

# Organizational Survival and Alignment: Insights into Conflicting Perspectives on the Role of the IT Professional

Indira R. Guzman  
School of Information Studies  
Syracuse University  
Syracuse, NY, 13205 U.S.A.  
Phone: 1 (315) 443-4508  
iguzmand@syr.edu

Michelle L. Kaarst-Brown  
School of Information Studies  
Syracuse University  
Syracuse, NY, 13205 U.S.A.  
Phone: 1 (315) 443-1892  
mlbrow03@syr.edu

## ABSTRACT

Different organizational theories clearly define critical organizational activities necessary for organizational survival. Recent attention to “hybrid” research that links organizational theory with MIS research has been proposed to lend new insights into strategic alignment of IT (Orlikowski & Barley, 2000; Zmud, 2002). One gap still to be addressed relates to role expectations and skills required by the IT professional according to different organizational theories. Much of the literature on strategic alignment of IT emphasizes the value provided by the IT artifact or focuses on communication between IT and business management, rather than on the role of IT professionals inferred by critical survival activities outlined in different organizational theories.

Motivated by organizational concerns related to the clarity and articulation of the role of Information Technology professionals in contributing to strategic alignment, our study reviews literature about the role of the information technology professional and the differences according to three organizational theories: Agency theory, Transaction Cost theory and Institutional theory. We then use bibliometrics and content analysis to analyze published research for implicit or explicit skill expectations and contributions to organizational survival and strategic alignment of IT. The goal of our study is to contribute to a better understanding of role conflict, skill expectations, and value of information technology professionals in organizations, and also contribute to a consolidation between information systems research and organizational studies.

## Categories and Subject Descriptors

K.7.3 The Computing Profession: Organizations

## General Terms

Management, Human Factors, Theory.

Permission to make digital or hard copies of all or part of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. To copy otherwise, or republish, to post on servers or to redistribute to lists, requires prior specific permission and/or a fee.  
SIGMIS'04, April 22–24, 2004, Tucson, Arizona, USA.  
Copyright 2004 ACM 1-58113-847-4/04/0004...\$5.00.

## Keywords

Role of IT professionals, IT Professional, Organizational Theories, Strategic Alignment.

## 1. INTRODUCTION

Organizational theory seeks to understand the behavior of organizations at the macro level. Different organizational theories propose different critical activities for survival, and similarly, propose different roles for managers and for technology in achieving this survival (Oliver, 1991; Scott, 2002). Information technology's (IT) critical contribution to organizational success via strategic alignment is now well established. However, the conflicting assumptions implicit in different organizational theories that would impact the role of the IT professional in achieving this alignment have not been explicitly addressed in prior research. IT research on strategic alignment, or research that integrates organizational theories, tends to treat the IT professional as simply a producer of the systems that support this alignment rather than highlighting the potential conflict in expectations of their role.

Drawing upon Agency, Transaction Cost, and Institutional theories, we seek to illustrate how different organizational theories clearly present conflicting expectations of the role of the IT professional and therefore impacts required skills and role congruence. Using a combination of bibliometrics and meta-analysis of published research, we further illustrate how this conflict is demonstrated in past studies. Implications for management practice and future research are proposed.

## 2. SUMMARY OF LITERATURE

“The value of integrating OS with IT in hybrid studies goes beyond informing one field by the other to a possibility of new syntheses that fuse accounts of human agency, material constraints/affordances, and institutional dynamics into richer explanations of techno-social change”. (Orlikowski & Barley, 2001).

From the perspective of organizational theory, organizations focus on different critical activities in order to survive and achieve success (Oliver, 1991; Scott, 2002). Similarly, the role of the manager and of technology is defined differently under each of many theoretical views (Morgan, 1986; Oliver, 1988, 1991).

