

Ambidexterity and Paradexterity: A typology of IT Governance contradictions

Full papers

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Abstract

The theoretical construct of organizational ambidexterity addresses how organizations balance managerial contradictions such as exploitation and exploration or efficiency and flexibility. The underlying argument is that management should involve not a trade-off between two states, but simultaneous handling of contradictions. This paper expands the theory of organizational ambidexterity through introducing a typology of contradictions in the form of dichotomies and dualities within a particular management focus, i.e. IT Governance. The paper utilizes a previous study of IT Governance practice at two large, public universities to propose a typology and the concept of paradexterity. Through this, the paper seeks to add new knowledge to the fields of both organizational ambidexterity and IT Governance.

Keywords: ambidexterity, paradexterity, it governance, contradiction, dichotomy, duality, paradox

Introduction

Several studies have shown the difficult yet necessary task for management to simultaneously balance activities of exploration and exploitation (Levinthal and March, 1993; Xue, Ray and Sambamurthy, 2012). As a response to this, the construct of *Organizational ambidexterity* has been proposed by researchers such as Duncan (1976), March (1991) and Birkinshaw and Gibson (2004).

According to Raisch and Birkinshaw (2008, p. 375) organizational ambidexterity is defined as the ability to be “aligned and efficient in their management of today’s business demands while simultaneously adaptive to changes in the environment”. According to the same authors, this can be achieved through a multitude of different approaches such as structure (e.g. dual structures) or leadership (e.g. managers embracing contradictions).

Core to the construct of ambidexterity is the identification of trade-offs vested in management contradictions, primarily referred to as dichotomies in the literature. From an etymological perspective, dichotomy traces back to the Greek *dichotomia*, i.e. the dividing in two. This eludes that before the dichotomy there was one, whereby the two are mutually exclusive and jointly exhaustive (Tsang, 1997). Utilizing this definition of dichotomies, we see that many of the reported dichotomies managers struggle with actually fall outside the very definition of dichotomy. For instance, exploration and exploitation

(March, 1991) falls into the category of *duality*, not into the category of dichotomy (Farjoun, 2010). Efficiency and effectiveness, on the other hand, would fall into the category of dichotomy; with the basic definition of doing the right things right being considered a logical whole (Tsang, 1997).

With organizational ambidexterity receiving substantive attention within the academic field, this potential construct ambivalence highlights the need for additional research. In their call for research into organizational ambidexterity, Raisch and Birkinshaw (2008, p. 398f) as well as O'Reilly and Tushman (2011; 2013) make similar observations on shortcomings in terms of construct validity.

The trade-offs between different sides of dichotomies and dualities holds particularly true within IT Governance, where research has long highlighted the difficult nature of balancing contradictions (Weill and Ross, 2004; Leidner, Lo and Gonzales, 2010; Turel and Bart, 2014; Tallon, Ramirez and Short, 2013; Williams and Karahanna, 2013; Lee et al, 2014). With IT reported both as a driving force for decentralization *and* centralization (Nault, 1998; Zarvic et al., 2012; Magnusson, 2013), professionalization *and* deprofessionalization (Christensen, Wang and van Bever, 2013), individual empowerment *and* administrative control (Magnusson and Nilsson, 2014), the construct of organizational ambidexterity offers an interesting and potentially viable road ahead for research on IT Governance (Yu et al, 2014; Huang et al, 2014; Tiwana, Konsynski and Venkatraman, 2014).

The purpose of this paper is to contribute to the literature surrounding organizational ambidexterity and IT Governance through proposing the nucleus of a typology of IT Governance contradictions. This paper contributes through an empirically grounded typology, sensitizing the construct of organizational ambidexterity through complementing it with a new construct, *paradexterity*. With ambidexterity signifying the ability to handle contradictions in the form of dualities, *paradexterity* refers to the ability to handle contradictions in the form of dichotomies.

The outline of the paper is as follows: After this introduction, the precursory findings and theoretical framing is presented. Then the method and results in the form of the proposed typology is presented. Following this, the paper concludes with a discussion.

