertain transition period after the Data Integration Task Force issued its final report to an energized new direction for implementing an integrated enterprise software system.   The leadership of the new CIO was critical in establishing the environment within which this could occur. And the CIO introduced a process to develop consensus on a technical approach to the solution based on business process needs, not simply the constraints of legacy systems. The focus on business processes created an opportunity to direct the discussions away from the historical influence of certain divisions based on prior investments in the existing systems.

Strong leadership and executive support created a positive coordinating climate in which an effort to address the technical needs of data integration and enterprise software systems could evolve. The purpose of the effort was clear in its objectives to generate organizational consensus for a plan within a specific IT context. The emerging operating mode introduced by the new CIO rapidly gained the consensus and support of the primary participants. And the select group of influential participants in the informal network had the status necessary to drive the coordinating effort forward.

4.2.2   BPA Event #2 – Exploratory Group Responds to Consultant's BPR Report

The model of the critical event analysis for BPA Event #2 is presented in Figure 4.12.
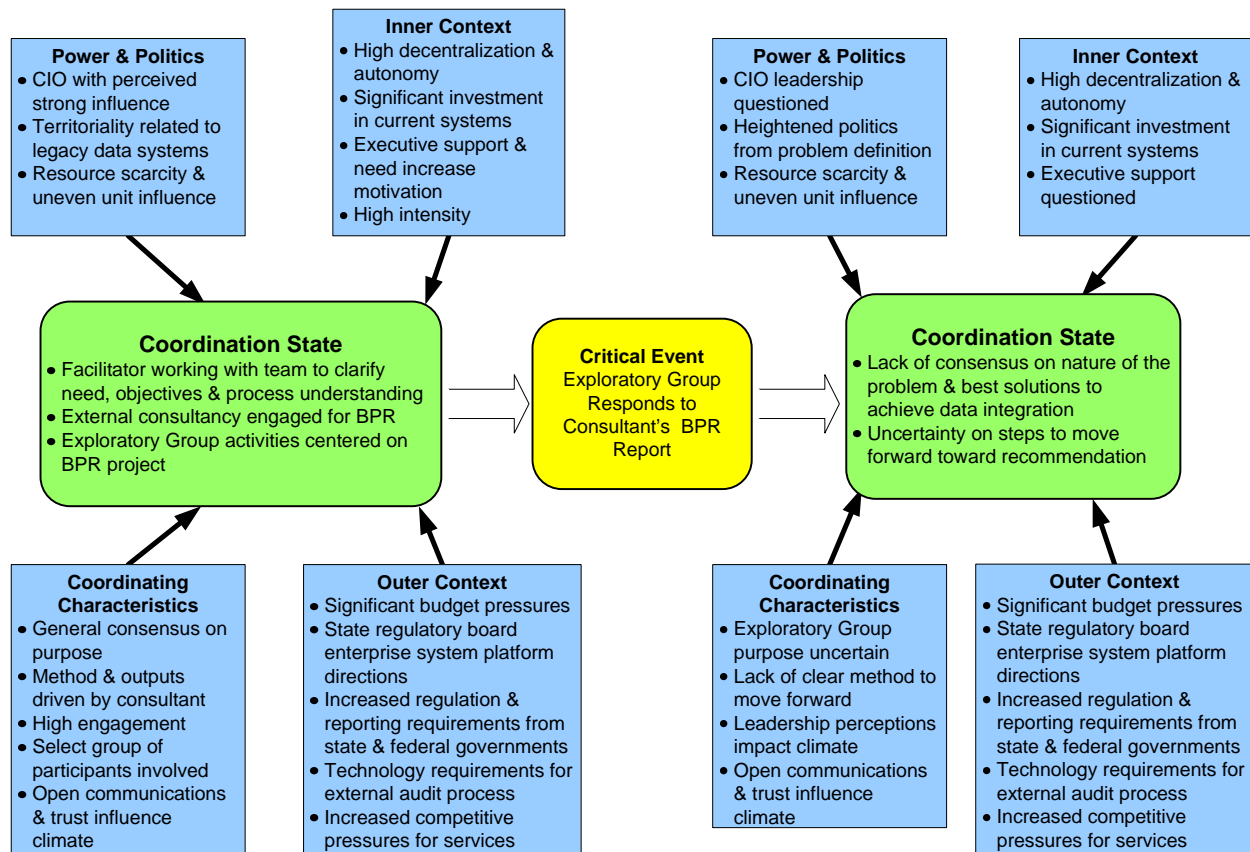
Power & Politics
- CIO with perceived strong influence
- Territoriality related to legacy data systems
- Resource scarcity & uneven unit influence

Inner Context
- High decentralization & autonomy
- Significant investment in current systems
- Executive support & need increase motivation
- High intensity

Power & Politics
- CIO leadership questioned
- Heightened politics from problem definition
- Resource scarcity & uneven unit influence

Inner Context
- High decentralization & autonomy
- Significant investment in current systems
- Executive support questioned

Coordination State
- Facilitator working with team to clarify need, objectives & process understanding
- External consultancy engaged for BPR
- Exploratory Group activities centered on BPR project

Critical Event
Exploratory Group Responds to Consultant's BPR Report

Coordination State
- Lack of consensus on nature of the problem & best solutions to achieve data integration
- Uncertainty on steps to move forward toward recommendation

Coordinating Characteristics
- General consensus on purpose
- Method & outputs driven by consultant
- High engagement
- Select group of participants involved
- Open communications & trust influence climate

Outer Context
- Significant budget pressures
- State regulatory board enterprise system platform directions
- Increased regulation & reporting requirements from state & federal governments
- Technology requirements for external audit process
- Increased competitive pressures for services

Coordinating Characteristics
- Exploratory Group purpose uncertain
- Lack of clear method to move forward
- Leadership perceptions impact climate
- Open communications & trust influence climate

Outer Context
- Significant budget pressures
- State regulatory board enterprise system platform directions
- Increased regulation & reporting requirements from state & federal governments
- Technology requirements for external audit process
- Increased competitive pressures for services

Figure 4.12 BPA Event #2 – Exploratory Group Responds to Consultant's BPR Report

Antecedent State

During the interim period before the decision to proceed with the BPA effort was taken, the CIO worked to bring the Exploratory Group together. The CIO tried to educate the group on business process analysis and how the focus on business processes related to the goal of data integration through the application of a new enterprise approach to information systems. The CIO also sought to establish a baseline of understanding within the group regarding the perceived needs, urgency and solutions to create data integration. This effort was conducted through a number of group meetings and facilitated discussions. One participant described the early period:

> [W]e talked amongst ourselves . . . our group of 6 to 8 to 10 folks . . . about what we thought were the good and the bad of the systems that we had. So I think at

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first, in any kind of group dynamics, we all kind of got comfortable with each other and talked through what were the major issues (Director Data Analysis & Reporting Interview 12/06).

The CIO also brought in an external facilitator with expertise in business process analysis, the industry, and implementing enterprise software systems. The facilitator focused the Exploratory Group (EG) and helped to generate the initial statement of drivers for pursuing data integration. The work of the Exploratory Group in this creation stage was described through this exemplar comment:

> There was one or two times where we did have outside individuals [come in]. And on one of those times in particular I can remember each of us was asked to go around the table and talk about the issues of data integration from our perspective. And then I guess what happened from that was this outside person kind of summarized or helped articulate how each of us saw the needs of data integration. So I would say both our time alone … just with our committee … and then the time with the outside person …, it was an attempt for us to be able to articulate how we, as representatives of different parts of LargePub, saw our current status of data and integration or the need for integration. And, as is typical, some of us would say this is a big problem, we need to fix it right now. And other people said we have spent the last five years fixing our system and we don't need to change anything. So that started . . . but we all said we are going into this with the right spirit and the right mindset to try to take a broad look and see (Director Data Analysis & Reporting Interview 12/06).

Upon the approval of the executive management for the BPA and hiring a consultancy, the EG moved quickly to engage the services of a consultancy specializing in business process analysis as well as the public sector industry. The CIO was recognized for expertise in this area and the EG followed the CIO's recommendations regarding the consultancy and the scope of work to be done. Thus the CIO established the approach and method for the group's work. This is captured in comments by a number of group members:

> Well, it is my understanding that the CIO was hired with the expectation … to address the issue of data integration or lack thereof actually within LargePub … And [the CIO] had worked with [Consultant #1] previously. And it's my understanding and belief that expertise from the prior institution is one of the

reasons the CIO was hired here. They had made a data integration transformation. And also, [Consultant #1] is one of the very few that are a knowledge experts in [this industry] … So [Consultant #1] was brought in . . . known, I guess, by the CIO, recommended by the CIO, but confirmed by the awareness that they were a recognized authority (Director of Planning Interview 12/06).

When [the CIO] introduced this idea [of business process analysis] to the group, we said "Well, yeah it makes sense, it makes sense for us to do an evaluation of what are our current processes and maybe how far away are they from what a canned ERP system would give you." … [The CIO] had had experience with this vendor, made it to happen, and before we knew it we were sitting in interviews (Controller interview 12/06).

Consultant #1 applied their methodology to drive the work of the business process review (BPR). [55] The BPR involved a high level review of the core business processes in each of the four primary operational areas. Each operational area was assigned a primary consultant. The consultant would meet with representatives from the affected operational areas as well as other key individuals across LargePub who were involved with each process. The BPR described existing processes, and then relative to industry best practices, identified processes that were considered good and those that were not providing what the organization required. From June, 2005 to late Fall, 2005, the data collection process involved hundreds of people in many dozens of sessions across LargePub. The process and nature of the sessions was described by the EG member responsible for the longest and most extensive data collection effort:

Here are the outlines on some of these [sessions] . . . what is this process about - [process name] requirements. So a narrative of that, the departments that were involved, and then we would talk about any electronic inputs, the manual paper inputs, key decision points, any related policies, interfacing with other systems, any web features, any electronic outputs, manual outputs, who the customers were, any regulatory items, frequency, potential break points, and automation issues (Senior Manager Customer Information Interview 11/06).

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[55] A business process review (BPR) was conducted for the four primary operational areas of LargePub: finance & administration, HR/Payroll, Customer Information, Customer Accounts. A more detailed business process analysis (BPA) was conducted simultaneously for the Identify Management area.

The sessions run by the representatives of Consultant #1 were typically well attended and

generated of energy within the broader community. As described by the Senior Manager of

Customer Information (Interview 11/06):

> We really had pretty good representation. Sometimes, we invited specific people
> from an office, and sometimes, they might send somebody else, sometimes
> nobody would come but overall…we had very, very good participation. In fact, it
> got to the point that people would contact me saying, 'hey, so and so said they
> were coming to your session, can I come too?' …But that was exciting - that
> people wanted to come to our sessions and talk about these issues.

During the BPR, the Exploratory Group had very little activity as a group. While the

members were highly engaged in the project their work centered on facilitating the detailed

sessions with the participants in each business process. The interactions of the EG were driven

by the need to respond to the consultant and to begin synthesizing the large body of information

that was accumulating (CIT Budget Director and Director for Planning interviews). The

following exemplar comments from members demonstrate the activities of the EG at that time:

> I am not so sure we played that active of a role in [the BPR]. We were
> coordinating the constituent groups that they should be interviewing to give a
> good…to provide the cross-section of who our business processes support. It was
> more from the coordination role (VP Finance Interview 11/06).

> We were all very busy, so we did not meet on a regular basis. I would have to go
> back and really look at my calendar to try to figure out how frequently we did
> meet. We had some evening meetings and email exchange. (Senior Manager
> Customer Information interview 11/06).

> There was some input from the committee as to whether or not a sufficient
> number and the right people were being included in the process. But beyond
> actually taking our own individual parts in that process and maybe monthly, I
> don't know, kind of review of do we have all the people we need. There was so
> much going on and nothing else was happening with the Exploratory Committee.
> (Director for Planning interview 12/06).

Many aspects of the contextual influences that impacted the BPA remained relatively

constant throughout the entire 18 months of the effort. As will be demonstrated throughout the

event analysis, some of these influences played a more prominent role at certain times. One key

on-going aspect of the coordinating climate of the BPA related to the nature of the

communications between the EG members. The communications were very open and often

direct. And informal communications were used primarily to support the exchanges that occurred

in the formal group meetings. The following exemplar comments broadly support the views of

most EG members.

> It is pretty much open. I would probably say that there is very little behind the scenes, one-on-one communication going that is between factions of the group. There is no really split between the group. If you are going in there and say there is this group of people over here and this group of people over here, I don't think those kind of communications are occurring that way. When [the VP of Finance] sends back an email, it is sent back to the entire Exploratory Committee, the Senior VPs are copied. When [the CIO] sends something out, same thing. So it is pretty much all out in the open (VP HR interview 12/06).

> It is important to realize that anything that was ever been done, in terms of a document or [email]…was sent out to the entire Exploratory Group to review and to provide input and everything. It was not like we would ever go off two people in a vacuum and do something and then represent it as the work of the Exploratory Group (VP Finance interview 11/06).

> So I never had a lot of extended phone calls with other people. Somebody might call to clarify a point or I might call somebody and say did I understand this correctly? Is this what we're supposed to be doing? I would say less than 3% of my total interaction in the project was outside the regular meetings. It just didn't happen. (Director Customer Financing interview 12/06).

> And it's interesting because at the root of it all, everybody really does have the best interest of LargePub in mind. It could be slanted because of where they sit, okay. But they really do have good reasons why they are making the case that they are making … And so I think we've allowed ourselves the latitude of making our case and having heated discussions with each other … But when it's time to call a meeting … everybody always comes back to the meeting, if their schedules allow it, they are back. So … I have to say the group has not fallen apart despite our arguing and our differences. We still know that a decision has to be made (Controller interview 12/20/06).

Supporting the open communication was another key aspect of the coordinating climate

of the BPA. The dynamics of the EG was characterized by an underlying level of trust and

friendship. On-going personal and professional interactions allowed the group members to

overcome strong differences of the opinion and remain functional in terms of working to fulfill

the objective of the EG by making a recommendation regarding enterprise systems in support of

data integration. The role and impact of the trusting relationships was expressed in the following

comments:

> I think, probably from my perspective, it is because all of us, except for [the CIO] because [the CIO] came after I did, had established a working relationship before we started discussing all the issues. My colleagues … we met a lot when I first came about issues they had with my system, and the way it interfaced with what they needed. I got to know them, and we became friends to the extent of we go out to lunch together, or do things like that. We also have a little expanded group that we meet for breakfast once a month. So, I think, because we got to know one another in that type of environment that helped … [A]nd then I think for the most part, because several of us have developed a really good relationship before getting into this group, because I think that we would have had a more difficult time that we have had, if we did not have that, you know I will call it friendship, underlying friendship there… And I think that is it in the group, because we respect the fact that we all feel so strongly about where we are coming from on this that we have made it work. Had it been a different set of people at LargePub, I think we would have torn each other's hair out by now (Senior Manager Customer Information interview 11/06).

> I think the many, many hours that we spent working on this project. I mean we've been hauling this Exploratory Group rock for many months … and everybody's pulled on their rope and we've budged it along some weeks and some weeks it didn't move and other weeks we moved 20 feet. But I have a basic implicit trust in the ethics and the character of all the people involved in the process. I don't think there are any hidden agendas … But I think if there were hidden agendas after the hundreds of hours that we spent together they would have come out in some form or fashion (Director Customer Financing interview 12/06).

> I think in the informal times, one of the members even said to me and another member, they said, "Lets go out to dinner one night." And during the course of the dinner conversation this one individual who has a different viewpoint than the other two of us said, "You know I hope that as we go through this process, we don't want any of this get in the way of our friendship." And so I think that informal piece, people would say "well you know I really didn't agree what they were saying," and "I don't think they understand," or "I think they are off base." No one has - I don't think anybody has gotten to the point where outside the group they won't talk to each other (Controller Interview 12/20/06).

As previously described in the BPA case overview and the in the discussion of Event #1, a variety of external influences were impacting LargePub. Within the context of the work of the BPR with Consultant #1, two of these factors emerged as highly relevant to the work of the EG and how the results of the engagement with Consultant #1 were to be interpreted by the EG members. Both of these external influences served to narrow the alternatives available to the Exploratory Group in terms assessing the findings presented by an external consultant and ultimately making a recommendation to the executive management of LargePub.

The first relates to the influence of the state regulatory board which had legal and regulatory oversight of LargePub along with over two dozen other institutions within this state government service sector. The state regulatory board had established standards for enterprise software packages for the four primary operational functions. LargePub did not adhere to these standards.[56] The state standards weighed heavily on some EG members as exemplified by the following comment:

> [T]hat in the minds of some members of the group have a very strong influence on what we need to be doing and that is the [state regulatory board] level, the direction that they may be headed with their administrative systems. Some of us in the group think that we need to be closely in line for that. Other members of the group think that it did not really matter, that we do not have to align with it at all because these have not been very successful (VP Finance interview 11/06).

The second external influence was identified by the DITF, the COO and several members of the BPA. This related to the state funding available and budget limitations due to a variety of cost factors and alternative spending priorities. The Associate COO addressed the concerns directly:

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[56] Primarily for cost reasons, LargePub was not required to adhere to the state standards for enterprise systems. However, LargePub was required to provide data and reporting to the state regulatory board consistent with the standards that had established based on these enterprise software solutions.

In other words the budget . . . because the reality is that the budget constraints are real. So the overall budget constraints … and then adding that in the context of a declining state support and then add that in the context of incredibly rapid rises in health insurance and in utility costs. All of that . . . the budget constraints really are real (Associate COO Interview 12/06).

Critical Event and Related Activities

After several months of work collecting data, Consultant #1 started to compile

preliminary reports for each of the four functional areas. These draft reports were circulated to

the Exploratory Group through the CIO and the members were given the opportunity to review

and comment on the draft reports. The process and reactions to these draft reports was

summarized by an exemplar comment from one group member:

> The most telling thing of the whole [Consultant #1] engagement was when they came out with their preliminary kind of business process analysis, and in that they said a lot of things were broken as far as how we were doing business. But a lot of people who read that didn't like it ... everyone was supposed to review their own section. And the first process was we would review our own section, that I think we coordinated through [the CIO's office], we would take [the CIO] our issues, [the CIO] would pass along this to Consultant #1 and they would do some clarification or something. And so then some more information came back … And so we got into a … then it became an exercise of rewriting a consultant's report. I think that is a dose of reality, but I think…but that was the reaction to it (HR Director Interview 12/06).

The members of the EG met on several occasions to address the BPR draft reports from

Consultant #1. The impact of these reports was captured by an EG member that was not part of a

functional area:

> I think that's probably when it became apparent that there were some fairly significant differences of opinion within representatives of the committee about how much needed to be done, what needed to be done, whether the [Consultant #1] evidence was compelling or whether it was actually…they missed the point. And so there were some units in particular that felt like they had to go back and correct some of the things that [Consultant #1] seemed to have found (Director of Planning Interview 12/06).

While three of the functional areas made at least minor changes to the reports for their areas, the Finance area was the most adamant about making corrections to the reports from Consultant #1 and had by far the most changes. This is represented in the following exemplar comments:

> There were parts of it that were simply wrong. There were also other parts that were either right or wrong but could have been stated in a much better and less negative fashion. And there were other parts that in my view were correct and we were probably defensive about them … And then there were things that they had written that we all agreed with or that varying folks would agree with. So it was the whole gambit of yes, we know you're right here, we agree and you're wrong here and we'll never agree that you're right and then all degrees in between. So other areas, Finance particularly, really did a major rewrite of their section (Director Customer Financing Interview 12/06).

> This institution went out, and the Exploratory Group went out, and when it saw things that were critical, potentially critical, and the organization to it as, Finance took it as, an evaluation or assessment of their unit. If somebody in their unit said something negative about the legacy environment, it was for the most part changed...at the top (VP HR Interview 12/06).

Not all functional groups sought to make substantive changes to the BPR report. The Human Resources (HR) and Customer Financing areas chose not to make substantive changes. In both cases, while EG members representing these areas could have taken issue with some of the findings, the over-riding issue was that neither area was considered high-priority. The ultimate decision regarding an enterprise software solution for other functional areas would determine what happened in HR and Customer Financing. This was exemplified by the Director of Customer Financing (Interview 12/06):

> I had begun to realize by that point that it really didn't matter because Customer Financing was going to hang on wherever [Customer Records] went and I just didn't have time to fight them on every bit of wording. So the report is written in a more negative fashion than I would have preferred for it to be as far as the Customer Financing piece goes but it wasn't going to make any difference in the outcome. So I just made a decision that I'm not going there because the real critical piece is the [Customer Records] piece.

However, the desire to ensure the integrity of the findings was an important issue to

several EG members. This was expressed by an exemplar comment:

> As a group, this Exploratory Group, we would raise these issues in our meeting
> without [Consultant #1] to say that we really want to have the opportunity to
> correct this. We feel like it is very important because this report is going to be the
> basis upon which we start to develop a road map to achieve greater data
> integration, and a road map to determine the future for our core administrative
> systems. We really feel like this document needs to be as accurate as possible,
> and to reflect reality as closely as possible. I think that everybody in the
> Exploratory Group understood that, because again from the functional areas,
> everybody had issues with certain things (VP Finance Interview 11/06).

In a effort to bring the engagement to closure and finalize the BPR report, the EG

conducted a day-long, offsite session with Consultant #1 to resolve all the remaining issues. The

report had generated a great deal of discussion and negativity amongst the EG (VP HR Interview

12/06). The impact of the BPR report on the effort to generate consensus within the Exploratory

Group was addressed by two participants:

> I think the whole process of resolving the [Consultant #1] report (was critical).
> The day that we met with them down in the [LargePub Meeting Center] was a
> long day. Nobody was happy with the work product (Director Customer
> Financing Interview 12/06).

> But at one point, we had to have them come back again, [Consultant #1] and sit
> down, and instead of just talking to the people they originally talked to, okay, the
> only people they talked to at that round was the directors of the various areas, who
> kind of pointed out deficiencies in the area … (I)t was an interesting day. Because
> that's all that happened there was that people were pointing out everything bad
> that [Consultant #1] had to say and at that point [Consultant #1] I think was very
> defensive as to this, this and this. They did try to make statements about, "they
> are just reporting what your people told us." But that didn't really carry the day, I
> don't think. So when it all got done there was something that said here are some
> things that are not so good (HR Director Interview 12/06).

Consequent State

After the off-site meeting, another major version of the report was generated to reflect the

concerns of the EG members. After additional revisions, the report was finalized and delivered to

LargePub. Consultant #1 made a final presentation of the BPR engagement to LargePub

executive management and the EG in early 2006. By this point, the full ramifications of the BPR

report were becoming apparent in terms of the work of the EG. And the potential of a future role

for Consultant #1 at LargePub was all but ended. The impact of the final presentation was

described by one participant:

> And that was about as bad as a consultant presentation as I could remember sitting
> through … I mean they were like, and even from the simple stuff - they didn't know how
> to have their projector to show on the right things, and then there were like six of them
> there, none of them would know an answer to one question - it was a bad performance I
> would say. And that was a bad thing for them, because they were already coming into an
> audience that was not…that was suspect of their motives and not sure about them. And
> then they put them on the bad show. And I think after that it was like "You guys are
> done!" (HR Director Interview 12/06).

The process of revising the BPR reports from Consultant #1 exposed significant

differences of opinion amongst the EG members along several dimensions. This included the

meaning of data integration within an enterprise solution, the purpose and objectives of the BPA,

how the problem was defined and the potential solutions available, and the process by which the

EG was to generate a consensus recommendation regarding the best solution. Each of these

differences that emerged during the BPR engagement will be described.

A fundamental difference that emerged had to do with the meaning of an enterprise

solution to address the coordinating purpose of data integration. While this was generally

articulated as the goal of the EG, it is not clear that the members had a common understanding of

what this meant. This divergence in understanding was identified by an exemplar comment:

> I think there was . . . and again, I'm being candid here . . . I think there was, and
> probably still is, a fundamental misunderstanding about [what we were doing with
> Consultant #1]. Because there were a lot of words that were getting thrown
> around all the time as though everybody knew what they meant. And one of them
> was enterprise approach. Well, there's no . . . I'd be willing to bet if you … set
> the Data Exploratory Committee down and had us each write a good essay

question on what enterprise approach means that you would be blown away at the lack of consistency in the answers (Assoc. COO Interview 12/06).

