

Bases of Intra-Organizational Power: An Analysis of the Information Technology Department

Andrew J. Setterstrom¹ and J. Michael Pearson²

¹College of Business, Northern Illinois University, USA

²College of Business, Southern Illinois University Carbondale, USA

asetterstrom@niu.edu

Abstract: Power is an important aspect of the social systems that make up organizations. The concept of power helps to explain how organizational decisions are made and executed, despite opposition that results from competing goals and desires amongst those in which a given decision affects. Using resource dependence and strategic contingency theories for guidance, we identify potential sources of intra-organizational power for the information technology (IT) department and its members. The comprehensive list of propositions developed in this paper will provide researchers potential hypotheses to test in future research, as well as a means to assess overall IT departmental power. While power plays an important role in facilitating the execution of the activities by an organization's IT department, it is often pursued by self-interested individuals, due to the fact that it provides the ability to influence decisions, such as resource allocation, as well as providing a sense of control over organizational outcomes and personal satisfaction. Based on the propositions developed in this paper, we demonstrate how power considerations provide one plausible explanation for many of the poor organization outcomes that occur with respect to the IT function, including technology for technology's sake, a lack of user preferences being integrated into IT systems development projects, resistance to using of knowledge management systems, and resistance to IS outsourcing. Our discussion of power-gaining activities provides practitioners an explanation of dysfunctional behaviors that previously may have been perceived as irrational, or even undetected. In our discussion section, we provide suggestions for researching the propositions we have developed. In particular, we suggest that a longitudinal or multi-case study approach may provide the best method for researchers to test our set of propositions. At the same time, we caution that results from case studies would be difficult to generalize, as the configuration of IT solutions adopted by organizations tend to be idiosyncratic.

Keywords: Information Technology Department, Strategic Contingency, Resource Dependence, Dysfunctional Behavior

1. Introduction

The study of power in social systems has long been an important pursuit for scholars, in the context of both intra- and inter-organizational situations. In particular, the past three decades have generated an increased interest in power in the mainstream information systems (IS) research and has precipitated considerable examination (see Jaspersen et al., 2002). This is not surprising, as research has suggested that power plays a critical role in execution of business functions carried out by an organization's IT department. For instance, IT departmental power has been demonstrated to be an important aspect of IT governance, affecting the ability of the IT function to control the development of IT projects, as well as to successfully propose IT investments for implementation (Xue, Liang, and Boulton, 2008). In the same vein, Preston, Chen, and Leidner (2008) argue that IT managers, specifically CIOs, need some degree of decision-making authority to pursue IT initiatives that support organizational strategies. It has also been shown that individuals within organizations resist the implementation of IT perceived to shift the distribution of power away from them (Alvarez, 2008; Lapointe and Rivard, 2005; Sarker, Sarker, and Sidorova, 2006). Consequently, power considerations for information systems implementation are important in avoiding implementation failure.

Prior scholarly investigations have attempted to gauge the power possessed by an organization's IT department by conducting empirical research into the perceived power relative to other departments (e.g. Lucas, 1984; Lucas and Palley, 1987; Saunders and Scamell, 1986). While providing valuable insights, these studies tend to be problematic in that perceptions often do not account for unenacted power (Lucas, 1984; Pfeffer, 1981), while technology users may even fail to recognize when power is being leveraged (Provan, 1980). Sillince and Mouakket (1997) observed that power is multidimensional and that much of the IT research has historically adopted too narrow of an operationalization; they argue that multiple views of power are necessary in gaining a more complete understanding of power's complexities. Pfeffer (1981) suggests one possible method for accurately gauging power is to utilize Gamson's (1968) indirect approach: assessment of the potential sources of power. This indirect approach has the ability to detect power that is unutilized or which is exercised without being perceived by other actors within the organization.

The contribution of this paper is to provide a comprehensive examination of critical sources of power for an organization's IT department. Drawing from the theories of resource dependence and strategic contingency as a theoretical framework (Hickson et al., 1971; Hinings et al., 1974; Pfeffer and Salancik, 1978), a set of propositions are developed that identify potential sources of organizational power for IT departments that are intended for use in future research. Information about the sources of power for IT departments would provide both researchers and practitioners examining the decision-making authority of the IT department an approach to assessing departmental power.

In addition to providing propositions, we demonstrate how one driving factor many common problems organizations experience relating to their IT function can be traced to, in part, attempts to gain legitimacy and power by IT personnel. The misuse of power by organizational leaders has been well documented (see Higgs, 2009). Previous literature has suggested many possible sources for issues relating to an organization's IT function, such as a low level of shared understanding between the CIO and top management about the role of IT within an organization (Tan and Gallupe, 2006) or not using the optimal type of IT governance structure (Van Grembergen and De Haes, 2009). Our work, however, suggests poor business results from technology may be attributed to intentional behaviors by IT personnel to gain power or avoid its erosion. We argue that an important step in mitigating the negative effect that power-gaining activities have on organizational performance is to recognize when they are occurring.