Much of the literature on strategic alignment of IT emphasizes the value provided by the IT artifact (Orlikowski & Iacono, 2001) or focuses on communication between IT and business management (Reich & Benbasat, 2000; Watson, 1990), rather than on the role requirements of IT professionals inferred by critical survival activities outlined in different organizational theories.

Our focus on organizational theories as a lens is supported by IT research such as that by Niederman and Trower (1993), which found that different industries shape the role of IT professional. Kaarst-Brown & Robey (1999) found that the IT function may be perceived differently based on underlying cultural assumptions and as such, resulted in different management approaches. Firm size and complexity or strategic outsourcing may similarly influence IT role complexity (Niederman & Trower, 1993; Brown & Magill, 1994).

This raises significant questions about potentially conflicting roles across different industry environments, expectations of diverse skills, and different evaluation criteria of the value of the IT professional. Further, role conflict and role ambiguity have been found to be major sources of stress for IT professionals (Moore, 2000). IT professionals are key participants in attempts to achieve strategic alignment and integration between IT and organizational objectives (Chan, Huff, Barclay & Copeland, 1997; Brown and Magill, 1994; Reich and Benbasat, 2000). In addition, IT professionals have direct responsibility for the quality of the information available to decision-makers (Prior, Rogerson and Fairweather, 2002). As organizations become more strategically reliant upon IT systems, IT professionals' role performance has an increasingly significant impact on the future of their company. To address these increasing role challenges, research has called for new understanding of the roles and skill requirements of the IT professional in order to guide IT leaders (Prior et al, 2002; Kakabadse & Korac-Kakabadse, 2000).

The next section briefly reviews the three theories, followed by our research design and status of the project.

### **3. ORGANIZATIONAL THEORIES AND ROLES OF THE IT PROFESSIONAL**

#### **3.1 An Agency Theory View**

Research using agency theory to describe the impact of IT on organizations focuses on internal management costs. According to this theory, information technology can reduce internal management costs and affect outcomes. The firm is viewed as a "nexus of contracts" among self-interested individuals rather than as a unified, profit-maximizing entity (Jensen and Meckling, 1992). Agents need constant supervision and management because otherwise they will tend to pursue their own interests rather than those of the owners. As firms grow in size and scope, agency costs or coordination costs rise, because owners must expend more and more effort supervising and managing employees. In agency theory, information is regarded as a commodity: it has a cost, and it can be purchased (Eisenhardt, 1989). For IT researchers like Ghurbaxani and Whang (1991),

"Modern IT can reduce the costs of communicating information by improving the quality and speed of information processing and management decision making, leading to more centralized management. At

the same time, IT can also provide management with the ability to reduce agency costs through improved monitoring capabilities and performance evaluation schemes, inducing decentralization of decision making."

By reducing the costs of acquiring and analyzing information, IT permits organizations to reduce agency costs because it becomes easier for managers to oversee a greater number of employees. Information technology professionals may work at different levels in organizations, serving as both agents and as instruments through which controlling and monitoring systems are created, implemented and managed. Certain roles, such as network administrator, computer security specialist, database manager, or systems developer may play a key role in configuring and setting up various controls and monitoring systems.

#### **3.2 A Transaction Cost Theory View**

According to transaction cost theory, firms and individuals seek to economize on transaction costs, much as they do on production costs. IT is seen as reducing the costs of participating in markets (Williamson, 1975). Technology facilitates the role of the manager to oversee exchange and ensure that transactions are efficient. IT professionals are in charge of providing information systems that make transactions more efficient, such as enterprise resource management (ERP) systems that integrate information flows or that will generate reliable financial reports in real time. IT personnel may also influence the reduction of transaction costs through attention to selection of appropriate systems, emerging technologies, or through process redesign. Organizations that engage in strategic outsourcing often turn to internal IT professionals to serve as intermediaries with outside firms, to monitor costs and help reduce system risk (Niederman & Trower, 1993).

The critical skills and roles of the IT profession that will be deemed most valuable are different under a transaction cost view of critical organizational activities.