A second point of divergence within the EG that was exposed by the BPR process and revising the report related to the nature of the problem that had to be addressed to achieve data integration. While some members clearly saw the issue as being driven by the dated technology of the core operational systems and thus requiring an investment in an enterprise software solution, others defined the problems in other terms. This is exemplified in the following comment by the VP of Finance (11/06 interview):

> I want to say there has been some disagreement because when they talk about data integration, while it needs to involve all components of those core systems, a great deal of the data integration issues we have at LargePub have nothing to do with these systems themselves. They have to do with data definitions; they have to do with who is responsible for maintaining the data - the custodian, things of that nature rather than the underlying architecture of this system - the platform of the systems. I think that has been something that we have wrestled with a good bit.

The lack of consensus on this point was captured well by the Associate COO (Interview 12/06):

> From my perspective I thought we started out with a consensus that I don't believe existed. And so in other words, I thought we started out with a consensus that this needs to be accomplished and the real issue is articulating a compelling case and then the implementation plan. But that consensus didn't and doesn't exist. And so I think that it . . . I thought that the beginning assumption . . . if you were to roll back the clock to that point in time, I thought the beginning assumption was this need for data integration at the institutional level. And there wasn't the level of consensus about that that I thought was there.

As the engagement with Consultant #1 unfolded and the draft reports were reviewed, the process of the BPR was questioned by EG members as well. Members questioned the work that was done, the value of the work product and how these related to the overall objective of the BPA effort. Consultant #1 conducted a 2-part engagement with LargePub. As described previously, a business process analysis was performed for the Identity Management process (associated with the work of the ID Management Task Force). And a higher level business

process review (BPR) was conducted for the four operational areas. A majority of the

participants could not accurately distinguish between the two types of work nor relate the

approach used to a domain area.[57] The confusion about the difference in the two parts of the

work and the value of the effort was described by one participant:

> And then the other was . . . business process analysis and business process review.
> And with quite a distinction being made between the work of Consultant #1 . . .
> and right now I'm going to embarrass myself by saying I'm struggling as to which
> is which, but doing the work on the data integration and doing the work on the
> personal identifier, you know the social security number project and doing a
> business process analysis for one and a business process review for the other. But
> I think there was . . . you know, that was sort of a language that was being traded
> around. But I think at the front end a lot of people didn't understand clearly what
> that meant that Consultant #1 was going to do. Because fundamentally I think a
> lot of people on the Data Exploratory Committee thought they're going to go
> through this process and at the end of it they're going to sit down with us, having
> gotten a significant fee, and say we've analyzed your processes and they are or
> are not up to snuff. And if they aren't, here's what we think you ought to do
> about it. In other words, not just an evaluation, they are or are not up to snuff, but
> a sense of . . . [given the situation at LargePub], we would _____ - and then fill in
> the blank … I thought we were going to get more advice … The
> recommendations that they made are the same ones that I would have written on
> the back of a napkin if the three of us had been having coffee at Starbucks before
> the process started. It was kind of like, well, you could keep your current systems
> or you could have an off the shelf system or you could have a hybrid …But there
> was a . . . that was sort of a collective sense was, "Wow, what did we really get
> out of that?" (Assoc. COO Interview 12/06).

The reactions by the various EG members that represented different operation systems to

the BPR report also indicated a lack of consensus regarding the basic nature of the work and how

the outputs were to be interpreted and used by LargePub. The general reactions were described:

> I think what happened when it came back and it was unflattering or something,
> people started to be concerned about it. And I think it's a legitimate point, I mean
> these were reports that were going to be out there, and if everyone is going to see
> it, and you are not going to want anything that says it is really this bad. And these
> people did not notice it was bad, and someone from the outside had [to] come in
> and tell them. I mean that's a very threatening, very threatening environment (HR
> Director Interview 12/06).

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[57] Based on a review of all interviews conducted regarding the difference between BPA and BPR.

And the reactions from the Finance & Administration area were particularly negative:

> And then another big factor that I think goes into it is that if you take the people from LargePub that are working in the area of what we would structurally call at the Finance and Administration, my bet is if you get those people to talk real honestly that the systems are working pretty doggone well. I mean, you know, in terms of are we cutting paychecks on time? Are we keeping track of our inventory? You could just go on down the . . . and they would say the systems are working well … And so I think what you have is a number of people for whom as a day-to-day working basis it isn't broken. And those are people that have a big part in the decision-making process (Assoc. COO Interview 12/06).

Yet the CIO addressed the implications of this for the broader effort (Interview 1/07):

> I think that the culture here is so strong toward we've done our own thing, we do it well - this particular piece works, Finance works fine. It works fine within Finance; it does not work fine as an integrated part of LargePub.

The BPR had been intended to identify the strengths and weaknesses of existing business processes within the four operational areas and to make a general assessment of these processes relative to industry best practices. The best practices were represented by the integrated processes available through an industry standard ERP software solution. Thus the BPR emphasized the extent to which the business processes were integrated across the four operational areas and support enterprise needs rather than the extent to which individual operational areas were able to perform their functions well in isolation. It was clear that the EG did not have a common understanding of just what the BPR would provide.

> And I think there was a huge letdown that happened when it came to the end and largely the way it was received is that there were a whole lot of score sheets. And the score sheets weren't very favorable. Because it was like, okay we've done this review of [Customer Financing] and . . . although this is not what it was . . . you've gotten bad scores. And so there was a lot of resistance to the bad scores, real honestly, in areas that were going, "We're doing a great job." But the score was not - "are you doing a great job?" The score was - "is your system integrated?" My point of all of that is the fact that people reacted like that indicates there wasn't an understanding of what the process was (Assoc. COO Interview 12/06).

The reactions to and effort to revise the BPR report exposed other aspects of the inner organizational context which impacted the ability of the EG to generate clear consensus on a recommended path forward. The BPA highlighted the level of decentralization within LargePub and the challenges this presented in terms of achieving data integration.

> And [the BPA] demonstrated to us how incredibly customized we are, and how LargePub has grown to expect that level of flexibility and customization. And I think it sent up some red flags to us that if were going to implement a vendor solution, and we were going to limit the amount of customization, what sort of ramifications that could have to this [organization]…(Controller Interview 12/06).

And as described previously, the Finance area was highly invested in the existing business processes and systems developed to support them. This level of investment was demonstrated by the following comments.

> I guess our major minority view concerns the Finance area because they have put a lot of time and effort into providing programming for a system that they believe works very, very well and serves their needs. They're even more convinced of their system because it's newer (Director Customer Financing Interview 12/06).

> [T]he way our systems are designed is that you can have very lower level of employees who are initiating transactions in our systems. When you go on an ERP system, because we have all kinds of edits and things built into our system … there is not as much data validity built into [an ERP system]. So you need to have … people with, maybe, a better skill set for initiating some of those transactions … It is not just that we are just going to change the way we are doing things, but there is going to be some real costs associated with that. There is going to be a different level of employee that is going to be required to make that a successful transition (VP Finance Interview 11/06).

The implications of the divergent views of the BPR, in part driven by the level of investment in the current systems, were captured by one EG member:

> Those who are invested in what they have and if it's working well, they don't see the value in changing. Human nature does not like change. And so those who have worked on something, got it working - didn't see the need for change. And those others who have had tremendous difficulties with their pieces of the administrative data system could see the need for change (Director Data Analysis & Reporting Interview 12/06).

As the BPR engagement unfolded, another consequence was the emergence of heightened politics in the work of the Exploratory Group. The BPR had exposed the significant differences within the group related to the nature of the underlying problems related to achieving data integration and the potential solutions for moving from the existing, non-integrated legacy environment to an enterprise solution. The political dynamics were demonstrated in several ways. The first, as represented by this exemplar comment, called into question the motives of Consultant #1 and thus the efficacy of the results produced:

> … [T]hey want a particular outcome from this. My boss … said, "It is like the fox guarding the hen house." Again, I think that what was…we all recognized that [Consultant #1] was also a software implementer. That is why we felt like a scope of doing the business process review would be appropriate. But then they saw an opportunity to make much more detailed recommendations … Yes, this whole options thing to my understanding, again from the beginning was that was not a part of their charge … I do not know if you are familiar with this but from what I have been told is that whenever you implement a system, an ERP system, then about 90% of the cost of that comes from the implementation, the implementation consultant cost which is what [Consultant #1] does. So when you hear about these multi-million dollar implementations, most of the money is going to something like a [Consultant #1]. Whether or not that biased their work, I do not know…I have got my opinions (VP Finance Interview 11/06).

The concern over the objectivity of Consultant #1 was voiced primarily by the EG representatives from Finance and Administration. Several comments indicated that most members understood and accepted the objectivity of Consultant #1. The CIO had repeatedly stressed that Consultant #1 had many divisions and that the group doing the BPR engagement was not related to the software implementation division (e.g. Senior Manager Customer Information, Director Data Analysis & Reporting, Director of Planning interviews). This had been discussed extensively within the group and the original decision to work with Consultant #1 had been endorsed by the full EG. Yet the on-going questions served to undermine this part of the effort of the Exploratory Group.

As the engagement with Consultant #1 unfolded, it appears members of the Exploratory Group representing Finance & Administration had significant access to the COO, senior vice presidents and other members of the executive management. Other members of the EG did not share in this frequent access. While it is not possible to state that the Finance & Administration members used this access to undermine the BPR or work of the EG, it did represent a potential for influence not shared by the rest of the EG. And it seems reasonable that the messages communicated by these members would reflect the issues described above. The access to the executive management was described by the Controller (Interview 12/06):

> Well, I have unlimited access to the Senior VP that I report to, okay. And it would not be unusual for us to have discussions as we moved along the way, you know I meet with him every other week anyway about a myriad of topics and so that generally would have been one of the topics: "Where are we? Where are we going? You know I see us drifting over in this, you know where do you want Finance and Administration to be? What do you want the voice of Finance and Administration to be? And sometimes I would say "this is my opinion and this is what I am going to say and, is that okay?" So I had…so to my Senior Vice President a lot of access. And on occasion we would have the opportunity if we are meeting with the COO about various things, we would talk about the progress and where things are. So, I felt like I, if I needed to I could go and talk to them about any of that, whether it'd be all of us together as the Exploratory Group or me singularly.

An issue was raised by several EG members that the Finance area had attempted to exert its influence on the process through the people assigned to participate in the BPR sessions. The findings that were questioned by the managers in the Finance area had been based on the input provided by the participants in the Finance related meetings. According to the CIO, Finance had the wrong people in the meetings (Interview Notes 3/06) and thus the process had been subverted. It is not known whether this was intentional or not on the part of the Finance area. However, the impact of the challenges from Finance concerning the veracity of the BPR findings was very clear.

The most direct manifestation of the increased political influence generated through the

BPR process had to do with the CIO's leadership of the Exploratory Group. The role played by

the CIO was challenged in two ways. The first had to do with a perception of the nature of the

leadership from the CIO. This was expressed by the two exemplar comments:

> So I guess, I am kind of seeing [the CIO] as the leader but at the same time, there
> was never a formal leader, okay. And there have probably been ramifications of
> not having that, okay. Sometimes, and I sat down with some of my folks to talk
> sometimes and we have said, "there may have been times through this process
> where we should have had a facilitator." Maybe we would have done a better job
> had we had a facilitator that was external to us and it didn't really have any beef
> about any of this (Controller Interview 12/06).

> I don't think the CIO had the perceived authority to follow through with this
> thing. I think a little bit of it is personality. I think a little bit . . . maybe a lot of it
> is authority of the position or the perceived authority of the position (Director for
> Planning Interview 12/06).

The second came in that the CIO believed that his role and leadership had been directly

challenged by members from the Finance & Administration area (CIO Interview notes 03/06).

The CIO later described the situation:

> And actually [Finance] disagreed not only with the findings but even with my
> leadership. I mean the suggestion was made that somebody else maybe ought to
> lead this. I have no idea [why], except that the findings of [Consultant #1] and I
> had worked with [Consultant #1] before…My qualifications didn't make squat
> difference. The fact that we have said that this [organization] is not functioning
> the way it ought to function in its business side for the 21st Century . . . "time out,
> we're doing just fine, our systems work fine." Finance systems do work pretty
> well but they work very well within Finance. They don't work well [across the
> organization]. But that was extremely political, extremely high . . . and it caused
> individuals to say, "Don't support this, don't want it," all the way down to the
> final set of recommendations. The consensus of the group was to move forward
> but the Finance people said no (CIO Interview 1/07).

The challenges to the CIO's leadership were made at a point in the process when

Executive Management support for the work of the Exploratory Group and the overall objective

of data integration was being questioned. The uncertainty in the executive support further

undermined the climate of the EG. Two comments demonstrate this impact:

> So the Exploratory Committee was pretty much left out there to try to…in some ways we have had little time in front of the Senior Vice Presidents given their schedules. I don't get the sense that there is strong sponsorship yet to come from [the COO]. I don't know that…he is not yet convinced (VP HR Interview 12/06).

> [T]he other factor is we brought a new CIO in right at the front-end of this [BPR] process. And I don't think that we ever clearly got to the point . . . I mean like this is a huge, in this decentralized environment, this is a huge issue. And it seems to me that for somebody to . . . for that to be solved, and sort of given the nature that we're trying to solve all these silos and decentralization at least on this one . . . somebody's got to be in front of this and perceived as "this person is our intellectual and organizational leader on this." And that person has the support of anyone who may be above them in the organizational structure. And I think that we never set that . . . we didn't set that up right at the very front end. And so I don't think we gave [the CIO] a fair chance to be that leader (Assoc. COO Interview 12/06).

The way in which the Exploratory Group responded to the BPR report and the

consequent interactions in the contextual influences served to undermine the BPA initiative. The

EG had a report that identified many business processes that would not support the enterprise

into the future and that deviated significantly from "best practices." The work of Consultant #1

also presented some general alternatives in terms of system solutions to create an enterprise

approach to data integration. Yet the EG did not have consensus regarding the results of the BPR

nor was the path forward clear. The state of the EG and the BPA effort was captured by one

member:

> I felt as if we started with a clear vision, a thought, an energy, and a run up to achieving something and then suddenly, probably about the end of the [Consultant #1] process and the beginnings of the awareness that there were differences in perception, differences in respect for the . . . not overt respect, but underneath, underlying respect for the whole thing that was going on . . . differences in the degrees of belief to which it would actually ever make any difference, that we started hitting a bog . . . somewhere after [Consultant #1] (Director for Planning Interview 12/07).

Implications

In the timeframe surrounding Event #2, the BPA Exploratory Group began to execute a process by which a recommendation for an enterprise solution to data integration could be developed. During this implementation phase, the BPA effort transitioned from a relatively positive, if tentative, consensus regarding the operating mode required to achieve consensus for a recommendation to a state of sharp disagreement and uncertainty.

The work of the BPA was an extension of the prior efforts related to data integration so there was considerable awareness of the issues and drivers for change. Initially the newly hired CIO worked to confirm within the EG these needs for data integration. And the CIO mapped out an approach to drive the creation of a recommendation based not on technology concerns but rather through the analysis of business processes. This approach was widely endorsed by the members of the EG. Thus the operating mode for the BPA initiative seemed to have been clearly defined and enjoyed general support.

A positive climate supported the initial work of the EG. The CIO was perceived to be providing strong leadership, based on pertinent experience and with the support of the COO, to drive LargePub in a new direction relative to enterprise information systems. The executive management supported the effort by approving the funds for the BPR engagement with Consultant #1even at a time when LargePub was facing significant budget challenges. And the EG was characterized by interactions based on open communications and trust.

Yet the BPR report from Consultant #1 exposed the superficial nature of the consensus within the EG and highlighted a number of influences that proved highly disruptive to the coordinating effort. Ultimately, the members of the EG did not have a common understanding of several key aspects of the data integration challenges or how a business process based review of

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the organization would help move the group forward. The fundamental operating mode of the

coordinating effort was not established in a way that supported the group activity.

It appears that the assessments of the BPR report brought deeply set positions to the

forefront. And the activities of the EG in responding to the BPR report served to reinforce the

lack of consensus in that the differences of opinion or assessments of the work of Consultant #1

were not addressed directly. The EG allowed the members of each functional area to deal with

issues within their own report as exemplified in this comment:

> I don't believe we really came to any consensus as a group. It was more up to the
> representatives of each individual area who addressed what they saw as errors in
> the data collected or misunderstandings in their own areas. And the group
> listened and tried to accommodate . . . didn't disagree with accommodating or
> asking [Consultant #1] to try to accommodate some of these concerns because the
> group perceived the various individuals as the experts in their own areas (Director
> of Reporting Interview 12/06).

Comments of the members suggest that the EG talked extensively about the need to

correct perceived inaccuracies in the BPR report. Yet it does not appear that these discussions

dealt with the fundamental issues dividing the operational areas and limiting the potential to

create a true common understanding of an enterprise system perspective or how the primacy of

one operational area could undermine the overall objective of data integration. The essence of

the lack of shared understanding was expressed by one member:

> I think a lot of what led to it was that [the CIO] came here . . . [from the prior
> organization], just having lived this process for years. And then [the CIO] comes
> into this environment which is . . . every institution has its own culture and
> language … is unique. And honestly I think [the CIO] came in and thought that a
> lot of people were hearing what was [being said]. And a lot people were hearing
> that, but they were hearing something different. I think with just a new person
> coming in . . . and to [the CIO] all of this language was something that . . . just
> standing alone . . . I mean all these words that aren't meaningful. And I think [the
> CIO] came in and started talking with a group of people like me who were maybe
> using all of those terms - and still are - in a different way … I fundamentally don't
> believe that the group as whole understood what was going to take place (Assoc.
> COO interview 12/06).

Negative politics interacted with the breakdown in consensus in the operating mode to
undermine the climate within the BPA effort. The CIO's leadership was overtly challenged. And
in the absence of strong and direct executive involvement to firmly establish the desired outcome
of data integration through an enterprise system that best served the entire organization
regardless of the impact on any one functional area, lack of understanding denied the emergence
of consensus and brought the work of the EG to a near standstill.

4.2.3   BPA Event #3 – Business Case Development with Consultant #2

The model of the critical event analysis for BPA Event #3 is presented in Figure 4.13.
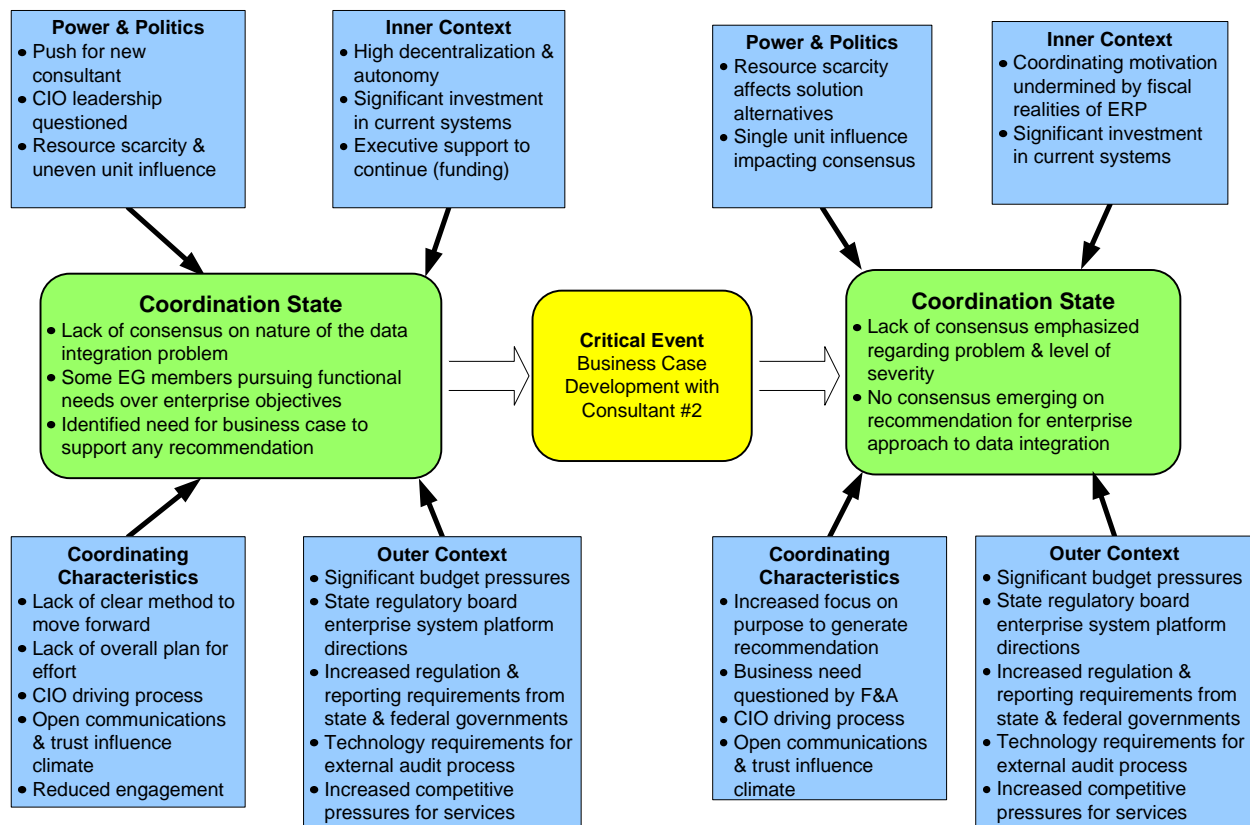

Figure 4.13 BPA Event #3 – Business Case Development with Consultant #2

Antecedent State

The Exploratory Group had conducted the BPR at the suggestion of the CIO in the belief

that it would then be able to generate a recommendation to executive management of LargePub

based on the outputs of that engagement. The Controller captured this commonly expressed view

(Interview 12/06):

> Because I believe that there were, that we may have started out the process
> saying, "Okay how we are going to get to this decision?" [The CIO] brings up the
> business process review, "Oh that's going to be fine. They will give us the
> answers we need and we can make a decision after that." Well after we got the
> BPR report we realized, we are not yet in a position to make a decision because
> … we can't walk in the door and say [to executive management], "We want to do
> this," without telling them this is the cost to x, y and z. So at the beginning we
> didn't realize that we needed that [business case] piece (Controller Interview
> 12/06).

However, as described in the prior event, the EG found that more information was needed to

create some level of consensus around a potential solution for data integration. The path forward

was not immediately clear. The lack of information and uncertainty regarding the next steps in

the process were exemplified by two members:

> [The BPR report was the consensus of group] because we kind of worked as a
> committee and was everyone [finally] said 'Okay, that's right.' We reached
> consensus. And that kind of left us with a 'what we are going to do now?' (HR
> Director Interview 12/06).

> We had not discussed that at all during the setting up of the BPR process, or
> during of the BPR process. We realized when we got the report back and it was
> close to being in final version that [Consultant #1] had some recommendations
> but there were no costs associated with them and there were no risks associated
> with the different possibilities (Director Customer Financing Interview 12/06).

The EG held several meetings after the completion of the BPR engagement with Consultant #1.

These interactions focused on what was required to generate a consensus recommendation from

the group. The apparent lack of a defined plan for completing the BPA initiative was an issue

that impacted the overall effort. An exemplar comment addresses the lack of clarity in the

operating mode of the EG:

> Now this is where I meant kind of falling forward, this is kind of an evolving kind
> of thing. There has not been an overall plan of first step, second step, third step, or
> phase one, phase two, phase three, phase four and then decision. So you haven't
> had a decision matrix, model, or saying that we need to do the business process
> review and then we need to do the assessment, then we need to do…at what point
> is the decision? The decision was made along the way to move forward or stop.
> None of that has been laid out; it has kind of been… it has been evolving just put
> together as time has gone on, as questions have been asked. So, the question was,
> "Well, should we change our administrative system environment? Well we need
> to do a BPR. Well how much does it cost? We need to get [Consultant #2]." So all
> along the way it has been that kind of thing (VP HR Interview 12/06).