Precursory findings and theoretical framing

Organizational ambidexterity

Throughout the literature surrounding management, organizational theory and information systems, the existence of clear differentiation in terms of options for management is apparent (Xue, Ray and Sambamurthy, 2012). These differentiations take on different forms such as present and future (Levinthal and March, 1993), exploitation and exploration (March, 1991), flexibility and efficiency (Gawer, 2011) to name but a few.

From early on in the development of the academic fields, the balance between these opposing states has been made clear (Schumpeter, 1934; Coase, 1937), and the issue of necessary trade-offs has been discussed (Kuran, 1988). Duncan (1976) was the first to propose an alternative approach towards handling said trade-offs. Through introducing the concept of *ambidexterity*, i.e. the ability to handle both hands simultaneously and with equal skill, he proposed that successful organizations avoid making trade-offs and instead manage to work with the opposing states in parallel.

March (1991, p.71) approached the concept from the perspective of organizational learning and proposed that: "...maintaining an appropriate balance between exploration and exploitation is a primary factor in the system survival and prosperity".

Following primarily March (1991), research into the construct of organizational ambidexterity received renewed attention throughout the noughties with works by Gibson and Birkinshaw (2004), Raisch and Birkinshaw (2008), Raisch, Birkinshaw, Probst and Tuschman (2009) to name but a few of the central publications during this time.

More recent examples of research approaching the construct of organizational ambidexterity include the works of Junni et al (2013) on the links between organizational ambidexterity and organizational performance, Luger, Rice and Schimmer (2013) on the differentiation between static and dynamic ambidexterity, and, O'Reilly and Tuschman (2013) on the future directions on research involving the

construct. In the latter of these works, the authors highlight the need for additional research into the definitional aspects of organizational ambidexterity, calling for an improvement of the constructs validity as was previously noted as necessary by Raisch et al (2009).

IT Governance

IT Governance has a long tradition of study within Information Systems (see Grabski et al, 2011 for an extensive review). Following Brown and Grant (2005), we can approach previous research into IT Governance through dividing the conducted research into *form* and *contingencies* after what the primary focus of the research has been. In terms of form, this follows a rich tradition of organizational theory research stemming back to the 1960's with Woodward (1965) and Thompson (1969; 2011) as two of the main contributors.

In terms of contingencies, this research has focused on finding the optimal combination of factors such as size, strategy and structure (Ein-Dor and Segev, 1978) on the organization and management of IT. As noted by Brown and Magill (1994) and Sambamurthy and Zmud (1999), this type of single-contingency research was saturated in the late 1990's, and as a response to this they introduced multiple contingency analysis. Despite this, the strive for contingencies between IT Governance configuration and organizational characteristics grew to become criticized for over-simplification and an overly normative stance (Sambamurthy and Zmud, 2000).

In the early 2000's, the construct of IT Governance received renewed academic and industrial interest through the works of primarily Weill and Ross (2004; 2005) at MIT. Since then, there have been a substantial level of interest for the construct, in recent years particularly with the focus of linking business value to issues of IS organization and IT Governance (Buchwald, Urbach and Ahlemann, 2014; Lee et al, 2014; Turel and Bart, 2014) and the links between IT and Organizational governance (Guillimette and Paré, 2012; Williams and Karahanna, 2013; Tiwana, Konsynski and Venkatraman, 2013).

As noted in the introduction of this paper, IT Governance is laden with dichotomies and dualisms in terms of balance and trade-offs. As a response to this, and in line with the parallel development and diffusion of the construct of organizational ambidexterity, we see several attempts at utilizing ambidexterity as an explanatory factor in studies of IT Governance. This includes the work of Xue, Ray and Sambamurthy (2012) and Tiwana, Konsynski and Venkatraman (2013), Yu et al. (2014) and Huang et al (2014). Despite being proposed as an interesting and potentially avenue for future research in these works, the construct of ambidexterity is not further developed (Cao et al, 2013; Cao, Gedajlovic and Zhang, 2009; Chang, Yang and Chen, 2009; Napier, Mathiassen and Robey, 2008).

