UNDERSTANDING THE IMPACT OF INFORMATION TECHNOLOGY ON STRATEGIC MANAGEMENT: A POWER ASYMMETRY VIEW

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ABSTRACT

The substantial impact of information technology (IT) on strategic management is well acknowledged by both practitioners and academics. However, there is a lack of in-depth understanding on such issues as (1) in what manners IT plays its fundamental role in strategic management and (2) how IT applications and decision makers interact with each other in this process. This paper investigates the power dimensions of IT in strategic management and the asymmetrical relationship of power-dependence between strategic management and IT applications. A set of theory-driven propositions is advanced, which can serve as a theoretical foundation for the development of hypotheses in future empirical studies. A multi-method research design of "mixing levels of analysis" is proposed to address the research questions.

Keywords: Information Technology, Strategic Management, Power, Rationality, Decision Making

INTRODUCTION

Information systems (IS) research has long focused on the advance of information technology (IT) and its far-reaching impact on organizations (e.g., [32], [38]). Since then, the influence of IT on strategic management has become one of the major research streams in the IS area. For instance, Henderson and Venkatraman [24] proposed a strategic alignment model suggesting IT be deployed and aligned appropriately and timely with the overall corporate business strategies. Most recently, Nickels and Janz [46] studied the role of organizational culture in IT-business alignment and found that "firms with more congruent cultures had higher levels of strategic alignment maturity" (p. 1). While research in this stream describes and prescribes the fundamental relationships between IT applications and strategic management, a lack of in-depth understanding exists on such issues as (1) in what manners IT plays its fundamental role in strategic management and (2) how IT applications and decision makers interact with each other in this process. This paper attempts to answer these research questions through a conceptual exploration of (1) the impact of power dimensions of IT on strategic management and (2) the asymmetrical relationship of power-dependence between strategic management and IT applications.

THEORETICAL FOUNDATIONS

The theoretical foundation of this study is premised upon strategic management literature, the power paradigm, and institutional theories. This section provides a review of relevant literature, which informs a research framework and a multi-method research design in the subsequent sections.

Strategic Management

Porter [50] characterizes corporate strategy in three dimensions: (1) strategic differentiation and uniqueness of managerial activities, (2) corporate-wide trade-off of decision making and organizational practice on what to do versus what not to do, and (3) creative fit in strategic marketing. Combining the appropriate and timely deployment of IT, these three dimensions shape an organization's competitive strategies and exert substantial impact on its overall performance [53].

Management is about decision making [43, 60] and strategic management is about the decision making concerning of the mainstream corporate practices and properties [16]. As such, strategic decision making is expected to exert

substantial impact on an organization as a whole and on individual functional business units as well [28] [57]. In addition, strategic decision making is very complex and highly unstructured, replete with novelty, ambiguity, uncertainty, and open-endedness [44]. At the turbulent age of business changes, the speed of strategic decision making has been viewed as one of the most important strategic themes in business [10].

Power

Power has been viewed as a capability in "evoking a change in another's behavior" [14, p. 205]. Therefore, power is defined as an interdependence function between two agents: when agent X performs an act and results in changes in agent Y, X exercises power over Y [9]. The essence of power is manifested in the asymmetrical relationship between power and dependence [17], where agent X has power and achieves the control over agent Y, the dependent [45, 59]. From the institutional perspective, established institutionalization endorses the legitimacy of power over individuals as dependence in an organizational setting [63].

Because of the asymmetry of a power-dependence designation, it is naturally expected that a dependence subject sacrifices his/her independence for benefits implicated in the asymmetrical relationship. Under an extreme asymmetrical circumstance of power-dependence, a dependence subject may ultimately be deprived of his/her real identity, personality, and spirit. As a result, the dependence subject no longer has the "humanism" of his/her own - a typical depersonalization, where the dependence subject is manipulated towards an inhuman condition of estrangement and powerlessness.

Institutional Decision Making

Organizations endorse and empower individual decision makers with managerial stability and practice through a series of institutionalized cognitive, normative, and regulative procedures [58]. The formulation and development of an institution can be viewed as a process of structuration of individuals in the institution [20, 21], during which the institution establishes managerial capacity and exercises control and constraint over individuals' decision making choices. Essentially, the institution defines a series of legal, moral, and cultural boundaries and imposes managerial restrictions and procedures over decision makers.