As indicated by most members, however, the EG continued to operate in an environment

of open communications. The CIO facilitated the effort and at one point brought the group

together after hours to generate agreement for the next step. "One night we sat at [the CIO's]

house and, as a committee, I think had a very good set of open conversations that led to the

decision to hire Consultant #2 (Director Data Analysis & Reporting Interview 12/06).

The EG determined that the recommendation to the executive management would have to

be based on a compelling business case that supported the identified approach to an enterprise

solution for data integration. The BPR report did not have sufficient information to define the

case. So the attention turned to how best to generate the required information. As described by

one participant:

> So we started to look at it, and I don't know who it was, but somebody in the
> group said, 'How do we cost this out?" And people started saying well, so and so
> can do this, and so and so do this, and then somehow in that discussion someone
> said 'Well, there must be someone out there who does this for a living, who could
> identify what this really is going to cost us. It is nonsense making some wild
> guess based on our rather inexperienced expertise at this, lets get somebody.' …
> But there was an intentional decision to 'let's not do it ourselves, let's get
> somebody else to do it, and lets trust their expertise to cost it (HR Director
> Interview 12/06).

The lack of expertise on the EG to develop the business case, and the desire to bring in an external agency to bring credibility to any recommendation required a change in the participation in the effort in terms of hiring an external consultancy. These needs were identified by an EG member and the COO:

> And of course you never can develop those costs internally because you are never as smart as somebody else outside… [We wanted somebody from outside to help determine] whether we should develop a new system in-house or go commercial off the shelf system. And no one really knew, and [Finance & Administration] wanted strong numbers. And [the CIO] brought numbers from [the previous organization]. But I think people wanted to know from the experts, like [Consultant #2] who had done this elsewhere, what they thought (VP HR Interview 12/06).

> The outside view can be very helpful, and was essential in this case, in terms of understanding what is possible based on experience from outside the organization as well as understanding if the priorities are cost effective and will provide the necessary efficiencies (COO Interview notes 1/07).

The decision to hire an outside consultancy to assist in the development of the business case to support a recommendation was summarized well by one member:

> As best I recall, even the hiring of [Consultant #2] was an acknowledgement and a second step probably that came about because people who at their gut levels were not on the same page began to say "Well, we don't really have enough information and we really need to do this business review and [Consultant #2] is an acknowledged authority in the business area." Even though you had all this [Consultant #1] data in the process area, it was sort of like, "Well, we're not really sure that we trust that [BPR data], certainly not to make a decision of this magnitude - we need a business analysis." And so in order to accommodate that desire then the decision was made to hire [Consultant #2] to do another review - a different focus review (Director of Planning Interview 12/06).

As described in the preceding event, the political environment of the BPA Exploratory Group had become more highly charged. The manifestations of this were demonstrated in the process of deciding on the consultancy selected to conduct the business case analysis. Finance & Administration representatives focused heavily on LargePub's budget situation, and the need to take the budget constraints into account when making a recommendation to the executive

management. Also, F&A was quite vocal about concerns related to the objectivity of [Consultant

#1]. These positions were described by the VP of Finance (Interview 11/06):

> I was not the only one on the Exploratory Group that had issue with [Consultant
> #1's] potential bias. So there began some question on, just how valid is their
> findings, their recommendations? We began to talk in the Exploratory Group
> about whether or not we needed to have someone who was more independent to
> take the business process review and help us develop a business case. You have
> [Consultant #1] throwing out numbers like, "Oh, you can implement the ERP
> system for $8 million." I am sitting there saying, "I do not know what planet you
> are on, but everything I hear is 40 million, 50 million and everything else." I felt
> like . . . I and some others felt that we really needed to maybe take this to the next
> step. If we are placing some validity in their findings, in their recommendations,
> then we really need to be able build a business case. What is the level of
> investment that will be required? What are the risks that are associated with it?
> What are the benefits that we would enjoy from some of these different
> recommendations? I think that is why we went and brought [Consultant #2] in.

The general consensus of the EG was that F&A insisted on the business case study and

pushed the selection of [Consultant #2] as the best group to do the work. The role played by the

F&A representatives and the political implications related to the CIO were described by two

exemplar comments:

> It was almost preordained by some units, it seemed. People more on the Finance
> side just were not willing to move at all without such a thing (Director of
> Planning Interview 12/06).

> It was actually the Finance folks who felt we needed to, and I agree with this, we
> needed to get some financial data. What would it take from our current system
> and what would it take to go to whatever the option was we decided? It was
> actually the folks from Finance who suggested that we go with [Consultant #2].
> And I think that was good, that it was their decision, that they are the ones that
> brought it up and not [the CIO] bringing it up (Senior Manager Customer
> Information Interview 11/06).

The necessity and political ramifications of the F&A members pushing the business case

analysis with the help of an external consultant were not lost on the CIO. However, expediency

required support for this portion of the process and the acknowledgement that any progress

would have to accommodate the highly influential group. This was described by the CIT Budget

Director (Interview 12/06):

> I think honestly with working with colleagues . . . from other institutions that have
> done this, we could have come up with budget estimates. More realistic budget
> estimates. We didn't have to bring [Consultant #2] in. But it was at a point where
> [the CIO] wasn't willing to fight that battle. It was like "Okay, if this is what it's
> going to take to . . . the final thing before we can proceed, then let's go ahead and
> do it" (CIO Budget Director Interview 12/06).

While the executive management team was not highly involved, they continued to

provide support for the BPA EG. This support took the form of funding for a second consulting

engagement even in the face of significant budget constraints within LargePub. The executive

support contributed to an environment that allowed the coordinating effort to make progress

towards the objective of developing a consensus recommendation. The role of the COO and

senior vice presidents was described:

> And then that decision [to hire Consultant #2] was actually reinforced by . . . as
> best I recall, by [the SVP-Finance] and [the COO] at a meeting that we had
> [offsite]. So once they sort of endorsed it, it seemed like a good idea. Well then
> this decision was made to go ahead (Director of Planning Interview 12/06).

> I think that was a good decision…and again the COO and SVP of Finance …
> supported this. Because I will tell you, my concern was, are they going to get so
> upset with us for taking so long, they are just going to write us off. But they were
> very supportive of us, bringing in another consultant group and [Consultant #2]
> was a good one to bring in (Senior Manager Customer Information Interview
> 11/06).

A new member, the Central IT Budget Director, joined the BPA effort in the transition

period between the BPR engagement with Consultant #1 and the decision to do a business case

analysis engagement with Consultant #2. This individual was added to the team because of his

knowledge of both the IT and business/budget domains within LargePub. This was described by

the CIT Budget Director (Interview 12/06):

And really, [the CIO] asked me to be in there because they were finally getting to the point where after looking at the processes at a very high level it was now time to start looking at the technology that would come in and no one on the group really had that technology background. But there's also someone who could understand that and understand the costs for it. [The CIO] brought me in I think mainly because of the budget side of things but I think he wanted to have someone on there who had a technology background and who could speak both languages.

While the group was meeting and working to move to the next step in the process, the overall engagement in the initiative seemed to be lower. The EG had been working for an extended timeframe and faced the prospect of another delay in fulfilling the primary objective of the effort. This was described by the CIT Budget Director (Interview 12/06):

The one thing, and again I can only comment on the last part of the group, the feeling I got was kind of a malaise that the committee . . . the committee had been functioning for over a year by the time I got on it and it was pretty clear that they accomplished a lot of their work early on and the rest of it has just been beating the dead horse. We knew going into it . . . if you had polled everyone on the committee before they ever met - we knew what the issues were, we knew who is in favor of what, and it's just been spinning the wheels. Yes, we did the business process review and the business process analysis. And yes, they provided some useful information and deep detail information but at the high level we didn't learn anything that we didn't know going in. So it was easy to see it as a waste of time and a waste of money. And we're on this committee and you know what everyone thinks looking around the table and we're still meeting all the time and we're not accomplishing things. Well accomplishing lots of little things, but in terms of moving LargePub forward, it's not happening. There's plenty of activity, people are working hard. But it's all of this - look at this report, bring in these consultants, tell us what we already know just so that we're covering our posteriors or appeasing people . . . but in terms of progress in getting LargePub closer to better data integration or system? No. People didn't see that.

Critical Event and Related Activities

In an apparent recognition of the lack of understanding from the BPR engagement as to exactly what the external consultant was to do and what the final deliverable was to be, several of the members of the EG took a more active role in specifying the work with Consultant #2. The purpose of the engagement was summarized succinctly by the Controller (Interview 12/06):

[T]he purpose of the [Consultant #2 work] of course was to do…help us with our business case analysis - what are the cost, benefits and risks of either doing nothing, we thought that we had to look at doing nothing because that was sort of our stake in the ground, revising our systems using in-house capability within in-house power to do so, or looking externally to vendor solutions.

While the process was open to all, the EG members from the F&A area worked most closely with the CIO and the consultant representatives to refine the parameters of the work and finalize the contractual arrangement. This was described by a key participant:

Yes, what we did...if I remember correctly, we met with [Consultant #2] and kind of talked through "here is what we are looking for." Then they develop a proposed scope of work. We as a committee reviewed that scope of work and said, "We really need this. This is where we need to focus." It was kind of an iterative process where we worked with [Consultant #2] to refine their . . . scope of services … It was a big, thick document, and a number of us worked on that. I worked on a good deal with [the Controller]. [The CIO] was very good about including folks who were saying, "Okay, we would like to help refine this." We were on conference calls with [Consultant #2] a couple of times. Again, just trying to get them to understand what it is we felt we really needed from them, [and] having the engagement reflect that (VP Finance Interview 11/06).

A kickoff meeting with Consultant #2 was held in June, 2006[58] and the consultants worked with the EG on the business case analysis through October, 2006. The EG group provide Consultant #2 with the BPR report from Consultant #1. The CIO and members of the EG spent time with Consultant #2's project team members. The data collection process of the engagement lasted approximately 4-6 weeks and involved primarily group interviews. The interviews focused on business processes but were not as detailed as the BPR data collection. The nature of the work with Consultant #2 is described in the following exemplar comments:

Well, at first with [Consultant #2] it was meeting with [their consultants] to get them up to speed…[W]e sent them lots and lots of materials including the [Consultant #1] report … I'm sure they spent time with [the CIO] . . . just on the phone or face-to-face . . . just getting the basics. But it appeared as if they just needed more time to get up to speed … So part of it was getting up to speed and then part of it was they asked for interviews with different colleagues … They met with me and about five of my staff members along with a couple of other

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[58] Business Case Analysis Kick-off Meeting Notes (June, 2006).

colleagues for a 2-hour session or something. And they did that with about ten or so groups which I'm sure that that gave them a more personal feel but I doubt if they heard anything new than what they didn't read in [Consultant #1]. Now, did that help some of my Exploratory members feel like the [Consultant #1] people [had been right]. . . it was kind of a double check (Director Data Analysis & Reporting Interview 12/06).

And those were generally group interviews, centered around processes - the payroll process, the such and such process, or what not. And they didn't get that defined, they chunked it out into finance in the larger scope, they didn't get down into the details as much as [Consultant #1 did] (Controller Interview 12/06).

Concurrent with the start of the business case analysis with Consultant #2, the

engagement of the EG increased in that the group started holding regularly scheduled weekly

meetings. The primary activities of these meetings focused on "assessing whatever had happened

to that date and then discussed it [and] talked about whether it was on track or not, if it needed

tweaking or not, if it was meeting the needs," (Director of Reporting Interview 12/06). The CIO

convened these weekly Monday afternoon meetings and worked to establish the agenda. This

was described by the Controller (Interview 12/06):

Usually, by way of email, a couple of days before the meeting, [the CIO] would send something out…kind of loose proposed agenda. And then other people may say, 'You know what, we should also talk about such and such.' So informally in the email format, we would pretty much come up with an agenda, and so when we walk in the door on Monday, we knew what we were going to talk about. There were some weeks when [the CIO] says, 'I don't really have anything for us to discuss this week, do any of you?' And if the answer was no, then we wouldn't meet that week. But I would say the group did a fairly good job of walking in the door, knowing what our topic was going to be that day.

The impact of these weekly meetings was described by an exemplar comment:

I think they were more focused. I think people began to really . . . it's sort of like having a huge jigsaw puzzle and we're down to the last 100 pieces and 'who's got the piece that's got the tree and who's got the dog and who's got the house? Let me get to the table and put my piece in.' And there was some excitement. There was some trepidation. And I think it was just a natural progression of how the whole group worked and how our tasks changed from the very beginning when we were saying, "Okay, we need to know what the business processes are [in this organization]," to "Alright, now we need to say

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how we're going to make those processes happen." And so the tasks just evolved (Director Customer Financing Interview 12/06).

Despite the overt challenges to the CIO's leadership, the CIO was largely responsible for driving the work of the EG and Consultant #2. The CIO's key role was described by one member:

> [The CIO] had to, for the most part, had to drive everything. There would be the occasional issue that would come up where someone would be very excited and interested and would take the lead. But for the most part [the CIO] would come in, [and] would work us through whatever had to be done … because if [the CIO] didn't, nothing would have happened (CIT Budget Director Interview 12/06).

Consequent State

After the data collection and a short time in which Consultant #2 synthesized its findings, draft versions of the findings were circulated back to the EG. The weekly meetings focused on reviewing and providing feedback on these preliminary findings. This was described by the Controller:

> … and as [Consultant #2] started to draft reports, [we were] reading those reports, responding, conference calls with the [Consultant #2] folks to clarify and refine and get the final report into the final stages (Controller Interview 12/06).

The fact that the EG members were involved in making revisions to the draft reports presented by Consultant #2, just as had been the case with Consultant #1, was pointed out by several participants. The issue was exemplified by these comments:

> [I]t is been being refined, I think, there again, not with the same strong feelings [as before], but still tweaked, I guess, more (Senior Manager Customer Information Interview 11/06).

> But I think people wanted to know from the experts like [Consultant #2], who had done this elsewhere, what they thought. And that's what they provided. And in any respects, we did a little bit of same thing in terms of challenging what they reflected back to us in terms of their view in their report (VP HR Interview 12/06).

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The EG worked through revisions with Consultant #2 to clearly articulate the alternatives under consideration to provide an enterprise solution to data integration. While the EG sought to generate consensus based on the findings, remaining differences related to budget limitations and parochial interests in the existing systems required that the EG have Consultant #2 revise their findings to include an assessment of a phased implementation of a COTS software solution. This was described by an exemplar comment:

> And there was concern from a couple of different viewpoints. One that the dollar point alone would be a killer for us, with this current budget situation. The second, that there was not total agreement in our group, that we needed COTS[59] for all four [operational] segments. So, [Consultant #2] were to asked . . . everybody agrees [Customer Information] is the worst…that is common acceptance, I think. So, there was a suggestion to [Consultant #2] to pull [that] piece out and say, if we do the [Customer Information] piece first, and to give us a better … to give us a kind of a timeline of implementation of all four and the cost breakdown by year (Senior Manager Customer Information Interview 11/06).

There was one dramatic impact of the work with Consultant #2 to generate the business case analysis for each of the three primary alternatives under consideration (maintain the status quo with incremental improvements to the legacy systems, completely re-engineer the existing systems internally, and implement a COTS solution). This second consultant engagement focused the EG on the primary purpose of the coordinating effort and the necessity to generate a final recommendation to the executive management of LargePub. Many of the participants commented on this increased focus, intensity, and increased sophistication in the work of the EG related to the business case development. The impact was described by the HR Director (Interview 12/06):

> [I]t became more of a real business problem in the sense of, okay how much is this going to cost us and lets make sure we know what we are talking about … so that became almost its own component of this discussion. And it also, I believe it did elevate the discussion to the level of 'what are we trying to do? What are we really trying to accomplish? And if we are going to spend real money, what is

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[59] Commercial Off-the-Shelf Software (COTS) – a vendor provided ERP system.

LargePub going to get for it?' And not simply how do we redesign our processes but how does it better make us competitive in whatever we talk about? … What are the benefits to LargePub? And if we can't identify what those benefits really are, we have no business spending money on it. So I think the discussion kind of elevated to that level.

The need to develop a recommendation based on a sound business case, the primary output of the coordinating effort, generated much greater clarity in the operating mode of the EG. However, the work with Consultant #2 served to further highlight the divergent views of the participants regarding the overall purpose of data integration through an enterprise approach to an operational information system. Just as in the response to the BPR report, the differences centered on three primary issues: 1) budget limitations constraining the available options, 2) the desire by some to optimize operational system efficacy at the functional/department level, and 3) the lack of consensus on the benefits of a single vendor software solution. The lack of progress in resolving the issues at the core of fulfilling the primary objective of generating consensus regarding a recommendation was addressed by comments from two EG members:

> The key areas of differences, and again this is, of course in my area is just the feasibility of … making recommendations that are not implementable from the fiscal perspective. There are some folks on that committee who just think 'we need to make a recommendation regardless of the investment that would be required.' There are others on the group, not just myself, who feel like 'no, no, no we need to make a recommendation that has feasibility.' We cannot just go to the senior administration and say, 'Here is what you need to do regardless of how much it costs.' There is still not a consensus there. There is still no consensus on what our long-term plan should be (VP Finance Interview 11/06).

> And there was concern from a couple of different viewpoints. One that the dollar point alone would be a killer for us, with this current budget situation. The second that there was not total agreement in our group, that we needed COTS for all four segments (Senior Manager Customer Information Interview 11/06).

> I am biased because I represent the financial side of things. I challenge anybody to find me an example where our financial information is not integrated, our financial information is not accurate, where our business processes are really out of whack. Are our financial systems perfect? Absolutely not. Can it be improved? Absolutely. But do we need to get to the level of investment in an ERP system to

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improve them? Is there a way to address our most critical needs which I think everybody…I think there is definitely a consensus that our [customer system] is a system that needs the greatest level of improvement amongst the group. There is no question that they will agree on that. So then do we try to focus our efforts on that area and make improvements there while developing a long-term plan for greater integration? Right now there are operational…inadequacies that are associated with the [customer] system. The [customer] system is impacting the functions. On the financial side we are happy as clams. We think our financial systems support us really well (VP Finance Interview 11/06).

While the engagement with Consultant #2 provided an opportunity to address the issues dividing the members, no appreciable progress was made in terms of framing the challenges in a way that would allow the EG to find a basis for consensus. The resultant impact on the EG was described by one member not representing a functional area:

> [The change to Consultant #2] it seemed to me that was my first real awareness that we were kind of a little bit dancing on eggshells through this business of . . . these streams of disagreement and different perceptions of either what the problem was or the level of the problem - not even in agreement in the level of the severity or not of the problem and certainly not in agreement on proposed solutions. And so it seemed to me we were kind of in a tentative state for quite a while (Director of Reporting Interview 12/06).

As the report drafts were delivered by Consultant #2, the Exploratory Group was faced by the stark fiscal reality of moving forward with any of the outlined options. The total cost of ownership (TCO) estimates[60] provided by Consultant #2 were very conservative which may have exaggerated the impact on the EG. Preliminary TCO estimates ranged between $30 million and $50 million. The magnitude of these estimates, in an environment of reduced state funding and extremely tight budgets, significantly intensified the pressure within the EG and the politics in the process. This was addressed by the following exemplar comment:

> It put a lot of reality in that situation because we knew that this would be expensive to do, but just how expensive because we have heard projections from individuals at the start of the process that you can do this at a very reasonable dollar amount. But then [Consultant #2] came in and said "big bucks!" I mean

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[60] 10-year TCO estimates (Business Case for Administrative Application Transformation—Alternatives Analysis and Preliminary Recommendation, Consultant #2, August 2006).

there are some people who'd say, you know 'Oh, we can do this for like $10 million.' And there is some of us saying, 'Well that's not what we determined years ago, that is not what we were hearing from other institutions of our size.' So that just doesn't seem reasonable at all. And then when you get [Consultant #2] to come in and say, 'No, we need to add some more zeros on there.' I think it really... the reality sunk in. 'Oh my gosh! Are there are reasons why we really need to do this? But somebody has to be willing to fund it,' (Controller Interview 12/06).

A stark assessment of the role played by Finance & Administration in directing and

delaying the work of the EG in generating a consensus recommendation to move forward was

offered by one member:

> It's been clear all along that what we need to do is go to a commercial system. It's the only way to really address data integration, social security number replacement . . . but the people who control the purse strings on the Finance side don't want to do it. And to try to appease them, there's been one committee after another and then . . . when they each drew the same conclusion it was, 'Well, let's bring in some external consultants to tell us.' And when they didn't like that answer it was like, 'Let's bring [Consultant #2] in.' And [Consultant #2] has confirmed everything that [Consultant #1] said which was everything that we've known for the last probably 10 years … What I would say is [Finance] saw what [Consultant #1] had recommended and didn't like it because [Consultant #1] was saying very clearly commercial system for everything, one system, not a hybrid - because that's the best approach. I think they wanted to have [Consultant #2] come in and show that we couldn't afford that. And to a large extent they succeeded because [Consultant #2] is coming in and they're pricing it at such a conservative level that it showed there was no way we could afford it. What's really interesting though is they're willing to accept the [Consultant #2] numbers and say LargePub can't afford to do it. But they're not willing to accept the fact that [Consultant #2] still said a single commercial system is the best approach (CIT Budget Director Interview 12/06).

Implications

It is clear from the comments of many of the Exploratory Group that a master plan did

not exist for taking the group through the process of developing a recommendation for an

enterprise approach to data integration. The idea of "falling forward" through the process

expressed by one participant indicates how the lack of a clear operating mode (e.g. purpose,

method, outputs) impacted the effort. Without the context and grounding that a well crafted plan would have provided for the EG, the members struggled to relate various activities to their primary objective.

The antecedent state, critical event and related activities, and consequent state associated with Event #3 provide clear support for viewing the coordinating process as a progression of stages. In the timeframe immediately following the initial implementation stage of BPR engagement with Consultant #1, the BPA Exploratory Group undertook an evaluation in which the limitations and gaps of the work product from the BPR were assessed. This identified the need to generate a business case to support any potential recommendation.

As the business case analysis was not included in the scope of the BPR engagement, a number of alternatives were considered as to how best to generate the required analysis. The decision to bring in Consultant #2 to conduct the business case analysis, instead of using internal resources, was an adjustment to the work of the EG. Further, the more active role played by EG members in framing the engagement and defining scope of services was a significant adjustment to the prior process with Consultant #1 in order to accommodate the preferences of a highly influential functional area.

The urgency of having to make a recommendation to the executive management of LargePub, the primary output of this coordinating effort, supported by a tightly defined business case served to focus the EG. The CIO instituted regularly scheduled weekly meetings and managed the agenda thus formalizing the method for this portion of the BPA effort. The adjustments to the effort clarified key aspects of the operating mode. And as the EG re-entered an implementation stage during the business case analysis engagement with Consultant #2, the

increased activity and immediacy of feedback to the members intensified the engagement in the effort.

One of the objectives of the work with Consultant #2 was to help overcome the divergent views within the EG related to the meaning of achieving data integration through an enterprise approach to information systems and the benefits of a single vendor software solution. Finance was not willing to give up highly customized business processes and the supporting operational systems for the promise of a higher degree of enterprise data integration. The work with Consultant #2 did not provide the means for creating in-depth understanding across the EG as to how a single vendor software solution would benefit all of LargePub. The CIO positioned the issue as an enterprise solution whereas the Finance & Administration members positioned the issue as a critical necessity for a single functional area (e.g. Customer Information). It is not clear that any activities were taken to overcome these divergent views to establish a shared understanding of data integration and an enterprise approach to information systems.

4.2.4   BPA Event #4 – BPA Exploratory Group Makes Final Recommendation

The model of the critical event analysis for BPA Event #4 is presented in Figure 4.14.