By examining the contending forces affecting the different sources of power, our purpose is to establish a better understanding of the nature of intra-organizational power for a firm's IT department and some of its consequences. Astley and Sachdeva (1984) observed that in the pursuit of identifying sources of power through resource dependence, hierarchical authority is frequently overlooked. While not the focus of this paper, the importance of formal power should not be ignored. The potential bases of power derived from the theories utilized in this paper are by no means exhaustive or mutually exclusive, but simply reflect broadly defined areas where intra-organizational power may be gained. Because the theory into power developed throughout the last several decades remains relevant, we will be revisiting this stream of research and using it as a lens for interpreting some of the challenges faced by contemporary IT departments.

2. Literature Review

2.1 Power of IT Departments

While being recognized by researchers as an important aspect in organizational studies, power remains difficult to define. This is in part due to the numerous interpretations and meanings of power that researchers have developed (March 1966; Pettigrew, 1972; Pfeffer 1981; Wrong, 1968). Further complicating its understanding, many scholars point out the difficulties in defining/developing measurements to assess power (Frost, 1987; Jasperson et al., 2002; Silva, 2007; Pfeffer and Salancik, 1978; Pfeffer, 1981). In his seminal article, Emerson (1962: 32) provides a commonly cited conceptualization of power: "the power of actor A over actor B is the amount of resistance on the part of B which can potentially be overcome by A." In this definition, power is attributed to the social relation, not the individual actors. Emerson asserts that in any social relation there is mutual dependence; that is, each actor provides the other actor resources that are valued, which can range from fiscal resources to "ego-support". The source of power for an actor resides in the other actor's dependency on the resource that is being provided. When one actor has greater dependence on the resources being exchanged than the other actor, the actor with the least amount of dependence in the social relationship gains power over the more dependent actor. Importantly, Emerson (1962) observes that despite the value of a resource provided, if that resource is readily available elsewhere, high dependency on the supplying actor does not occur. For the purposes of our paper, we employ Emerson's conceptualization of power.

IT departments generally do not possess what Weber (1947) would refer to as "formal authority." However, as Mintzberg (1983) points out, in addition to the traditional view of legitimate, or hierarchical power, power can also be gained through political or social sources. Empirical studies have examined the perspectives of both top managers and other departments within organizations. Historically, they suggest the perceived power of IT departments has been low (Lucas, 1984; Lucas and Palley, 1987; Saunders and Scamell, 1986). However, more recent research in the area suggests that some IT departments now possess moderate amounts of power (Setterstrom and Pearson, 2009), suggesting

that changes in the contemporary businesses have occurred and that this stream of research should be revisited.

2.2 Strategic contingency

Building on Emerson's (1962) notion of power, strategic contingency theory (Hickson et al., 1971) has served as a framework for organizational scholars to operationalize intra-organizational power. It posits that power among organizational departments can be defined as a dependent variable connected to three contributing variables, or sources of power: (1) coping with uncertainty, (2) non-substitutability, and (3) centrality. Hickson et al. define uncertainty as an information deficit pertaining to possible outcomes of future events. This is congruent with Thompson's (1967) view of uncertainty, in which he theorized that organizational structure is, in part, a result of attempts to minimize or eliminate exposure to uncertainty through departmental buffering and division. In this way, some organizational units or departments manage varying amounts of uncertainty while others function in virtually certain environments. Successful coping of uncertainty reduces the impact that the uncertainty has on activities of other departments within the organization and consequently confers power through dependency of the organization and its subunits on the coping subunit.

Substitutability is the degree to which there are available alternatives for completing the activities of a particular subunit (Hickson et al., 1971). When a person or department can easily be replaced, either through the market of available employees or from other organizations, the dispensable nature of the subunit fails to provide a base for power. However, in instances when the functions performed by a subunit are critical to the organization and replacement would be difficult, the subunit gains power through its non-substitutability.

Thompson (1967) described organizations as collections of systems, both open and closed, of interdependent roles and activities. Based on this definition, Hickson et al. (1971) describe centrality as the degree to which a unit's activities are connected with other units within the organization. The concept of centrality can be divided into two distinct measures: the number of other activities within the organization to which the workflows of the unit connect and the "speed and severity with which the workflows of a subunit affect the final outputs of the organization." (Hickson et al., 1971: 222). If either the pervasiveness or immediacy of the workflows increases, the power of the subunit relative to other units increases.

Hickson et al. (1971) hypothesized that these three contingencies (coping with uncertainty, non-substitutability, and centrality) are interrelated to each other. Control over only a single contingency is inadequate for gaining organizational power. Therefore, as the number and degree of contingencies controlled by a department increases, the greater the power for the department within the organization. Empirical testing has produced mixed results supporting this idea (Cohen and Lachman, 1988; Hinings et al., 1974; Ibarra, 1993; Saunders and Scamell, 1982).

