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AN INSTITUTIONAL ANALYSIS OF PLURALISTIC RESPONSES TO ENTERPRISE SYSTEM IMPLEMENTATION

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Abstract

Organizations are awash in a wide range of practices that are guided by a variety of goals, values, assumptions, and identities. New enterprise systems are consistent with many of these practices, yet conflict with others. Using institutional theory, we show how the congruence with the institutional logics associated with an ERP implementation affects the local responses to the system. This institutional logic is often accompanied by strong institutional pressures whereby actors can respond either with strategies of acquiescence such as compliance or mutual adaptation, or with loose coupling strategies of compromise and avoidance. We conducted a qualitative meta-analysis of eighteen published case studies of ERP implementations. The results support our theoretical conjectures. The findings suggest that situations involving loose coupling call to question the validity of enterprise system data. We also highlight the limited role of resistance strategies as viable long-term responses.

Keywords: enterprise systems, ERP, institutional logic, institutional theory, implementation, resistance, adaptation, loose coupling
Introduction

Information technologies have been characterized as triggers for organizational structuring (Barley 1986), as “carriers” of institutional structure (Scott 1995), and as a form of structure in themselves (Orlikowski 1992; DeSanctis & Poole 1994; Gosain 2004). Introduction of a large information system into an organization can become disruptive, when “structures” carried along with the system conflict with the existing structures in the organization. Research into technology adaptation (Leonard-Barton 1988; Orlikowski 1996; Majchrzak et al 2000) does not, however, address situations where the structures associated with IT are incongruent with the goals, values, assumptions, and identities incumbent in the organizational setting. This is particularly problematic for enterprise system implementations such as enterprise resource planning (ERP), where a large scale systemic infrastructure is expected to cut across a broad variety of idiosyncratic organizational routines (Ciborra 2000). An organization is not made up of a single homogenous set of routines and practices. To the contrary, it is a nexus of diverse, and often conflicting, routines and local practices. Although many researchers allude to similar conclusions, this issue has not been explicitly addressed in the ERP systems literature: What are the responses of specific groups and individuals to an enterprise system, the structure of which is inconsistent with localized routines and structures? Furthermore, why does resistance rise in situations where systems are consistent with existing practices?

To address these questions, we draw upon institutional theory (Gosain 2004; Soh & Sia 2004). In general institutional theory offers a theoretical lens for analyzing goals, values, and prescriptions that underlie and legitimate behaviors of groups and individuals (Powell & DiMaggio 1991). We conceive of an organization as a nexus of nested institutions, some of which are compatible, while others conflict (Meyer & Rowan 1977; Powell & DiMaggio 1991; Bacharach et al 1996; Crouch & Farrell 2004; Whitford 2005). If in conflict, these institutions become loosely coupled (Meyer & Rowan 1977). Each institution in turn can be characterized in terms of the “institutional logic” of its structures (Friedland & Alford 1991; DiMaggio 1997): the symbolically-grounded organizing principles that underpin individual action – both the means and the ends of those actions - in a manner consistent with a given institution (Friedland & Alford 1991).

When a given ERP system embodies a specific institutional logic, and organizations are made up of a diverse set of individuals and groups with incongruent and loosely coupled institutional logics, one can expect an enterprise system to be congruent with some institutional logics, and be incongruent with a host of others. We formulate a theoretical framework to distinguish and analyze varying levels of congruent and incongruent logics and associated responses to ERP implementation by drawing upon the institutional theory of Oliver (1991) and Goodstein (1994). We propose that given a high degree of force behind the introduction of a new enterprise system, actors will engage in a variety of typified responses – from compliance to loose coupling - in accordance with the extent of congruence between the institutional logics that guide their everyday routine and those of the proposed enterprise system. This suggests that an organization’s response to an ERP implementation will be more pluralistic and complex than singular and homogeneous responses that are often characterized in the literature. Therefore, it is not a matter of success or failure, but rather how diverse responses in an organization emerge and how managers can anticipate and manage such diverse responses. Our goal in this paper is to provide a theoretically driven framework and validate it based on a meta-analysis of published case studies of ERP implementations.

Next we will introduce the notion of an institutional logic and formulate an institutional framework that organizes local responses to a new ERP system based on its congruence with the logics of existing routines, and the force by which it is introduced. We then apply this framework to 16 published case studies to analyze to what extent the responses to system implementations could be explained by the framework. The paper concludes with a discussion of implications for research and practice.

An Institutional Perspective

While the bulk of institutional studies focus on macro-level phenomena governing industries, sectors, and fields, with organizations viewed as the smallest level of actor (e.g., DiMaggio & Powell 1983), Powell and DiMaggio (1991) caution institutional researchers that any macro-level phenomena can find their roots in micro-level human action. Drawing upon Bourdieu’s (1977) notion of habitus, Powell and DiMaggio describe internalized rules that are chronically reproduced by individuals through everyday action, yet generative in nature, as the foundation for conceptualizing institutions.
We view an institution simply as “an organized, established, procedure” (Jepperson 1991, p.143). The term “organized” implies structure, and “established” implies history and persistence. This procedure, when reproduced consistently, generates specific patterns that guide the actions of individuals through their rule-like qualities, and which individuals draw upon to establish and maintain their identities (Jepperson 1991). Institutions are nested within each other – from individual micro-practice to supra-organizational patterns of activity – and these institutions can be complementary or contradictory (Friedland & Alford 1991).

When scholars address societal or industry-level topics, they often treat organizations as “homogenous, internally isomorphic” actors (Crouch & Farrell 2004, p.32). This organizational unit of analysis is generally how the IS literature treats institutions (King et al 1994; Robey & Boudreau 1999; Ang & Cummings 1997; Damsgaard & Lyytinen 2001; Liang et al 2007). However, when addressing issues within individual organizations, a richer institutional view is in order (Friedland & Alford 1991). While some organizations can evolve to institutional status in and of themselves, most do not (Scott 1995). Still, organizations are typically portrayed as uniform, singular entities in institutional theory, while organizations are in fact typically made up of many fragmented, contradictory, and incoherent patterns of activity (Bacharach et al 1996; Crouch & Farrell 2004; Whitford 2005). These inconsistent institutions can coexist within the same organization through decoupling (Meyer & Rowan 1977).

