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Timothy Olsen
timothy.olsen@ceprin.org

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TRANSCENDING IT MANAGEMENT TRADITIONS: TRANSFORMING FROM TECHNOLOGY-ORIENTED TO SERVICE-ORIENTED MANAGEMENT

Timothy Olsen
Georgia State University
timothy.olsen@ceprin.org

ABSTRACT

Large organizations establish departments for managing information technologies (IT) used to support their activities. Historically, this led to a view of the IT department as an important but costly technology-oriented department whose main activity was to keep things running. Recently, best practice has called for service-oriented management of IT departments. This report seeks to report from an organizations attempt to transform from technology- to service-oriented management. To structure the study we use Pettigrew's framework for understanding organizational change, emphasizing the *content*, the *context*, and the *process* of the transformation. IT management principles of technology- and service-orientation are considered as the *content*. The *context* is taken into account from an organization-centric analysis of structures, people, management practices, and technical structures. Finally, a punctuated process model that focused on event sequences of the transformation effort guided the *process* analysis. We use this contextual approach couched in an interpretive case study to understand the transformation to service-oriented IT management, and by so-doing, offer lessons for how managers can enact this change.

Keywords

Shared Services, IT Management, Service-orientation

INTRODUCTION

Managers of organizational information technology departments are continually faced with great challenges. As technology and business become more intertwined, a properly functioning business demands reliable IT. These circumstances are leading to new roles wherein enterprises are customers of IT departments (Mayerl et al. 2006). With this new customer focus IT departments are seeking to transform into service providers (Hochstein et al. 2005). While service-oriented frameworks have been developed, they are largely normative -- leaving managers with merely a set of best practices and no prescribed plan of action (Addy 2007). Consequently, executives need adapted management methods and knowledge of how to undergo such an evolution.

The purpose of this research is to explore how IT units in large bureaucratic professional organizations can transform from their historical technology-oriented management towards service-oriented management. To that end, we propose to investigate a transformation to service-oriented management using process theory principles (Van de Ven & Poole 2005). This will allow us to understand the process by which this transformation may occur.

The research investigation will be carried out over a 15-month period during 2009-2010 wherein we will study the transformation effort of an information technology department (referenced herein as IT_Department) that provides services to a large university. The research site was selected both opportunistically and purposefully based on high-level access to the organization, and a belief that a longitudinal study of the transformation effort would make a significant contribution to research in this area. The stated goals of the transformation effort later confirmed this belief, and were aligned with service-oriented management definitions (Demirkan et al. 2008).

We will organize our study based on Pettigrew's framework for studying organizational change, emphasizing the *content*, the *context*, and the *process* of transforming management styles at IT_Department (Pettigrew 1987, 1990b). This framework is ideal as it supports longitudinal investigations of how transformation efforts unfold in organizational settings. Interactions among the three areas of the transformation (content, context, and process) are used to gain insight and understanding, and are then used as a basis for managing change under similar conditions in other organizations.

We present the compositional elements of our research to enhance clarity in Table 1. These elements consist of area-of-concern under investigation (A), conceptual framing of the investigation (F), method of investigation (M), research question (RQ) and contributions to practice and theory (C and CFI) (Mathiassen et al. 2009). These core structural elements appear in more detail in the in this document.

Area of Concern (A): Management of IT departments in large professional bureaucracies (Mintzberg 1983)
Framing independent of A (FI): Social process model (Newman & Robey 1992) combined with a punctuated equilibrium model (Newman & Zhao 2008)
Framing independent of A (FI): An organization-centric analysis of the organization during transformation based on Applegate's change framework (Applegate 1994)
Research Method (M): Qualitative, single case study, with retrospective and real-time longitudinal analysis (Leonard-Barton 1990), using ethnographic data collection methods, and rooted in interpretivism
Contribution to A (C): An explanatory, descriptive account of the process undertaken by IT_Department to transform to service-oriented management
Contribution to FI (CFI): Normative service orientation transformation process model grounded in the case as well as literature about service management
Research Question (RQ): How do IT departments in large professional bureaucracies transform from technology- to service-oriented management?

Table 1. Compositional Elements of Research

In Section 2 we provide a review of the literature for the *content* of technology- and service-oriented IT management. Section 3 focuses on describing the framework that will be used to interpret the organizational *context*. The method for presenting a description of the transformation *process* is put forth in Section 4. Section 5 discusses our research method, and data analysis techniques. Finally, Section 6 outlines the expected results of our study, while Section 7 discusses potential research contribution to both theory and practice.