2.3 Resource dependency and political sources of power

In 1974, Salancik and Pfeffer observed that the power possessed by individual departments within a university was relative to the amount of resources possessed by the department, either through allocation of budget or grants. This led to their formulation of the resource dependency theory (1974). Resource dependence theory posits that organizations, and subsequently departments and subunits within organizations, require a continued supply of resources to carry out the processes and functions for which they were designed. The most commonly conceived resources include money, material inputs, expertise, customers, and personnel, but other resources can include social legitimacy or prestige. Resource dependency asserts that individuals or subunits gain organizational power if they are able to provide resources that are considered crucial to the organization and challenging to obtain (Pfeffer, 1981; Pfeffer and Salancik, 1978). Resource dependency theory has offered a politically oriented view of power (Pfeffer, 1989) and has served as a seminal work in the pursuit of scholarly understanding of power (Ibarra and Andrews, 1993; Orlikowski and Gash, 1994).

While providing considerable explanatory power, resource dependence and strategic contingency theories are incomplete in their assessment of the determinants of power. In his seminal discussion of power within organizations, Pfeffer (1981) posited that affecting decision processes and consensus among individuals were also considerable sources of organizational power. For example, while having the authority to make a decision confers power on the decision-maker, having an effect on decision

constraints, values, information available about alternatives, and objectives used in the decision-making process can also be interpreted as organizational power (Pfeffer, 1981). Consensus is a situation where individual members of a subunit share a common view. Consequently, individuals from the unit act and speak in a similar ways. This allows the subunit to argue more convincingly that results from a decision or action are more certain, thus compelling other subunits to rely more heavily on the focal subunit (Pfeffer, 1981). Enz (1988) offers a more compelling interpretation of how consensus can result in power; when values and perspectives are shared between a subunit and top management, or what Thompson (1967) would refer to as the “dominant coalition,” power will be conferred to the subunit. Enz (1988) argues that this is a result of value systems serving as a rationalization of conferring power to some subunits but not to other subunits.

3. Sources of power for the IT department

3.1 Coping with uncertainty

The development of IT-based solutions has diminished the uncertainty of some critical business aspects. This is accomplished in several ways. First, IT provides information quickly and accurately to departments throughout an organization, despite their geographic location. Additionally, IT does not simply facilitate the diffusion of information, but it is increasingly the key component in processing raw data to create information. Sophisticated data warehouses and data mining software are able to extract meaningful information from data that would not be possible by individuals. Such actionable information can be used to identify business opportunities and threats, aid in critical decision-making, and help formulate business strategies (March and Hevner, 2007). Furthermore, by providing real-time information, IT has enabled improvements in organizational processes and logistics control, enhancing efficiency and effectiveness (Carton and Adam, 2010; Zammuto et al., 2007). As Thompson points out (1967), the ability to help an organization cope with uncertainty results in the conferring of power. By controlling, transmitting, and manipulating high quality information, the IT department enables other subunits to more effectively absorb uncertainty (Pettigrew, 1972)

Proposition 1: *As an organization’s utilization of information technology to store, retrieve, create, and transmit information increases, the power possessed by the IT department will increase.*

New systems development results in a high degree of uncertainty. This is for several reasons. First, the process of technology implementation itself causes uncertainty. Research shows that the risk of implementation for new information systems is high, especially in instances where the technology is particularly sophisticated or complex (Barker and Frolick, 2003; Dalcher and Genus, 2003). Evidence of this point can be observed in ERP implementations, which, despite advances in IT project management approaches over the last several decades, still experience a high number of failures (Hawari and Heeks, 2010; Muscatello and Parente, 2006) Second, an organization needs an adjustment period, to routinize the processes involved with the new technology and to crystallize changes in organizational structure resulting from adoption, before uncertainty from a new technology implementation recedes. Employees often revert to old business procedures or find work-arounds to using an information system during the period following its implementation (O’Donovan et al., 2010), which can be attributed to ambiguity related to using a new system. Based on these two observations, we argue that the propensity of an IT department to undertake innovative systems development has a direct effect on organizational uncertainty, which, consequently, the best equipped subunit for coping with this uncertainty is the IT department.

Proposition 2: *As the frequency in which different information technologies are implemented in an organization increases, the power possessed by the IT department will increase.*

These first two propositions warrant a caveat to organizations relying on IT departments to supply technology resources. Businesses are entities where political activity takes place. In fact, one recent study found that political behavior is typical in organizations and managers generally perceive such tactics as both necessary and ethical (Buchman, 2008). This same study went on to report it was a commonly held belief that failing to carry out political activities has a negative impact on both a manager’s career and the ability of a department to secure needed resources. This is problematic, as research has shown that while individuals within an organization might be rational, aspirations and preferences possessed by employees are generally not homogeneous throughout an organization (Cyert and March, 1963; Yukl, 2002); individuals value their personal beliefs and the requirements of their departments more highly than the needs of the organization at large (King, 1983). This is in

agreement with Brass, Butterfield and Skaggs' (1998) work, where they argue that unethical behavior in organizations is more likely to occur across functional areas, as opposed to occurring within a given group. Hickson et al. (1971) discussed the possibility that individual departments will intuitively act to preserve or gain power within an organization, thus pursuing departmental desires over organization goals. Certainly this argument holds true for individuals and groups within the IT department as well. Given our first two propositions, we argue that behavior previously labeled as "technology for technology's sake" might in fact be rationalized efforts to increase personal or IT departmental power. Some evidence of this assertion can be seen in a longitudinal case study by Brown (1998), where group narratives were analyzed in an effort to understand attempts to legitimize the implementation of a hospital information support system. His research found that while the IT project team emphasized benefits to the organization in campaigning for the implementation of the system, their underlying motivations for system adoption were to increase the dependency on the IT department and promote career growth. Similarly, Hussain and Cornelius (2009) conducted a longitudinal case study in which IT management was found to implement organizational-wide IT projects to increase the credibility and importance of the IT department.