**Institutional Logics**

Individuals within organizations, thus, draw upon a variety of institutions to guide their actions. Each of these institutions can be said to have its own “institutional logic,” or rather:

> [The logic associated with an institution is] a set of material practices and symbolic constructions – which constitutes its organizing principles and which is available to organizations and individuals to elaborate... These institutional logics are symbolically grounded, organizationally structured, politically defended, and technically and materially constrained. (Friedland & Alford 1991, p.248-249)

It is important to stress that these logics can be fiercely defended, as institutional logics are fundamental components of individual’s identity: “The routines of each institution are connected to rituals which define the order of the world and one’s position within it, rituals through which belief in the institution is reproduced.” (Friedland & Alford 1991, p.250)

While Friedland & Alford (1991) focus on institutional logics of broad, societal level institutions (i.e., capitalism, the state, democracy, family, religion, science), DiMaggio (1997) indicates that the idea of institutional logic is consistent with the micro-level concept of “logics of action.” A logic of action can be defined as an “implicit relationship between means and ends underlying the specific actions, policies and activities of organizational members. While the logic of action is for the most part taken for granted, it becomes manifest when parties try to explain to themselves or justify to others the selection of specific means, ends, and the linkage between the two” (Bacharach et al 1996, p.478). DiMaggio (1997) states that the device of institutional logic / logic of action is useful to researchers for the following reasons:

> First, it proposes that external rituals and stimuli interact with internal mental structures to generate routine behavior. Second, it is consistent with the view that culture is fragmented among potentially inconsistent elements, without surrendering the notion of limited coherence, which thematization of clusters of rituals and schemata around institutions provides. Third, it provides a vocabulary for discussing cultural conflict as confrontation between inconsistent logics of action. (DiMaggio 1997, p.277)

Individuals can be expected to cling to the institutional logics that have guided their actions and given them meaning in the past, and they will not easily move to new, conflicting, institutional logics (Thornton 2002). When presented with the force of a new, conflicting institution, for example, in the form of prescriptions from upper management, actors can be expected to experience dissonance that makes exchanges between different local groups difficult (Bacharach et al 1997). To address this dissonance, local actors have a number of potential strategies in responding to new institutional logics, and this understanding of dissonance and conflict is essential to our analysis of a range of responses to a new enterprise system.
Response to Institutional Logics

Institutional theory has been criticized for painting organizations and actors as passive recipients of institutional forces (Powell & DiMaggio 1991; Scott 1995; Oliver 1991). To remedy this problem, Oliver (1991) identified five broad categories of organizational responses to institutional forces (in order of progressively more resistance to the institutional pressure): acquiescence, compromise, avoidance, defiance and manipulation (see Table 1 for definitions). These could be organized after Goodstein (1994) based on the congruence of logics with one another (congruent / incongruent), and the level of institutional pressure to follow the new institutional order (strong / weak).

Oliver’s (1991) theorizing treats organizations as single actors. As discussed above, however, while this might make sense for institutional analyses that study industries or fields, we draw on the pluralistic view which holds that organizations are the intersection of multiple, nested institutional logics (Meyer & Rowan 1977; Bacharach et al. 1996; Crouch & Farrell 2004; Whitford 2005). In a particular location within an organization, therefore, a new institutional logic may or may not come in conflict with the existing order. If they conflict, it will likely result in loose coupling between the existing practice and new institutional requirements (Meyer & Rowan 1977), resulting in different configurations and relationships among local practices. Such reconfigurations among local practices then can transpire, setting off a wave of unanticipated changes among other adjacent local practices, producing change at the organizational level. This suggests that the implementation of an enterprise system can have much more complex and dynamic consequences than what is often described in the literature, when we look at it from a pluralistic perspective, taking the idiosyncrasy of local practices into account.

<table>
<thead>
<tr>
<th>Response strategies</th>
<th>New institution (adaptation of Goodstein 1994)</th>
<th>Definition</th>
<th>Forms of response</th>
</tr>
</thead>
</table>
| Acquiescence        | Strong pressure; logics congruent             | Conformity to institutional prescriptions and implied social order. | Habit (unconscious, passive)  
Imitation (mimetic isomorphism)  
Compliance (conscious obedience) |
| Compromise          | Strong pressure; logics incongruent           | “Partial conformity” to explicit institutional prescriptions without necessarily the implied social order. | Balance (parity among multiple interests)  
Pacify (conform to minimal standards)  
Bargain (extract concessions for conformity) |
| Avoidance           | Strong pressure; logics incongruent           | “Partial conformity” to either a portion of the institutional prescriptions or none at all. | Concealment (disguise conformity)  
Buffering (reduce scrutiny, decoupled)  
Escape (exit domain in which pressure exerted) |
| Defiance            | Weak pressure; logics incongruent             | Non-conformity with a portion of the institutional prescriptions within the applicable domain. | Dismissal (ignore institutional rules)  
Challenge (actively challenge institution)  
Attack (intense and aggressive challenge) |
| Manipulation        | Weak pressure; logics congruent               | Actively direct the institutional prescriptions. | Co-opt (take ownership of the source)  
Influence (“manipulation of belief systems”)  
Control (“struggles for power”) |

Goodstein (1994) extended Oliver’s (1991) analysis by indicating that the form of response chosen will also be influenced by the anticipated effect of these institutions on “technical outcomes.” Inherent in Goodstein’s (1994) analysis, however, is again the assumption that rational action associated with technical outcomes will guide responses universally across all contexts, which is not an assumption consistent with institutionalist thinking (Goodrick & Salancik 1996). Individual discretion in the form of strategic response is constrained, or “bounded by the institutions that gave rise to it,” and therefore any response to institutional pressure must be consistent with existing institutions (Goodrick & Salancik 1996, p.2). Goodrick & Salancik (1996) remind us that technical outcomes are not always the fundamental concern of organizational activity, as institutions are guided by established norms and values. Based on this insight, we modify Goodstein’s (1994) focus on technical outcomes by focusing on congruence of the institutional pressure coming out of new logics with existing institutions. Our adaptation of the
Goodstein (1994) framework leaves room for situations where a rational focus on specific technical outcomes is congruent with the guiding institutional logic, as well as those occasions when it is not.1

Following our adaptation of Oliver (1991) and Goodstein (1994), we suggest that when incumbent institutional logics are congruent with that of a newly introduced institution, and the force to comply is great, then local practices will eventually comply with the new institution, or “acquiescence,” which subsumes responses such as habit, imitation, or conformity (Oliver 1991). If, however, this newly introduced institutional logic is incongruent with that of local practice, and yet the force to comply is great, then responses will involve “partial conformity” in the form of compromise or avoidance, which together represent the “thin edge of the wedge in organizational resistance” (Oliver 1991, p.153). These tactics for partial conformity range from “concealing their nonconformity, buffering themselves from institutional pressures, or escaping from the institutional rules or expectations,” to “disguising nonconformity behind a façade of acquiescence…”, “window dressing”; ritualism; ceremonial pretense; or “symbolic acceptance of institutional norms, rules, or requirements” (Oliver 1991, p.154). Only if the pressure through which the new logic is introduced is weak can outright resistance strategies, or the “defiance” of ignoring or fighting the institution, be possible. Finally, if the new institution is introduced without a great deal of pressure, yet it is congruent with the logic of existing practice, then the response can involve “manipulation” or control of the newly introduced institution. Next we will synthesize this institutional framework with common responses to IT implementation to create an institutional framework of responses to enterprise system implementations.