Human beings heavily rely upon three underlying supports to make decisions: methodologies, techniques, and tools. The human use of facilitating supports has been viewed as the first sense of rationality to "cope with the environment by adjusting reactions to environmental stimuli" [56, p. 122]. In an institutional environment, decision makers turn to the facilitating supports and employ instrumental structures to transcend human limitations in managerial activities [15, 60]. Thus, it is expected that the instrumental facilitators in use employ certain cognitive framing influence on the reference framework of decision makers [39], and further shape their rationality of decision making. In an organizational setting, the framing influence on rationality is essentially reflected in the process of institutionalization and socialization of decision makers.

A POWER ASYMMETRY VIEW OF IT IMPACT ON STRATEGIC MANAGEMENT

The Power of IT on Strategic Management at the Organizational Level

In the business world, IT has been widely deployed as a competitive tool to address organizational problems and opportunities [11, 30, 66]. McFarlan and McKenney [40] formally recognize the facilitating role of IT in strategic decision making. Ives and Learmonth [32] envision IT as a competitive weapon and argue that with the strategic integration of IT applications, organizations gain a competitive edge over competitors. Porter and Millar [52] view the strategic implementation of IT at three vital levels, all of which place prominent emphasis on the effect of business process innovation fueled by "the information revolution." Likewise, Porter [51] indicates that IT is becoming more essential than ever for companies to strategically distinguish themselves through the wide implementation of IT. Brown and Hagel [6] point out that IT is inherently strategic because of its potential in creating a variety of business advantages and options.

As to the impact of IT on strategic management, a wide variety of studies have evaluated the strategic significance of IT on organizational productivity and consumer benefits. For instance, Lichtenberg [37] suggests that, with the deployment of IT at the firm level, substantial excess returns can be expected. Brynjolfsson [7] indicates that IT spending in 1996 generates approximately $50 billion to $70 billion in net value. Hitt and Brynjolfsson [25] further point out that IT has created substantial value for consumers. Drawing upon microeconomics theory, Hitt and Brynjolfsson [25] propose a framework to measure the business value of IT by addressing three crucial questions: (1) Has IT increased productivity? (2) Has IT improved competitive advantage? (3) Has IT created value for consumers? The business value manifested in the framework can be identified in the three dimensions of corporate strategy aforementioned. Thus,

> *Proposition 1: At the organizational level, the power of IT on strategic management can be characterized and measured along three dimensions: improvement of industry profitability, formulation of competitive advantage, and achievement of a high level of performance and process innovation.*

The Power of IT on Strategic Management at the Individual Level

The power of IT on strategic decision making has been widely recognized. . Aligning IT applications with strategic management has gained prominence in business practices in reducing ambiguity and uncertainty of decision making [52]. Feeny and Wilcocks [18] contend that top managers increasingly depend on IT to facilitate decision-making. Emerging decision support systems and expert systems attract much attention of top managers. Most senior executive officers leverage a great amount of time and effort in IT platforms to empower daily operations, capture strategic and productive benefits, and digitize business models for strategic differentiation [6, 8].

IT is becoming an eminent aspect of organizational life [29], and the power of IT at the organizational level has triggered fundamental changes in organizational structures, processes, and technologies [15, 19, 67]. The wide embeddedness of IT in organizational practices stimulates emerging constitutions of business policies, procedures, and routines in various institutional settings [15, 47, 68]. In the formulation of strategic plans, Wilkes [65] suggests that the power of IT be recognized as a type of organizational resource. Overall, IT has been commonly viewed as the underpinning backbone of business life [8].

Institutional changes manipulated by the power of IT have been widely acknowledged regarding the shifting attitude of top managers [8]. As the power of IT is ultimately materialized in strategic choices, organizational actions, and psychological perceptions of decision makers [35], the implementation of IT influences the shaping of human beings' cognitions and behaviors. To a certain extent, the interactions and dynamics between IT and strategic management can be viewed as a power-dependence relationship, where IT wields fundamental power over decision makers. At the organizational level, IT resources can be deployed to formulate and implement corporate strategies or can be developed as a fancy tool to support strategic planning [27]. Either way, IT assumes the capability of evoking behavioral changes in decision makers. Any influence of IT on organizational intelligence and decision making is ultimately reflected in cognitive and behavioral changes of individual actors [59]. Thus,