3.2 Non-Substitutability

Thompson (1967) would describe IT as an intensive technology, as it utilizes many complex and non-standardized inputs to provide a unique informational output. Consequently, specialists with extensive training and experience are required to handle the various functions of the IT department. Despite the growing prevalence of end-user development of computing solutions (Lieberman et al., 2006), a high degree of expertise remains necessary for successfully implementing large and complex information technologies, such as ERP systems (Maditinos, Chatzoudes, and Tsairidis, 2012). We argue that IT department gains power through the inability of subunits to substitute its expertise with resources from within the firm. As technology solutions become more complex and sophisticated, advanced IS skills become increasingly important to manage them. Given that advanced IS skills are difficult to obtain or imitate (Wade and Hulland, 2004), increasing the complexity of information technologies utilized by an organization results in higher levels of reliance on the IT department to manage them. This view of non-substitutability affirms Lucas and Palley's (1987) observation that an unsophisticated level of computing support for an organization consequently resulted in a low levels of power for the IT department.

Proposition 3: *As the complexity of IT solutions utilized by an organization increase, the power possessed by IT department will increase.*

The inundation of technology solutions in the market also has an effect on IT departmental power. As actors within organizations gain the ability to purchase applications from external commercial sources, they are able to rely less upon the IT department, consequently reducing the IT department's power (Markus and Bjorn-Andersen, 1987; Willcocks, Fitzgerald, and Lacity, 1996). We extend this observation to assert that the availability of open source software solutions reduces reliance on a firm's IT department in the same way. Though organizations might choose not to seek IT solutions externally, the availability of such solutions makes the IT department more substitutable, particularly in cases where the technology provided by the IT department is generic and unspecialized. Conversely, in cases where systems provided by an IT department are idiosyncratic, seeking technology solutions through external sources becomes less viable. The more unique the features and functionalities of a given system, the less suitable a commercially available becomes.

Proposition 4a: *As IT solutions provided to an organization by an IT department become available from sources external to the organization, the power possessed by the IT department will decrease.*

Proposition 4b: *As the information systems provided to an organization become more idiosyncratic and specialized, the power possessed by the IT department will increase.*

Interestingly, case study research has provided some evidence IT workers possess an intuitive understanding of propositions 4a and 4b. In one particular case study, an administrator for a system developed in-house was observed campaigning with system users to resist the implementation of a commercially-developed ERP component (Setterstrom and Pearson, 2010). The project manager for the ERP system believed that this action was carried out by the system administrator to conserve the value of the unique expertise needed to manage the legacy system. Ultimately, the system administrator's political activity resulted in the failed implementation of the new system.

The use of information technology continues to become increasingly commonplace in society. Decreases in technology costs, the increased popularity of the Internet, and the prolific use of computers in public schools are just a few examples of the driving forces behind the diffusion of IT. As a result of increased exposure, users are generally becoming more IT self-efficacious (Torkzadeh, Chang, and Demirhan, 2006). Studies suggest that users who have become generally self-efficacious, and consequently confident, with using IT have less anxiety when adapting to new and specialized technologies than users with lower self-efficacy (Agarwal, Sambamurthy, and Stair, 2000). Moreover, individuals with a high degree of self-efficacy learn new computer skills more quickly than individuals with a low degree of self-efficacy (Downey and Zeltmann, 2009). As computer users become more self-efficacious, they perceive less need for support from an IT department and are more inclined to independently seek out technologies that fulfill their business needs. Consequently, those individuals become less dependent on the IT department to supply technology solutions or support.

Proposition 5: *As computer users in an organization become more self-efficacious with IT, the power possessed by the IT department decreases.*

Interestingly, this proposition provides a possible explanation for some of the seemingly irrational adherence to bureaucratic policies and procedures that IT personnel exhibit as it pertains to the IT domain. One example of this is prohibiting users from making IT purchases without the approval of the IT department (Markus and Bjorn-Andersen, 1987). Another example would be the refusal of IT personnel to allow capable users to perform software upgrades or maintenance on their PCs, arguing that a qualified technician must carry out the work (Setterstrom and Pearson, 2010). Because many IT personnel understand, at least at an intuitive level, that allowing users to perform IT-related tasks contributes to the substitutability of their position, some individuals will respond with behavior to protect their territory.