Institutional Response Framework for IS Implementation

There has not been a great deal of research on enterprise systems using an institutional lens. Two exceptions include Gosain (2004) and Soh & Sia (2004). In both cases, enterprise systems are characterized to embody a specific institutional logic. Organizations that respond to the introduction of the new enterprise system are conceived as singular actors, where the institutional forces embodied by the system are not in alignment with that of the organization (Soh & Sia 2004; Gosain 2004). In one case, while organizations are acknowledged to contain multiple stakeholder groups, the “misfit” between the institutional logic of the system is set in opposition to the “dominant institutional logics” associated with the organization (Gosain 2004, p.167). We view organizations to be awash in multiple, nested institutional logics, and need, therefore, to dig beneath the surface view of an entire organization’s harmonious adaptation and instead focus on specific responses associated with particular routines. Table 2 below combines the adaptation activities that are prevalent in information systems implementation literature with our application of Oliver’s (1991) institutional analysis of responses in Table 1. Many of Oliver’s descriptions are consistent with concepts recognized in the literature, and we have matched these descriptions respectively.

<table>
<thead>
<tr>
<th>New institution embodied by IS</th>
<th>Response strategies - Oliver 1991</th>
<th>Local responses to information system</th>
<th>Sampling of applicable IS literature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strong pressure; logics congruent</td>
<td>Acquiescence</td>
<td>Process adaptation; system configuration</td>
<td>Leonard-Barton 1988; Tyre &amp; Orlikowski; Majchrzak et al 2000; Soh &amp; Sia 2004; Davenport 1998; Markus et al 2000; Boudreau &amp; Robey 2005; Orlikowski 1992; DeSanctis &amp; Poole 1994</td>
</tr>
<tr>
<td>Strong pressure; logics incongruent</td>
<td>Compromise / avoidance</td>
<td>Process adaptation; system customization; improvisation, resistance</td>
<td>Ciborra 2000; Pollock &amp; Cornford 2004; Scott &amp; Wagner 2003; Wagner &amp; Newell 2004, 2006</td>
</tr>
<tr>
<td>Weak pressure; logics incongruent</td>
<td>Defiance</td>
<td>Resistance</td>
<td>Keen 1981; Markus 1983; Lapointe &amp; Rivard 2005</td>
</tr>
<tr>
<td>Weak pressure; logics congruent</td>
<td>Manipulation</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>

1 Note that by reinterpreting Goodstein’s drivers as “congruence,” we are equating this with Oliver’s “content.” Although his notion of pressure initially appears to embody all of Oliver’s constructs, we choose to focus on “control” as this directly equates to Goodstein’s operationalization.
Of these strategies, acquiescence has been addressed at length in information systems literature and we have a wide array of studies of mutual adaptation (Leonard-Barton 1988; Tyre & Orlikowski; Majchrzak et al 2000; Soh & Sia 2004), technology adaptation (Orlikowski 1992; DeSanctis & Poole 1994), and enterprise systems (Davenport 1998; Markus et al 2000; Boudreau & Robey 2005). In contrast, lack of acquiescence, or defiance (and some forms of avoidance), are usually framed in terms of “resistance,” and this concept also has a rich follow-up in the IS literature (Laponte & Rivard 2005; Markus 1983; Keen 1981). Some attention has also been paid to compromise and avoidance quadrants (Ciborra 2000; Pollock & Cornford 2004; Scott & Wagner 2003; Wagner & Newell 2006).

In an effort to further explore the relationship between various adaptation activities in the wake of an enterprise system implementation, we will next operationalize our theoretical constructs and apply them in order to analyze a sample of published case studies on ERP implementations, in an effort to understand how documented response strategies in the wake of an enterprise system implementation matched with the institutional logics at play.

### Operationalization of the Framework

In order to appreciate the clash of incongruent logics, and thus operationalize the concept, we apply the following four dimensions of an institutional logic that have been recognized in the literature (Table 3). First, institutional logics act as organizing principles that guide activities, and thus embody the goals and values of the institution (Friedland & Alford 1991). Second, institutional logics are founded on assumptions associated with specific causal means-end relationships (Bacharach et al 1997). Third, institutional logics form local identities (Dimaggio 1997; Friedland & Alford 1991; Jepperson 1991; Thornton 2002). Fourth, institutions are more and less salient to specific domains and their practices (Jepperson 1991; Powell & Dimaggio 1991).

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Definition</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principles</td>
<td>Goals and values of the institution</td>
<td>Friedland &amp; Alford 1991; Thornton 2002</td>
</tr>
<tr>
<td>Assumptions</td>
<td>Understanding of causal means-end relations</td>
<td>Bacharach et al 1997; Friedland &amp; Alford 1991</td>
</tr>
<tr>
<td>Identity</td>
<td>Individual or group identities implied by practices guided by the institution</td>
<td>DiMaggio 1997; Friedland &amp; Alford 1991; Jepperson 1991; Thornton 2002</td>
</tr>
<tr>
<td>Domain</td>
<td>Context or specific practices associated with the institution</td>
<td>DiMaggio &amp; Powell 1991; Jepperson 1991</td>
</tr>
</tbody>
</table>

The institutional logic for an ERP system is represented quite uniformly in the information systems literature. Adopting the four dimensions of an institutional logic identified above, Table 4 summarizes the institutional logics associated with ERP.