> *Proposition 2: At the individual level, as top managers draw upon IT resources to enhance business value and to overcome decision making limitations, the relationship of power-dependence between IT and individual decision makers occurs.*

Asymmetry of Power-dependence between IT and Strategic Management

The asymmetry of power-dependence between IT and strategic management is clearly discernable. At the organizational level, as the impact of IT expands, companies view IT as a strategic resource ever more critical [12]. King [34] argues that the overall investment in IT has grown far beyond expectations. Further, Carr [8] shows that overspending in IT is rather common in companies. Companies are potentially misled so much by a perception of IT

mightiness that they become obsessed with IT investment. According to the IT Governance Institute [31], many organizations rank IT expense the second highest expenditure after staffing.

Undoubtedly, IT largely facilitates organizations to capture, manipulate, and analyze data for strategic decision making [13]. At the individual level, however, as the capability of IT is overestimated in information processing and organizational performance, a postmodern superstition of the power of IT in strategic decision making rises among managers [28]. The power asymmetry between IT and individual decision makers becomes essentially inevitable and pervasive. In the context of strategic management, the power of IT is proportional to the desirability of information by decision makers [34]. Carr [8] characterizes the phenomenon of top managers' overdependence on IT as "the veneration of IT." Thus,

> *Proposition 3: At both organizational and individual levels, the asymmetry of power-dependence between IT and strategic management will become denser and more eminent in the future.*

Specifically, the asymmetry of power-dependence is reflected in its cognitive framing influence on decision makers. Institutionalized power of IT on strategic management shapes individuals' social practices [47, 48]. The asymmetrical power relationship at the organizational level constitutes a cognitive behavioral template upon which individuals draw to perform decision activities [49].

Empirical studies have demonstrated the framing influence of IT on decision making [22, 55]. As cognitive psychology suggests that the core of problem solving is problem representation [39], Groth and Peters [23] identify a series of cognitive barriers among managers in creative problem solving due to the overuse of IT. Adams [3] indicates that IT has an adverse influence on problem cognition. Adams and Avison [2] and Zhang et al. [67] argue that different IT implementation techniques lead to different representations of the same business problems. They found that IT implementation techniques have considerable influence on problem identification as manifested in the resulting decision making.

Various models of strategic decision making emphasize the significance of rationality in the process (e.g., [42], [61]). In decision making activities, however, human rationality is constrained by a variety of environmental, psychological, and technological factors. Computerization and digitalization are commonly viewed as the most eminent trend of the contemporary IT [4]. The cognitive framing influence of IT may instill and permeate the rationality process of decision makers and essentially affect strategic management [54]. When appropriated in decision making in an institutional environment, IT as a comprehensive structure may determine the representation of rationality in aspects of data presentation, flow, and interpretation, as well as the overall coordinative modes among decision makers [41]. Thus,

> *Proposition 4: The power of IT over strategic management can be examined through identifying its cognitive framing influence on rationality of decision makers.*

> *Proposition 5: The cognitive framing influence of IT is positively related to the degree of the asymmetry of power-dependence.*

Depersonalization of IT in Strategic Management

In the process of strategic management, as data, information, and knowledge are commonly shared across various organizational levels, the implementation of IT has downsized decision making units homogeneously [29]. For instance, as IT takes the role that human information processors conventionally play, fewer and fewer human experts are involved in decision making [29]. The power of IT in this respect may induce a decrease in the number and variety of human actors. There is evidence in empirical studies that the total number of meetings among top management has substantially decreased due to the deployment of IT [5, 33]. As a result, the meetings that used to serve as a means of social gathering are eventually downplayed. The latest research of Vande Brake [64] affirms a similar switch "from oral face-to-face interaction, which is very rich mode that contains visual, auditory, and gesture

cues as well as words, to the leaner more limited graphic mode" (p. 269). The dramatic advance and ubiquitous application of IT in organizations are leading to more frequent and intensive use of computing resources than that of human brains [26, 28, 29]. Typically, IT is initiating a depersonalization trend in strategic management, where human decision makers are formalized as a standard symbol. When dealing with strategic management, decision makers may be interacting more with computing devices and less with their human colleagues [4].