CONTENT: SERVICE-ORIENTED IT MANAGEMENT

Service-oriented management is all about delivering value added services to the customer (Demirkan et al. 2008, Mayerl et al. 2006). Customer expectations of customized solutions, dynamically changing markets, regulations and technologies, have lead to increased needs for companies to be able to transform from a focus on goods to a focus on services (Christensen and Raynor 2003, Vargo and Lusch 2004). Although the benefits of the adoption of such practices are numerous, the service concept has been and still is difficult for established managers to grasp (Magnusson and Stratton 2000). The service paradigm has dramatic implications for technology and management (see Table 2).

<i>From</i>	<i>To</i>
Focus on goods	Focus on services
Cost reduction through manufacturing efficiency	Revenue expansion through services
Standardization	Customization
Mass marketing	One-on-one marketing
Transactions	Relationships
Function oriented	Coordination oriented
Limited ability to store and process data	Improved ability to store and process data
Limited information sharing capabilities	Improved information sharing capabilities
Application silos	Integrated solutions
Tightly coupled applications	Loosely coupled solutions
Contracts	Service-level agreements

Table 2. Categories of transformation towards service-oriented management (Demirkan et al. 2008)

Service orienting requires much more than a change in organizational structure. Siloed businesses processes must be broken into modular independent services that can be used in loosely coupled dynamic business services (Demirkan and Goul 2008). Staff must be taught how to involve customers in service design and delivery. Likewise, organizational incentive mechanisms need to be changed to encourage this collaboration (Keel et al. 2007). Organizational metrics should reflect the success of the organization in supplying services to customers. All of these differences entail a major culture change that will require strong top-down and bottom-up organizational support, and time to implement (Demirkan et al. 2008).

PROCESS: PUNCTUATED SOCIO-TECHNICAL ORGANIZATIONAL CHANGE MODEL

Following prior work (Newman & Zhao 2008) we outline our approach to conduct a process analysis of a transformation to service-oriented management.

Process and Variance models

Mohr describes the process and variance research approaches for studying organizational change (Mohr 1982). Since Markus and Robey (1988) introduced Mohr's process approach, and it has been used to describe many IS phenomena including project management (Montealegre and Keil 2000) and service provisioning (Crowston 2000).

The limitations of variance models highlight the virtue of process models as Newman and Robey (1992) point out: "factor models...do not explain how outcomes occur... they provide only partial guidance to the practitioner who must assume responsibility for attaining positive outcomes. The attainment of system success can be likened to a puzzle wherein the pieces can be identified but where the implementer is left to his or her own resources to put the puzzle together. The process approach... focus on the dynamics of social change, explaining how and why the results...are achieved". The process approach seems to provide better solutions to address the nature of our research question. For purposes of this research, we *define the meaning of process* to be "a narrative describing how things develop and change" (Van de Ven & Poole 2005).

Punctuated Socio-Technical Organizational Change Model

Based on Newman and Robey (1992), Newman and Lyytinen (2008), and Applegate (1994) this study is constructed on three major frameworks: *Applegate's organizational system change model*; *a social process model*; and *a punctuated equilibrium model*. Applegate's organizational change model is used to identify the relationships between structure, people, and management and technical systems and their effects on the management transformation. This is similar to Leavitt's (1965) socio-technical change model which has been used to explain IS change, but Applegate's framework was adapted to deal with nuances dealing with the organizational aspects of information technology (Applegate 1994).

The social process model is applied to describe outcomes to the transformation process (Michael Newman and Robey 1992) where organizational change is seen as a construction of a sequence of incremental changes and critical incidents representing periods of equilibrium and disequilibrium within organizational and external contexts (Gersick 1991; Lyytinen & Newman 2008; Pettigrew 1990b). Finally, punctuated equilibrium theory is used to understand how change occurs. IT Management transformation is depicted as having relatively long, stable periods, punctuated with opportunities for change to the deep structure (e.g. a crisis such as a change in leadership or major issues arising from organizational structures that lead to a radical change of approach).

A gap can invite two types of responses from the organizational system. The first is an incremental and gradual adaptation of system components as dictated by the organizational systems deep structure. The deep structure consists of the set of fundamental 'choices' an organization system has made concerning "1) the parts of which its units will be organized, and 2) the activity patterns and principles of interaction that will maintain its existence" (Gersick 1991). Deep structures are stable, based on historical patterns, and manifest path dependency (Garud and Karnøe 2001). Actors who recognize a gap may construct an intervention (e.g. small group training) to try to remove it. Also included in this example are the elements of organizational (inner) and external (outer) contexts (Pettigrew 1990a) as these may affect critical incidents. In these interventions, the deep structure of the process remains intact (Gersick 1991).