Routinization is a concept discussed by Hickson et al. (1971) which states that as an organization creates recurrent task activities for carrying out business functions and the processes for executing those tasks are documented, absorption of the tacit knowledge necessary to carry out those business functions is captured from employees. An example of routinization in the context of IT can be found in the maintenance of workstation computers. These routines can be broken down into individual tasks and then automated so that any organizational member can properly perform the maintenance. In creating this routinization, the power of the IT staff whose duty it is to conduct routine workstation maintenance becomes negligible. Routinization is not limited to workstation maintenance, however; it is applicable to many of the functions that an IT department performs, such as software upgrades and server maintenance. Similarly, poor documentation of the current computing systems' configurations can further enhance the non-substitutability of IT personnel (Lucas, 1984). Especially in situations where the organization's computing solutions are complex and sophisticated, or the technology is relatively new or not widely in use, lack of documentation makes substitution of IT personnel, even through the employment market, increasingly difficult.

Proposition 6: *As tasks executed by the IT department become routinized and documented, the power possessed by the IT department will decrease.*

This proposition suggests another point of caution for organizations with regard to power maintaining behavior: resistance to documenting and routinizing job functions within the IT department (Crozier, 1964; see Reed, 1996). As documentation is created that prescriptively outlines the procedures necessary to administer IT systems, IT professionals become more substitutable and their power is eroded. Therefore, it should be expected that some IT professionals will resist organizational pressures to document the details of their job functions, keeping the tacit knowledge of their duties secret. In interviews with CIOs and project managers at universities, Setterstrom and Pearson (2010) documented occurrences in which systems administrators and network administrators were reluctant to document the configurations of the technologies they administer. In the opinion of their supervisors, this was done to increase personal job security.

Interestingly, resistance to documenting job duties would have a notable impact on knowledge management systems. Knowledge management systems are implemented into organizations to help leverage knowledge assets in an effort to create competitive advantage (Halawi, Aronson, and McCarthy, 2005). Despite the potential benefits from their effective use, members of organizations adopting knowledge management systems are often observed to be reluctant to contribute their knowledge (in 't Hout, Vrancken, and Schrijnen, 2010, see Kankanhalli, Tan, and Wei, 2005). While research has suggested factors such as organizational characteristics, social context, or characteristics of the knowledge itself can affect individuals' willingness to share information (van

Wijk, Jansen and Lyles, 2008), we assert that some employees, IT personnel in particular, would be motivated to actively resist the absorption of their knowledge into knowledge management systems by the desire to retain organizational power. Research has shown that individuals' willingness to share knowledge can be tied to rational self-interest (Constant, Keisler, and Sproull, 1994), and our proposition is congruent with arguments put forth by other researchers that have observed some individuals are unwilling to contribute to knowledge management systems in an attempt to avoid a loss of personal power (Davison, Ou, and Martinsons, 2012; Durcikova and Everard, 2004). This has important implications, as critical activities carried by the IT function, such as information systems development, could be negatively impacted by resistance to contribute to knowledge management systems, because they are highly reliant on knowledge sharing for positive outcomes (Kotlarsky and Oshri, 2005; Tesch et al., 2009).

3.3 Centrality in workflow

Information technology is increasingly used by organizations to facilitate their workflow (Stohr and Zhao, 2001). With an ERP system, for instance, an organization can track and manage all of its human resource, manufacturing, financial, supply chain, project management, and customer relationship management activities in a single system. Consequently, ERP systems can improve workflow and increase overall organization competitiveness (Hitt, Wu, and Zhou, 2002; Kohli and Devaraj, 2003). Moreover, technology enables firms and divisions that are widely dispersed geographically to more effectively communicate, allowing for more effective vertical control and horizontal coordination, while helping to compensate for communication problems that correlate with increased organizational size (Fulk and DeSanctis, 1995). For example, e-mail, has become commonplace as a means of communication both within and between organizations and has been argued to improve workflow (Zhao, Kumar, and Stohr, 2000). Likewise, collaboration technologies are increasingly adopted by organizations to facilitate the completion of projects by virtual teams (Weimann et al., 2010). As organizations adopt information technologies to facilitate workflow and enable communication, the IT department acquires a more central role in the organization. Correspondingly, the pervasiveness or immediacy of the IT department increases relative to other subunits within the organization, resulting in a greater degree of power.

***Proposition 7:** As the workflow of organizational processes becomes more dependent on information technology to administer, the power possessed by the IT department will increase.*

3.4 Provide resources

The capacity of an organization to execute the daily functions of an IT department internally, which are to design, implement, maintain, and develop an organization's computing services functions, is very difficult without services of the IT professionals. Even IT processes that have been routinized require a degree of technical knowledge beyond the capacity of many non-IT personnel. This precipitates into expert power (French and Raven, 1959; Reed, 1996). The amount of expertise needed to perform the IT functions within an organization increases as the variety and number of IT systems utilized cumulates. This concurs with Lucas and Palley's (1987) overall assessment of IT departmental power in which they asserted that power increased as the organization's portfolio of information systems increased.

An important distinction is drawn in this paper between IT variation and quantity. Variety refers to the level of diversification within an IT portfolio. As differences in the types of technologies employed by a firm increases, the number of specific areas in which there is a need for a high level of IT expertise also increases. Quantity simply refers to the sum of technologies used by the organization. As the amount of IT within a firm increases, the amount of time, and consequently the number of IT professionals, required to administer systems will also have to increase to meet the technology demands of the organization.