Depersonalization in strategic management concerns the issue of control systems [1, 34]. In the extreme, the asymmetry of power-dependence between IT and strategic management can be dominant to a degree that decision makers are depersonalized into "mere cogs in the social machine in a highly programmed, more machine-like management world" [36, p. 43]. As a result, strategic management – a process conventionally full of personal judgments, aspirations, intuitions, emotions, and numerous possibilities and contingencies – may ultimately be reduced into a series of mechanized routines [62]. Depending on the degree of the institutionalized power of IT applications in organizations, the degree of depersonalization may vary. Thus,

> *Proposition 6: The overdependence of decision makers on IT may lead to depersonalization in strategic management.*

A Research Framework

Drawing from the previous analysis of power asymmetry of IT, a research framework detailing the power asymmetry view of IT impact on strategic management is proposed in Figure 1. This research framework suggests that IT exercises a fundamental impact on strategic management in such aspects as profitability improvement, competitive advantage, and organizational performance and innovation. In an institutionalized environment, when individuals use IT to enhance strategic decision making, the impact of IT at the organizational level is manifested in its cognitive framing influence at the individual level. As organizations over-depend on IT in their institutional life, the asymmetry of power-dependence between IT and decision makers occurs, which ultimately leads to depersonalization in strategic management. This research framework, as shown in Figure 1, encompasses all the major propositions advanced in the preceding sections.

SUGGESTED RESEARCH METHODOLOGY

This paper proposes a research framework describing the power asymmetry view of IT impact on strategic management. The theories and research propositions advanced herein concern studies at both individual and organizational levels. Following the research guidelines outlined in Markus and Robey [38], Orlikowski [47], and Silva [59], studies of this stream may adopt a research design of "mixing levels of analysis" to capture the impact of IT applications on strategic management. Combining qualitative and quantitative explorations, we propose a multi-method research design that can be administered to top managers in multiple companies. In this design, replicated case studies, follow-up interviews, and research surveys can be undertaken following a data triangular procedure. The case studies accompanied with document examination will allow researchers to conduct a thorough examination of the strategic management environment and related decision making activities. Follow-up interviews and research surveys can collect data on managerial practices, system requirements of top managers for strategic decision making, and their perceptions of IT impact in the process. The multi-method research is an appropriate means supporting triangulation in data analysis for research discovery and theory justification.

CONCLUSION

This paper outlined a research framework conceptually describing the asymmetry of power-dependence between IT applications and strategic management. A set of theory-driven propositions were advanced to identify research questions designed to explore the asymmetrical power of IT over strategic management. A multi-method research design was also proposed. It is our hope that this paper will serve as an impetus for future research, in which research hypotheses are developed from the identified propositions and are empirically tested using the suggested research methodology.
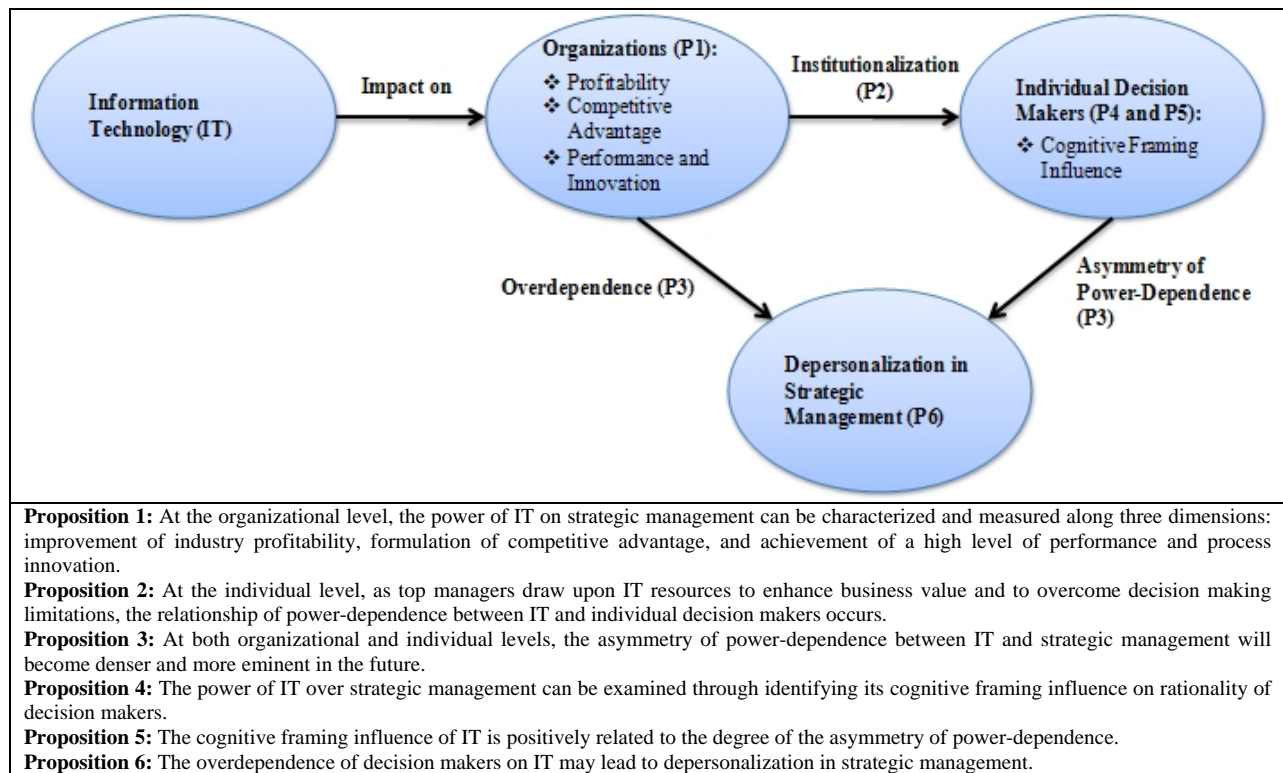
Proposition 1: At the organizational level, the power of IT on strategic management can be characterized and measured along three dimensions: improvement of industry profitability, formulation of competitive advantage, and achievement of a high level of performance and process innovation.