Antecedent State

The EG worked during the weekly meetings and closely with Consultant #2 to bring the final report of the business case analysis to closure. The urgency and engagement during this time continued to be high because of the necessity to make a final recommendation to the

executive management of LargePub in the near term. The final report from Consultant #2 was

issued in late August, 2006. The final report made three primary recommendations[61]:

- Implement an integrated COTS Customer Administrative module with minimal modification (customization) to the basic system. Ensure that the chosen COTS administrative application will be able to adequately support HR and Financials. Do not immediately proceed implementing additional modules (HR/Finance), as LargePub does not have sufficient organizational capacity at this time.
- Elevate the CIO role to a more senior management position with greater authority, access, and visibility. Establish an IT Governance framework which will provide the authority to set and enforce enterprise-wide infrastructure, application, and data direction and standards.
- Sponsor, at the senior leadership level (i.e. CEO, COO and Senior Vice Presidents), an extensive business process standardization and re-engineering effort that leverages the "best practice" processes embedded within the COTS administrative application to the fullest extent possible.
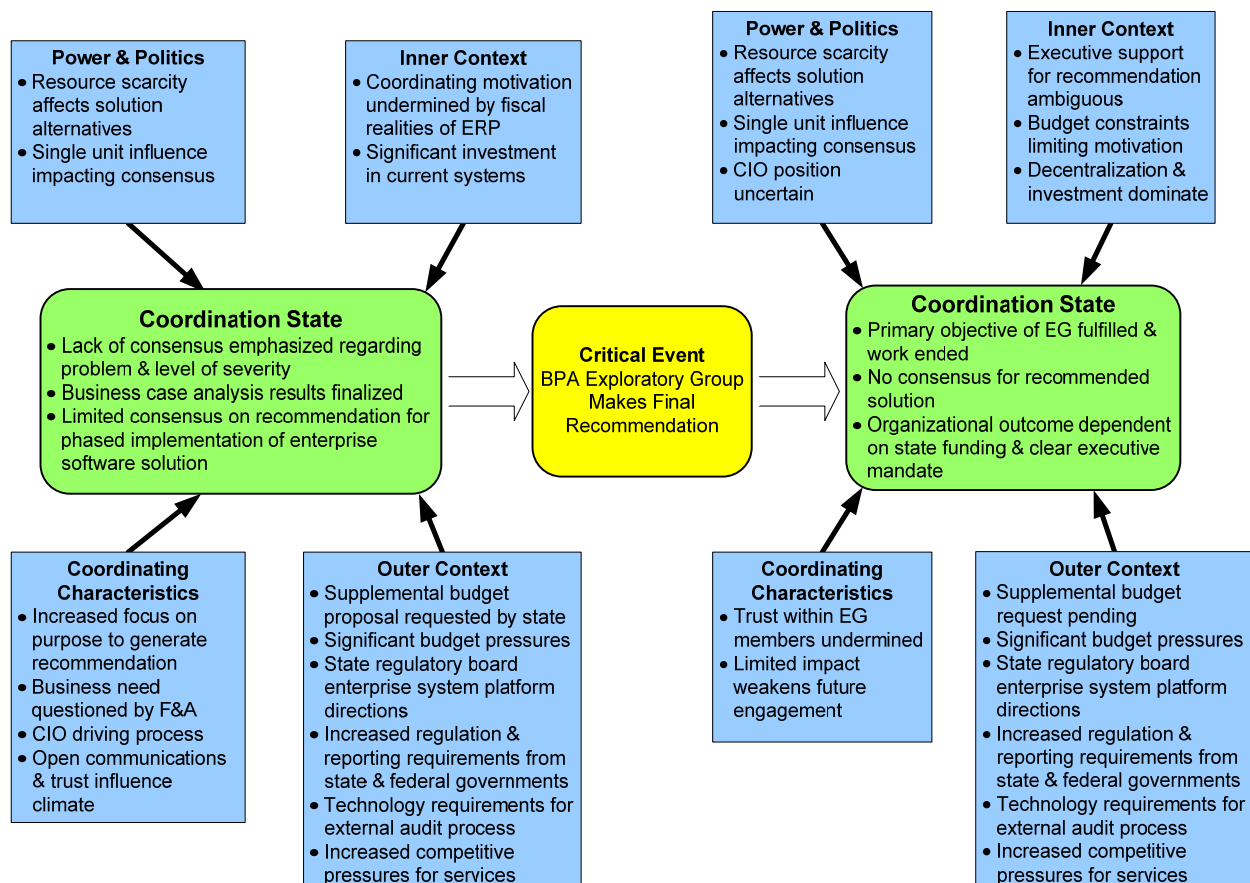

Figure 4.14 BPA Event #4 – BPA Exploratory Group Makes Final Recommendation

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[61] Business Case for Administrative Application Transformation—Alternatives Analysis and Preliminary Recommendation, Consultant #2, August 2006.

The recommended strategy was estimated to have a ten year TCO of approximately $35 million

for implementing all four functional modules of a COTS solution.

The report from Consultant #2 made clear that COTS was the best approach for LargePub

and that all four operational modules should be implemented. This confirmed the basic

recommendation from the BPR engagement with Consultant #1. And based on input from

Consultant #1 and input from Consultant #2 not included in the final report, it was generally

accepted by the EG that the recommended, lowest risk approach to implementing COTS

involved starting with the Finance module followed by HR and then customer administration.

However, the Finance & Administration representatives would not agree to this approach. This

was demonstrated by the following exemplar comments:

> We have the perfect opportunity and as I've talked to my colleagues around the
> country . . . and what the [Consultant #2] people told us is that what you would
> like to do is start with your least complex piece and 99% of the time what I'm told
> is that is Finance. But instead, what we're going to do is start . . . we're likely
> going to start with the most complicated and convoluted, which is the [Customer
> Administration] system. Now, if I were standing outside and I were in a business
> environment I would say that is a stupid, stupid decision (Director Data Analysis
> & Reporting Interview 12/06).

> [M]y belief is that [Consultant #2] said you ought to do all of this in as short an
> amount of time as possible. The reality is you can't afford it and if you do it all it
> will be too disruptive and so you'll have to order [the implementation]. Now,
> everybody pretty much agrees that the whole world practice says Finance and HR
> ought to go first because they are the simplest and because all their numbers then
> feed into all the other systems. But at this institution, those are the systems that
> are most resistant to change. And the Customer Administration System is
> acknowledged to be the most broken. And given the financial constraints and the
> most broken and the resistance, it seemed to me, [Consultant #2] then came
> forward with, "Okay do the [Customer Administration] first and then phase the
> other" (Director of Reporting Interview 12/06).

The fiscal demands of implementing a COTS solution for data integration and the

unwillingness of F&A to support the recommended implementation strategy significantly

impacted the consensus within the EG. A majority of members favored a full implementation of

a COTS solution including all four functional modules. However, the costs for this approach

were too high and the members agreed that the executive management of LargePub would not

support this approach. And as was demonstrated in the final report from Consultant #2, F&A was

able to exert sufficient influence to change the recommended implementation approach to start

with Customer Administration. The lack of consensus was captured by a comment of a member

representing Finance & Administration.

> Because of the cost factors in all of this, the group had pretty much resolved itself
> that we can't make a compelling case right now on the Finance or HR piece. A
> more compelling case centered around [customer administration], as we are going
> to focus our energies there, knowing that that needed to be one solution, and that
> it maybe five plus years before we could even do anything on the HR and Finance
> piece. I think because we have sort of evolved into that, this whole idea of, "we
> are not necessarily making a decision on an across-the-board solution right now."
> Okay, I think we kind of got there. And all the way through the process, even
> though we didn't have [Consultant #2] do a best-of-breed solution, several of us
> in the group continued to bring up to the group that, 'We are not saying that a
> single vendor solution is not the way to go but what we are saying is, we have not
> done the research to determine whether that is the optimal fit for the institution'
> (Controller Interview 12/06).

After Consultant #2's final report was presented, a request from the state regulatory board

regarding supplemental funding significantly changed the focus of the discussions and increased

the urgency of the EG regarding the final recommendation. The director of the state regulatory

board approached the executive management of LargePub and requested proposals for

supplementary funding. The requests were to be for new, incremental funds that would be used

to further the strategic priorities of the organization. The COO and senior vice presidents

recognized the opportunity to include the enterprise software solution for data integration as one

of these initiatives. Comments from several members involved with the supplemental budget

request highlight the impact on the EG:

> [T]here was a request for enhancement funding. We got a call and were asked to
> submit if we had "X" number of dollars, what could we do with that in terms of

moving forward with this. And so we put together, based on all our homework, a proposal and submitted that number to the [state regulatory board] as part of LargePub's enhancement request (CIO Interview 1/07).

About the first part of November, LargePub was putting together something called an FY08 Budget Request to the [state regulatory board]. The [director of the state regulatory board] had said 'If you were to get new money, what would you use it for?' So [the COO] asked LargePub to submit new funding requests that would be eligible to go to the [state regulatory board]… So using the Consultant #2 numbers, they put together a request and so that meant that you were requesting like $10 million in year one…Well at a certain point in the discussions about what does LargePub's funding request look like, the executive management says, 'There is no way that we can submit this at this dollar amount. Maybe we could get some funding.' So I think somebody just picked $3 million out of air, okay. And they went to the CIO's office and they said, 'If you had $3 million, how would you use it towards this effort?' So that got turned into an implementation budget at the tune of about $3 million a year… (Controller Interview 12/06).

This enhancement request was a pretty big thing because we probably wouldn't have been facing any kind of decision about what to do until spring if we hadn't gotten the . . . it was like a mid-October deadline from the [state regulatory board] to submit that enhancement request … That really shook up the apple cart because it meant that we had to come up with some kind of recommendation. And because it wasn't just an internal thing, it's going to the [state regulatory board], it's going to the [the director there] – it meant that there had to be at least some level of institutional commitment. They weren't saying 'Yes, we're definitely going to do this.' But they at least had to acknowledge this was a pretty good approach and it was worth putting into this enhancement request (CIT Budget Director Interview 12/06).

The CIO and CIT Budget Director worked to develop an implementation approach that would fit within the $3 million per year limit. This was accomplished by reducing the software licensing and maintenance costs through state contract pricing, phasing the implementation work, and most significantly assuming that LargePub CIT staff would do a majority of the implementation thus significantly reducing the costs of an implementation partner (CIO Interview 1/07, CIT Budget Director Interview 12/06, and Controller Interview 12/06). This revised budget was circulated to the Exploratory Group and a topic of discussion as the final recommendation was being prepared.

The reactions of key participants to the findings of the business case analysis and the final recommendations produced by Consultant #2 served to underscore the depth of investment in the existing systems within the culture of LargePub. It was very clear that Finance & Administration would resist efforts to replace the existing legacy systems in that area with a COTS solution. Two exemplars emphasize the level of investment that was undermining a consensus recommendation:

> …I think we struggled because it's very hard to accept change and to have someone come in and tell you that you're not functioning the way you ought to, to be competitive. We had two major players in the industry tell us that, and that was hard (CIO Interview 1/07).

> I think people, people really got caught it up in the end game and they were worried that, you had camps that were worried that 'we like the way the systems are now. So all our energy is going to be devoted to defending why what we are doing is good." Not so much… so everything kind of took on a value of good and bad. And so people became somewhat defensive, 'Okay what I am doing right now, I don't want anyone to think it's bad, so lets keep it' (HR Director Interview 12/06).

Critical Event and Related Activities

In preparation for the final presentation of the Exploratory Group's recommendation to the executive management of LargePub, the group interacted over the period of about a month. The weekly meetings continued as did a significant amount of electronic communication. The group worked to reconcile the work of the BPR with Consultant #1, the business case analysis with Consultant #2 and the revised implementation budget developed for the supplementary request into a final recommendation that enjoyed consensus support. The Exploratory Group relied heavily on the final report from Consultant #2 to prepare the recommendation. The fiscal limitations and lack of consensus for the full implementation of a COTS solution were the dominant factors. As described by several participants:

[W]hat do we take out of this report that brings out the most important points. Because now we are dealing with some executive leadership and they expect us to just bring them the salient points, they don't need to know everything. So what is the most important things? What is the story that we want to tell? And what is the simplest way to tell that to them? That's the audience that we are playing to it at that point. So that's what happened between there, and it came up with what was presented to that group which was basically here's… the discussion really centered on the priorities, again, and we think that the [Customer Administration] Systems are the things that need fixed first, and here's the cost associated with that. Because again with [the executives] cost is a major driver and if you are not…you may want to do it but you just don't have the resources to do it compared to everything else that's competing for those dollars (Director HR Interview 12/06).

[During the preparation of the final recommendation the single vendor solution did come up] a little bit, but … funding for a project such as this is very large. And so we had an awful lot of discussion about how is it that the [executive management] is going to make funds available for this when they may have other priorities … So even though there was some discussion about single vendor solution, and in preparing that document [for the] three senior VPs, we've focused so much more on what are the compelling reasons that we need to do this. What compelling reason can we give to the three Senior VPs that is going to say, 'Okay, I am going to write the check and I am going to fund this project.' So yeah those discussions were out there but I think the group is focusing much more on how we are going to sell this. We need to know hardcore selling points, and they've got to be big enough such that the decision makers are saying, 'You know what, that really is worth me taking this money away from [this other area] and putting it into this" (Controller Interview 12/06).

In the face of divergent perspectives and prior incidents in which the CIO's role was challenged, the CIO provided the leadership to drive the EG to completion in creating the final recommendation and presentation for the executive management. This was expressed by the exemplar comment:

I think we were probably floundering at that point. I think that, that's my perception … I kind of want to okay say, 'Where do we have to get?' Okay, dink, dink, dink, dink - this is how we're going to get there. Okay, it's difficult to do when you have kind of a group of people from different areas, different views, relatively similar levels of authority, lack of consensus, and it seemed to me that the tail end of all this was work and tweaking whatever but it was kind of floundering. Although, at the last meeting before the presentation to the three Senior VP's, I thought [the CIO] did a good job of pulling things together in a systematic way for the presentation (Director of Reporting Interview 12/06).

An issue developed immediately prior to the final presentation that continued to show the

lack of consensus within the Exploratory Group. The members met a few days prior to the

meeting with the executive management to finalize the presentation. The business case report

from Consultant #2 recommended a COTS solution for all four functional areas. The majority of

EG members viewed the COTS recommendation as a *single vendor* solution. And given the

limited number of vendors supporting the public service sector and the standards established by

the state regulatory board, some EG members considered the product from *one* vendor as the

only viable alternative for a COTS ERP solution (Senior Manager Customer Information

Interview 11/06). However, the members of F&A considered alternatives to the single vendor

solution, such as a best of breed option, as a viable alternative for a COTS solution. This conflict

was described by an exemplar comment:

> In preparing for that meeting with the senior VPs, another sort of summary
> document was being prepared more from a budgetary perspective. And somehow
> between the document with our three recommendations, and this other summary
> document and the time that we were getting ready to sit down with them, our
> recommendation had evolved from those three items to, 'We are going to go to a
> single vendor solution for LargePub,' okay. Now that's a big difference between
> what we recommended … [and] we are going to a one vendor solution across the
> board … So there were some people that were rather upset that somehow our
> recommendation had changed … So there was an awful lot of heated discussion at
> that meeting … But, to go so far and say we are going to carry whatever vendor
> solution we determined to be best on the [customer] side, we are going to carry
> that across all the way across the board for HR and Finance when we haven't had
> any of those discussions whatsoever. I could not sit there and agree to that
> recommendation … So finally at the end of the meeting, they relented and said
> 'Okay, we understand that. We understand that you cannot sit here today and say
> that Product X is going to work for you.' We haven't done an RFP. We haven't
> done any sort of analysis (Controller Interview 12/06).

The implication of this last minute conflict over the group's final recommendation was addressed

by the following comment:

Not until the very, very end of the process did we probably . . . this is my opinion . . . acknowledge as a group that there was in fact a significant difference of opinion among units and that we would perhaps just have to agree to disagree and give our recommendations as best we could to the Senior VP's and let them sort it out (Director of Reporting Interview 12/06).

In the end, the BPA Exploratory Group agreed to a final recommendation for an enterprise approach to data integration that was based on COTS software. The negotiated consensus was described by the CIO (Interview 1/07):

[T]he recommendation is not just the two modules [covering customer administration]. The recommendation . . . and I made sure that was in there, [is] that over a five year period – and the group all agreed – over a five year period, we will convert, we will move forward with a conversion off the current legacy system to an enterprise approach. And the first two modules are a Commercial Off-the-Shelf platform. And the [COO] was adamant that all pieces would be able to be integrated into an enterprise approach.

In late November, 2006 the full BPA Exploratory Group met with the COO and senior vice presidents to present the final recommendation. The recommendation included a phased implementation of COTS over 5-years, to include the implementation of all four functional areas (Customer Information, Customer Financing, Finance, and HR), with a projected cost based on the revised budget estimates of approximately $3 million per year.

Several members commented that the COO and other senior vice presidents were very engaged in the presentation (Director Customer Financing, Director HR, Director of Data Analysis & Reporting interviews). The discussion addressed operational drivers for a change in the legacy environment related to issues with customer records and ID management that could have serious legal, financial, and reputational implications for LargePub if not addressed. The revised cost estimates were presented. The presentation was well received by the executive

management. "They actually seemed very excited about this. It was a very positive meeting, they understood the need," (CIT Budget Director Interview 12/06).

However, at the very end of the meeting a member of the Exploratory Group challenged the CIO over the veracity of the revised budget estimates. This issue had not been raised during the 4 week period during which the EG developed the final recommendation. And this issue had not been raised during the final preparation meeting held just prior to the presentation. The fact that the issue was raised at the meeting with the executive management was a real surprise to the EG members and generally viewed in very negative terms (Assoc. COO Interview, Director of Data Analysis & Reporting Interview, and Director of Customer Financing Interview). The interaction was described in detail by a primary participant in the discussion:

> This was probably the most unprofessional, un-collegial thing I have ever seen and I experienced it first-hand, aimed at me … [A member from Finance] had seen all of the budget work that [Consultant #2] did. I was also asked to come up with something less conservative than [Consultant #2] because they gave a very, very 'no one could possibly exceed this cost' kind of estimate. [The CIO] asked me to work with colleagues out at [another institution] who went through this kind of implementation. I actually talked to [others in the state about their ERP implementations] … I had to come up with a way to fit this project into something close to $3 million a year. [This other member] had seen the budget numbers for several weeks, he was involved … So he had seen those numbers from the very beginning, hadn't said a word … We get to the very end [of the meeting] and out of the blue he questions the budget numbers. He said, 'I don't think these budget numbers are right. We certainly can't do the project for this. They don't know what they're doing in coming up with this. [Consultant#2] said this much and they're saying it's this much . . . you can't trust them.' … Oh, he didn't say you can't trust it, but he started to say that 'they don't know what…' and then he stopped … [I]nstead of raising the question in the Exploratory Committee meetings, including the one the day before we met with the senior vice presidents, he waited and sprang it on the group and basically trying to discredit us right then and there… (CIO Budget Director Interview 12/06).

The question raised about the revised budget estimate generated a number of questions from the COO and senior vice presidents. The CIO and CIT Budget Director provided an explanation of the assumptions and logic used to produce the revised estimates. However, the

issue raised enough concern that the primary outcome of the presentation was a charge to the CIO to revise the cost estimates and answer some questions regarding enterprise solutions in the 21st century (CIO Interview 1/07).

The executive management appeared to be on the verge of supporting the recommendation to move LargePub to a new enterprise platform based on COTS. The CIO offered an interpretation of why the budget issue was raised only at the end of the meeting with the executives and not previously within the Exploratory Group:

> A potential explanation could be that LargePub was closer to a decision on a new enterprise system than it had ever been, and this could have been a "last ditch" kind of attempt to slow down or stop the process (CIO Interview Notes 1/07).

Consequent State

One consequence of the meeting with executive management related to the way in which the group member voiced opposition to the consensus recommendation. The cultural environment of LargePub is very conflict averse (VP HR Interview 12/06). The direct attack on the revised budget estimates was not consistent with the expectations and experiences of openness that had characterized the entirety of the BPA Exploratory Group and the trust-based relationships that had been established. The climate of the group had been severely undermined by this episode.

The BPA Exploratory Group had fulfilled the charge set out for the group by the COO and CIO. The outcome of the coordinating effort can be assessed at two levels. Clearly, the Exploratory Group had developed a "consensus" recommendation on an enterprise solution to data integration and presented the business case and cost estimates for implementing a COTS solution. As stated by the CIO (Interview 1/07):

Well, the whole point of that group was to come up with a recommendation. And they did that, we were through.

At the broader level, the extent to which the efforts of the Exploratory Group had an impact on LargePub remained in question pending a decision by the executive management regarding the final recommendation. One member addressed this issue with an exemplar comment:

> So I think that there is a certain amount of frustration in that having…did we really…. We put all this time into it, but is it really going to make any difference in the end? … [The best case scenario] is the 3 Senior VPs tell us something. I mean right now where we sit right now, today, the best thing that could happen to us is for them to say something, to tell us "We think that this is important, we are going to fund it, this is how much funding we can provide. Now tell us how you can accomplish it with this much funding" (Controller Interview 12/06).

In terms of the long term desire to improve the operational systems at LargePub, the implications of the forthcoming decision by the executive management were addressed by the CIO (Interview 1/07):

> But I give the credit to the group. They knew there was a history and we had several on there who said, 'This is the turning point - we don't make a decision this time, this [organization] can forget ever trying to do this again because nobody's going to pay any attention to it.' So you know, there's a lot riding on this decision besides just . . . there's a message here and there's a lot riding on this decision (CIO Interview 1/07).

The Exploratory Group had been engaged to make a recommendation for all of LargePub. Yet the group could not find a way to generate an unambiguous consensus regarding the implementation of a COTS solution. And the way in which the recommendation was presented opened the door to doubt about whether the organization would adopt a true enterprise solution. This issue is highlighted in comments from several members:

> And then the last thing in our recommendation was to evaluate the vendor solutions as well as other options to determine the optimal best fit for an integrated customer, human resource, and finance administration process (Controller Interview 12/20/06).

There is not, in my opinion, total buy-in that some of the rest of [the other functions] are ever going to phase. Even though the Consultant #2 recommendation and the ostensible recommendation of the Exploratory Group is that they all have got to be changed (Director of Reporting Interview 12/06).

I mean there's certainly merit [to Finance's arguments] . . . an Off the Shelf system will not have all the functionality that we currently have. And I'm willing to admit that in some areas that lack of functionality is going to put a burden on us. But if you look at the big picture, which I don't think they are, the benefits of having an enterprise approach and true integration of the data and systems outweighs some of these operational issues (CIO Budget Director Interview 12/06).

The lack of consensus from the Exploratory Group deferred the fundamental issue of what an "enterprise approach" means for LargePub and how to handle the objections presented by the Finance & Administration regarding a COTS solution back to the executive management.

The extent to which the COO and senior vice presidents support even the concept of an enterprise solution, and in particular the COTS approach remained in doubt throughout the BPA Exploratory Group effort. Several comments from group members highlight the lack of executive involvement in the process, a clear sense of direction to guide the effort, or a fundamental understanding of the business needs.

[The SVP of Finance], I think he said several times [in the final meeting], 'I just need to know what am I getting for spending this money? And why is it better than what I have now? And is it so much better that I have to spend this much money or is what we have right now, maybe not perfect, but its good enough?' (HR Director Interview 12/06).

But you know I just don't, from what I hear, I just don't see there being an over abundance of support for this…at the Senior VPs' level. And like I said, without the support for saying "this the way LargePub will operate", none of us even want to go down the trail (Controller Interview 12/06).

So the Exploratory Committee was pretty much left out there to try to…in some ways we have had little time in front of the Senior Vice Presidents given their schedules. I don't get the sense that there is strong sponsorship yet to come from COO. I don't know that…he is not yet convinced (VP HR Interview 12/06).

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In response to the issues concerning the revised implementation budget estimates and to address the other questions posed by the senior vice presidents, the CIO was asked to provide additional information to help facilitate the decision. The CIO described the additional effort (Interview 1/07):

> And then right now the group's not meeting anymore, they did their job. I mean great, we met the charge - we took the recommendation, I have met with the Senior Vice Presidents, we are refining the budget. I'm bringing in somebody to help me answer some questions that the Senior Vice Presidents had about what is a 21st Century environment and what does it mean to modernize our systems. Why can't we just patch them or why can't we reengineer them? Legitimate questions, great questions, we don't a need a committee to do that. We have beat that horse to death. We need to get very focused and very articulate - put the case on the table and let the senior administration decide which way we're going.