***Proposition 8a:** As the variety of IT systems utilized by an organization increases, the power possessed by the IT department will increase.*

***Proposition 8b:** As the number of IT systems utilized by an organization increases, the power possessed by the IT department will increase.*

The propositions developed thus far offer some explanation as to why some IT managerial practices are met with resistance by members of the IT department. IT governance decentralization, for instance, can be defined as the degree to which the decision-making authority concerning IT-related

activities is granted to divisional IT personnel and other organizational members outside the direct hierarchical authority of the IT department (Sambamurthy and Zmud, 1999). IT governance decentralization results in power erosion for the IT department in two ways: first, formal decision-making authority for IT-related activities is lost by the central IT department. Second, decentralizing the IT governance results in a reduction of dependence on the IT department for resources, such as expertise. As dependence on the IT department decreases, so too does the power resulting from dependence. These shifts in power provide a possible explanation for conflicts which occur when the degree of IT governance centralization/decentralization within organizations is altered (Peterson, 2003).

Similar to IT governance decentralization, outsourcing also decreases the power of the IT department and its members. Organizations outsource functions of their IT department to reduce costs, gain access to technological expertise, or so that a firm might focus on its core competencies (Bergkvist and Johansson, 2007). Despite potential benefits to the organization, attempts to outsource part of the IT function fail remain common (Devos, Van Landeghem, and Deschoolmeester, 2008). One possible reason for difficulties in outsourcing the IT function might be due to concerns about loss of power. As our propositions suggest, outsourcing would erode power for several reasons, including a reduction in the portfolio of solutions provided by the IT department and a simplification of the information systems managed by the IT department. Members of the IT department appear to intuitively understand these consequences, as research suggests IT personnel believe outsourcing reduces the need for technical personnel (Apte et al., 1997). Therefore, it can be expected that IT departments and personnel within them will be resistant to IS outsourcing (Khosrowpour et al., 2011), including outsourcing through cloud-computing (McAfee, 2011).

3.5 Affecting decision processes

As a result of its position in an organizational hierarchy, the IT department may not be perceived as possessing the ability to affect decision processes. However, power literature suggests that control of relevant information is a source of potential influence (McCall, 1979; Pettigrew, 1972; Pfeffer, 1981). Even though IT use is becoming more widespread in business, many organizational executives continue to find IT enigmatic in nature. Comprehending the vast variety of technology solutions available in the market tends to be a daunting task for decision-makers who lack technical knowledge. Consequently, IT managers are commonly relied upon by top executives to select which systems to purchase (McAfee, 2006; McKeen and Smith, 1997), including IT that supports strategic organizational initiatives (Preston, Chen, and Leidner, 2008). Even when IT governance structures are in place dictating who and how IT decisions are made, it has been observed that decisions such as upgrades and maintenance are often not subject to these established rules (Weill and Woodham, 2002). Furthermore, IT system developers are frequently granted the authority to select system features and choose system development methodologies for the implementation of new technologies (Markus and Bjorn-Andersen, 1987).

Proposition 9: *As the degree to which IT managers affect the decision-making processes increases, the power possessed by the IT department increases.*

Of importance to organizations, analysis of how affecting the decision-making process provides power helps bring to light additional behavior which might be exercised to gain power. Because non-IT professionals may not have developed opinions about which IT solutions will best meet organizational needs, it can be expected that some IT professionals will attempt to persuade individuals that a given portfolio of IT solutions is best for the organization, when in fact the suggested IT portfolio is what will best secure the power possessed by the IT department. This can be achieved by disclosing or withholding information, true or otherwise, about decisions constraints on IT investment decisions. An example of this can be seen in case study research conducted by Howcroft and Light (2006), where IT consultants were observed persuading decision makers' to alter the scope of the project being implemented, as it would result in better meeting the needs of the organization; this was argued to be a conceptual exercise of power by the consultants. In the same vein, IT professionals might attempt to influence organizational IT decisions by using acronyms and terminology that are difficult for non-experts to understand, thus mystifying services provided by the IT department. In a case study conducted by Sillince and Mouakket (1997), evidence was found that system analysts developing a system to support the functions of the housing department at a university used technical language that was difficult for end-users to understand for the purpose of gaining greater control over the development of the project.

3.6 Consensus

Research suggests that the psychological climate toward IT is one dimension of organizational context which, if positive, can lead to conferring of power (Ein-Dor and Segev, 1982). When consensus about values, goals, and organizational interests is achieved within a subunit, individuals within the unit will behave in a similar manner. In the instance of an IT department, this would mean that the IT professionals agree about what information technologies should be utilized and how these technologies help the organization fulfill its goals. As a result, conflicts within the department are minimized. This type of consensus creates a convincing image of the IT department that technology decisions are certain, resulting in other departments perceiving the IT department as having strong expert power.