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Characterization of ERP’s logic</th>
<th>Selected sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identity</td>
<td>Top-down structure implies rationalized bureaucracy in line with functional managerial interests; user discipline.</td>
<td>Davenport 1998; Soh et al 2000; Pollock &amp; Cornford 2004; Boudreau &amp; Robey 2005; Soh &amp; Sia 2004; Gosain 2004; Webster 1991</td>
</tr>
<tr>
<td>Domain</td>
<td>Highly explicit and repetitive administrative routines.</td>
<td>Davenport 1998; Soh et al 2003; Kallinikos 2004; Markus &amp; Tanis 2000; Wagner &amp; Newell 2004</td>
</tr>
</tbody>
</table>
The enterprise system can be seen to embody a specific “technological imperative” (Davenport 1998); rationalized logic or structure (Sia et al 2002; Gosain 2004; Elmes et al 2005); or procedural focus (Soh et al 2003; Kallinikos 2004). The principles generally associated with the enterprise system are control (Ciborra 2000; Hanseth et al 2001; Sia et al 2002) and efficiency (Newell et al 2003; Kallinikos 2004; Elmes et al 2005). These objectives are met through standardization (Soh et al 2000; Newell et al 2003; Kallinikos 2004); visibility (Sia et al 2002; Elmes et al 2005); best practice (Markus & Tanis 2000; Soh et al 2003; Wagner & Newell 2004); and integration (Davenport 1998; Markus et al 2000; Hanseth et al 2001; Soh et al 2003; Allen 2005). Enterprise systems are inscribed with assumptions inherited from reference industries and countries (Pollock & Cornford 2004; Soh & Sia 2004); managerial interests (Soh & Sia 2004; Gosain 2004); and historical industrial management trends (Webster 1991), which reflect bureaucratic, hierarchical administrative practices. Such practices are particularly well-suited to highly explicit procedures (Davenport 1998; Kallinikos 2004; Wagner & Newell 2004). Enterprise systems thus embody a logic that is well-articulated in information systems literature (Table 4).

Congruence of Institutional Logics

Within organizations, we anticipate the presence of incumbent institutional logics in local practices that are incongruent to that of the ERP system. Unlike the global organizing logics of contemporary organizations, these local practices may not be motivated by concerns of efficiency or control (Wenger 1998). They may not align well to standardization and integration, may resist rationalization, and may generally be less routine. Oliver’s (1991) notion of consistency applies here, as she indicates that inconsistent institutions have different goals, and compliance with an inconsistent institution would reduce an organization’s decision making discretion, and thus effectiveness. Goodstein’s (1994) notion of “congruence” is concerned specifically with the “goals and policies” of the new institution, and if they can be accommodated while maintaining faithfulness to the goals and practices of the organization. DiMaggio (1997) thinks of conflicting logics as inconsistent cognitive schemata that are simultaneously applied to the same situation. As an indication of conflicting logics, Bacharach et al (1996) emphasize the “dissonance” that is felt by organizational actors in such cases that limits their ability to continue established practices. Based on Oliver (1991), Goodstein (1994), DiMaggio (1997), and Bacharach et al (1996), we can conceive of two situations, where institutional logics can be congruent (1) the potentially inconsistent logics are applied to different domains, and thus never conflict; or (2) two or more institutional logics can be applied to the same practices, and those practices can be guided by these logics without the dissonance. Thus, we define incongruent institutional logics as those that are applied to the same domain and situation and cannot simultaneously guide the practices without fundamentally changing those practices.

Strength of Institutional Pressure

As enterprise system implementations are often obligatory, we expect them to be introduced with great institutional pressure. Oliver (1991) indicates that the force of a new institution can be assessed by the degree coercion, enforcement, vigilance, and sanctions associated with its (non) application. Oliver (1991) states that if the “consequences of nonconformity are highly punitive” (p.168), then the pressures associated with conformity are strong. Conversely, if conformity is strictly voluntary, these pressures can be considered weak. While Oliver (1991) emphasizes coercive forces, Goodstein (1994) adds to this the isomorphic pressures (DiMaggio & Powell 1983) that can be quite powerful. In an organizational context, we define a strong institutional pressure to be involuntary compliance where significant, negative consequences are associated with nonconformity. Conversely, weak institutional pressures are those that allow voluntary adoption and offer no significant negative consequences for nonconformity.

Therefore, in the case when enterprise system usage is not voluntary and implemented through strong institutional pressures, we expect to find the process of mutual adaptation leading to eventual acquiescence (Leonard-Barton 1988; Orlikowski 1996). Accordingly, we postulate:

Conjecture 1: Given strong institutional pressures to conform, individuals whose local practices are guided by institutional logics congruent with that of an enterprise system will respond to the implementation of the enterprise system through mutual adaptation leading to eventual alignment.

Conversely, groups and individuals will respond to an enterprise system implementation that is incongruent with their practice through loose coupling when institutional pressure is strong:
Conjecture 2: Given strong institutional pressures to conform, individuals whose local practices are guided by institutional logics incongruent with that of an enterprise system will respond to the implementation of the enterprise system by loosely coupling their practices with the system through compromise or avoidance.

Practices maintain loose coupling from the ERP system through multiple mediating mechanisms that enable loose coupling. This implies ceremonialization, use of categorical (vs. technical) ends, and informal coordination (Meyer & Rowan 1977), that enable the informal to coexist with the formal, or the institutionally enforced activity to coexist with only a superficial connection to a local activity.

Our first two conjectures are based on the assumption that compliance with enterprise systems are involuntary. In situations that the pressure is weak – i.e., voluntary adoption - we offer the following conjectures:

Conjecture 3: Given weak institutional pressures to conform, individuals whose local practices are guided by institutional logics incongruent with that of an enterprise system will respond to the implementation of the enterprise system with resistance.

Conjecture 4: Given weak institutional pressures to conform, individuals whose local practices are guided by institutional logics congruent with that of an enterprise system will respond to the implementation of the enterprise system with an attempt to manipulate / control the implementation.

Next we use these conjectures to test the implications and validity of the theoretical framework with twenty-four published case studies around ERP implementation.

Research Method

We chose qualitative cross-case “data-set observations” (Brady & Collier 2004) to conduct our meta-analysis across published, qualitative cases. Much like a cross-case statistical comparison of quantitative scores, qualitative data-set observations involve a rectangular data-set of process-oriented observations from independent cases – complete with variation on both the dependent and independent variables – in support of causal inference (Collier et al 2004).

We reviewed the enterprise systems literature after 1998, which is the date we identified as a beginning of the modern research stream on “enterprise systems” following Davenport’s seminal article (1998). Although there were enterprise systems before that time point, they were often tackled differently, in terms of “configurable” software (Fleck 1994), “packaged” software (Lucas et al 1988), and with more specific terms such as “advanced manufacturing technologies” (Webster 1991). From 1998 onwards there is a cohesiveness within and momentum to the ERP literature. We reviewed articles from 1999 to 2006 in MISQ, ISR, JMIS, and EJIS that addressed enterprise systems. Next we traced their sources by snowballing citations, and thereby we obtained a database containing 147 articles on enterprise systems (mostly journal articles, but also several book chapters). The goal of our study is to identify and theorize around data about institutional logics – a goal that can not be addressed without a rich case description. Therefore, we chose to focus on “interpretive” case studies – those informed by ethnographic, phenomenological, action research, or open-ended interview methodologies. From the total sample, we eliminated theoretical papers, prescriptive papers, and those involving factor and variance models and statistical analyses. We also had to eliminate additional positivistic case studies (e.g. Cotteleer & Bendoly 2006; Wei et al 2005; Sia et al 2002), as such studies did not lend themselves to the re-interpretation necessary for our purposes.