The effort to bring the Exploratory Group to the point of making a recommendation had been very difficult and required tremendous effort by the CIO. The political cost had been very high and the CIO questioned if the level of executive support required for a CIO or enterprise IS initiatives to be successful existed at LargePub (CIO Interview Notes 1/07). One member assessed the CIO's situation relative to the work of the Exploratory Group:

> I think the Exploratory Group has been a tremendous effort, in my talking with [the CIO] and I have shared my thoughts with him, and that [the CIO] is at the point. And when you are breaking trail on point you are going to get shot first or you are going to get all cut up going through the bush. And [the CIO] is. I tend to look at [the CIO] as a casualty of progress in that if one thing [the CIO] can do is to have created a dialogue and been the casualty of this and get a decision on doing a customer system and then leave, retire which in my guess is what [the CIO] will do, great! And [the CIO] would have done the best that he could do (VP HR Interview 12/06).

As the data collection for this research project ended, LargePub executive management was waiting on the final briefing from the CIO regarding the revised cost estimates and related issues as well as word from the state regulatory board on the status of the supplemental funding request. Executive Management was generally supportive of the Exploratory Group's

recommendation but had to deal with the budget issues before taking the final decision. The

situation was summarized by the COO (Interview Notes 1/07):

> In general, the [executive management] is in agreement with the
> recommendations of the group on how to proceed. The [customer administration
> systems] will be the first areas addressed. Then the Finance and HR areas will
> likely be implemented into a single, common technology platform. The [executive
> management] and CIO are currently evaluating the cost estimates - there is some
> difference between the internally generated numbers and those provided by the
> consultant. There is clear recognition that these numbers are estimates and that the
> costs can change. Approximately within a month this process of specifying costs
> should be completed and then the question becomes how to fund the initiative. All
> have an understanding that this is a major investment that cannot be funded in a
> single year, cannot be completely funded internally, and will have to be funded
> over 3 to 5 years. Requests have been made to the [state regulatory board] for
> funding support and LargePub will have to wait to see what support is available
> from the state. Assuming things work out as expected, the project would be
> initiated in the June, 2007 timeframe (COO interview notes 1/07).

Implications

The final phase of the work performed by the Exploratory Group offers two primary

insights in gaining greater understanding of the coordinating process. The first relates to the

interaction of consensus around the operating mode and executive support for a coordinating

effort. As was demonstrated in the final presentation of the Exploratory Group's

recommendation, a lack of clear and convincing consensus from the group regarding a single

vendor COTS solution undermined the executive support for pursuing the recommended

solution. The impact of the lack of consensus was captured by an exemplar comment:

> [T]he Administration sees the lack of consensus and it's very hard to commit the
> kind of funding necessary when you don't have that consensus. And even at
> some point you set a smaller target and well, let's just tackle the [customer
> administration] side with a commitment that we'll tackle the financial side later.
> And even there, that helped bridge the gap a little bit but it's still not even a strong
> consensus (CIT Budget Director Interview 12/06).

Likewise, clear and convincing executive support would have provided a basis by which the parochial priorities and objections from Finance & Administration could have been overcome to allow the Exploratory Group to develop a true consensus-based recommendation. The need for the unequivocal executive support was identified by two senior members of the Exploratory Group:

> I think if the new CIO had come in and basically, the first thing he had gotten was the clear message, publicly delivered by the three Senior VP's that 'This is going to happen, folks. It's an institutional priority. You've got until X date to tell us what your recommendation is about how it's going to happen.' First do-over I would recommend is that right at the front end that that be clarified in the most direct way possible so that people really understood that the three Senior VP's were behind this and just wanted advice about when, how, how much (Assoc. COO Interview 12/06).

> [W]hat's missing here quite frankly, what's missing here is the senior leadership saying, 'Do it! We're going to do it. We're going to do this.' That's what is missing. I mean clearly what's missing is [the CEO and COO], whatever saying, "We have got to go down this path. We have got to make it happen. Whether it happens over four years or three years or five years because of money, we have got to. We have got to. Now is the time!" (VP HR Interview 12/06).

In this situation, a key element of the operating mode interacted with the inner contextual influence of the coordinating motivation to produce result that did not fully realize the organizational objective of a clear, consensus approach to data integration through the application of an enterprise software solution.

The second insight provides further support for a stage view of the coordinating process in which the activities of the coordinating process unfold through a pattern of stages. The Exploratory Group emerged from having fulfilled the stated objective of making a recommendation to executive management. The major portion of the work performed by the EG and the final outputs generated were well received by COO and senior vice presidents. The evaluation of the recommendation by the executive management determined that only relatively

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minor clarifications were required and that the CIO could provide the requested information. Thus having fulfilled its charge, the BPA Exploratory Group was disbanded.

4.2.5   BPA Case Insights

The BPA Exploratory Group was established as a task force coordination mechanism with a specific charge from the executive management of LargePub. Based on the prior theory as discussed in Chapter 2, many of the characteristics of the BPA were established as to suggest a high likelihood of success. The BPA had a clear purpose – to develop a consensus recommendation to LargePub's executive management as to the optimal approach for achieving data integration through an enterprise approach to operational systems. The total membership of the task force was small enough to enable collaborative work to be done efficiently and effectively. The BPA included participants that covered most of the organizational functions that would be impacted by the implementation of a new enterprise system. The participants were mostly senior managers within the organization that had the status, reputation, track record and clout to indicate success. The members of the BPA had established professional and personal relationships based on prolonged interactions and trust thus enabling the potential for positive interactions related to the BPA. The group quickly established a protocol of open and direct communications which minimized back-channel interactions. The executive management provided support to the BPA in two key areas. First, the executive management authorized the funding necessary to allow the BPA to hire two external consultancies to facilitate the process of developing a well-grounded recommendation for an enterprise system solution to data integration. Also, the executives allocated senior people to spend a significant amount of time to fulfill the stated objectives for the BPA. The BPA had sufficient leadership from the CIO and

flexibility from the participants to establish a method for the group to accomplish its objective and to establish enough consensus amongst the members to "muddle through" (Lindblom, 1959) the process to completion.

There were also some deficiencies in terms of how the BPA was established as addressed in the literature. Not all functional areas that had a significant stake in the outcome and that would be integral to an implementation effort were represented. A key functional area, customer acquisition, was not included on the BPA. Nor were any of the major customer service business units represented on the EG. Adding more members to improve representation from across LargePub would have caused issues with the size of the group and the ability to function effectively. However, potentially strong voices that could have changed the dynamics of the group were excluded. When charged to develop a recommendation by the executive management, the BPA did not receive a timeframe within which to complete its work thus leaving the charge open-ended and reducing the sense of urgency. Finally a detailed method and plan were not established upfront to drive the work of the group throughout the entire effort towards fulfilling its primary objective.

LargePub sought to create data integration through the application of state of the art web-based information systems technology applied from an enterprise perspective to replace the legacy operational systems. Data integration implied a real-time system which supported the primary functional areas (finance, HR, and customer administration) with a shared relational data structure which incorporated ubiquitous data definitions, clear responsibilities for data integrity and control, and the elimination of redundant, standalone operational systems wherever possible. And to the extent standalone applications where required to satisfy specific and unique unit or business needs, these systems would utilize the enterprise data structures and technology which

supported easy integration. The ideal state was frequently discussed in terms of what could be realized with a commercial off-the-shelf (COTS) ERP system.

When the BPA Exploratory Group was established, the participants had broad agreement as to the nature of the data integration problems and the potential solutions available to LargePub. The issues of data integration and outdated legacy systems that could not support the organization had been an on-going topic of discourse at LargePub for years. And the Data Integration Task Force produced a report just prior to the initiation of the BPA effort that reiterated many of the problems with the non-integrated operational systems and the preponderance of stand-alone systems created across the organization to satisfy unit specific needs.

The prior efforts to address the data integration problem and the general agreement amongst the BPA participants as to the nature of the data integration problem focused on two dimensions. First, the orientation was a system view of the problem. This related to the fact that the legacy systems at LargePub were over 20 years old in many cases at the core data and programming levels. Thus the inability to achieve data integration related to the antiquated technology and the lack of staff capable of maintaining the legacy systems. In other words, the "systems" were the problem and if the technology were updated, the existing processes would adequately support the operational needs of the organization.

The second dimension was a functional view of the problems. Several functional areas were satisfied with their ability to perform their roles and responsibilities. In key functional areas, finance and customer financing in particular, the operational units believed that the existing systems and business processes were satisfactory to do what was needed in those functional areas. The need for change was being driven by other functional areas, primarily

Customer Information, where the existing systems could not meet the operational needs of the functional area or satisfy customer requirements. The problems with data integration in some of the functional areas were due to a lack of prior investment, or the inability, to update the legacy systems to newer relational database technology. Thus the functional view suggested that data integration for the organization could be solved by upgrading the systems in the problematic functional areas while leaving the legacy systems in the other functional areas as-is.

When the business process review was introduced by the new CIO, the Exploratory Group followed this recommendation as a logical means to generate a recommendation for an enterprise solution to data integration. However, the system and functional views of the data integration problem indicates that the EG members did not understand the implications of an enterprise view to business processes or the purpose of the business process review and what this meant in terms of identifying an enterprise solution for data integration. The BPR was assessing existing business processes relative to the *enterprise* processes incorporated into a standard COTS ERP system. This involved assessing the efficacy and automation of existing processes *within* a functional area as well as the extent to which processes were integrated in a seamless and automated manner *across* functions. The outcome of the BPR was a surprise to some of the functional areas because the assessment, based on enterprise criteria, presented all of the functional areas in very unfavorable terms. And this assessment did not meet expectations, particularly of the Finance representatives, for a very favorable view of the business processes and operational systems which the functional and systems view might suggest.

Analysis of the critical events in the BPA case and the myriad of contextual influences that impacted how the coordinating process evolved over time appears to highlight two generative forces that impacted the ability of the Exploratory Group to reach consensus on a

recommendation to the executive management of LargePub regarding an enterprise approach to achieving true data integration. These two mechanisms are lack of unit alignment and shared understanding.

The extent of the first, lack of unit alignment between the objectives of the functional areas and the organizational objective of data integration through an enterprise approach to the core operational systems, was exposed by the BPR reports from Consultant #1. The BPR report indicated that relative to "state of the art" ERP systems, both the existing technology and the business processes across all four primary functional areas were inadequate. Changing the operational system for the enterprise would require significant changes to the business processes in all of the functional areas. While certain business processes within the functional areas were at least as good as existing "best practice", the existing operational systems and the business processes embedded into them could not support the organizational goal of true integration. Yet in the face of the BPR report, the representatives from Finance and Administration held firmly to the belief that the Finance and Accounting systems had very high data integrity and accuracy, and were highly integrated.

Lack of alignment between the objectives of the functional areas and the organizational objectives in terms of the meaning of and the changes needed to achieve data integration undermined the ability of the Exploratory Group to achieve consensus on a recommendation on how LargePub should proceed. In particular, the system and functional views of Finance and Administration were at odds with the organizational view of data integration. As exemplified by the comments of the VP of Finance referenced in Consequent State of Event #3, Finance representatives on the EG believed the financial systems fully met the definition of integration and were far superior to anything available in a vendor solution because of the highly customized

nature of the processes embedded into the existing systems and the level of control provided

through the legacy systems. Replacing the legacy system with any COTS solution represented a

tremendous cost to the Finance area due to the perceived loss of highly customized functionality,

loss of control due to generic business processes, and the changes required in personnel in order

to deal with the loss of control over various transactions initiated across the organization. From

the purely functional perspective, a COTS solution offered little benefits to the Finance area to

offset the perceived costs.

For the other functional areas, the lack of alignment between the unit objectives and the

overall organizational objective was much smaller or non-existent. The customer information

area clearly viewed a COTS solution as the only viable option to correct the myriad of problems

with the existing legacy systems. The Senior Manager responsible for Customer Information had

experience in other organizations using a COTS ERP solution and understood the benefits of this

approach both from the organizational and functional perspectives (Senior Manager Customer

Information Interview 12/06). In this situation, the Customer Information area was totally

aligned with the organizational objective.

For the HR and Customer Financing areas, some lack of alignment existed but was not

significant in terms of negatively impacting the ability of the EG to achieve consensus on a

recommendation. As discussed previously, Customer Financing fully understood that any system

solution was dependent upon the Customer Information function. For Customer Financing, the

existing legacy systems were adequate providing 85% of the needs as described by the director

of this area, and the remaining 15% that was not satisfactory had just not been addressed yet by

Central IT (CIT). Yet the director understood that the organization need was primary and that

Customer Information would drive the decisions for all of customer administration. The cost of

the implementing a new COTS solution would be high in that the function would have to give up a system that was mostly meeting its needs, a new COTS ERP solution would require realignment of process responsibilities across several departments, and a key piece of functionality for a special state customer financing program would have to be recreated outside the COTS solution (Director Customer Financing Interview 12/06). However, the cost of staying with the existing customer financing legacy system and integrating to a new customer information module in a COTS ERP would be even greater and was not remotely feasible. So while lack of alignment existed, the gap was narrow and Customer Financing supported the organization objective and approach to data integration.

The HR function recognized the very weak support provided by the legacy systems[62]. The VP of HR had extensive experience at a prior organization both implementing and using COTS ERP systems to support HR and the other primary functional areas. And the VP of HR had been a vocal supporter of this approach at LargePub from the very beginning of his tenure. Yet the VP of HR preferred to delay the implementation of a COTS software solution in his area because it would have absorbed the full attention of his function for an extended period of time and deferred plans for implementing more sophisticated HR services for LargePub. Just as with Customer Financing, some lack of alignment existed between the HR function and the organization objective, but this had to do with the timing of an implementation rather than the desirability of the ERP based solution.

The extent to which lack of alignment impacted the ability of the Exploratory Group to reach consensus on a recommended approach to enterprise data integration was influenced by the political power of the various units. This is demonstrated in the dichotomy of Finance and Customer Information. Finance was highly misaligned with the organizational view of data

integration through an enterprise approach to operational systems. Customer Information was very highly aligned to the organizational view. However, all participants acknowledged the political clout of the Finance area. This was manifested in the extended process to rewrite the report from Consultant #1, undermining the position and leadership of the CIO, requiring a new consulting engagement for a business case analysis as a basis for generating a recommendation, selecting Consultant #2 to conduct the business case analysis, and challenging the revised cost budgets for the proposed solution. Ultimately Finance was able to deny the Exploratory Group the opportunity to put forward a consensus recommendation, preferred by the vast majority of members, for a single vendor COTS solution for all four functional areas and starting the implementation with Finance and HR (as was recommended by both consultants and industry best-practices). The political power of Finance interacted with the high degree of lack of alignment to change the basis of consensus to a phased implementation of a COTS ERP solution starting with another functional area and that might never actually include Finance and Administration. In essence, a recommendation that was not truly an enterprise approach to data integration.

Customer Information, while widely recognized as an extremely important function within LargePub, lacked the political influence to counter the impact of Finance. Customer Information was able to make the case that the legacy systems could not be upgraded to a point of providing an adequate solution for LargePub customers and that the needs of this functional area were approaching a critical state. Thus Customer Information became the priority functional area for the phased implementation of a COTS solution. Finance concurred with the approach of starting the phased implementation of a COTS solution in Customer Information. This afforded the Finance and Administration members to opportunity to demonstrate support for the

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[62] This discussion is based on comments from the VP HR Interview (12/06).

consensus approach while delaying any potential implementation effort for the Finance modules.

This was demonstrated in an exemplar comment:

> Is there a way to address our most critical needs which I think everybody…I think there is definitely a consensus that our customer system is a system that needs the greatest level of improvement amongst the group. There is no question that they will agree on that. So then do we try to focus our efforts on that area and make improvements there while developing a long-term plan for greater integration [in the other functional areas]? (VP Finance Interview 11/06).

Supporting the phased implementation starting with customer administration also minimized the probability that the Finance phase would ever actually happen. The customer administration modules were considered to be the most complex and difficult. A failed implementation in Customer Administration, or one that generated significant user dissatisfaction, would all but eliminate a Finance implementation thus leaving the Finance area unaffected and working with the existing legacy systems. This rather Machiavellian view was captured by the following exemplar comment:

> Now whether it's going to be successful, and I think there is a faction that would sit out there and say, 'You know I hope it fails because if it fails we will never get to HR/Payroll and we'll never get to Finance.' So if the [customer administration system] fails it's not on F&A, although there will be some F&A units that would be involved. But that is, "I told you so!" Or if it is implemented that it's more people complain about it because not only is it different but it's not as customized as the current environment is, so "I told you so. We hate it!" (VP HR Interview 12/06).

The second generative influence on the ability of the EG to achieve consensus on a recommendation was the extent of shared understanding amongst the participants. Shared understanding involves the extent to which the participants develop a common meaning for what the coordinating effort is trying to accomplish (purpose and objective), how the purpose is to be accomplished (method and process), and the language used to describe and explain these. The critical events demonstrated that the BPA Exploratory Group expressed a lack of shared

understanding along all three aspects. And, rather than improving over time, the differences were perpetuated throughout the coordinating process.

The objective of the BPA EG was organizational in scope and perspective. The effort was an attempt to develop an approach for implementing operational systems across the four primary functional areas that would improve data quality and integrity, increase the efficiency and effectiveness of the systems for both LargePub customers and employees, and improve the return on the investment in information systems. As discussed previously, many of the EG members maintained system and functional views of the data integration problem which blinded these individuals to the business process implications of an enterprise technology solution. The benefits derived from an ERP system are generated largely from applying a full suite of the core functionality of the software in as generic a way as possible. An enterprise approach involves more than creating operational systems that adequately serve the operational and transactional needs of all the primary functional areas. The enterprise approach requires a complete reformulation of business processes with a primary focus on those processes that cross functional unit boundaries.

The BPR and business case analysis efforts reinforced the functional views of a subset of EG members. Throughout the BPA, the Finance members held to the belief that the legacy Finance systems fully supported the data integration for the enterprise and that these systems did not need to be fundamentally changed. These members did not understand the extent to which an enterprise solution would rely on new Finance processes and functionalities at the core of a new system to enable functionality in other functional areas as well as simplified integration of data and workflows. The objective of an enterprise approach to data integration did not have shared understanding amongst the EG members.

As discussed previously in Events #2 and #3, the Exploratory Group did not have an

agreed upon plan for getting from the creation of the group to a consensus recommendation on

an enterprise approach for operational systems to achieve data integration. As was demonstrated

by the reaction to the BPR report from Consultant #1, the members did not fundamentally

understand how the results of the BPR related to, or even supported, making a recommendation

on whether LargePub should maintain the status quo of the legacy systems, reengineer the

systems and processes using in-house capabilities, or implement a COTS ERP solution. And

while the business case analysis offered 10-year Total Cost of Ownership profiles for the primary

alternatives, it was not clear that the EG members recognized how this would improve the

understanding of which alternative to pursue in order to maximize the likelihood of an enterprise

solution to data integration.

Finally, shared understanding is predicated on a common language or lexicon. This is

intimately related to the ability to develop shared understanding of the purpose and methods of a

coordinating effort. The basic terminology of data integration, enterprise approach, business

process review and analysis, and business case did not convey the same meaning for the various

participants. This lack of shared language was expressed by an exemplar comment:

> [W]e continually, over the course of these meetings, would come to these
> realizations that no one really was using the term enterprise approach in the way
> that the people who really know what that means use it. So I think we needed
> some front end education of the group so that we really were of a collective,
> common mind about just what our lexicon was going to be (Assoc. COO
> Interview 12/06).

In the absence of shared understanding related to the language of discourse, the objective and

purpose of the effort, and the methods for achieving the purpose, the Exploratory Group

struggled to generate consensus for a recommendation for an enterprise solution for data

integration.

The next insight drawn from the BPA Case relates to the role of consensus and executive support in terms of achieving coordinating success. As introduced in the implications of Event #4, consensus and executive support interact to influence the achievement of success from the coordinating effort. This represents a contingency view of coordinating. Unequivocal executive support for the coordinating outcome would have altered the negotiation process that occurred within the coordinating process. The dominant impact of the political influence from the non-aligned unit as well as the impact of other contextual influences could have changed the way in which the Exploratory Group reached consensus for an enterprise approach to data integration. Likewise, if the Exploratory Group would have generated unequivocal, broad-based consensus for a specific enterprise approach to data integration, this strong consensus would have influenced the executive support manifested for the process of conducting the BPA effort.

In the absence of clear executive support and group consensus, the leadership of the coordinating effort may seek to change the dynamics of the process in one of three ways. The first is to seek to generate consensus from within the group. The objective would be to focus on developing the level of shared understanding within the group. To the extent that this is achieved, the effort would then require reaching out to build a compelling case for those participants representing the units or functional areas with the greatest lack of alignment. It is not clear to what extent, if any, the CIO, other members of the Exploratory Group, or the two consultancies sought to use the language and purported strengths of the existing financial systems to demonstrate in specific and quantifiable terms how the functional focus of the Finance processes and legacy systems undermined the objective of enterprise data integration.

The second approach would involve generating consensus support for the recommended approach in the broader organization and exposing the Exploratory Group to this influence.

There were many constituencies within LargePub that were very interested in and that would be very heavily impacted by the implementation of an enterprise software solution. The Division Managers of the various service delivery divisions were a very influential group within LargePub. There were also several very influential business managers for a number of large support units not represented on the Exploratory Group. These divisions and support units initiated many of the transactions in the core operational systems. And many of these Business Managers were responsible for creating single-purpose, standalone applications that compounded the data integration problems at LargePub.[63] It is not clear that the CIO made substantive efforts to reach out to these influential Business Managers with status updates or other information about the work of the EG. To the extent these business managers had supported the primary recommendation that emerged from the two consulting engagements and the work of the EG, this broad-based consensus would have had a significant impact on the overall consensus of the exploratory group as well as the executive leadership.

Lastly the consensus of the group as well as the level of executive support could be altered by a real or perceived crisis. The issues that were identified related to operational integrity of the Customer Information systems generated real concern among the Exploratory Group members and the executive management. These issues were understood to be potentially critical but the extent of the problems was limited to the Customer Information systems. If the CIO and Exploratory Group members could have realistically and credibly positioned the problem in terms that crossed organizational boundaries, particularly to involve Finance, then the process of negotiating the group consensus might have been altered based on a different interaction of the coordinating process, unit alignment and political influence driven by shifting

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[63] The COO admitted to playing a part in the data integration problem when in the role of Division Manager for a large service delivery division by creating standalone data systems to support division needs (Interview Notes 1/07).

the focus to an organizational level necessity. The issues of information security and the social security number replacement could have been levers with sufficient organizational impact that would have changed the focus of the conversations within the Exploratory Group and led to greater consensus for the recommended solution to data integration.

The final insight drawn from the BPA case relates to the application of both rational decision making and political influence frames and how these influences interact with the coordinating process and impact the outcomes of this coordinating effort. The objective of the BPA initiative was to make a recommendation regarding the application of an enterprise software solution for core operational systems to achieve data integration. From one perspective, the BPA effort followed a rational approach to generate consensus for an enterprise solution to data integration. The Exploratory Group conducted a business process review to assess the existing business processes and operational systems relative to a state-of-the-art ERP system. This review demonstrated that the existing systems and processes were not adequate to provide the desired enterprise data integration and identified the primary alternatives to be considered. However the BPR lacked information regarding the costs and benefits associated with the primarily alternatives. The EG then conducted a detailed business case analysis which confirmed the optimal approach of implementing a COTS solution but also determined that a full implementation was not feasible from a cost standpoint. Thus the Exploratory Group members identified the functional area with the greatest need and negotiated a consensus recommendation based on phased implementation plan that would eventually include all functional areas on a common system and that provided the greatest benefits for a manageable cost.

From the political influence perspective, the impact of the BPR report was somewhat different. Finance was the most politically influential unit at LargePub and had long been

opposed to implementing a COTS software solution in the Finance area. The BPR report undermined the argument that the existing financial systems were fully integrated and superior to a COTS solution. The report also generated broad agreement amongst the EG membership that the optimal solution for data integration was a total COTS implementation starting with the Finance area. Confronted with a significant threat to its desire to maintain the status quo, Finance used its political influence to force the EG to conduct a business case analysis of the primary alternatives for a new enterprise solution. By selecting the consultant for this engagement and influencing the scope of work, Finance was able to ensure that the business case defined an implementation cost for a complete system that was prohibitively expensive. This forced the EG to consider a phased implementation focused on the functional areas with the greatest needs. Thus Finance used its political influence to negotiate a consensus recommendation from the Exploratory Group that was based on rational cost/benefit analysis and supported its desire to keep it existing systems and processes.