Proposition 10: *When consensus about values and goals is reached among the members of the IT department, the power possessed by the IT department will increase*

Enz's (1988) research suggests a correlation exists between the degree to which a department shares critical organizational values with the firm's dominant coalition and the power conferred to that department. Enz cites Walsh et al. (1981) in arguing that by sharing similar values as the dominant coalition, a department is able to influence the power structure of an organization as it is developed. This is due to values congruity serving as a rationalizing device for top management in deciding to distribute power to some organizational departments but not to others. Because this power distribution is integrated into the organizational rules and structure, it becomes immobile and difficult to erode. Furthermore, Enz posits that shared values also allow for influence in establishing which strategic contingencies are accepted as critical to the organization. In terms of the IT department, this can mean that IT managers are systemically granted a larger degree of power and IT is positioned as a critical solution for coping with organizational uncertainties. Hussain and Cornelius (2009) found evidence of this in their case study where IT management 'demonstrated' the benefit that a given IT project would have to the organization, when, in fact, the ultimate goal of IT management was to increase personal and departmental power.

Proposition 11: *As the degree of value congruity between top management and the IT department increases, the power possessed by the IT department will increase.*

Frost (1987) asserted that coalitions can be an effective source of power. Historically, however, the IT director has not been a member of the dominant coalition (Kaarst-Brown, 2005; Peppard and Ward, 1999). A powerful figure head can help increase the power of the IT department by possessing the ability to influence the dominant coalition through strong political skills. Our assertion ties closely into the idea of prestige power, which is the "managers' reputation in the institutional environment and among stakeholders" (Finkelstein, 1992: 510). Prestige power for the CIO is greatest when he/she has established relationships with key individuals in industry and the firm (Medcof, 2008). Connections with individuals in industry help provide the CIO knowledge about technology and access to important resources, such as highly qualified technology professionals. Such ties improve the status of the CIO among members of the organization. At the same time, connections with the dominant coalition allow the CIO to fully understand the organization and its strategies (Chatterjee, Richardson, and Zmud 2001), and provide the opportunity to convey the importance of IT to the organization in reducing uncertainty. Research provides some evidence supporting our argument, as CIOs who reports directly to the CEO and members of the dominant coalition have greater influence on the joint development of business and IT strategies than CIOs with no such connections (Byrd, Lewis, and Bryan, 2006; Peppard, 2010).

Proposition 12: *If the dominant coalition perceives the IT department as having a strong leader, the power possessed by the IT department will increase.*

3.7 Interrelation of power sources

As mentioned in the literature review, Hickson et al. (1971) asserted that power conferring contingencies are interrelated to each other and that control over only a single contingency is inadequate for gaining organizational power. They concluded that as the number and degree of contingencies controlled by a department increases, the greater the power for the department within the organization. Having identified many of the possible sources of power for an IT department, we can begin to examine possible relationships among them. For example, propositions 2, 3 and 4 can potentially be interrelated. While the frequency in which new IT is implemented within an organization affects uncertainty, if the technologies implemented are not particularly complex or sophisticated, the

uncertainty created by the implementation process is to a much lesser degree than that created by more complex, sophisticated technologies. Moreover, despite potential uncertainty which is created by implementing complex technologies frequently, if the IT implemented is consistently similar in variety, the implementation process from project to project will also be similar. Hence, the organization gains experience through repetition and again uncertainty is reduced as compared to the implementation technologies that are varied in nature.

While many more potential combinations of relationships we have not discussed can have an effect on the IT department's overall power within the organization, our purpose is not to provide an exhaustive set of examples. Rather, we simply aim to illustrate how possession of one source of power, in and of itself, is insufficient for gaining intra-organizational power; an IT department must possess a combination of power sources which results in a high degree of dependence for substantial power to be gained.

Proposition 13: *As the number and degree of valuable resources provided by the IT department increases, the overall power possessed by the IT department will increase.*

4. Discussion

Using resource dependency theory for guidance, this paper developed a set of propositions describing factors that influence the power relationship between an IT department and other actors within an organization. Further, we suggest that these sources of power are interrelated; as the number and the degree to which these sources are controlled by a department increases, the greater the power possessed. With the increasing prominence of IT in organizations, initial intuition would suggest that the IT department's power would correlate with the general increase of spending on IT. However, this assumption, in and of itself, is short-sighted. While the growth of IT usage potentially acts to increase the IT department's power within an organization, there are also many counter acting forces, such as increased user self-efficacy, the increasing availability of commercial technology, and the information absorption by organizations.

Organizations experience many problems related to their IT functions. These issues commonly include technology for technology's sake, a lack of user preferences being integrated into IT systems development projects, and lack of IT alignment with overall firm strategy. With the understanding that organizations are places that political activity takes place and that individual employees' preferences and needs are not necessarily consistent the needs of the organization, we argue that many of the common IT issues organization grapple with might be, in part, the result of intentional behavior by the IT personnel to avoid power erosion.