Toward a typology of IT Governance contradictions

As noted in the introduction, the existence of opposing states for organizational action (March, 1991) does not automatically infer that all opposing states can be categorized as dichotomies. In the definition of dichotomy lies the dividing of a whole into two mutually exclusive and jointly exhaustive (Tsang, 1997), whereby the ambidextrous handling of dichotomies would be a contradiction in terms.

As a response to this, we follow Farjoun (2010) in his use of *dualities* in seeing this as a viable road ahead for improving the construct validity of organizational ambidexterity. In contrast with dichotomies, dualities stem from the dualistic philosophical tradition where the whole is divided into two interdependent principles, i.e. two essential parts. One example of this would be the division of man into body and soul according to Christian tradition, where both are regarded as necessary parts of the system (man).

With ambidexterity etymologically defined through the Latin *ambi* (i.e. both) and *dexter* (i.e. right or favorable), we argue that it is an inappropriate term when referring to the avoidance of tradeoffs between management dichotomies on the basis of these being mutually exclusive and jointly exhaustive. In terms of management dualities, on the other hand, ambidexterity is deemed appropriate.

To address how management works in avoiding trade-offs between dichotomies, we introduce the notion of paradox. Paradox has long been a highly debated element of management studies (Luhmann, 1995; 2002; Eisenhardt, 2000; Czarniawska, 2005; Ask et al, 2007; Borzillo, Probst and Reisch, 2008; Cameron and Quinn, 1988; Lewis, 2000; Poole and Van de Ven, 1989; Andriopoulos and Lewis, 2009). Following

Luhmann (1995), we regard paradox as examples of parallel logic, i.e. derived back to the etymological definition of *para* meaning “beside”, “near” or “along”. Or in the words of Eisenhardt (2000, p. 703):

Paradox is the simultaneous existence of two inconsistent states, such as between innovation and efficiency, collaboration and competition, or new and old. Rather than compromising between the two in some sort of Goldilocks fantasy, vibrant organizations, groups, and individuals change by simultaneously holding the two states.

Any asperation towards avoiding trade-offs between dichotomies is, by definition, paradoxical. According to Luhmann (1995), however, paradoxes are regarded as instances where managers are given the opportunity for moving from reflection to action. A manager faced with a dichotomy hence embarks on reflection to solve the situation, or as Luhmann argues: reflection is a strategy for deparadoxization. Deparadoxization in this manner can be in the form of one of three strategies: temporization, spatialization or relativization.

Hence we arrive at a definition of paradexterity to complement the previously presented definition of ambidexterity. Organizational Paradexterity is the ability to be: “reflective through the identification of management dichotomies”. Following this line of argument, organizational ambidexterity would be defined as the ability to be: “actionable through the parallel aspiration of management dualities”.

Table 1 summarises the differences between dualities and dichotomies.

	<i>Duality</i>	<i>Dichotomy</i>
Description	Two essential parts	Two opposing parts
Summary	“Both”	“Beside”
Metaphor	“Body and Soul”	“Warm and Cold”
Philosophical tradition	Teleology/dualism	Nihilism
Equilibrium	Logical	Illogical
Agreement	Bipartite	Monopartite
Repertoire	Action-Action	Reflection-Action
Management ability	Ambidexterity	Paradexterity

Table 1. Overview of first order differentiation between duality and dichotomy and corresponding management abilities.

Method

The underlying method for this paper is that of theory testing through secondary analysis of qualitative material (Sandelowski and Barroso, 2006). The two cases were selected in an opportunistic manner with access to the empirical material as the primary selection criteria. Key to the selection was that the studies should include transcribed interviews that could be analyzed through Atlas.ti, i.e. that thresholds for initiating a secondary analysis were deemed as low. The two organizations (A and B) are large, public universities in Sweden, and the underlying studies were conducted by the authors of this paper in 2010 and 2012.