<table>
<thead>
<tr>
<th>Industry: sector</th>
<th>Country</th>
<th>Practice</th>
<th>Source</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Government: state agency</td>
<td>United States</td>
<td>order entry</td>
<td>Boudreau &amp; Robey 2005</td>
<td>interviews, observation, &amp; docs</td>
</tr>
<tr>
<td>2. Manufacturing &amp; services</td>
<td>United States / global</td>
<td>opportunity management</td>
<td>Ciborra &amp; Failla 2000</td>
<td>Interviews</td>
</tr>
</tbody>
</table>
Initially we identified a total of 31 articles from our literature review for our analysis. After more detailed analysis of the cases, our sample was further reduced to 17 articles. The other 14 articles were eliminated for a number of reasons, such as solely organizational level of analysis (e.g., Hanseth et al 2001; Soh & Sia 2004; Akkermans & van Helden 2002), or data that did not apply to our line of inquiry (e.g., Sawyer & Southwick 2002; Monteiro & Hepso 2000). Table 5 summarizes the 16 cases (across 17 articles) that were included in our final sample.

Beyond the common characteristic that most of these organizations were quite large, we found a great deal of diversity. The cases ranged across industries, across the globe, and focused on different practices within organizations. Therefore we deemed this an adequate sample for a cross-case meta-analysis to initially validate our theoretical conjectures.

We coded the rich descriptions presented in the articles across six categories. The first four categories captured the four dimensions of the incumbent institutional logic - principles, assumptions, identity, and domain - with the goal of understanding whether this logic was congruent with that of the enterprise system. We only coded practices where a response to ERP implementation was explicitly narrated in the case description. The next category was for the strength by which the enterprise system was introduced. In general, we assumed the strength to be high – involuntary and strictly enforced – as we indicated above. However, we did find cases where the pressure was weak in relation to the incumbent logic. The final category of codes related to the form of response to the implementation: acquiescence, compromise, avoidance, defiance, manipulation. Next we will discuss our findings for each of these quadrants.
**Congruent Logics, Strong Pressure**

In a number of articles, incumbent institutional logics appeared to be congruent with the logic of the enterprise system. However, unproblematic, immediate acquiescence was not reported in any of the cases. Often, there was a period of mutual adaptation where either the system was customized, or practices changed, or both. Rolland & Monteiro (2002) provide an illustrative example of mutual adaptation borne out of congruent institutional logics. Surveyors in the field were presented with a system that was intended to standardize their data entry and automate surveying activity. While the software was not perfect for the application initially, the principles and assumptions associated with the software, which include higher efficiency based on standardization and process rationalization, for the domain appeared quite congruent with the principles of the supported activity. After all, the entire purpose of surveying activity [domain] is to “ensure compliance with classification rules and international regulations” [principles / goals] (p.92). Before the introduction of the system, surveyors were also pursuing the goal of rationalizing their practices, as is evidenced by the point that "the surveyors had established a system of 74(!) different paper-based checklists for supporting different types of surveys" [assumptions of cause/effect] (p.92). While the software had a number of difficulties associated with its use, adoption was involuntary [strength of pressure] and therefore surveyors had to make it work – which they did over time with adjustments to both practice and the system. For example, initially there were problems with the “Quick report” function of the system, so surveyors would delay its use. “In the later redesigns of the Surveyor Support System, however, the problem around the ‘Quick reports’ was solved by making it possible to make corrections in the final report.”(p.96)

Similarly, materials management practices in a hospital context (Soh et al 2003) appear to require technical solutions combined with changes in practices before compliance can be effected. While the desire to control resources, what the authors describe as a “functional orientation”, impeded the adoption of the system, principles of standardization and efficiency guided the materials management practice. Therefore, mutual adaptation resulted in compliance with the system: “the implementation consultants were able to offer a workaround solution within the system that maintained the benefits of sharing a common database while accommodating the functional orientation of users. Some changes in workflow, however, were still necessary” (p.90).

Some case descriptions presented adaptation as a training issue, where, once understood, the enterprise system offered powerful benefits in congruent domains that centered on information access such as customer service and product inspection activities (Elmes et al 2005). In one example, adoption was described as unproblematic in relation to existing practices because all employees were displaced: “none of the original project team members were left in group accounting” (Larsen & Myers 1999, p.409). Other cases presented more problematic descriptions of mutual adaptation. For example, Ciborra & Failla (2000) describe a situation where the enterprise system is congruent with the opportunity management domain, and was advocated in a powerful manner, with the CEO as the owner of the new process. However, the implementation took over four years to gain momentum, required incredibly high levels of training. Incentives did not always work and a complementary application finally gave the project the impetus to become widely accepted. Even after all of this, there was a “lack of compliance on all levels” (p.116) and an “uneven level of implementation” across the entire enterprise (p.117).

In a governmental context, order entry personnel, whose activities were routine and ostensibly compliant in principle with the enterprise system, initially avoided the system because they were given the option of avoiding it (Boudreau & Robey 2005). Once the pressure to comply was increased, the order entry personnel, through a mutual adaptation process of “improvisational learning,” acquiesced. The pressure to comply was intensified largely through coercive means, as a user indicated, “we were told that if we did not use the system, then we could be bumped out” (p.12). Also, “users recognized that departments whose transactions were processed [using the enterprise system] received faster service” (p.12).

In summary, when the institutional logic that guided the practice was congruent with the logic of the enterprise system, and the pressure by which compliance with the system is enforced is strong, acquiescence eventually takes place, typically through some mutual adaptation process. It is important to note that this acquiescence is not necessarily unproblematic, as it often takes a significant amount of time, and that both of these forces (congruence and force) must be in place over time to drive this acquiescence.
Incongruent Logics, Strong Pressure

Descriptions of involuntary adoption in the face of incongruent logics are also prevalent in the literature. In his discussion of value conflicts associated with an enterprise systems implementation, Allen (2005) describes a number of practices that appear to be guided by institutional logics inconsistent with that of the enterprise system. Most notable is the customer order process. While the system implies a standardized, formal process for inputting orders, then putting them in the queue for production, the goals of effective customer service [principal / goal] often trumps this rationalization. According to one buyer/planner, “we have 12-14 week lead times on many of our computer products. Customers can’t always give us that much warning ahead of time. Often, we have to place orders for them in the system before we get the official order. That’s reality. We have to share the risk. Every major account does this” (p.39). Based on this example, we can infer the logics that guide their actions imply that standardized queues do not always lead to good customer service [assumptions of cause/effect], and therefore buyer/planners, who identify that “our priority number one is to support production and shipments” (p.45), appear to be disguising their non-conformity by ostensibly using the system appropriately, while in reality straying from the assumptions embodied by the system [partial conformity / loose coupling].