The framing of the BPA coordinating effort and its outcomes based on the rational decision making and political influence perspectives and the interaction of these influences and the coordinating process are elaborated below.

Prior literature suggests that a rational decision model based on the assessment of cost and benefits associated with data integration provides leverage in understanding the extent to which this objective is appropriate and achievable within a given organizational context (Goodhue et al., 1992b). Given the potential for lack of alignment between unit goals, questions regarding the efficacy of alternative system solutions, and scare resources (Markus, 1983; Pfeffer, 1981), the rational lens may not be sufficient. Rather the decision process may involve a political process between organizational units accruing the benefits and those paying the costs of

data integration (Goodhue et al., 1992b) thus suggesting additional benefits by applying a political influence frame to the unfolding events in the coordinating process.

The evolution of the BPA coordinating effort reflects the interaction of both rational and political influences on the decision process. The initial engagement with Consultant #1 to conduct the business process review was undertaken to provide an objective assessment of the existing business processes and operational information systems in terms of providing enterprise data integration. This fundamentally rational assessment was based on a comparison of the existing systems and processes to the level of process and data integration available from a state-of-the-art commercial off-the-shelf (COTS) ERP system. It was not clear how the results of the BPR would be used to generate a specific recommendation for an enterprise software solution. However, the objective seemed to be to use the assessment to narrow the range of viable alternatives capable of creating the desired data integration at the organizational level to the point at which the optimal solution would be obvious.

The response by the Exploratory Group, driven primarily by Finance, to the BPR report indicated that the initial assessment did not provide sufficient information to generate a consensus recommendation. Additional information would be required to validate the efficacy of the BPR assessment and the alternative solutions identified, as well as accurately capture the costs, benefits and risks associated with the primary alternatives. Consultant #2 was engaged to assist in developing the business case for three alternatives: remaining with the status quo, re-engineering the processes and operational systems internally, or implementing a COTS software package. This business case clearly identified the COTS solution as the optimal approach from the standpoint of total costs, benefits to the organization and operational effectiveness. However the total costs for implementing the COTS solution for the four primary functional areas far

exceeded the budget realities of the organization. The Exploratory Group used the data from the business process review and the business case analysis to identify customer administration as the area with the greatest need and clearest beneficiary from an investment in a new operational system. Other units would maintain the status quo reflecting the lack of perceived benefits from investment in a new system and the significant costs associated with reduced functionality and control, most specifically in Finance. Thus the exploratory group rationally negotiated a consensus recommendation through the coordinating process based on partial integration (Goodhue et al., 1992b) through the phased implementation of a COTS solution.

A political frame offers the potential to interpret the activities in the coordinating process somewhat differently. As discussed previously, the BPR report presented a very negative assessment of the existing operational systems, the level of process and data integration, and the ability of the existing systems to support true enterprise data integration. This assessment applied to all four operational areas including Finance. This defined the data integration problem in a way that conflicted with the position adamantly presented by the Finance representatives that the financial systems were fully integrated and capable of supporting the organization. The majority of Exploratory Group participants concurred with the findings of the BPR report thus undermining the position of Finance. The Finance representatives found it much more difficult to argue for maintaining the existing systems based on superior functionality and operational support. Even though the finance systems were considered to be the best of the operational systems at LargePub, the BPR findings clearly determined that none of the existing systems were adequate from an enterprise data integration perspective.

In response to the BPR report from Consultant #1, the Finance representatives exerted significant influence to shift the focus of BPA EG activities to developing a realistic business

case for the primary enterprise solution alternatives under consideration. Finance insisted on using Consultant #2 and was very heavily involved with defining the scope of the business case project. Consultant #2 generated very conservative numbers for the costs of implemented a COTS solution for all four functional areas. Given the fiscal limitations imposed by reduced state allocations and competing priorities within the LargePub budget, the estimated costs made a full implementation of a COTS ERP system completely infeasible. LargePub could not undertake a major systems implementation effort with costs as estimated by Consultant #2.

The assessment of the costs, benefits and risks of an enterprise software implementation was entirely rational, appropriate and necessary. Yet this was not defined as part of the original scope of the BPA Exploratory Group coordinating effort. It was introduced in response to the BPR findings which undermined the position of Finance. While Finance found it more difficult to challenge the efficacy of an enterprise COTS solution for creating data integration, it could create significant uncertainty around the ability of LargePub to fund the full software implementation. If the full implementation was not feasible, then an acceptable alternative would focus on implementing a new system for the areas of greatest need and that could be managed within the existing budget constraints. Thus it could be argued that Finance used rational methods to alter the coordinating process and to achieve the desired political outcome that would provide the greatest chance for significantly delaying, if not completely eliminating, the implementation of a COTS solution in the Finance area. Thus Finance used its influence to negotiate a phased implementation of a COTS software system, starting in the highest risk functional area, and that was unlikely to affect Finance substantially for many years. The coordinating process provided the forum for the consensus recommendation to be negotiated.

The political influence of the Finance area was demonstrated at the level of LargePub's executive management. The COO was one of three senior vice presidents that reported to the President/CEO of LargePub. The COO supported an enterprise software solution that provided true data integration across all the operational areas of the organization. The CIO reported to the COO and was given the charge to pursue enterprise solutions to improve the return on IT investments at LargePub. While the COO was responsible for the vast majority of the operations of LargePub, it was not possible for the COO to undertake a major new software implementation project without the support of the other senior vice presidents. And the executive management team had not established consensus for pursuing an enterprise wide implementation of a new operational software system. The CFO was skeptical of the benefits to be derived from an enterprise COTS software solution and fully aware of the cost implications. The executive management supported the coordinating process by allocating key managers over an extended timeframe and providing budget support for two consulting engagements. And the executive management established consensus for the partial integration solution, pending notification of supplemental funding from the state regulatory board, by accepting the negotiated settlement generated by the BPA Exploratory Group coordinating effort.

Applying both the rational decision and political influence models offer new insights into how the coordinating process evolves over time and how various contextual influences interact to impact the coordinating effort and the outcomes observed. The BPA case also demonstrates the challenges of isolating the impacts of rational and political influences that on the coordinating process and the outcomes generated from a specific coordinating effort.

4.3   Cross-Case Implications

A comparison of the two cases in this research offers additional insights related to the coordinating process within the federated governance structure. The implications drawn from this comparison are presented in the following sections.

4.3.1   Similarities and Differences in the Coordinating Efforts

The Information Technology Advisory Council (ITAC) and Business Process Analysis Exploratory Group (BPA) cases displayed a number of similarities and differences across the coordinating efforts. In terms of the organizational context, both coordinating efforts were conducted within the same organization during overlapping periods of time. In terms of inner and outer contextual influences, the coordinating efforts operated largely within the same context environment. This provides support for comparing and contrasting the coordinating efforts to explicate the coordinating processes and the impact of specific contextual influences. A comparison of the two efforts across select characteristics of the coordination effort is presented in Table 4.2.

Select Coordinating Characteristics	ITAC	BPA
Primary Mechanism (DeSanctis and Jackson, 1994; Doll and Torkzadeh, 1987; Tsai, 2002)	Informal Network evolved into Formal Standing Committee	Informal Task Force
Purpose/Objective	Changed and Unclear – from setting IT agenda for LargePub to advisory on specific projects/initiatives.	Constant and Clear – develop recommendation on enterprise solution to data integration.
Participation Requirements (Rockart et al., 1996)	Unclear – criteria changed. Broad participation desired. Initially fixed assignments based on division or constituent group. Changed to discretion of CIO based on vague criteria.	Clear – Senior managers with functional knowledge, capabilities, status and influence.

Select Coordinating Characteristics	ITAC	BPA
Representation (Drury, 1984)	Heavily weighted to IT directors and managers; limited business and senior management. Actual changes by CIO minimal.	Most constituencies represented; limited IT implementation/operational experience; some key divisions/units no involved.
Size	Too large (20+ members) for collective action.	Appropriate (12) for efficient & effective collective action.
Executive Support – Outcome (Raghunathan, 1992; Sharma and Yetton, 2003; Torkzadeh and Xia, 1992)	Very limited - COO conditional approval of IT DMM, appointed first chair	Very limited – questioned by many participants.
Executive Support – Process (Raghunathan, 1992; Sharma and Yetton, 2003; Torkzadeh and Xia, 1992)	None – delegated to CIO	Significant – approval and funding of two consultant engagements.

Table 4.2 Comparison of ITAC and BPA Cases

The primary coordination mechanism at the core of each coordinating effort, while different between the two, was the appropriate mechanism for the purpose of each specific effort. The BPA was established as a task force. The objective was to develop a recommendation to the executive management of LargePub for an enterprise approach to new operational information systems that would provide true data integration. While not specifically established at the outset, the effort was expected to be of limited duration and relatively high intensity. The nature of the objective dictated very clear participation requirements. The BPA required a small group of participants capable of taking collective action in an efficient and effective manner. Also, the participants had to have the appropriate knowledge, experience and organizational standing to accomplish an enterprise scale outcome. In this case, a task force made up of senior level managers drawn from the primary functional areas was the appropriate means of generating the required recommendation. One issue with the representation of the on the BPA is that the CIO was the only member of the group that had significant implementation and operational knowledge and experience with enterprise software systems. Thus the task force was somewhat

limited in terms of incorporating the full implications of specific technical alternatives into the group's deliberations.

The ITAC was established as a standing committee formally recognized within the structure of LargePub. The stated objective of the committee evolved over the duration of this study. Initially, the ITAC was charged to work with the CIO of LargePub to create an IT strategic plan that was aligned with the primary goals of the organization, which reflected the priorities of the primary functional areas of the organization, and which enjoyed broad support from the organization. This plan and supporting IT initiatives would then be carried forward to the executive management for approval and funding. In addition, the ITAC was to evaluate performance against the plan on an on-going basis. The purpose changed to meet the needs of a new CIO such that the primary role of the ITAC shifted to provide advice to the CIO on critical IT initiatives that impacted the organization. The ITAC would also provide advocacy to affected LargePub constituencies and generate organizational consensus such that the CIO would have the appropriate information and organizational support for any initiatives that the CIO carried forward to executive management for approval and funding. For both objectives, the ITAC served an on-going organizational role that crossed organizational unit boundaries and required broad, representative participation from both the business and IT functions.

The original ITAC formulation established fixed representation based on division size, senior customer service employee groups, division management, and affiliated coordinating bodies. The size of the ITAC was very large and heavily weighted to IT with little representation from senior management of the functional areas. Thus the potential for collective action by the council within formal group settings was low. The ITAC was supported by four smaller functional committees which were intended to have broader representation and also provide a

much more action oriented means for fulfilling the ITAC objectives within the functional areas. The new CIO maintained the basic structure and membership of the ITAC. The CIO attempted to expand the membership by adding additional customer service employee representatives as well as customer group representatives. While the CIO did not change which divisions or employee groups were represented, the repeatedly expressed desire by the CIO to change the representation and membership of the ITAC caused confusion as to which representatives should actually be members of the council and based on what criteria.

The role and nature of executive support was manifest in different ways for the ITAC and BPA. These differences demonstrate the impact of executive support for the process of a coordinating effort versus the outcome of a coordinating effort. For the BPA, executive management including the COO and other senior vice presidents provided significant support for the process of the BPA. This was demonstrated by the approval and funding provided for two external consulting engagements undertaken to assist in creating the required recommendation. As was identified by key participants, and discussed in the BPA Case Implications, the lack of executive support for the outcome of the BPA hindered the ability of the group to achieve its primary objective of creating a consensus recommendation. It was not clear what the executive management desired in terms of an enterprise solution to data integration through its operational information systems. A clear statement that a new system was to be implemented that would include and integrate all four primary functional areas, e.g. the outcome, would have dictated the exploratory group find a means to achieve consensus on a recommended approach whether internally developed, single-vendor COTS, or best-of-bread. Executive support for the BPA process allowed the group to create a negotiated solution that was not a consensus

recommendation and that provided significant opportunities for functional areas to pursue parochial interests at the expense of the desired organizational objective.

For the ITAC, what executive support was provided was focused primarily on the process of implementing an IT body. Under the initial formulation, the COO withheld formal endorsement for the IT decision-making model in anticipation that the new CIO would want to have input into the process. Thus the COO withheld support for the outcome of creating an enterprise decision-making model. The implication was that despite concerted efforts to implement the ITAC, the effort did not achieve the stated objective. The COO did support the process by appointing a division manager as chairperson and authorizing the ITAC to form, appoint members, and begin work. Under the new CIO, executive support entailed encouraging the CIO to create whatever type of body the CIO needed to improve efficiency and efficacy of IT investments. Full responsibility for the ITAC shifted to the CIO. The executive management of LargePub had no real involvement from that point on. The absence of executive support combined with the lack of focused leadership by the CIO led to effectively limiting the ITAC to an information dissemination body.

4.3.2   Framework of Contextual Influences

One of the research questions motivating this study sought to understand the range of contextual influences that affect the coordinating process. The hybrid approach to coding which incorporated template-based and stratified coding of data from the ITAC and BPA cases was used to identify the various contextual influences impacting the coordinating process. The coding process resulted in a framework of the contextual influences that significantly impacted these two coordinating efforts. This framework is presented in Table 4.3.

Coordinating Characteristic	Power & Politics	Inner Context	Outer Context[64]
Operating Mode	*Sources*	*Structure*	*Economic*
Clarity of Purpose	Legitimate	Budget Alignment	
Plan & Method	Information	Decentralization	
Defined Outputs	Expert		
Business Need			
Participation	*Determinants*	*Culture*	*Legal/Political*
Representation	Actor Role Importance	Autonomy	
Size	Actor Resource Control	Conflict Averse	
External Experience	Actor Influence	Investment	
	Unit Resource Control	Openness	
	Unit Decision Authority	Coordination Intensity	
Engagement	*Conditions for Use*	*Coordinating Motivation*	*Technological*
Relevance	Conflicting Goals	Budget Need	
Importance	Resource Scarcity	Common Interests	
Action Oriented	Problem Definition	Executive Support	
Impact/Results	Solution Uncertainty		
Coordinating Climate			
Leadership			
Executive Involvement			
Trust			
Open Communications			

Table 4.3 Contextual Influences Impacting the Coordinating Process

The data analysis confirmed the impact of a number of the contextual influences that had been derived from existing theory and incorporated into the coding template. These are related to the Power and Politics, Inner Context and Outer Context. The most prevalent dimensions of each are presented. Additionally, the stratified coding identified the coordinating characteristic categories and the primary dimensions of these that influenced the efficacy of the effort. These coordinating characteristic categories include operating mode, participation, engagement and coordinating climate. Further, in addition to the categories of structure and culture derived from

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[64] Sub-categories of the primary outer context categories were also identified during the coding process. However, in order to disguise the organization these sub-categories have been omitted. Furthermore, these primary categories are sufficient in providing insight into the aspects of outer context that impact the coordinating efforts.

the extant literature, the data analysis identified and additional aspect of the inner context, termed coordinating motivation, which influences the coordinating process.

This framework provides a comprehensive and parsimonious structure for the contextual influences that have the most significant impact on the coordinating process. Certain influences, such as executive support, may have a dominant influence and fundamentally change the nature and efficacy of the coordinating process. Other contextual influences were shown to interact and either initiate activities or activate other contextual influences on the process. Profiling the coordinating process based on these categories of contextual influences facilitates our ability to understanding of how the coordinating process evolves over time.

4.3.3   A Stage Model of the Coordinating Process

Detailed analysis of the antecedent conditions and related activities, critical events, and consequent conditions and related activities for the ITAC and BPA cases demonstrates an iterative stage model of the coordinating process. The model consists of five stages including creation, implementation, evaluation, adjustment and termination. These stages are described in Table 4.4 and the model is presented in Figure 4.16. This model seeks to move beyond simple sequencing of the events to expose recurrent patterns and the motivating contextual influences (Pettigrew, 1992) observed in the coordinating efforts.
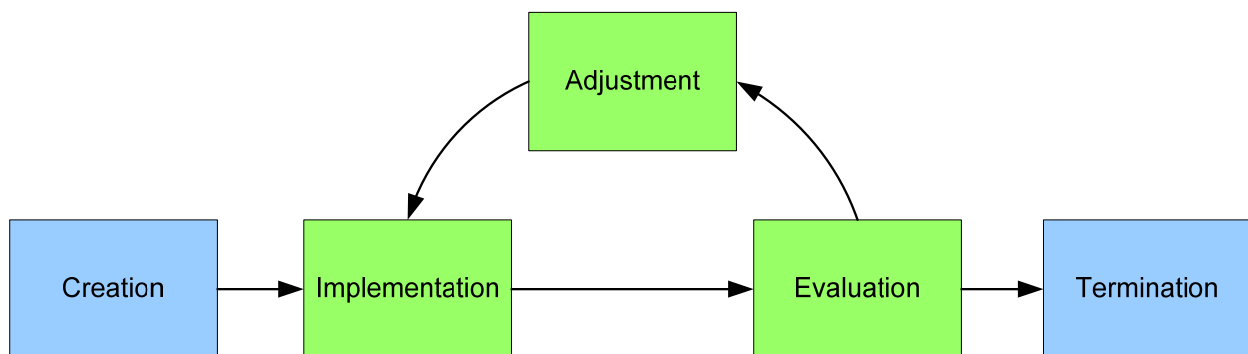

Figure 4.15 Stage Model of the Coordinating Process

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Coordinating Stage	Description
Creation	Articulate the purpose and IT context of the coordinating effort, define the operating mode and establish the profile of coordinating characteristics required to support the effort.
Implementation	Execute the plan and method (operating mode) to create the defined outputs required to fulfill the effort purpose.
Evaluation	Assess the coordination state and efficacy of the activities to achieve the purpose and objectives of the effort, identify gaps or limitations in the coordinating characteristics, and assess changing contextual influences impacting the effort.
Adjustment	Specify changes in the operation mode and other coordinating characteristics in order to achieve the desired coordination state and improve the opportunity to fulfill the purpose and objectives of the coordinating effort.
Termination	Cease activities and bring coordinating effort to closure.

Table 4.4 Coordinating Process Stage Descriptions

In response to a perceived organizational or business need, a coordinating effort is created to provide a capability that is not or cannot be addressed through existing structures and processes. In the BPA case the end of an inconclusive prior effort, pressing business needs for more tightly integrated operational systems, and the entry of a new CIO afforded the opportunity to convene an informal network of highly influential managers to pursue a new approach to data integration. In the ITAC case ineffective leadership from a CIO who had lost the confidence of executive management, severe budget pressures driving efficiency improvements, and the influence of a group of division IT directors initiated a sequence of antecedent activities which lead to the creation of the ITAC coordinating effort. In both cases, the creation stage incorporated the activities associated with articulating the purpose and IT context, defining the operating mode and establishing the profile of coordinating characteristics required to support the effort. The stage to stage transitions are presented for the ITAC case in Figure 4.17 and for the BPA case in Figure 4.18. In these diagrams, the critical events are shown in bold and the

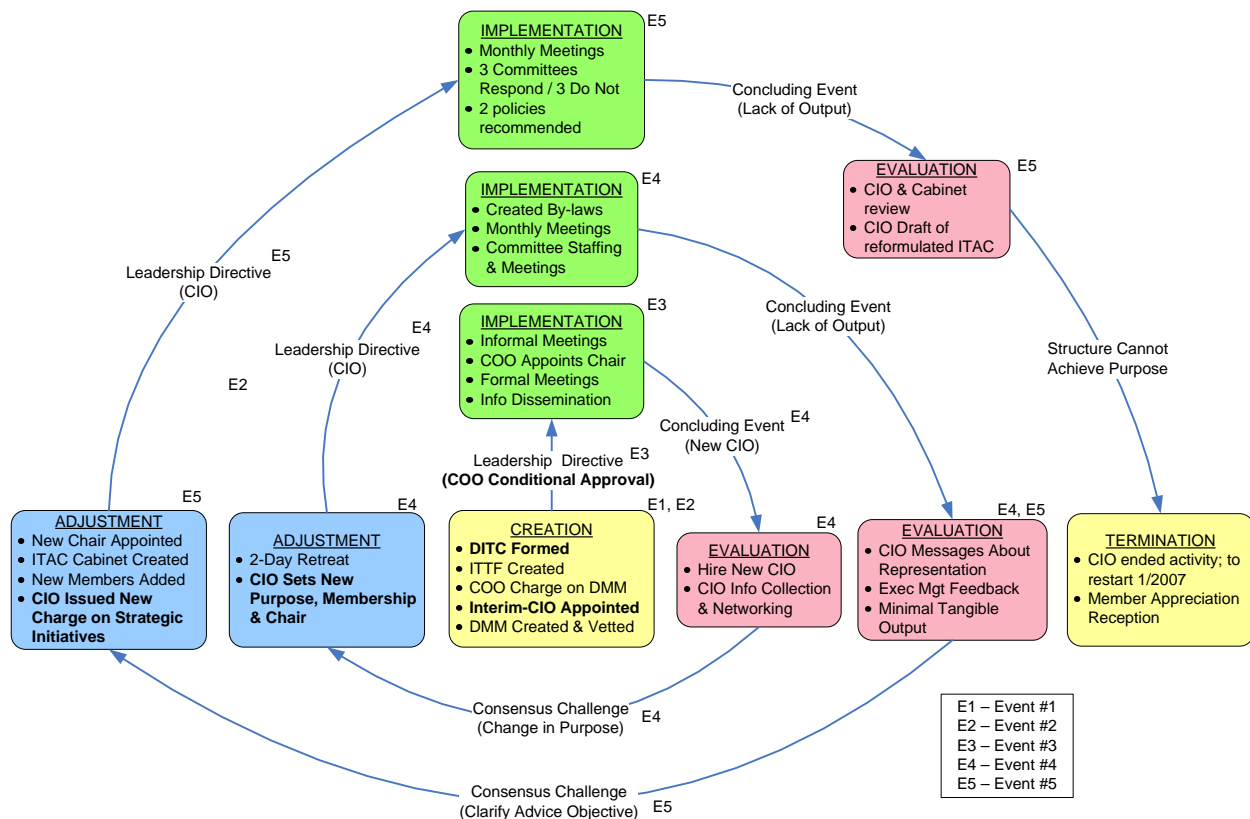outward spiral indicates the passage of time culminating in the termination of the coordinating effort.