#### **3.3 An Institutional Theory View**

Institutionalization is the process by which societal expectations of appropriate form or behavior come to take on rule-like status in social thought and action (DiMaggio & Powell, 1983). Institutional theories attempt to explain changes in occupational and organizational structure (as well as other organizational behaviors), as organizations respond to both external pressures and internal desire for legitimacy (Giddens, 1979; Oliver, 1991). Robey (1981) and Orlikowski and Robey (1991) argued that structural change may or may not accompany systems implementation as these changes are co-produced by the internal and external forces, including environmental pressures produced by government, stockholders, management fashion, institutional ideologies, and general cultural expectations. From the perspective of institutional theory, the role of information technology professionals is to use IT to enable structural adaptation and to maintain legitimacy in the environment.

An example of institutional pressures from the environment that affects the role of information technology professionals is the Clinger-Cohen Act (The Information Technology Management Reform Act, 1996). This act requires that federal CIOs report to,

and work directly, with agency directors. This is a good example of how external forces cause organizations to conform to institutional requirements in order to maintain legitimacy. The Sarbanes-Oxley Act of 2002 impacts boards of directors and audit committees and is also predicted to impact IT oversight, IT governance, and increase institutional pressure on the IT professional for skill and performance legitimacy in the eyes of peer organizations.

The assumptions underpinning each of these theories reflect the implied role of information technology and the IT professionals who support the IT function. As can be seen from sample Table 1 below, there are very distinct and potentially contradictory expectations of the roles of the IT function.

**Table 1. Application of Organizational Theory to Interpret Implied Roles of IT Function**

	<b>Institutional Theory</b>	<b>Agency Theory</b>	<b>Transaction Cost Theory</b>
<b>Summary of Critical Activities</b>	<ul style="list-style-type: none"> <li>• Isomorphism may be coercive, mimetic, or normative</li> <li>• Appearance of conformity to institutional process</li> <li>• Maintaining the faith</li> </ul>	<ul style="list-style-type: none"> <li>• Determining whether a behavior-oriented or outcome-oriented contract is better (i.e. more efficient)</li> <li>• Seeking mechanisms that will minimize self-serving behavior on part of agents</li> <li>• Monitoring agents; aligning principal-agents goals</li> </ul>	<ul style="list-style-type: none"> <li>• Efficiency-driven exchange</li> <li>• Controlling other actors' opportunistic propensities</li> </ul>
<b>Role of Technology</b>	<ul style="list-style-type: none"> <li>• Keep institutional standards</li> <li>• Follow institutional forces, tendencies</li> </ul>	<ul style="list-style-type: none"> <li>• Facilitate controlling role of principal over agents</li> </ul>	<ul style="list-style-type: none"> <li>• To reduce time &amp; costs, allow transactions</li> <li>• Enable efficiency of transactions</li> </ul>
<b>Role of Information Technology</b>	<ul style="list-style-type: none"> <li>• Allow sharing of information about legitimacy and institution standards</li> </ul>	<ul style="list-style-type: none"> <li>• Control agent opportunism</li> <li>• Outcome measurement</li> </ul>	<ul style="list-style-type: none"> <li>• Reduce transaction costs</li> </ul>
<b>Role of Information</b>	<ul style="list-style-type: none"> <li>• Update information about institutional decisions</li> </ul>	<ul style="list-style-type: none"> <li>• Purchasable commodity</li> </ul>	<ul style="list-style-type: none"> <li>• Provide accurate information about transactions</li> </ul>
<b>Role of IT Professional</b>	<ul style="list-style-type: none"> <li>• Implement IT that supports Institutionalism conformity &amp; legitimacy</li> <li>• Maintain common institutional standards, formats.</li> <li>• Integrate IS applications</li> </ul>	<ul style="list-style-type: none"> <li>• Configure &amp; setup IT that will allow better controlling and monitoring of agents by principal.</li> <li>• Integrate IS applications that will facilitate supervision.</li> </ul>	<ul style="list-style-type: none"> <li>• Select appropriate IT that will contribute to reduction of transaction costs.</li> <li>• Mediate negotiations under outsourcing conditions.</li> <li>• Maintain &amp; administer IS applications under outsourcing conditions.</li> </ul>