In another situation, “study monitors” [identity] who are responsible for managing pharmaceutical research projects [domain] are pressured to use a system that prescribes “structured and sequential data entry” (Cordella & Simon 2000, p.185). However, research activity requires a great deal of temporal and sequential variety [assumptions of cause/effect] and cannot be entirely planned in advance. Therefore, study monitors engage in what the author describes as “tinkering and improvisation” (p.189), but, by an example they give it may be better interpreted as partial-compliance. Study monitors were expected to be on-location, and to input the data themselves. Instead, “a typical situation would be monitors obtaining a copy of the paper-based [form] and entering the data at home… In one case, the monitor introduced extra pages into the [form], using carbon copies. Once the [form] was completed, the monitor collected the carbon copies and then paid external people to enter the data” (p.185). While this activity might be chalked up to “process adaptation,” it is clear that this activity is not consistent with the standard processes implied by the system.

Other examples abound of incongruent logics and strong pressures resulting in practices that are loosely coupled from those implied by the system. For example, nurses in a hospital were focused on patient care, and, although clerks enforced perfunctory use of the system, nurses would engage in patient scheduling activity outside of the system, only to reconcile it later (Soh et al 2003). In a university context (Pollock & Cornford 2004), “centre administrators” were charged with purchasing, and they had to reconcile somewhat informal faculty procurement activities with that of the system’s rationalized process prescriptions, thus engaging in concealment activities that the authors describe as “Janus-faced” and “pretending to live with defaults”:

If the centre administrator was unavailable, which often happened, the other staff did not have an appropriate “login” or “user profile”, and thus could not generate the paperwork when it was needed. To circumvent this, a copy of the Enterprise order form was designed on a word-processor (available to print out at any time by the remaining support staff) and this was adorned not with the Enterprise order number but with what the staff called a “pseudo number” or “Secretarial requisition number”. Tickets could thus be ordered and the correct paperwork dealt with at a later date. (Pollock & Cornford 2004, p.43)

However, incongruence of institutional logics does not always appear to result in loose coupling. In a similar situation associated with another university’s purchasing practices (Lee & Lee 2000), accounts payable personnel experience dissonance, as they perceived their jobs to be “deprived of meaning and responsibilities” (p.286) in the wake of a system implementation, and there was a “higher than expected turnover rate” (p.285). In the past, accounts payable people focused on individual areas, after the implementation they were expected to understand a wide range of accounting issues – their roles were then expanded to embody the auditing function in an attempt to enrich their activity.

Another example of incongruence that did not result in loose coupling is described in the case of two engineering practices of a manufacturer (Volkoff et al 2005). Their organization implemented an enterprise system that focused on automating the production process. Yet, engineers who originated much of the data for this process were concerned primarily with form and function of the products [principles / goals]. Many downstream activities were simply not salient to their task [assumptions of cause/effect], yet with the new system, they had to be concerned with these downstream activities to be compliant with the system in practices associated with engineering changes and bills-of-materials. In both cases, there appears to be sincere compliance reported on the part of the engineers, but
this compliance was questionable, as it often led to delays and inaccurate information: “assembly operations were
often held up because design engineering did not specify an engineering change either fast enough or in sufficient
detail for assembly operations” (p.116).

In summary, as expected, incongruent logics associated with an enterprise system introduced with a strong
institutional pressure lead generally to loose-coupling as a response. However, this was not always the case. As the
case studies indicate, in one case the activity changed entirely (consistent with DiMaggio 1997), and in another it
was rife with procedural and data problems.

**Incongruent Logics, Weak Pressure**

As expected, incongruent logics of enterprise systems introduced with weak pressure typically lead to initial
resistance. However, it does not end there. This resistance can lead to either a wholesale rejection of the system,
loose coupling similar to those associated with stronger pressure, or even eventual compliance over time.

Resistance that leads to outright rejection is evident in the data. For example, the buyer/planners of Allen’s (2005)
manufacturer do not use the enterprise system for scheduling, as they need “room to maneuver” (p.38) in their
monthly scheduling practices, and prefer to use personal spreadsheets and weekly meetings to convey scheduling
information. In another situation, a manufacturing division with a flat structure and informal culture (Hislop et al
2000) was able to outright reject the enterprise system being imposed from the parent company.

In other situations, resistance can lead to a form of loose coupling between the certain practices and the enterprise
system. An excellent description of such a situation was described in the grant administration practices of a major
university (Wagner & Newell 2004; Scott & Wagner 2003). The principal investigator associated with a grant
preferred the flexibility of “commitment accounting” [principal / goal] because the cash outflows of research activity
were often unpredictable, and therefore better served by focusing on a “zero balance” (p.314) at the end of the grant
period, and avoiding too much specificity within the period [assumptions about cause/effect]. Implementers
dismissed such practices as a “checkbook mentality” and an “outdated mindset” (Scott & Wagner 2003, p.305). The
enterprise system embedded a “time phased budgeting” approach that parsed expenses out in planned increments.
This approach was initially rejected outright, and attacked fiercely by powerful faculty. Central administration
responded with a number of concessions. In the winter 99–00, leaders representing faculty and departmental
administrators lobbied for changes to both the system and the support structures. In response to this pressure, the
core group agreed three things. First, they agreed to leave the mainframe legacy system running until additional ERP
functionality was created. Second, they would meet the faculty functional requirements by designing ERP-based
commitments. Third, the BSC and TSC would be left running at least through the end of next fiscal year (Wagner &
Newell 2004, p.317). Thus, initial resistance led to eventual loose coupling.