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Proposition 3: At both organizational and individual levels, the asymmetry of power-dependence between IT and strategic management will become denser and more eminent in the future.

Proposition 4: The power of IT over strategic management can be examined through identifying its cognitive framing influence on rationality of decision makers.

Proposition 5: The cognitive framing influence of IT is positively related to the degree of the asymmetry of power-dependence.

Proposition 6: The overdependence of decision makers on IT may lead to depersonalization in strategic management.

Figure 1. IT Impact on Strategic Management: A Power Asymmetry View

REFERENCES

1. Ackoff, R. L. (1967). Management misinformation systems. *Management Science, 14*(4), 147-156.
2. Adams, C., & Avison, D. (2003). Dangers inherent in the use of techniques: Identifying framing influences. *Information Technology & People, 16*(2), 203-234.
3. Adams, J. (1987). *Conceptual blockbusting: A guide to better ideas*. Harmondsworth, UK: Penguin.
4. Attewell, P., & Rule, J. (1984). Computing and organizations: What we know and what we don't know. *Communication of the ACM, 27*(12), 1184-1192.
5. Benbasat, I., & Konsynski, B. (1988). Introduction to special section on GDSS. *MIS Quarterly, 12*(4), 588-590.
6. Brown, J. S., & Hagel, J. (2003). Does IT matter? An HBR debate. *Harvard Business Review - Web Exclusive, 81*(6), 2-4.
7. Brynjolfsson, E. (1996). The contribution of information technology to consumer welfare. *Information Systems Research, 7*(3), 281-300.
8. Carr, N. (2003). IT doesn't matter. *Harvard Business Review, 81*(5), 41-49.
9. Cartwright, D. (1965). Influence, leadership, control. In March (Ed.), *Handbook of organizations* (pp. 1-47). Chicago, IL: Rand McNally.
10. Chen, M. J., & Hambrick, D. (1995). Speed, stealth, and selective attack: How small firms differ from large firms in competitive behavior. *Academy of Management Journal, 38*(2), 453-482.
11. Child, J. (1984). *Organization: A guide to problems and practice* (2nd ed.). London, UK: Harper and Row.
12. Coombs, R., Knights, D., & Willmott, H. (1992). Culture, control and competition: Towards a conceptual framework for the study of information technology in organizations. *Organization Studies, 13*(1), 51-72.
13. Culnan, M. J., & Markus, L. (1987). Information technologies: Electronic media and intraorganizational communication. In Jablin, Putnam, Roberts, & Porter (Eds.), *Handbook of organizational communication*. Beverly Hills, CA: Sage.