#### 4. RESEARCH DESIGN AND MODEL

Our conceptual model appears in Figure 1 below. The evidence that will support this is based on a review of a set of published information systems literature in five major information systems outlets (Larsen & Neely, 2000): Communications of the ACM, Decision Sciences, Information Systems Research, Management Science, and MIS Quarterly. For each article, we examined whether, and how, IS researchers conceptualized and treated the role of information technology professionals (Orlikowski and Iacono, 2001). Research articles were categorized along two

dimensions: the role of information technology professionals, and the three organizational theories. The "role-categories" identified were analyzed and explored to the extent to which a dominant set of theoretical assumptions were present. Bibliometric methods (White and McCain, 1989) assisted the identification of the most representative roles under each organizational theory.

To date, we have analyzed 32 empirical research studies about information technology professionals.

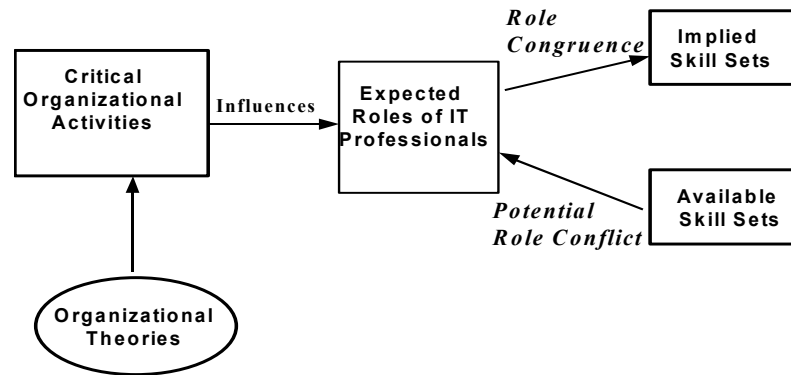


Figure 1: Initial Research Model

## 5. STATUS OF RESEARCH AND IMPLICATIONS

We are currently completing our analysis of articles and writing up the results. Preliminary findings suggest that there are, in fact, dominant implicit assumptions in prior research that match with one or more of the three organizational theories presented in this paper. These theoretical underpinnings translate into specific expectations of the role to be played by both technology and the IT professional in order to support different critical activities for organizational survival and success. The surfacing of these implicit assumptions about organizational survival and success are important to understand user satisfaction with the IT professional during systems development or alignment initiatives, role stress, as well as providing guidance to IT leaders.

For researchers, this highlights the importance of confronting one's underlying assumptions about activities critical to organizational survival as it relates to information professionals.

The integration of organizational theories would seem to offer promise of deeper understanding of the roles of both IT and the IT professional at the research and practical levels.

## 6. ACKNOWLEDGMENTS

Our sincere thanks to the participants in the IST Doctoral Seminar on Organizational Issues in Information Studies, and to the anonymous reviewers who have shared their insights and suggestions.