In other situations, incongruent logics such as the flexibility necessary for engineering activity resulted in resistance,
but it is unclear how this resistance was eventually resolved (Newell et al 2003). In another example of unresolved
resistance (Dahlbom et al 2000), while the authors show that the “craft production” principles incumbent in the
organization are contrary to the standardized automation associated with the enterprise system, they also indicate
that in actuality the activities may not be as incongruent as they appear. As is evidenced by a paper based process
“The six-week production plan sheet is, of course, the interface to a system that might have been very well run on a
computer” (p.95). Regardless of whether the logic is congruent or incongruent, weakly introduced enterprise
systems appear to be met largely with resistance. An important point here is that these responses often lead to
adjustments in the relations between the focal community and other adjacent communities that interact with them,
which might lead to quite different responses to the implementation of enterprise systems. Therefore, the ultimate
fate of the enterprise implementation is determined not only based on the initial reactions by these local practices as
noted here, but also through eventual reconfiguration of the relationships among communities over time, as they
each figure out how others react to the system implementation and how that might affect their own local practices.

**Congruent Logics, Weak Pressure**

The situation that is least addressed in this sample is that where the institutional logics embedded in the system are
congruent with that of practices, yet the system is not introduced forcefully. As indicated above, the government
agency where order entry activity was quite congruent, the system was initially introduced with strictly voluntary
training (Boudreau & Robey 2005). Implementers were surprised when order entry personnel did not attend
training, and they continued to use the paper-based process for as long as they were allowed. When the pressure to use the system was ratcheted up, those personnel found a way to comply. Perhaps the production management activity of the craft manufacturer is similar in that a fairly congruent system was being resisted simply because the institutional pressure that accompanies the system was weak (Dahlbom et al 2000).

In another situation, however, a weakly-introduced system was co-opted and redefined by the managers of a division that the system attempted to standardize (Lee & Myers 2004). Management of the division resisted the implementation directly, but upper management attempted to forcefully introduce the system. The division management proved more powerful in this context (thus the strength of the pressure was weak in comparison), as the managers undermined the system: “From time to time [the division manager] would force a large order through the already congested product delivery schedule to please a big customer. This was because, in his view, Stark had to take care of its large customers. These customers would call up on one day and make demands that their order be put ahead of others. [The division manager] did not want to lose these big customers (and he was prepared to disadvantage smaller customers and disrupt the delivery schedule if needed). Given his power within the company, Dunkins was able to succeed in his demands, thereby completely over-riding (and in effect undermining) the system” (Lee & Myers 2004, p.369).

Eventually upper management changed the scope of the enterprise system implementation to match the demands of the division manager for that division. According to the company’s president: “We were quite expansionist and visionary and we came back to a very conservative operational [focus]... So it wasn’t a dramatic change, but it was more a degree of how expansionist we would have been had we wound the dial back a little bit to be more conservative”(Larson & Myers2004, p.370). Thus we find that resistance seems to be likely when the relative strength (pressure associated with the system, net of the resistance) is weak, independently of whether the logics are congruent or incongruent. Four results of resistance evident in the data are outright rejection, eventual compliance, eventual loose coupling, or a co-opting of the goals of the system.

**Discussion**

Although there is some indication of support for our conjectures from our analysis of 16 case studies on the implementation of enterprise systems, there are a number of caveats. Our first conjecture about response strategies that involve “acquiescence” or mutual adaptation with the system was consistent with much of the literature that treats compliance primarily as a technical issue that can be resolved by either customizing or configuring the system, or by changing practices to align better with the system (Soh et al 2000; Markus et al 2000; Wei et al 2005). While our analysis supports this conjecture, it is important to note Ciborra’s and Failla’s (2000) description of the extreme amount of effort spent on training and advocating the enterprise system – although congruent, it still took years to take root. In their example, even after taking four years to take root (largely with the help of a complementary application), the level of system adaptation remained inconsistent throughout the organization. With today’s fast-changing industry conditions, waiting more than four years for an enterprise system to become “ready-to-hand” (Ciborra 2000) across the organization is simply too long. The case suggests that a similar story may be the reality in many implementations.

In our second conjecture, we expected “partial compliance” strategies that lead to the loose coupling of practice with the enterprise system. This second conjecture is an important departure from treatments of “misalignments” of organizational practices with the enterprise system (e.g., Soh & Sia 2004). First, by focusing on institutional logics that guide practices rather than the practices themselves, we are able to distinguish between surmountable, technical barriers to implementation that might be resolved by adaptation, and those that will not. Adaptation responses involve more training, upper management support (greater force), technology tweaking, or process change, and result in progress toward eventual alignment of the practice with the system. If the practices are fundamentally incongruent – which, we argue, would be identified through an analysis of the institutional logics that guide that practice – then this alignment will not occur without changing the practice to something entirely different. Our conjecture appears to be supported by the case data. This result implies that partial compliance allows for existing practices remain unchanged, whereas full compliance can only be reached by changing the nature of these practices.

In one case, however, the response to incongruent institutional logics appeared to involve sincere compliance (Volkoff et al 2005). There are at least two plausible explanations for these findings. One is that our model is wrong, and that we are missing an important confounding variable, or response type. Another explanation is that the researcher took the compliance with the system at a face value, while there might have been, in fact, “minimal” use
of the system which would be consistent with our partial compliance strategy. Perhaps the quality and efficiency problems resulting from the system implementation hint to this explanation, as efficiency and data integration are fundamental objectives of the system. Yet, the outcomes do not appear to be consistent with these objectives.

Our third and fourth conjectures address situations where the enterprise system was introduced without a great deal of pressure, and this form of introduction was invariably met with resistance. This resistance was manifested in a form of overt conflict (e.g., Wagner & Newell 2004) or simply ignoring or avoiding system use (e.g., Boudreau & Robey 2005). An important observation is that resistance seems to be temporary and often leads to something else – eventual acceptance, loose coupling, co-opting, etc. Strategies for dealing with resistance tend to involve gradually increasing the strength of the institutional pressure (Boudreau & Robey 2005; Dahlbom et al 2000). Once the strength is increased, congruent practices approach alignment through mutual adaptation, whereas incongruent practices respond with partial compliance that loosely couples those activities from the system. Of course, the other option is for the group to co-opt the system introduction. Although this strategy is evident in the Lee & Myers (2004) case, it is clear that this possibility is not adequately addressed in the literature.