Figure 4.16 ITAC Stage Transitions

Both the BPA and ITAC coordinating efforts moved from the creation stage to implementation in response to a "leadership directive." During implementation the plan and method (operating mode) is executed to create the defined outputs required to fulfill the effort purpose. In the case of the ITAC, the COO appointed the chairperson and provided conditional approval of the IT decision-making model authorizing the committee to begin working. In the BPA case, the executive management of LargePub approved and provided funding for the proposed business process review engagement with Consultant #1. This same "leadership directive" also appears to initiate the transition from the adjustment stage (to be discussed below) to a subsequent implementation stage.
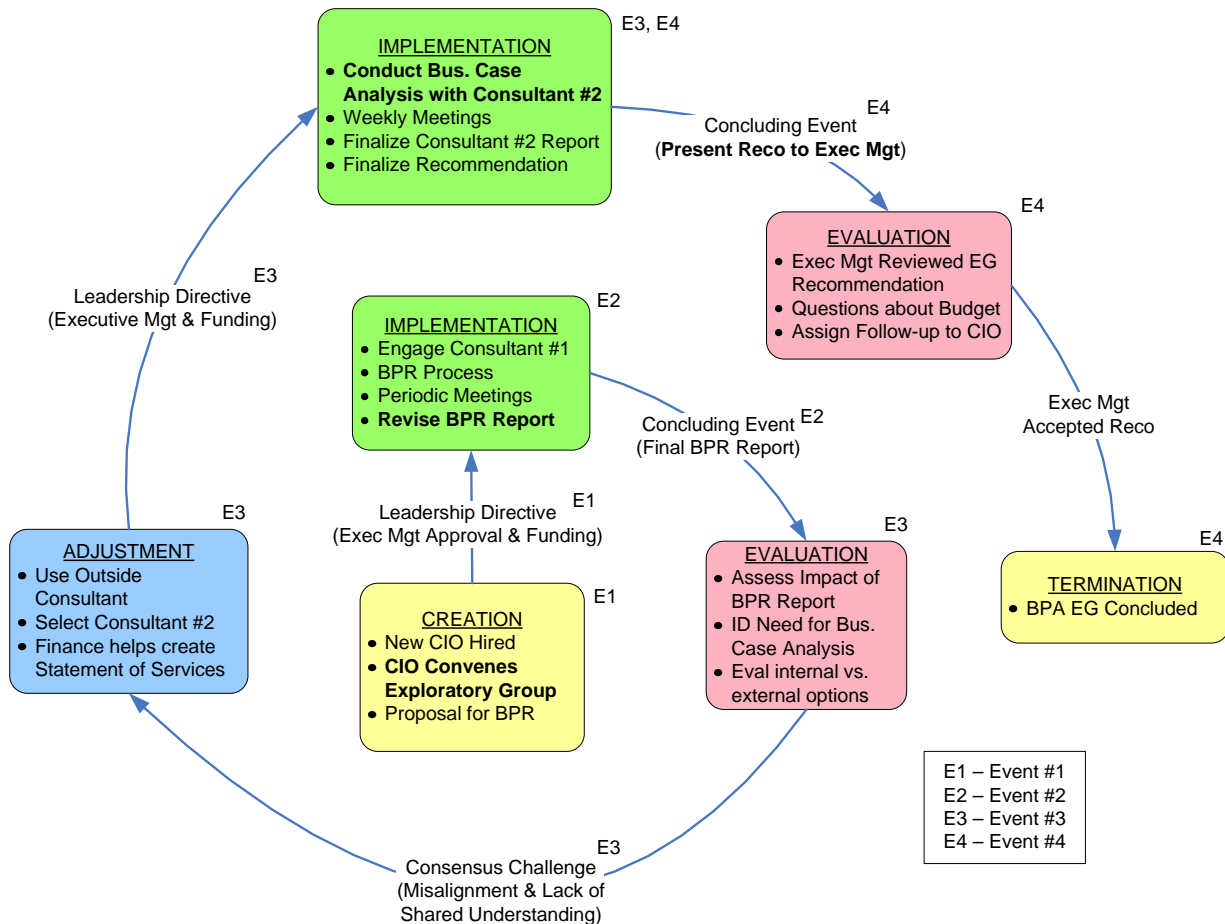
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Figure 4.17 BPA Stage Transitions

The coordinating efforts transitioned from implementation to an evaluation stage based on some type of "concluding event." During evaluation the leadership and participants assess the coordination state and efficacy of the activities to achieve the purpose and objectives of the effort, identify gaps or limitations in the coordinating characteristics, and assess changing contextual influences impacting the effort. In the BPA, the requirement to respond to the preliminary deliverables from Consultant #1 exposed the lack of alignment in some units and lack of shared understanding that undermined consensus within the exploratory group. This transition was repeated in the BPA effort when the final recommendation of the Exploratory Group, the primary work product of this coordinating effort, was presented to LargePub executive management thus initiating executive review of the recommendation. In the ITAC

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case, three instances of the transition from implementation to evaluation were observed. When the interim-CIO was replaced by the permanent CIO, a "concluding event", the new CIO immediately initiated an evaluation of the coordinating effort. At two additional times the CIO initiated an evaluation of the coordinating effort based on the necessity of meaningful outputs from the ITAC that did not materialize. In effect, the "concluding event" motivating the evaluation stage was the absence of expected work product.

The next transition in the coordinating process involves a shift from evaluation to adjustment. During adjustment changes in the operation mode and other coordinating characteristics are specified in order to achieve the desired coordination state and that improve the opportunity to fulfill the purpose and objectives of the coordinating effort. The driver of this transition appears to be a "challenge to consensus" related to the primary method or desired outcome of the effort. In the case of the BPA, the system/functional view of the data integration problem exposed the lack of understanding of the process required to create a consensus recommendation and the lack of alignment of an influential unit relative to the desired organizational outcome. And the non-aligned unit possessed sufficient political influence to specify a specific change to the operating mode of the coordinating effort. In the ITAC case the CIO introduced a new method for influencing the IT priorities and projects that were to be presented to the executive management of LargePub for approval and funding. This new process conflicted with the IT decision-making model that had been created and to which many ITAC participants were highly invested. However the CIO practically controlled all aspects of the ITAC and thus was able to specify any desired changes.

As indicated previously, the transition from the adjustment stage to the implementation stage mirrors the change from creation to implementation. Some type of "leadership directive"

initiates the transition. The primary difference between the two cases relates to the level of leadership involved and this relates to the scope of the coordinating effort. For the BPA, the only transition from adjustment to implementation occurred as the exploratory group engaged the services of Consultant #2 to conduct the business case analysis. Executive management put this adjustment into action by approving and funding the work with the consultant. For the ITAC case two transitions occurred moving from adjustment to implementation. In both cases CIO directives attempted to put the desired changes into place.

The final stage transition which occurs in the coordinating process involves moving from an evaluation to termination whereby associated activities are ended and the coordinating effort is brought to closure. The evaluation of the coordinating effort determines that the primary purpose and objectives have been achieved or that it is not possible for the coordinating effort to generate the desired outcomes. In the case of the BPA, the executive management determined that the recommendation of the Exploratory Group, while not supported by full group consensus, was adequate to allow LargePub to move forward with a final decision regarding an enterprise system approach to data integration. What additional information was requested did not necessitate EG involvement, and having fulfilled its objective, the coordinating effort was ended. In the case of the ITAC the CIO, in concert with the ITAC Cabinet, determined that adjustments to the council operating mode and related coordinating characteristics would not have the desired impact. Thus, the CIO ended the work of the ITAC and made plans to establish a completely new advisory body.

The final insight related to the stage model of the coordinating process drawn from a comparison of the BPA and ITAC cases deals with the iterative nature of the implementation, evaluation and adjustment stages. It is possible and quite likely that the activities related to two

or all three of these stages may occur continuously and/or simultaneously during a coordinating effort. The simultaneity of implementation and evaluation was demonstrated in the ITAC case. The CIO twice implemented adjustments to the primary method (operation mode) of the council. It may be that these adjustments were incomplete relative to an ideal state as the CIO only made incremental changes to the operating mode at least in part in deference to the investment by council members in the existing approach. Throughout the implementation stage, the CIO continued to evaluate the efficacy of the coordinating effort as evidenced by the on-going statements to the ITAC about the need to change the representation of the group and improve the way in which the advisory role was being performed.

4.3.4 Lack of Alignment and Shared Understanding - Generative Forces in the Coordinating Process

In both the BPA and ITAC cases, unit lack of alignment and shared understanding were generative forces which help to explain the progression and iteration of the coordinating efforts through the stage process as well as why the efforts failed to obtain the consensus required to achieve their primary objectives. As was demonstrated in the BPA case, an influential functional unit pursued objectives related to data integration that maximized the unit benefits by minimizing the chances of the preferred legacy systems being replaced and by forcing an implementation of new COTS enterprise software to start with a much higher risk functional area. While other units were much more aligned, or only minimally misaligned, with the organizational objectives, they lacked the political influence to compensate for the strength of the misaligned units in order to drive to full consensus within the Exploratory Group.

In the ITAC case, the adjustments implemented by the new CIO in transitioning the

ITAC from a decision-making body for the organization to an advisory body for the CIO actually

created the lack of alignment for many units. The original decision-making model provided a

direct linkage between the large divisions at LargePub and the organizational objectives of

establishing broad-based organizational support for IT initiatives that had been prioritized across

the major functional areas of LargePub. The linkage was the ability to directly influence the IT

priorities and initiatives established to support those priorities through the creation and on-going

evaluation of the IT strategic plan. The alignment was further enhanced by the objective of

having the decentralized units allocate IT resources in support of the prioritized initiatives

emerging from the ITAC. In changing the purpose of the ITAC to advisory to the CIO, the direct

link from the divisions to the organizational objectives was broken. Many divisions were limited

in, or even excluded from, the process of influencing the IT priorities and initiatives in the

restructured ITAC. And the organization objective of aligning resource allocation across the

organization to the highest priority initiatives was undermined. The lack of input and influence

into the decision-making process created real or perceived lack of alignment between many units

and the organizational objectives.

Shared understanding relates to the creation of common meanings for the purpose and

objectives (the what), plan and method (the how), and the associated language used to describe

these elements of a coordinating effort. Shared understanding is critical to activate the

coordinating process and generate consensus for the desired outcomes. In the BPA case,

LargePub sought to create true data integration through the implementation of new operational

information system based on an enterprise approach. That level of data integration required

fundamental changes to boundary-spanning business processes and operational systems in the

four primary functional areas. System/functional views of the data integration problem made the development of shared understanding of the enterprise-wide organizational objective very difficult. In the ITAC case, the permanent CIO sought advice and advocacy in order to identify the highest priority initiatives and carry those forward to executive management with full organizational consensus supporting those initiatives. This objective is not substantially dissimilar to the objective of the IT decision making model originally embodied in the ITAC. A shared meaning of the advisory objective relative to the original objective of creating and evaluating the IT strategic plan for LargePub was never established within the ITAC. Absence of a common meaning for the coordinating objective undermined shared understanding in both cases.

The lack of a well defined process for creating the desired outcomes in both the ITAC and BPA cases hampered the work of the coordinating efforts in terms of generating the desired outcomes. In the case of the ITAC the process for creating the "advice" sought by the CIO was not well articulated and laden with confusion. The CIO did not provide sufficient guidance on the method for providing the desired advice and the ITAC members failed to pursue clarification from the CIO or council chairperson. As discussed previously in the BPA Case Insights section, the Exploratory Group did not have a plan for moving from its creation to the delivery of a recommendation to executive management for an enterprise solution to data integration. It was not clear how the business process review could produce the information necessary to generate a recommendation or how the business case analysis would provide clarity on the best implementation approach of an enterprise software solution. In the absence of a shared understanding of how the process would achieve the objective, the BPA Exploratory Group reverted to the functional/system lenses to provide structure to the process. In the case of the

ITAC, the lack of meaning for the process of advisory and advocacy limited the coordinating effort to largely information dissemination.

Finally, the language used in both the ITAC and BPA cases only reinforced the difficulties in establishing shared understanding and dealing with other issues in the coordinating process. For the BPA EG, the terms data integration, enterprise approach, business process review and analysis did not have common meanings. Likewise for the ITAC the terms advisory, advocacy, decision-making/governance, IT core and core services were frequently used, rarely if ever discussed in detail, and a constant source of confusion and frustration. And in both cases, it appears little was done to develop shared meanings for these terms as the gaps in understanding were identified and highlighted.

The lack of shared understanding related to language, objectives and methods for both of the BPA and ITAC undermined the opportunities for generating the consensus for desired outcomes which was necessary to fulfill the objectives of the coordinating efforts.

4.3.5   Value of Applying Multiple Theoretical Frames to the Coordinating Process

Establishing the coordinating phenomenon as an organizational process that evolves through identifiable stages in an iterative manner provides a new and useful frame for understanding what is required to achieve enterprise level IT objectives and outcomes. As was demonstrated in the ITAC and BPA within case analyses, significant leverage can be gained by applying the rational and political models of decision making to understand the evolving coordinating process. These cases also demonstrate the extent to which the various contextual influences interact with the coordinating process and can be quite difficult to isolate. The rational and political frames have been applied to a variety situations related to the creation, implementation and use of information systems. Each frame generates unique insights into the phenomenon of

interest. All IT governance structures, and the federated design in particular, require a coordinating process for any enterprise IS initiative. And it is likely that politics will be involved for any enterprise IS initiative of importance (Markus, 1983). Thus the rational cost/benefit and political influences are likely to interact with the coordinating process in most enterprise coordinating efforts. Depending on the context, it may be beneficial to incorporate all three perspectives and how the pertinent contextual influences and coordinating process interact to better explicate of the evolution and outcomes of various IS initiatives.

5 Conclusions

5.1 Research Limitations

This qualitative research was conducted using a longitudinal in-depth case study methodology. The limitations of this study are related to those that are inherent to this type of research as well as those related to the particular research design. These limitations should be considered when interpreting and applying the findings presented.

The setting for this comparative case study was a single, public sector organization. And the research investigated two IT coordinating efforts within that common organization setting. The findings of this research may be idiosyncratic to the specific cases that were investigated. Likewise the peculiarities associated with a public sector entity, as opposed to a private sector organization, related to such things as funding derived largely from state tax appropriations, different relationships with customers, and different rules guiding the employer/employee relationship may limit the extent to which the findings can be generalized to other contexts. However, LargePub derives a significant portion of its budget from customer fees and customers are not captive. LargePub must respond to competitive pressures to deliver high quality services at competitive fee structure or its customers are free to find alternative service providers. While there are substantive differences that must be considered, this context does offer the basis for reasonable comparisons with other organizational context.

Also, LargePub is characterized by a federated IT governance structure with highly decentralized and autonomous units that rely on a central IT unit for many core infrastructure services. This is becoming the dominant IT governance paradigm for all organizations (Scott et

al., 2006) and the ability to generate insights into the coordinating process in federated

governance structures is of value to both public and private sector organization. The highly

decentralized structure within LargePub in a cultural environment that values autonomy to a very

high degree, accentuated the need for effective coordinating processes in order to achieve

enterprise-level IT objectives as well as the effects of various contextual influences impacting

the coordinating process. It is plausible to believe that the findings in this research can provide

leverage in other organization contexts. However, replication to strengthen the theoretical model

presented and explication of the generative forces identified so as to enhance generalization

should be a focus of future research.

The primary data source for this research was semi-structured interviews of participants

in both the cases. The analysis and findings are a function of the data collected and thus the

interpretations of events by the individual respondents. To the extent that the participants shared

some particular bias or other unknown perspective on the events, this research is limited by that

influence. However, several steps were taken to improve the quality and integrity of the data

collected. The interviews for the ITAC case occurred over a period of 2.5 years and included

almost all of the members of the council during the time of the study. Several participants were

re-interviewed at different points in the process. Also, when a change in personnel occurred in

key positions thus changing the membership of the ITAC, these individuals were interviewed. As

new members were added to the council, most of these individuals were also interviewed.

The BPA interviews took place over a period of 3 months and included all but two

participants on the Exploratory Group including one participant added at the mid-point of the

coordinating effort. As the BPA effort was nearing the termination stage, these interviews were

retrospective in nature covering a period of approximately 18 months. The participants were

senior managers directly involved with the activities of the coordinating effort, represented all of the functional areas impacted by the proposed enterprise software solution, and the interviews focused on the key events and contextual influences that impacted those events. Thus, the retrospective interviews provided an excellent and generally accepted means of understanding the BPA coordinating effort (Glick, Huber, Miller, Doty and Sutcliffe, 1990; Miller, Cardinal and Glick, 1997).

It is also important to note that while the primary data source was semi-structured interviews, these data were supplemented by observations of regular ITAC meetings as well as offsite retreats, observations of other meetings related to the ITAC and BPA coordinating efforts, and many hundreds of pages of archival data. These data were used to corroborate data from the interviews as well as a source of questions for the respondents regarding the critical events and contextual influences at work.

The final limitation deals with the role of the researcher as the research instrument when conducting qualitative research (Trauth, 2001). A single researcher conducted most of the interviews and performed all of the coding and data analysis. The limitations and biases of the researcher in conducting interviews as well as in performing the analysis have influenced this study. My faculty advisor and dissertation chair participated in approximately 13 of the semi-structured interviews and observed one ITAC meeting, taking a largely passive role but asking questions as well as providing field notes from the interviews. In one particular interview, this researcher took a more prominent role because of a strong personal relationship between one participant and me.

As the research instrument, this researcher brings a wealth of experience to the research endeavor. With over 15 years of professional experience in management and IT consulting, the

author of this research has been involved with dozens and dozens of organizations and many more projects. This experience allowed the researcher to develop excellent interviewing skills, learn how to establish professional relationships, and provided a broad base of organizational experiences from which to assess and interpret the findings of this study.

5.2 Research Contributions to Theory

This research has made several contributions to theory in advancing our understanding of the coordinating phenomenon within a federated IT governance structure context. First, this empirical research clearly establishes coordinating as an enterprise process. Prior literature acknowledges coordination is a process (Galbraith, 1994; Garvin, 1998; Kellogg et al., 2006; Malone and Crowston, 1994; Quinn and Dutton, 2005; Sambamurthy and Zmud, 2000; Schwarz and Hirschheim, 2003) yet most studies have taken a static view of the phenomenon. We have taken a process view of coordinating delineating stages, evolution of the process over time, and the iterative nature of the process. The process of coordinating is instrumental in developing, implementing and using information technology to achieve organizational level outcomes, as well as aligning the activities of various decentralized units in the federated governance structure.

The coordinating process is impacted by a number of contextual influences. These influences have been shown to initiate, modify or inhibit activities in the coordination process. This research has defined a comprehensive and parsimonious framework of the contextual influences that have the most significant impact on the coordinating process. The categories and dimensions of contextual influences that have been identified provide the basis for explicating the coordinating process implemented to pursue IT/IS outcomes in a variety of organizational contexts. Some of these influences have been identified in prior literature (e.g. Brown, 1999;

Cheng, 1983; Clark, 1992; Doll and Torkzadeh, 1987; MacKenzie, 1986; Raghunathan, 1992; Sabherwal, 2003; Sharma and Yetton, 2003; Torkzadeh and Xia, 1992; Van de Ven et al., 1976). And the likely emergence of political influence in the federated IT governance structure (Brown, 1999) and in response to disagreement over the nature of the IT problem and uncertainty regarding solution efficacy (Markus, 1983) was observed in both cases. However, we have identified a comprehensive set of influences and examine how they impact the coordinating process, stages and transitions in the process and coordinating outcomes.

This research has presented an iterative stage model of the coordinating process involving 5 stages: creation, implementation, evaluation, adjustment and termination. As was demonstrated in the two cases in this study, the coordinating process is iterative in that the process cycles through the implementation-evaluation-adjustment cycle multiple times as the contextual influences change and in response to different critical events. The research has identified the categories of initiating events that mark the transitions from stage to stage. The transition from creation/adjustment to implementation is initiated by a "leadership directive", implementation to evaluation by a "concluding event", and evaluation to adjustment by a "consensus challenge". This non-linear view of the coordinating process offers the potential to explicate the role of boundary-spanning mechanisms in achieving organizational outcomes.

This research has identified and demonstrated the importance of shared understanding and unit alignment as generative forces driving the coordinating process. Prior research has identified the factors contributing to coordination success (e.g. Blanton et al., 1992; Brown, 1999; Cheng, 1983; Drury, 1984; Gupta and Raghunathan, 1989; Raghunathan, 1992; Sharma and Yetton, 2003; Torkzadeh and Xia, 1992), and though the role of executive support is widely acknowledged (Drury, 1984; Raghunathan, 1992; Sharma and Yetton, 2003; Torkzadeh and Xia,

1992), the role of shared understanding and unit lack of alignment that emerged from both cases are largely absent from the extant literature on coordination. The concept of shared understanding has been related to coordination in the context of the software development process (e.g. Crowston and Kammerer, 1998; Easterbrook, 1995; Espinosa, Kraut, Slaughter, Lerch and Herbsleb, 2002). In the strategic management literature, alignment of business units to a corporate management system through coordination activities has been related to creating synergies and business value (Kaplan and Norton, 2006). However no references have been found to work specifically relating shared understanding and unit alignment with the coordinating process. Thus this research has added to the factors that influence coordination success or failure and that can be leveraged to enhance the success of such efforts.

Shared understanding involves the development of common meaning amongst the primary participants for the operating mode and language of the coordinating effort. Shared understanding develops and evolves over time and does not always move forward to a heightened level of common meaning. The extent of shared understanding can be masked and critical events may expose lack of shared understanding within a coordinating effort. Research has demonstrated the role of IT professionals in facilitating knowledge transfer across organizational boundaries in federated structures by challenging process assumptions and translating between units (Pawlowski and Robey, 2004). The relative absence of IT representation on the BPA potentially inhibited the knowledge brokering which could have facilitated the creation of shared understanding. As was demonstrated in both the ITAC and BPA cases, the coordinating process cannot progress until adequate shared understanding has developed supporting the formation of consensus for the desired outcomes and process of the coordinating effort.

Unit alignment with organizational objectives was also shown to play a crucial role in the development of consensus. The extent of the lack of alignment as moderated by unit political influence was shown to undermine the achievement of consensus. As with shared understanding, critical events can serve to expose unit lack of alignment and activate the use of political influence to orient consensus toward the pursuit of unit objectives over the organizational objectives of the coordinating effort.

The critical realist philosophy of science views these generative influences or mechanisms not as deterministic but rather as tendencies to act or produce the observed outcomes. These generative influences may occur simultaneously, interact, or fail to be activated based on different contextual conditions. This dissertation has identified multiple generative influences including unit alignment, shared understanding, political influence and rational decision processes that operate in the coordinating process. And perhaps more importantly, this research has demonstrated how these generative influences interact with each other and various contextual influences to impact the observed coordinating outcomes. These generative influences, and how they interact, provide a foundation for explicating the coordinating process in the federated IT governance structure as well as other contexts.

5.3   Research Contributions to Practice

Managers have been applying various mechanisms as a means to coordinate activities across organizational boundaries as long as organizations have existing. This research offers several contributions to practice. The traditional view of coordination is a structural problem to be solved by applying various coordination mechanisms (e.g., task forces, steering committees, facilitator roles, etc.). Defining the coordination phenomenon as an evolving, iterative process

provides managers the opportunity to identify and design methods to make coordinating efforts more effective. The focus shifts from implementing a structural solution based on certain criteria, to actively managing a process that is integral to achieving the desired organizational outcomes.

This research demonstrates the importance of shared understanding, unit lack of alignment and consensus as key drivers of the coordinating process and for achieving positive coordinating outcomes. Managers responsible for coordinating efforts need to create mechanisms which promote shared understanding, reveal potential unit lack of alignment and promote consensus. For example, managers seeking to achieve a highly complex organizational outcome such as the implementation of an ERP system must take steps to establish shared language among the participants and primary constituents of the coordinating effort. This shared language, an integral component of shared understanding, must penetrate surface usage of related terms (e.g. enterprise solution, data integration, business processes, information security) to generate fundamental understanding of the socio-technical implications of the desired outcome. Managers can use the importance of shared understanding to implement learning opportunities during the creation stage to promote shared understanding of the operating mode and lexicon. Managers must also take steps to assess the state of and provide for the development of shared understanding as the coordinating process evolves.

Critical events can expose gaps in shared understanding and unit alignment which can undermine the development of consensus in the coordinating effort. Managers can use this knowledge to re-engage participants in the activities focusing on identifying and explicating the discrepancies in understanding and alignment. This provides a basis for negotiating consensus that supports the organizational objectives of the coordinating effort. It also can provide

managers of the coordinating effort with the ability to engage executive management at key points in the process to overcome issues of alignment and foster consensus.

Finally, this research presents a parsimonious framework of contextual influences that impact the coordinating process. This framework provides practitioners with specific characteristics related to the operating mode, coordinating climate, participation and engagement in a coordinating effort to use in creating and evaluating a specific coordinating effort. Additionally the framework identifies the most prominent aspects of the inner organizational context (structure, culture, and coordinating motivation) and external environment (economic, legal/political, technological) to which practitioners must be sensitized in order to effectively manage the coordinating process.

5.4   Directions for Future Research

The coordinating process is instrumental in the creation, implementation and use of information systems in the federated IT governance structure. The findings of this research related to the iterative stage model of coordinating and the framework of contextual influences impacting the coordinating process provide valuable insights in explicating this phenomenon. The investigation of the coordinating process should be extended to other public and private sector organizational contexts. Also, coordinating efforts are undertaken to pursue a variety of IT specific objectives. The focus of the two coordinating efforts in this research related to data integration and knowledge sharing. Researchers have addressed coordination related to software development (e.g. Crowston and Scozzi, forthcoming; Kirsch, 2004; Kraut and Streeter, 1995; Nidumolu, 1995; Sabherwal, 2003). Applying the perspective of coordinating as a process related to information security, development and implementation of common software

applications, and the development of common infrastructure in dispersed organizations could substantially extend our understanding of these organizational uses of IT.