14. Dahl, R. (1957). The concept of power. *Behavioral Science, 2*(3), 201-215.
15. DeSanctis, G., & Poole, S. M. (1994). Capturing the complexity in advanced technology use: Adaptive structuration theory. *Organization Science, 5*(1), 121-147.
16. Eisenhardt, K. M., & Zbaracki, M. J. (1992). Strategic decision making. *Strategic Management Journal, 13*(S2), 17-37.
17. Emerson, R. (1962). Power-dependence relations. *American Sociological Review, 27*(1), 31-41.
18. Feeny, D., & Wilcocks, L. (1998). Core IS capabilities for exploiting information technology. *Sloan Management Review, 39*(3), 9-21.
19. Feldman, M. S., & March, J. G. (1981). Information in organizations as signal and symbol. *Administrative Science Quarterly, 26*(2), 171-186.
20. Giddens, A. (1979). *Central problems in social theory: Action, structure, and contradiction in social analysis*. Berkeley, CA: University of California Press.
21. Giddens, A. (1984). *The constitution of society*. Berkeley, CA: University of California Press.
22. Grant, R. A., & Higgins, C. A. (1996). Computerized performance monitors as multidimensional systems: Derivation and application. *ACM Transactions on Information Systems, 14*(2), 212-235.
23. Groth, J., & Peters, J. (1999). What blocks creativity? A managerial perspective. *Creativity and Innovation Management, 8*(3), 179-187.
24. Henderson, J. C., & Venkatraman, H. (1999). Strategic alignment: Leveraging information technology for transforming organizations. *IBM Systems Journal, 38*(2/3), 472-484.
25. Hitt, L. M., & Brynjolfsson, E. (1996). Productivity, business profitability, and consumer surplus: Three different measures of information technology value. *MIS Quarterly, 20*(2), 121-142.
26. Hu, T., & Kettinger, W. J. (2008). Why people continue to use online social networking services: Developing a comprehensive model. *Proceedings of the 2008 International Conference on Information Systems* (pp. 1-11). December 14-17, Paris, France.
27. Hu, T., Zhang, X., & Teng, W.-Y. (2011). Understanding information technology configuration in business diversification: A political view. *Information Technology Journal, 10*(3), 470-477.
28. Huber, G. P. (1984). The nature and design of post-industrial organizations. *Management Science, 30*(8), 928-951.
29. Huber, G. P. (1990). A theory of the effects of advanced information technologies on organizational design, intelligence and decision making. *Academy of Management Review, 15*(1), 47-71.
30. Huber, G. P., & McDaniel, R. R. (1986). Exploiting information technologies to design more effective organizations. In *Managers, Micros and mainframes*. New York, NY: Wiley.
31. IT Governance Institute (2004). The CEO's guide to IT value at risk. http://www.itgi.org.
32. Ives, B., & Learmonth, G. (1984). The information system as a completive weapon. *Communications of the ACM, 27*(12), 1193-1201.
33. Johansen, R. (1988). *Teleconferencing and beyond*. New York, NY: McGraw-Hill.
34. King, J. L. (1983). Centralized versus decentralized computing: Organizational considerations and management options. *ACM Computing Surveys, 15*(1), 319-349.
35. Kling, R., & Iacono, S. (1993). The institutional character of computerized information systems. *Information Technology & People, 5*(1), 7-28.
36. Leavitt, H. J., & Whisler, T. L. (1958). Management in the 1980's. *Harvard Business Review, 36*(6), 41-48.
37. Lichtenberg, F. (1995). The output contributions of computer equipment and personnel: A firm level analysis. *Economics of Innovation and New Technology, 3*(4), 201-217.
38. Markus, L., & Robey, D. (1988). Information technology and organizational change: Causal structure in theory and research. *Management Science, 34*(5), 583-598.
39. Mayer, R. (1996). *Thinking, problem solving, cognition*. New York, NY: Freeman Press.
40. McFarlan, F., & McKenney, J. (1983). *Corporate information system management*. Homewood, IL: Richard D. Irwin Inc.
41. Miller, D. (1987). Strategy making and structure: Analysis and implications of performance. *Academy of Management Journal, 30*(1), 7-32.
42. Miller, S. J., Hickson, D. J., & Wilson, D. C. (1999). Decision-making in organizations. In Clegg, Hardy, & Nord (Eds.), *Managing organizations: Current Issues* (pp. 26-42). Thousand Oaks, CA: Sage.