A key insight from our pluralistic approach is that one needs to focus on “relative power” in attempting to understand the role of power in enterprise systems implementations. A thorough analysis of our findings points to what may be a flaw in conventional operationalization of the construct of institutional pressure and power. From a pluralistic perspective, it is important to keep in mind that “voluntary” and “involuntary” do not adequately tap into all aspects of institutional pressure. While the coercive forces associated with an involuntary enterprise system implementation may be great, it is possible that other, less explicit forces, such as normative and mimetic pressures (DiMaggio & Powell 1983) are just as powerful in shaping voluntary implementation. While coercive force associated with central management’s top-down initiative is consistent with the conventional notion of power (Introna 1997), the institutional pressure stemming from normative and mimetic pressures point to a very different kind of power. It is more distributed and relative, perhaps more in line with Clegg or Foucault (Introna 1997). The institutional pressure arises as a result of systemic inter-relationships among various local practices, either rationally designed or socially negotiated. Responses to institutional pressure across a network of force relations might be more difficult to detect and should be studied, as these often arise as a result of the reconfiguration of interrelationships among local groups who all struggle to deal with a new enterprise system. In this case, we can detect some indication that the institutional pressure from the coercive top-down management initiative acts more like a first-wave of pressure, whereas the institutional pressures associated with distributed and relative power acts more like a second-wave. Power has long been one of the primary concerns around system implementation (Markus 1983; Introna 1997; Jasperson et al 2003), and the notion of the strength of institutional pressure integrates these political aspects of implementation into our model.

Similarly, actors’ sense-making has been a widely used as an explanation for many IT adaptation outcomes (Lyytinen & Hirschheim 1988; Orlikowski & Gash 1994; Griffith 1999). Institutional logics, as cognitive schema (DiMaggio 1997), capture this notion of sense-making, and the congruence of interpretive schemata is deemed important to technology adaptation (Orlikowski & Gash 1994). Yet institutional analysis goes beyond cognitive schemes of individuals by tying local practices into broader socio-cognitive institutions of professions, organizations and fields. Using an institutional lens, we are able to cover both political and interpretive aspects of information systems implementation in our model, while at the same time tying these notions to the context of both micro and macro behaviors that shape individuals, organizations, and entire societies. Our pluralistic lens allows us to reveal powerful and complex systemic dynamics among interacting socio-cognitive forces, as multiple actors draw on diverse and often conflicting institutions.

**Implications**

We offer two contributions associated with enterprise systems implementation. First, through our institutional analysis we propose a causal explanation of response variations to an enterprise system. This explanation goes beyond the technical / work practice analyses that underlie much of the prevailing ERP literature. This literature implicitly assumes congruence in the institutional logics underlying both business routines and the IT systems – why would one implement a technology to support a practice with which it is incongruent? We contend that this is an assumption carried over from the tradition of local, customized information technology projects that supported specific and localized tasks of users. But enterprise systems are different. They represent a rationalization, encoding and abstraction of “best practices” that, while being congruent with the logics of certain areas of certain organizations, can be in conflict with others. When there is such conflict, alignment is simply not possible without
significantly changing the institutionally enforced practice – essentially making it a different practice altogether. While the principles of efficiency and control may, in fact, reflect the primary goals of managers of an organization – and thus the reason for implementing the enterprise system in the first place - it is important for them to consider that this may not be the case for every group within the organization.

Another contribution is our use of existing, published case studies as a meta-analysis of case data by which we initially validate our theoretical model. Thanks to heightened research interest in ERP systems we were able to access a rich variety of data sets in published, interpretive case studies. While this validation was not expected to be an irrefutable test of our model, it shows that our model has some empirical support. It also show that some level of external and internal validity for theories can be obtained by mining case data in cases where extensive statistical analyses are not possible due to lack of representative samples or where cost of access is an issue.

The analysis also highlights some areas where we can still tighten up our operationalization. Our chosen method is not without its drawbacks. First, we face the problem of the double (or triple?) hermeneutic (Giddens 1984). The researchers who created the case studies are interpreting the interpretations evident in individual accounts. We then interpreted these interpretations again. In many cases significant amount of inference was required to make sense of an article for our purposes. In certain cases this resulted in difficulties in correctly accounting for behaviors as our interpretations differed from the researcher’s interpretations (e.g., Volkoff et al. 2005). In addition, case researchers asked specific questions that were different from ours. Overall, through this method we add distance between our interpretive activity and the phenomena of interest. Nevertheless, we feel that these limitations were more than balanced by the access to a variety of cases across multiple practices, industries, and geographic locations. This provides a level of external validity that would be virtually impossible in a traditional empirical multi-case analysis.

The practical contribution of this study is recognition of the diversity of guiding principles and assumptions across routinized practices in an organization. Too often practitioners approach enterprise system-related issues from the rationalistic perspectives of efficiency, standardization, and integration and an implied assumption of a universally uniform outlook. However, organizations enact a rich variety of practices that are not compatible with these espoused driving principles. Furthermore, there is an assumption that the data within an enterprise system faithfully reflects the practices that it is supposed to support. Our recognition of the partial-compliance that loosely couples the enterprise system from the practices shows that this assumption is often unfounded.

Conclusion

Institutional theory has been advocated as a meaningful approach for information systems research (Orlikowski & Barley 2001), and has been promoted to be particularly well-suited to the study of enterprise systems (Gosain 2004). In this paper we make steps in this direction by proposing an institutional model that marries institutional logics and ERP systems together in a way that predicts and explains organizational responses to ERP implementations through a pluralistic lens. While the institutions we identify are concerned with micro-practices, it is these micro-practices that both draw from and contribute to the major institutions surrounding the system use (Powell & DiMaggio 1991).

Our framework hinges on the device of an “institutional logic,” which is consistent with Bourdieu’s (1977) notion of “habitus.” In using this lens, we attempt to characterize the primary cognitive enabler and guide of human practices. The habitus is the sum of the dispositions of individuals, born of experience, that drive the way these individuals approach their practices. Individuals attend to formal rules and norms, and in this case, ERP systems, from the habitus. In adopting the notion of an institutional logic, we are, in effect, approximating a form of root-cause analysis of individual and group responses to enterprise systems. Congruence with the institutional logic becomes a key determinant in a given user’s attitude towards the system.

We initially validated our model using 16 published, interpretive case studies. This novel approach enabled us to gain insight into a variety of geographically distributed contexts across industries. We found some evidence to support our model while we also found inconsistencies and avenues to improve our operationalization and analysis. This methodology has some limitations, however. In particular, the interpreted data had to be re-interpreted for our purposes. Thus we ran into a situation where only the descriptions that fit the research questions of other projects could be included in ours. For example, any indication of resistance necessarily seemed to imply weak pressure, which is a circular argument. Future research will involve collecting original data to further test and refine the model. By measuring strength of pressure directly, for example, we should be able to avoid tautological pitfalls, while at the same time embark on a more finely-grained analysis of the role of power and sense-making in enterprise system implementations.
References


Ciborra, C. From Control to Drift: The Dynamics of Corporate Information Infrastructures, Oxford University Press, 2000.