The second type of response is a *punctuation* -- where actors re-examine and change fundamental assumptions about how work is accomplished or how the organization is structured, thus rewriting the organizational systems deep structure. During punctuation, organizational system elements are re-configured and afterwards they exhibit new emergent properties. These types of changes are infrequent. The start of a transformation effort nearly always involves punctuations, first in the build system where the effort is initiated and later when it replaces the prior structure (Newman & Zhu 2009).

In summary, shaped by a historical context, existing structures remain in place until a critical incident (planned or unplanned) produces a gap, resulting in an unstable organizational structure. Actors may recognize this unstable state and attempt to implement interventions to address these gaps. The deep structure of the organizational system remains unchanged, unless punctuations occur.

Combining all these process frameworks, Lyytinen and Newman (2008) will build what Langley (1999) calls a visual mapping strategy, depicting dependencies between environments, events and outcomes by organizing them according to sequence, gaps, system levels, punctuations, and interventions. Organizing the events of the transformation process in this way creates a sense-making device we can use to understand the nature and role of different events in the context of transforming to service-orientation. As an example of one of the outcomes of our proposed research project we include a plausible (not based on data analysis) visual map of the transformation process. See figure 1 as an example

The visual map shows the work system, the building system, and a description of critical incidents, events in the context of the organization and its environment. It is designed to build an accurate process narrative about a situated transformation effort that can later be generalized (Eisenhardt 1989).

RESEARCH APPROACH

This study adopts a qualitative research approach with the support of a longitudinal interpretive case study of IT department in a large public university.

Research Site

IT_Department is an information technology department that provides IT services and support to a large University in the United States. In 2009, this department employed approximately 200 personnel. In the past, management attempted to implement service management principles from well-known service-management frameworks with poor success. A recent strategic effort in which they have analyzed the cost of providing services has caused them to initiate an effort to adopt service-oriented management principles. The department enlisted the help of an outside consultant who provided the framework for and expertise in the management of such a transformation. The consultant had experience working with many IT departments who had also had poor success and university IT departments that are undertaking similar “service” transformations. The department had been working with the consultant for 5 months on the design of the new organizational structure when we entered the field.

Data Collection

Our in field research efforts will occur over a 15 month period (2009-2010). Although we are not conducting an ethnography, we collect data according to an “ethnographic field study” approach (Levina 2005). Typical ethnographies are focused on understanding culture (Van Maanen 1988). Ethnographic field studies use similar methods, but focus on understanding something (i.e. a transformation) *in situ* (Levina 2005). The majority of our data consists of intranet postings, photos, emails, excel documents, meetings observations, informal “hallway conversations”, and interviews.

Meeting observations

Longitudinal real-time meeting observations will be conducted during monthly and weekly steering committee meetings, which consist of the entirety of the upper level management. In these meetings management teams are taught principles of service-oriented management, discuss how to implement new service requests from customers, plan transformative actions, and discuss problems they encounter along the way. These meetings will be recorded with the consent of those present and personal notes and the researcher will record reflections from the field later that same day (Barley 1996). Pictures of the meetings will be taken for the sole purpose of aiding the researchers’ memory of the events and ambient factors surrounding the event.

Data Analysis

Each interview and meeting transcript or set of notes taken from document analysis, observations, and informal “hallway interviews” will be coded using qualitative analysis software. Changes to organizational dimensions will be coded based on Applegate’s (1994) framework. Critical incidents resulting in gaps will be coded with Atlas.ti according to the pre-established methods discussed in Section 4 and the six-step process discussed below (Gersick 1991; Lyytinen & Newman 2008).

In step one, data transcripts are used to produce a basic narrative of the overall process: what happened; when did it happen; what went before; what were the outcomes; and what were the influences? These features will be found using a microscopic approach (Strauss and Corbin 1998) which consists of line-by-line coding of the data. During this step, the antecedent conditions will also be identified. From this analysis we will attempt to identify the events, episodes, and stages related to the transformation. In the second step we will look for critical incidents, separating them out into work and build level events, while looking for interactions between them. Step three uses the punctuated equilibrium model (Gersick 1991) to analyze these critical incidents. This model describes change as relatively stable (evolutionary) periods that are punctuated by shorter, turbulent (revolutionary) periods (often started by critical incidents). Fourth, we will interpret the data to draw individual organization-centric diagrams, identifying the four components of Applegate’s (1994) model and any gaps in between them. As there are no clear-cut boundaries between the four components, we will rely on our interpretations to make these categorizations (Newman & Zhu 2009). In the fifth step, we will analyze the context of the organization, university, and broader economic context for their interactions with the process. Finally, we will combine data from steps one to five to construct the overall process diagram (see Figure 1 as a possible example of a research outcome). These steps are seen as a simplification of a process that in reality includes much iteration.