Both underlying studies followed the same approach in analyzing IT Governance through a combination of interviews, surveys and document analysis. IT Governance was conceptualized following De Haes and Van Grembergen (2006). The original material is presented in Table 2, and out of this material the secondary analysis focused strictly on the transcribed interviews. The documents and surveys were omitted from this analysis, but provide interesting data for additional analysis in future studies. The interviews ranged from 1 hour to 1,5 hours and were performed with respondents from all levels and lines of the two organizations, with the goal of investigating IT Governance practice and how this was perceived throughout the organizations. The interviews were sound recorded and transcribed verbatim.

Organization A is one of Sweden’s oldest universities with a history dating back to the 17th century. It has around 6,500 employees and 40,000 students. The annual turnover of the organization is €600M and IT

is governed through a three-tier organization with Governance (leadership and ownership), Delivery (all delivery) and Learning (development for the educational environment). Organization B is one of Sweden’s youngest universities with around 1,000 employees and 14,000 students. The annual turnover of the organization is €100M and IT is governed through a centralized delivery model.

The analysis involved reading and re-reading the transcribed interviews per organization in search for contradictions. These were then categorized into dualities and dichotomies following the proposed typology. Following this, a secondary grounded analysis was performed with the intent on looking for patterns in the identified dichotomies and dualities. We avoided looking at previously reported instances of dualities and dichotomies within the IT Governance literature to be as unbiased as possible in respect to the empirical material.

	Organization A	Organization B
Interviews	26	24
Respondents	Managerial staff involved in IT Administrative managers, counselors Faculty and Department managers (Professors) Student union chairman, student	

Table 2. Overview of empirical material.

Results

Through the qualitative analysis of the empirical material, we identified a set of contradictions. These contradictions were categorized into dualisms or dichotomies provided the previously described definition. Table 3 contains an overview of these contradictions along with examples of quotes where the contradiction were identified. Due to space restrictions we are not able to provide a full overview of all the empirical material, or additional justifications in terms of interpretation and categorization.

Category	Contradiction	Example
Dualisms (ambidexterity)	Policy vs Praxis	“...when this re-organization popped up I think that these issues about IT and IT Governance should have come up, but in hindsight I do understand that IT Governance is something that has not been discussed whatsoever.”
	Reality vs Business	“I have a hard time seeing the benefit with us in the IT department being owners of the systems. It feels as we then would push certain issues about... and systems development and so forth... I feel that should be part of the business.”
	Formal vs Informal	“There is nothing specified how these issues should fall down to the IT Department so we have to handle them how we see fit or which way is possible, and now that we have terminated the IT Strategy officer there is nothing formal either that can handle these issues, so we have to handle them, that’s how they have perceived it. But I think that we need something formalized.”
	Centralized vs Decentralized	“So I was one of many... perhaps the loudest in terms of that we should centralize, and that was precisely against the backdrop that I thought that our resources, that we lacked some understanding about what we were dealing with.”
	Maintenance vs Project	“...they removed this a couple of years back. And that was partly to come to terms with when an account should be removed or something like that because then the department heads had to go in and remove the accounts that were lying

		around, and then distribute this... it was three budgets, it was the investment budget and the maintenance budget and then there was that, third budget that was called something, I can't remember now. But that was how we got a small part of the money."
	Quality vs Responsiveness	"I think that most often it is only a telephone operator answering [the support line], she can't handle the issue, so you always need to be further connected to somebody... you need to have luck when you call for instance the helpdesk."
Dichotomies (paradexterity)	Insourced vs Outsourced	"...when the coworkers heard about outsourcing here, then their hairs started standing on the back of their necks you know, they were mad when they heard about it. But today I would claim that the IT department has, and the market has matured to an entirely different level. Nobody said anything when I outsourced the student's email to the cloud... no one reacted. And I hear that the maintenance group... would also like to get rid of the staff's email... the target was to outsource... email for staff to the cloud before the end of the year."
	Horizontal vs Vertical	"... should both be able to act upwards and act downwards and towards the sides and, but... we need a clear order, at least if I see this from maintenance, I see a lot of this... we want to have control over the activities that come in in order to allocate resources but also be able to show if we perhaps lack the resources."
	Man vs Woman	"It doesn't matter if it is a woman. It doesn't matter, but its, I would claim that, yes, that is also a way of balancing the department."
	Supply-and-Demand function vs Integrated in business functions	"The supply- and demand organization has not really made it into operations, it has never been implemented but is only a paper construct. We have SLAs for some of the systems but that is for maintenance of some library system... but it was way too complicated... then you created a SLA Light and that was not really... well, if there had been time and energy to push it through..."
	Overhead vs Chargeback	"We are visible on the overhead charge. So we are part of overhead now... you can go into the annual reports to see this, but they can't see what they get for their money."
	Efficiency vs Effectiveness	"...part of the tools that we use for instance are really obstructions for efficient work and business development, there are some tools missing that we would need to have in place in order for this to become a better business."