## 7. REFERENCES

- [1] Brown C.V. and Magill S.L. "Alignment of the IS Functions with the Enterprise: Toward a Model of Antecedents." *MIS Quarterly* (18: 4), December 1994, pp. 371-403.
- [2] Chan, Y. E., Huff, S. L., Barclay, D. W., and Copeland, D. G. "Business Strategy Orientation, Information Systems Orientation and Strategic Alignment," *Information Systems Research* (8:2), 1997, pp. 125-150.
- [3] DiMaggio, P.J. and Powell W.W. "The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields," *American Sociological Review* 48, 1983, pp. 47-160.
- [4] Eisenhardt, K.M. "Building Theories From Case Study Research." *Academy of Management Review* (14:4), 1989, pp. 532-550.
- [5] Ghurbaxani, V., and Whang, S. "The Impact of Information Systems on Organizations and Markets," *Communications of the ACM*, January 1991.
- [6] Giddens, A. *Central Problems in Social Theory: Action, Structure and Contradiction in Social Analysis*, University of California Press, Berkeley, CA, 1979.
- [7] Jensen, M.C. & Meckling W.H. "Specific and General Knowledge and Organizational Science" In *Contract Economics*, edited by L. Wetin and J. Wijkander. Oxford: Basil Blackwell, 1992.
- [8] Kaarst-Brown, M.L. and Robey, D. "More on Myth, Magic and Metaphor: Cultural Insights into the Management of Information Technology in Organizations", *Information Technology and People*, (12:2), 1999, pp. 192-218.
- [9] Kakabadse, A. and Korac-Kakabadse, N. "Leading the pack: future role of IS/IT professionals." *The Journal of Management Development* (19:2), 2000, pp. 97-155.
- [10] Larson, K. & Neely, P. "Profiles of MIS Doctoral Candidates: Ideas and Reality", *The DATABASE for Advances in Information Systems* 31(3), 2000.
- [11] Moore, J. "One Road To Turnover: An Examination Of Work Exhaustion In Technology Professionals", *MIS Quarterly* (24:1), March 2000, pp. 141-169.
- [12] Morgan, G. *Images of Organisation*. California: Sage, 1986.
- [13] Oliver, C.M. "A framework for comparing organizational theories" Unpublished teaching materials, 1988.
- [14] Oliver, C.M. "Strategic responses to institutional processes", *Academy of Management Review*, 16, 1991, pp. 145-179.

- [15] Niederman, F. and Trower, J. "Industry Influence on IS Personnel and Roles". ACM Special Interest Group on Computer Personnel Research. ACM Press, New York, 1993, pp. 226 - 233.
- [16] Orlikowski, W.J. & Barley, S.R. "Technology and Institutions: What Can Research on Information Technology and Research on Organizations Learn from Each Other?" MIS Quarterly, 25, 2001, pp. 145-165.
- [17] Orlikowski, W.J. & Iacono, C.S. "Research Commentary: Desperately Seeking the 'IT' in IT Research: A Call to Theorizing the IT Artefact", Information Systems Research, (12:2), 2001, pp. 121-145.
- [18] Orlikowski, W.J. and Robey, D. "Information Technology and the Structuring of Organizations," Information Systems Research (2:2), June 1991
- [19] Prior, M., Rogerson, S. and Fairweather, B. "The Ethical Attitudes of Information Systems Professionals: Outcomes of an initial survey" Telematics and Informatics 19, 2002, pp. 21-36.
- [20] Reich, B.H. and Benbasat, I. "Factors that Influence the Social Dimension of Alignment between Business and Information Technology Objectives". MIS Quarterly (24:1), 2000, pp. 81-111.
- [21] Robey, D. "Computer Information Systems and Organization Structure." Communications of the ACM (24:10), October 1981.
- [22] Scott, R. Organizations: Rational, Natural and Open Systems, Englewood Cliffs, N.J.: Prentice Hall, 5th Edition, 2002.
- [23] Watson, R. T. "Influences on the IS manager's perceptions of key issues: information scanning and the relationship with the CEO", MIS Quarterly, 14(2), June 1990, pp. 217-231.
- [24] White, H.D., & McCain, K.W. "Bibliometrics". Annual Review of Information Science and Technology, 24, 1989, pp. 119-186.
- [25] Williamson, O.E. Markets and hierarchies, analysis and antitrust implications: A study in the economics of internal organization. New York: Free Press, 1975.
- [26] Zmud, R. "Special Issue on Redefining the Organizational Roles of Information Technology in the Information Age" MIS Quarterly. September, (26:3), 2002, p. 177.