The stage model of the coordinating process is non-linear. Future research should investigate these transition points to understand the similarities between the different stage transition and how the various contextual influences initiate and impact each stage transition. Clarifying the contextual influences that impact the stage transitions offers the potential to design mechanisms to identify and more effectively manage these transitions to produce the desired coordinating outcomes.

Future research should seek to refine the framework of contextual influences that impact the coordinating process. The contextual influences that impact the coordinating process may change based on the primary IT context, the scale and scope, or the primary objective of the coordinating effort. Clarifying which contextual influences have the greatest impact based on these different dimensions of the coordinating process would provide the opportunity to establish coordinating characteristic profiles. These profiles would support the creation and use of various mechanisms to more effectively manage the coordinating process.

Finally, future research should seek to identify additional generative influences impacting the coordinating process and the contextual influences that activate the mechanisms and the conditions in which they co-occur. Additional insights can be generated by exploring the interactions of these mechanisms with shared understanding, unit alignment, political influence and rational decision processes with the coordinating process to enhance explication of coordinating outcomes.

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7 Appendices

7.1 Appendix A – Final Interview Guide

Coordination Efforts
Semi-Structured Interview Questions

Experience/Demographics

1. What is your title? Department? Current role and area of responsibility?

2. How long have you worked at LargePub?

Involvement with Coordinating Effort(s)

3. What is the purpose of ITAC (BPA)?
   a. What does "success" look like for this group?
   b. How will you know when the group has achieved "success"?
   c. To what extent are the different units (customer service, administrative, business, etc.) at LargePub interdependent related to the use of IT?
   d. What is one initiative that the group did successfully? What do you think contributed to its success?
   e. What is one initiative that failed? What do you think lead to its failure?

4. What is your role in ITAC (BPA)? How long have you been involved?
   a. How did you become involved initially?
   b. How has your role changed over time?

5. How does ITAC (BPA) achieve coordination? What does ITAC (BPA) do?
   a. What is the purpose of the "formal" meetings?
   b. How are the meetings structured?
   c. How is member participation structured?
   d. How are decisions made?
   e. Who are the key players in ITAC (BPA)? What roles do they play?
   f. What are some examples of issues that ITAC (BPA) addressed?

6. Who provides leadership for the group?
   a. Is the leadership clear and consistent?
   b. What "behind the scenes" influences impact the direction and work of the group?
   c. Is the work of the group impacted by influential "sub-groups" of members? How does this play out in terms of the overall effort of the ITAC (BPA)?

7. Not all interactions for ITAC (BPA) occur in formal sessions. What typically happens between "formal" sessions/meetings of ITAC (BPA)?

a. What is the nature of your interactions with other members of the group as it pertains to ITAC-related (BPA) issues?

b. Others not directly involved with the group?

8. Has the purpose of this group/effort changed over time? How?

    a. Why? What motivated this change?

    b. How did this impact the level of coordination and what ITAC (BPA) was trying to accomplish?

    c. What has been the net result?

9. What are some other key "events" or "incidents" (*What are the "big things"*) that have happened during your involvement with the ITAC (BPA) that significantly impacted the structure, process, work, & outputs of the group?

    a. When did these occur?

    b. How did these happen? Why?

    c. What was the impact on ITAC (BPA) and what it is trying to accomplish?

10. External influences sometimes have an effect on what a group does or how it does it. What are the most influential external influences that impacted the ITAC (BPA)? (e.g., budget/funding, federal and state regulations, available technologies, etc.)

    a. How do these influences impact what the group does? How it works?

11. How is the ITAC (BPA) impacted by considerations of "the way we do things here" at LargePub?

    a. How does ITAC (BPA) fit in the formal organization structure of LargePub?

12. Have you faced a situation where you have differences in priorities/preferences/goals between what you think would be best for your unit, and other units, the ITAC (BPA) or LargePub as a whole?

    a. What are these differences and why do you think they arise?

    b. How do you resolve these differences?

    c. Who do you work with in your unit and on the ITAC (BPA) to resolve the differences?

13. Has the work of ITAC (BPA) improved the coordination between various units in the organization related to the (strategic, enterprise) use of IT at LargePub?

    a. How?

    b. Why/Why not?

    c. What is needed to achieve improved coordination?

    d. What one thing would you change about ITAC (BPA) to have the biggest impact on how IT is used at LargePub?

Follow-up Questions if Not Previously Discussed by Participant

14. Have any "conflicts" developed within the group in trying to complete its work?

    a. Why did the conflict arise?

    b. How are conflicts resolved?

    c. How was the overall effort affected?

15. *(Only for small number of participants in multiple efforts)* How does your involvement with a) ITAC (BPA) compare to your involvement with b) BPA (ITAC) (or other IT related coordination efforts at LargePub)?

    a. Is this effort more or less successful? How? Why?

    b. What are the primary differences between ITAC and BPA?

ADDITIONAL QUESTIONS (TIME PERMITTING)

General

16. To what extent are you involved with decisions relating to the implementation and use of IT solutions (including network infrastructure, hardware, software, and applications)?

Levels of Coordinating

17. What aspects of the creation, use and support of IT in your unit (and at LargePub) should be handled centrally and what should be handled by sub-units?

18. What do you think should be the role of the central IT function at LargePub?

    a. Should Central IT be able to direct how <u>some</u> IT initiatives are implemented at the sub-unit level? Why or why not?

19. What input does your unit have into the overall priorities of IT initiatives at LargePub? Should it have?

Need for Coordinating

20. Do you perceive that increased coordination between IT in your unit and other units at LargePub to be a good thing?

    a. What parts of the IT function would benefit? Why?

    b. What would this coordination look like? How would it take place? What would be the results?

21. What are some areas where increased coordination of IT activities doesn't make sense?

    a. Why would you not want to see increased coordination between IT in your unit and other units?

    b. What are the benefits of independent action at the sub-unit level?

7.2 Appendix B – Coding Template

Family	Code	Sub-code	Symbol	Description
Coordination Mechanism			CoordMech	A variety of organizational structures put into place to facilitate the flow of information and decision making across organizational boundaries.
	Formal Group		CoordMech-FormalGrp	Bodies or groups established formally with specific integration or oversight objectives
		Steering Committee	CoordMech-FormalGrp-SteerComm	Group of business and IS managers responsible for providing direction, priorities, and oversight to IS initiatives
		Standing Team/Committee	CoordMech-FormalGrp-Committee	Group of business and/or IS managers and staff sanctioned by the organization and which has an specific mission/objective and an on-going duration.
		Task Force	CoordMech-FormalGrp-TaskForce	Group given very specific objective, defined deliverables and specific duration for completing work
	Formal Role		CoordMech-FormalRole	Formal positions with responsibility to link activities between organization units
		Cross-unit integrators	CoordMech-FormalRole-CrossUnitIntegrator	Position accountable for meeting decentralized unit goals as well as centralized unit/organization goals, which may also have matrix reporting relationships
		Corporate oversight role	CoordMech-FormalRole-CorpOversight	Individuals and/or groups responsible for reviewing, evaluation and approving IS initiatives for conformance to strategic objectives or IT infrastructure & application standards
	Informal Networking Practice		CoordMech-Informal	Non-structural activities to create links and relationships between individuals in cooperating units
		Direct Contacts	CoordMech-Informal-DirectContact	One-on-one interactions between members of different units.
		Interdepartment events	CoordMech-Informal-InterdepartmentEvents	Meetings attended by personnel from many units that provide opportunity for spontaneous, voluntary contacts (training, conferences, special programs, etc.)

Family	Code	Sub-code	Symbol	Description
		Networks	CoordMech-Informal-Network	Groups of individuals from different units that meet regularly to communicate and share information
		Physical co-location	CoordMech-Informal-Colocation	Individual(s) from one unit work in the same physical location/proximity with individuals in another unit
	Cross-Unit Human Resource Practice		CoordMech-HR	Human Resource management practices to foster and improve efficacy of cross-unit partnerships
		Job rotations	CoordMech-HR-JobRotate	Programs to move IS staff between units and to the central organization on a regular basis
		Performance review input	CoordMech-HR-PerfInput	Procedures for units (central and autonomous) to provide performance review input for personnel from other units with whom they work.
Interdependence			Interdependence	The extent to which one organizational unit is dependent on another unit(s) in order to fulfill its primary purpose.
	Pooled		Interdependence-Pool	Each unit contributes to the overall organization by completing its tasks satisfactorily and is supported by the organization as other units fulfill their tasks
	Producer/ Consumer Relationship		Interdependence-PCR	A situation where one activity produces something used by another activity
		Sequential	Interdependence-PCR-Sequential	One unit is dependent on the outputs of another unit before it can accomplish its tasks
		Reciprocal	Interdependence-PCR-Reciprocal	Each unit is dependent on the other to accomplish its assigned tasks
	Shared Resources		Interdependence-SharedResources	Multiple activities share some limited resource
	Simultaneity Constraint		Interdependence-SimultaneousConstraint	Activities that must occur at the same time or cannot occur at the same time
	Task/Subtask dependency		Interdependence-TaskDependency	A group of activities are all subtasks for achieving some overall goal
Coordination Criteria			Criteria	Characteristics of coordination efforts that are required to achieve successful outcomes
	Accountability		Criteria-Accountability	The mechanism responsible for coordinating outcomes is defined relative to the formal structure and is clearly accountable for the outcomes

Family	Code	Sub-code	Symbol	Description
				achieved.
	Action Oriented		Criteria-Action	Participants in the coordinating effort are focused on getting things done in a timely fashion and bringing work to closure - taking decisions, producing work product, formulated position statements, etc.
	Business Need		Criteria-Business Need	A clear business need is clearly articulated and given sufficient justification so that most will accept the demands and costs of a cross-unit coordination effort as necessary in order to achieve the benefits from the effort.
	Common Infrastructure		Criteria-Common Infrastructure	Specific coordination efforts require a foundation of common infrastructure in order to achieve the coordination purpose. This infrastructure includes the human and technical capabilities for work to be accomplished across organizational boundaries. This includes things like a shared language or lexicon, common communication methods and processes, work roles and methods, etc. Technical coordination to jointly develop, or share, software applications requires the participants to have a common IS/IT environment, requisite skills for the specific environment, appropriate training, etc.
	Clarity of Purpose		Criteria-Purpose	The sponsor(s) and leader(s) clearly define the purpose of the coordinating effort and establish consensus on the purpose and methods of the coordinating effort with key constituencies & participants. The purpose of the coordinating effort is clearly defined in terms of relationships to other coordinating efforts and organizational entities with which it is likely to interact.

Family	Code	Sub-code	Symbol	Description
	Consultants		Criteria-Consultants	External consultants or other service providers selected to participate in or facilitate a coordination effort are knowledgeable, competent, and have the appropriate resources, capabilities and independence required to support the effort. Additionally, the consultant's role, methods and deliverables are clearly defined.
	Cultural Fit		Criteria-CultureFit	The nature of the coordinating effort and is methods of operating are consistent with the internal cultural context of the organization.
	Defined Outputs		Criteria-Outputs	The coordinating activity is oriented to achieving clearly defined and accepted outputs or deliverables which support the primary purpose and objectives. These could include work products, policy/procedure, position statements, decisions, etc. The participants in the coordinating effort are capable of producing the outputs necessary to fulfill the purpose and objectives of the effort.
	Executive Support		Criteria-ExecSupport	Executive/senior management provides visible, on-going support to the coordinating effort through allocation of required resources, by communicating the importance/value of the effort, and through involvement in strategic or operational topics that encourage coordinating activities and the ultimate success of the effort.
	External Experience		Criteria-External Experience	Participants in the coordinating effort offer viewpoints not limited to experience within the organization but rather leverage experiences from other organizations and settings to expand alternatives for achieving success.

Family	Code	Sub-code	Symbol	Description
	Flexibility/ Responsiveness		Criteria-Flexibility	The leadership and participants in coordinating effort must demonstrate flexibility to react to changing information and environmental influences. This is manifest in adjustments to primary purpose, priorities, activities, and outcomes/deliverables of the coordinating effort.
	Impact / Results		Criteria-Impact	The actions and outputs of the coordinating effort generate a visible impact on the organization. The participants and constituents can experience the results of the coordinating effort in a timely and direct way.
	Importance		Criteria-Importance	The purpose of the coordination effort, and the potential impact on the organization if the purpose is successfully achieved, is seen as very important and worthwhile.
	Independence		Criteria-Independence	Formal coordinating body requires some level of independence from the sponsor. Independence is required for the coordinating body to take actions, offer opinions, feedback or recommendations that may not be in full agreement with the sponsor. This provides the requisite diversity needed for robust & effective coordination.
	Leadership		Criteria-Leadership	The coordinating effort has clear & consistent leadership, the leadership has the consent and support of the primary participants, and the leadership has the necessary status to fulfill the effort purpose.
	Organizational/Unit Support		Criteria-Support	Participants in the coordinating effort are supported by their organizational unit to make the necessary commitment of time and effort to fulfill the purpose of the coordinating effort. Participation in coordination efforts is valued, recognized, and/or rewarded by the unit and the participant's managers.

Family	Code	Sub-code	Symbol	Description
	Open Communications		Criteria-Communications	Participants in the coordinating effort have open and transparent communications through a variety of channels that supports the full sharing of ideas, issues, and concerns. The means of communication and information repositories are established, agreed upon and used.
	Plan & Method		Criteria-Plan	The leader(s) and sponsor(s) of the coordination effort have established a clearly defined plan which directs the activities of participants to produce the required outputs/deliverables and to support the realization of the effort's purpose.
	Relevance		Criteria-Relevance	The purpose and the defined deliverables of the coordination effort are highly relevant to the primary participants and directly relate to their primary area of responsibility. The outputs have the potential for substantive impact on the participants, the units within which they operate and the whole organization.
	Representation		Criteria-Representation	Participation in a coordination effort needs to include sufficient representation of key constituencies to establish and maintain credibility in the organization, and to generate support from those constituents not directly participating.
	Size		Criteria-Size	The number of participants involved in the coordination effort. The key issue is having a small enough number to allow for things to get done. Too many participants leads to a focus on information dissemination.
	Status		Criteria-Status	The leader and primary participants are recognized within the organization as having the necessary status, means and influence to fulfill the purpose of the effort.
	Trust		Criteria-Trust	The participants develop and maintain a sense of mutual trust in each other, the purpose and the leadership of a coordinating effort.

Family	Code	Sub-code	Symbol	Description
	Uniqueness of Need		Criteria-UniqueNeed	The stated purpose or outcome of the coordinating effort does not conflict with the unique requirements of the participants.
Coordination Intensity			CoordIntense	The general level of activity, or energy level, related to various coordination activities.
Coordination Motivation			CoordMotive	The factors that encourage or discourage participation in coordination activities.
	Budget/Financial Need		CoordMotive-Budget	Constrained financial resources limit or prohibit internal solutions generating interest in collaborative solutions.
	Common Interests		CoordMotive-Interests	The coordination participants have a sense of commonality - shared interests, concerns, issues, scope of challenges, etc.
	Duress		CoordMotive-Duress	Perception of difficulty or loss that could occur if coordinating activities are not taken.
	Executive Support		CoordMotive-ExecSupport	Attention by senior management in strategic or operational topics that encourage or discourage coordinating activities
	Service Improvement		CoordMotive-ServiceImprove	Participants seek improvements in services and service levels as a result of the coordinating effort over what the individual units provide autonomously. If services and solutions generated through coordination represent a reduction in what already exists, the representatives of the affected unit will not be motivated to participate in the coordination effort.
Coordination Purpose			CoordPurpose	The desired objective or outcome for initiating, participating in or supporting a specific coordination effort.
	Build Consensus		CoordPurpose-Consensus	Develop agreement on opportunity or problem definition, priority, urgency, or plan of action related to topical issues. (ADVICE)

Family	Code	Sub-code	Symbol	Description
	Common Infrastructure		CoordPurpose-Infrastruct	Promote, establish, implement or enforce common IT network, software or communications infrastructure along with the required policies and standards (or gain specific waiver to policies/standards)
	Communication		CoordPurpose-Comm	Establish new relationship and open new line of discourse with individual(s) in other organizational units
	Data Integration & Reporting		CoordPurpose-DI	Linking disparate IS to provide common data structures and to support common, enterprise reporting
	Efficiency & Effectiveness		CoordPurpose-Efficiency	Develop common technology and service solutions to eliminate redundancy and promote more efficient and effective use of IT investments, reduce costs, and improve services.
	Exert Influence		CoordPurpose-ExertInfluence	Provide input into and meaningfully influence strategic and operational decision processes that impact multiple units
	Information Security		CoordPurpose-InfoSec	Implementing policies, procedures, processes and supporting technologies to provide security for all IT assets and users
	Information/Knowledge Sharing		CoordPurpose-InfoShare	Provide complex organizational information or convey experiential learning
	Resource Allocation		CoordPurpose-Resources	Determine priorities and amounts for IS initiatives that impact multiple units
	Shared Software Applications		CoordPurpose-SWApps	Promote, establish, implement or enforce common enterprise business software applications (or to gain specific waiver to standards)
	Strategic Planning		CoordPurpose-StratPlan	Establish IS objectives, initiatives and priorities that impact multiple units
	Trust Building		CoordPurpose-Trust	Establish confidence and trust in a relationship through repeated professional and social interactions
Inner Context			InnerContext	Inner mosaic of the organization - drivers and inhibitors of change characteristic of an organization's culture, history & political structures

Family	Code	Sub-code	Symbol	Description
	Structural		Inner-Structure	Formal reporting relationships & decision structures within the organization
		Budget Alignment	Inner-Struct-BudgetAlign	Alignment of budgeting and resource allocation processes to the organizational structure providing the ability to allocate resources across organizational boundaries in order to achieve common purposes.
		Decentralization	Inner-Struct-Decentralization	Organizational structure emphasizes decentralization of operational management, resource allocation and decision making to highly autonomous units.
		Human Resources Alignment	Inner-Struct-HRAlign	Aligning HR related business processes including training & development, performance evaluation, promotion and compensation to encourage activities within and across unit boundaries that support achievement of organizational objectives and initiatives.
	Cultural		Inner-Culture	Pattern of basic assumptions about correct ways for organizational members to perceive, think and feel
		Autonomy	Inner-Culture-Autonomy	Belief in the freedom of individual action and self-determination
		Conflict Averse	Inner-ConflictAverse	Interpersonal interactions, for individuals and in group settings, seek to avoid conflict and confrontation. Cordial interactions, civility and deference are encouraged.
		Investment	Inner-Culture-Investment	The organization is committed to the status quo due to significant prior decisions or due to potentially significant investments in creating the existing ways of doing things. This could be the long-term investment of resources in legacy systems which reinforce belief in the need to keep and improve existing systems versus renewed investments in new technology. This could also be related to investments in employee development and training which generates commitment to the existing methods for performing core processes.

Family	Code	Sub-code	Symbol	Description
		Openness	Inner-Culture-Open	Expectation for openness and transparency in interactions between individuals and groups within the organization. Decision making is based on consensus and expected to be public and open to external review. Organizational business is conducted collaboratively in groups that are publicly identified with published rules/bylaws, widely accessible minutes and work products.
		Performance Expectations	Inner-Culture-Performance	The level of urgency and performance expected within the organization related to routine work. This establishes the general level of urgency that is generated and how fast a response is expected in response to requests. This excludes true crisis response, but rather focuses on typical day-to-day work processes and activities.
Outer Context			OuterContext	Aspects of environment external to the organization that shape the context within which the organization operates and have an impact on how organizational processes are created and function
	Competitive		Outer-Competitive	Pressures from existing or new competitors providing the same or similar products and services
	Economic		Outer-Economic	General economic conditions that influence business activity, resource availability, and costs
	Industry/Sector		Outer-Industry	General trends in the particular industry or sector within which the organization competes
	Legal/political		Outer-Legal	Political trends or legal/regulatory requirements that impact the organization
	Social		Outer-Social	Trends in the social/cultural attitudes and behaviors
	Technological		Outer-Technology	New technologies or attitudes towards the use of technology that impact what and how technology is used in producing or delivering goods & services
Power & Politics	Use Conditions		PwrPol-Use	Organizational conditions in which decision making is more likely to involve the use of different manifestations of power and influence tactics to alter decision outcomes.

Family	Code	Sub-code	Symbol	Description
		Interdependence	PwrPol-Use-Inter	Extent to which organizational units or actors in different units are interdependent
		Conflicting Goals	PwrPol-Use-ConflictGoals	Actors or units have goals that are different or conflict
		Resource Scarcity	PwrPol-Use-Resources	Units require the same, scarce resources
		Problem Definition	PwrPol-Use-ProblemDefinition	Lack of clarity regarding the specific nature of the (IS) problem confronting the organization
		Solution Uncertainty	PwrPol-Use-SolutionUncertainty	Uncertainty regarding the efficacy of a proposed (IS) initiative
	Power Source		PwrPol-Source	Basis of power which provides an actor to exert influence over a target individual(s).
		Reward	PwrPol-Source-Rwd	Target person complies to obtain rewards controlled by agent.
		Coercive	PwrPol-Source-Coerce	Target person complies to avoid punishments controlled by agent.
		Legitimate	PwrPol-Source-Legit	Target person complies because of belief that agent has the right to make request and target is obliged to comply.
		Information	PwrPol-Source-Info	Agent possesses access to and control over the distribution of vital information providing opportunity to influence agents' perceptions and attitudes.
		Ecological	PwrPol-Source-Eco	Agent possesses control over the physical environment, technology, and organization of work providing indirect influence over targets.
		Expert	PwrPol-Source-Expert	Target person complies because of belief that agent has special knowledge about optimal way to perform requested action.
		Referent	PwrPol-Source-Ref	Target person complies because of admiration or identification with the agent and the desire to gain approval.
	Power Determinants		PwrPol-Determin	The factors that determine to the extent of the power an actor or organization unit may bring to bare in order to influence decision processes.

Family	Code	Sub-code	Symbol	Description
		Actor Role Importance	PwrPol-Determin-Role	The importance of an actor's role within the organization
		Actor Resource Control	PwrPol-Determin-ActorResourceControl	Actor's ability to provide critical resources
		Actor Dependence	PwrPol-Determin-ActorDependence	The extent to which others depend on an actor
		Actor Uncertainty management	PwrPol-Determin-ActorUncertaintyMgt	Actor's ability to cope with internal and external uncertainty
		Actor Value	PwrPol-Determin-ActorValue	Inability to easily replace an actor (skills, experience, network, etc.)
		Actor Influence	PwrPol-Determin-ActInfluence	Actor's potential to affect organization decision processes
		Unit Workflow Position	PwrPol-Determin-UnitPosition	Unit's position in the overall workflow of the organization - impact on delivery of products & services
		Unit Information Influence	PwrPol-Determin-UnitInfoInfluence	Extent to which a unit creates information and controls its distribution
		Unit Resource Control	PwrPol-Determin-UnitResourceControl	Amount and criticality of resources controlled by a unit
		Unit Decision Authority	PwrPol-Determin-UnitDecisionAuthority	Unit's formal authority to take decisions
General Codes				
	Critical Event		CriticalEvent	An event associated with a coordination effort that dramatically alters the coordination effort, the participation, the activities of the participants, the purpose or expected outcomes, or the ability of the coordination effort to fulfill it's purpose.
	Outcome Assessment		OutcomeAssessment	Perception of the efficacy of the coordination effort. The extent to which the purpose and objectives of the coordination effort are achieved and the defined outputs generated. This also includes the assessment of the impact of the coordinating effort on the use of IT for enterprise purposes.

Family	Code	Sub-code	Symbol	Description
	Punctuation		Punctuation	A critical event in the process of a coordinating effort that is the basis of fundamental change within the effort and/or the organization as a whole. This magnitude of the change due to the event may be recognized a priori or only a posteriori. The punctuation results in a fundamental restructuring of the coordinating effort including such things as the purpose, participants and roles played, relationships between key participants and the various organizational units represented, and the resources available.