Table 3. Overview of contradictions identified in the empirical material

Discussion

In this paper we have strived for sensitizing and increasing the construct validity of organizational ambidexterity in the study of IT Governance. We have done so through introducing the nucleus of a typology for categorizing and differentiating between dualities and dichotomies. On the basis of this, we have proposed the construct of paradexterity as a complement to organizational ambidexterity.

The differentiation between dualities and dichotomies opens up for a more nuanced understanding of how management approaches and deals with issues related to IT Governance. We argue that the

previously reported trade-offs between contradictions within IT Governance cannot be handled in a uniform manner. There is a clear difference in how a CIO for instance handles the dichotomy of efficiency and flexibility and how she handles the dualism of exploration and exploitation.

As we have shown, utilizing support from the field of paradoxes within management and more specifically Luhmann (1995), the existence of management dichotomies could be regarded as a means to induce reflection among managers. Through deparadoxization, the dichotomy opens up for action but in a manner not captured in the construct of organizational ambidexterity. Handling management dichotomies through the ability of organizational ambidexterity is per definition not possible, given that dichotomies are, mutually exclusive and jointly exhaustive (Tsang, 1997). Instead, we proposed that ambidexterity should be deemed relevant when dealing with management dualities, but in terms of dichotomies the ability of paradexterity is more fitting.

From a practical perspective, with dichotomies poised towards reflection and dualities towards action, this implies that IT Governance should work to utilize dichotomies as a means for reflection in the short term. In the long term, however, the organization should work with moving from dichotomies to dualities. This could be done through identifying the core dichotomies in their particular situation and accepting that they cannot be managed in the same way as the dualities. We argue that this type of sensitization is valuable for managers and their organizations.

With this being a response to a previous call for research into the definitional and construct validity aspects of organizational ambidexterity (Raisch and Birkinshaw, 2008; O'Reilly and Tuschman, 2013), we propose three future projects:

1. Micro-studies of CIOs and their individual coping mechanisms with dichotomies and dualities. As noted by Raisch and Birkinshaw (2008) and O'Reilly and Tuschman (2013), one of the most promising avenues for research into organizational ambidexterity at the present time lies within the role of leadership. This implies that the previously predominating organizational level of analysis should be complemented by an individual level of analysis. Given that the proposed typology shows that dichotomies and dualities are handled in different ways, this opens up for a micro-study of individual CIO behavior.
2. Macro-studies of internal relationships and categories of dichotomies and dualisms. As seen in the different instances identified in this paper, we see the possibility of further nuancing the structure. In this brief study, we see emerging categories of spatial, temporal, logical, relational, organizational, financial and technological instances, but this requires additional attention.
3. Meta-studies of previous research on organizational ambidexterity utilizing and developing the proposed typology. With this being one of the first attempts to focus on the construct validity of organizational ambidexterity, we see the need for approaching previous research in a structured manner, mapping previous use of both the construct and the underlying contradictions. As noted, we see a clear difference between dichotomies and dualities and a meta-study of previous empirical research could open up for a more nuanced understanding of how the construct of organizational ambidexterity has been used in previous research.

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