43. Mintzberg, H. (1973). *The nature of managerial work.* New York, NY: Harper and Row.
44. Mintzberg, H., Raisinghani, D., & Théorêt, A. (1976). The structure of "unstructured" decision processes. *Administrative Science Quarterly, 21*(2), 246-275.
45. Morgenthau, H. J. (1978). *Politics among nations: The struggle for power and peace* (5th ed.). New York, NY: Alfred A. Knopf.
46. Nickels, D. W., & Janz, B. D. (2010). Organizational culture: Another piece of the IT-business alignment puzzle. *Journal of Information Technology Management, 21*(3), 1-14.
47. Orlikowski, W. (1992). The duality of technology: Rethinking the concept of technology in organizations. *Organization Science, 3*(2), 398-427.
48. Orlikowski, W., & Robey, D. (1991). Information technology and the structuring of organizations. *Information Systems Research, 2*(2), 143-169.
49. Poole, M. S., & DeSanctis, G. (1990). Understanding the use of group decision support systems. In Fulk & Steinfild (Eds.), *Organizations and communication technology* (pp. 173-193). Beverly Hills, CA: Sage.
50. Porter, M. E. (1996). What is strategy. *Harvard Business Review, 74*(6), 61-78.
51. Porter, M. E. (2001). Strategy and the Internet. *Harvard Business Review, 79*(3), 62-78.
52. Porter, M. E., & Millar, V. E. (1985). How information gives you competitive advantage. *Harvard Business Review, 63*(4), 149-160.
53. Prajogo, D., & Sohal, A. (2006). The relationship between organization strategy, total quality management (TQM), and organization performance - the mediating role of TQM. *European Journal of Operational Research, 168*(1), 35-50.
54. Ranganathan, C., & Sethi, V. (2002). Rationality in strategic information technology decisions: The impact of shared domain knowledge and IT unit structure. *Decision Sciences, 33*(1), 59-86.
55. Roberts, J., & Scapens, R. (1985). Accounting systems and systems of accountability: Understanding accounting practices in their organizational context. *Accounting, Organizations, and Society, 10*(4), 443-456.
56. Rorty, R. (1998). *Truth and progress*. Cambridge, MA: Cambridge University Press.
57. Sabberwal, R., & King, W. (1995). An empirical taxonomy of the management processes concerning strategic applications of information systems. *Journal of Management Information Systems, 2*(4), 240-259.
58. Scott, W. R. (2001). *Institutions and organizations* (2nd ed.). Thousand Oaks, CA: Sage.
59. Silva, L. (2007). Epistemological and theoretical challenges for studying power and politics in information systems. *Information Systems Journal, 17*(2), 165-183.
60. Simon, H. A. (1945). *Administrative behavior* (2nd Ed.). New York, NY: Free Press.
61. Simon, H. A. (1953). Notes on the observation and measurement of political power. *Journal of Politics, 15*(4), 500-516.
62. Simon, H. A. (1987). Making management decisions: The role of intuition and emotion. *Academy of Management Executive, 1*(1), 57-64.
63. Stinchcombe, A. L. (1968). *Constructing social theories*. Chicago, IL: University of Chicago Press.
64. Vande Brake, K. (2009). *Through the back door* (pp. 261-294). Macon, GA: Mercer University Press.
65. Wilkes, R. (1991). Draining the swamp: Defining strategic use of the information system resource. *Information and Management, 20*(1), 49-58.
66. Zhang, X., Hu, T., Dai, H., & Li, X. (2010a). Software development methodologies, trends and implications: A testing centric view. *Information Technology Journal, 9*(8), 1747-1753.
67. Zhang, X., Nickels, D. W., & Stafford, T. F. (2010b). Understanding the organizational impact of radio frequency identification technology: A holistic view. *Pacific Asia Journal of the Association for Information Systems, 2*(2), 1-17.
68. Zmud, R. W., & Apple, L. E. (1988). Measuring the infusion of a multi-business unit innovation. Unpublished working paper, Florida State University.