Table 1: IT Departmental Power Propositions

<p><u>Coping with Uncertainty</u></p> <p>Proposition 1: <i>As an organization's utilization of information technology to store, retrieve, create, and transmit information increases, the power possessed by the IT department will increase.</i></p> <p>Proposition 2: <i>As the frequency in which new information technologies are implemented in an organization increases, the power possessed by the IT department will increase.</i></p>
<p><u>Non-Substitutability</u></p> <p>Proposition 3: <i>As the complexity of IT solutions utilized by an organization increase, the power possessed by IT department will increase.</i></p> <p>Proposition 4a: <i>As IT solutions provided to an organization by an IT department become commercially available, the power possessed by the IT department will decrease.</i></p> <p>Proposition 4b: <i>As the information systems provided to an organization become more idiosyncratic and specialized, the power possessed by the IT department will increase.</i></p> <p>Proposition 5: <i>As computer users in an organization become more self-efficacious with IT, the power possessed by the IT department decreases.</i></p> <p>Proposition 6: <i>As tasks executed by the IT department become routinized and documented, the power possessed by the IT department will decrease.</i></p>
<p><u>Centrality in Workflow</u></p> <p>Proposition 7: <i>As the workflow of organizational processes becomes more dependent on information technology to administer, the power possessed by the IT department will increase.</i></p>
<p><u>Provide Resources</u></p>

Proposition 8a: *As the variety of IT systems utilized by an organization increases, the power possessed by the IT department will increase.*

Proposition 8b: *As the number of IT systems utilized by an organization increases, the power possessed by the IT department will increase.*

Affecting Decision Processes

Proposition 9: *As the degree to which IT managers affect the decision-making processes regarding organizational IT increases, the power possessed by the IT department increases.*

Consensus

Proposition 10: *When consensus about values and goals is reached among the members of the IT department, the power possessed by the IT department will increase*

Proposition 11: *As the degree of value congruity believed by top management to exist between itself and the IT department increases, the power possessed by the IT department will increase.*

Proposition 12: *If the dominant coalition perceives the IT department as having a strong figure head, the power possessed by the IT department will increase.*

4.1 Interrelation of Power Sources

Proposition 13: *As the number and degree of valuable resources provided by the IT department increases, the overall power possessed by the IT department will increase.*

Practitioners have many possible solutions to help mitigate these dysfunctional behaviors, but an important step is to recognize when these power-gaining activities are occurring.

While our discussion of implications for our propositions focused on how the pursuit of power by IT personnel can be detrimental to organizational outcomes, caution should be exercised interpreting the arguments we have presented. As previously discussed, power and politics have long been observed as having an important role in the execution of business functions by the IT department, such as the implementation of new information systems into an organization (Avgerour and McGrath, 2007; Doolin, 2004; Jaspersen et al., 2002; Lapointe and Rivard, 2005; Levine and Rossmoore, 1995; Markus and Bjorn-Andersen, 1987; Sillince and Mouakket, 1997; Silva and Hirschheim, 2007). Consequently, while power may be a source of dysfunction for an organization's IT function, it is nonetheless crucial in garnering commitment and support for IT strategy and decisions, as well as facilitating change.

4.2 Future research

Investigation into the sources of power for an IT department has several implications for future research. Previous investigations into the power possessed by IT departments are dated. With the drastic increase of IT spending over the last couple of decades, the general perceptions for the importance of IT to businesses potentially has changed. In general, this stream of research needs reexamination. Additionally, the relationship between the propositions presented in this paper need to be empirically evaluated. This will help to support the validity of not only the propositions presented in this paper, but also the strategic contingency and resource dependency theories. Power gaining activities performed by IT personnel should also be investigated. This would provide useful information to researchers in better understanding the rationale utilized in some IT decisions. It might also be beneficial for managers in identifying behaviors which are counterproductive to organizations.

Empirical research into this area may be problematic in that, as discussed earlier, gauging power can be difficult. To address this issue, researchers have suggested that both objective and subjective measures be used in combination when measuring power (March, 1966; Pfeffer, 1981). Provan (1980) provides one methodology which might be helpful in overcoming these difficulties by suggesting measures of power that can be triangulated to an overall power evaluation; specifically, he suggests gathering perceptual data, information about formal position within an organization and membership in decision-making coalitions, information on dependence, and information on demonstrated ability to influence organizational outcomes, such as budget allocations. If information gathered from these multiple measures of power is consistent, it can be argued that an accurate overall measure of power for a department has been obtained. Even if a clear assessment of IT departmental power can be obtained, the meaning of such data may be difficult to determine due to the substantial differences in the types of IT utilized from organization to organization. Therefore, we

suggest either a multi-case study or a longitudinal study of a single organization. Using this approach, researchers can compare the overall assessment of IT departmental power across cases or time, then identify variations in potential sources of power that might be the cause of these power differences. This method of theory testing is referred to as “pattern matching” (Campbell, 1975). In our opinion, a longitudinal study of a single organization would provide the highest degree of internal validity, as this approach would best control confounding variables.

4.3 Conclusions

Power will remain an important consideration in the study of both organization theory and management information systems, due to its pervasive nature in the social systems that make up organizations. A more complete understanding of power will help the explanation of behaviors, both at the individual and departmental level, which otherwise appear to have no rational cause.

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