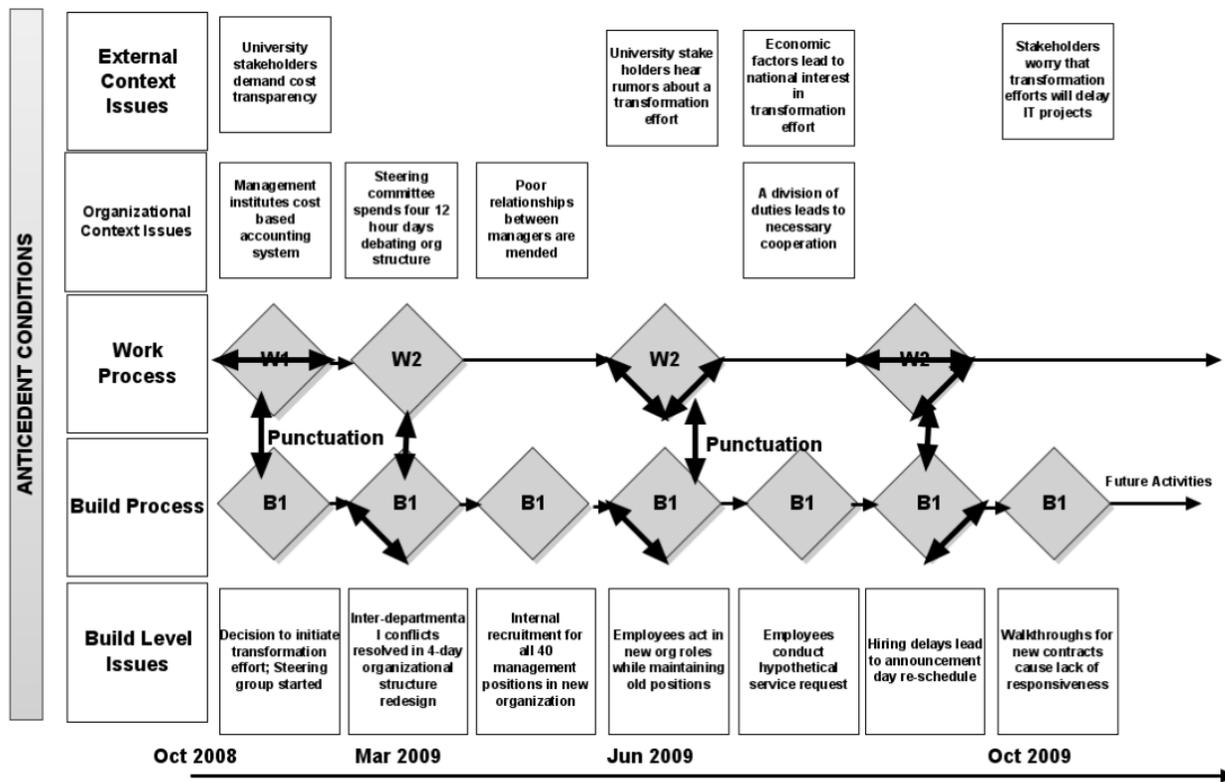


Figure 1. Plausible structure of the transformation process at IT Department

Upon conclusion of the analysis a “member check” will be conducted, wherein all of the final research report’s findings are presented to interested members of the community to solicit their comments. The insights gained from this process will be incorporated into the research report.

DISCUSSION

This research will produce several contributions which will be of interest to the IS community. First, we will demonstrate the advantages of using a punctuated process model to describe the organizational transformation that enables service-oriented management. The use of gap analysis, and build and work processes will yield an insightful and descriptive process description. Second, our study will be able to provide insights into the patterns that lead to success or failure in transforming to service-oriented management. These insights will be a boon to many practitioners of IT management. Third, as there is a dearth of this type of labor-intensive process study (Newman & Zhu 2009), this research will serve as a model to others considering a similar research paradigm. Fourth, we will build much needed theory in this nascent area of service-oriented management (Demirkan & Goul 2008).

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