Paradox and deparaxotization: Studying IT Governance through Luhmann’s Theory of Social Systems

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Abstract. This paper uses Niclas Luhmann’s concepts of paradox and deparadoxization as a starting point for looking at IT governance within large, Swedish organizations. All in all a total of 25 organizations within both the public and private sector have been investigated through interviews with the companies Chief Information Officers. The results are presented in relation to a number of areas within the study that could be identified as dichotomies, or areas where the respondents had to deal with conflicting logics. The results are discussed in general terms in relation to IT Governance practice as well as the potential value of applying Luhmann’s theory of Social Systems to the study of IT Governance.

Introduction

Governance issues related to organizing the IT-function is often portrayed as highly complex and cumbersome (Schwartz & Hirschheim, 2003). Despite this, research into the phenomena of IT Governance (differentiated from IT Management through a focus on setting rather than operations) has historically been rather scarce (Sambamurthy & Zmud, 2000).
Apart from issues related to structure (Dearden, 1965; Agarwal & Sambamurthy, 2002) and loci of responsibility (Schwartz & Hirschheim, 2003); recent developments within this area of inquiry has turned more towards organizing logic (Prahalad & Bettis, 1986), authority patterns (Sambamurty & Zmud, 1999) and capabilities (Feeny & Willcocks, 1998; Willcocks, Feeny & Olson, 2006).

According to Luhmann (1995) and Czarniawska (2005), paradoxes can be seen as occurrences forcing the actor to switch mode from reflection to action, and hence a potential methodological approach to studying practice. In this temporary state of disharmony, the actor is forced to face parallel logics and choose between different strategies for *deparadoxization* (Luhmann, 1995), resulting in activity as opposed to observation and reflection.

This paper uses the concept of paradox as inspiration for studying the phenomena of IT Governance in large organizations. Through applying the concept in relation to its original meaning (*contradiction*, Luhmann (1995)) as a means for identifying areas within the study where the respondents have been forced to deal (in the past-tense form) with contradicting logics (centralize/decentralize, standardize/customize etc), this paper uses paradox as a method for analytical selection.

Using Luhmann in this rather shallow and in some means “tool-box-related” manner could be seen as unwarranted, especially in light of the strong rhetoric stance of Luhmann himself (1983) against the fragmented usage of social theory for empirical investigations. Despite this, there is a strong interest within contemporary social- and organizational theory to use Luhmann (Seidl & Becker, 2005), yet the applications within IT-related research has been disparate at best. Hence, we feel the approach used in this paper necessary to further the usage of Luhmann’s Social Systems Theory within IT-related research.

**Theoretical foundation**

**Social Systems as Autopoietic**

“In this sense, in respect of its own information, the universe *must* expand to escape the telescopes through which we, who are it, are trying to capture it, which is us. The snake eats itself, the dog chases its tail.” Spencer Brown, 1979:104-106

The opening quote by the mathematician John Spencer Brown can be seen as figurative for the stream of thought underlying the works of Niklas Luhmann. Together with influences from biology (Maturana & Verula, 1980) and systems theory and cybernetics (Wiener, 1948), Luhmann makes a theoretical attempt to solve the age-long problems related to dualistic differentiations such as
subjectivity/objectivity, agent/structure, and macro/micro; much in the same way as Giddens (1984) among others have tried.

In his seminal work on social systems (1995), Luhmann tries to capture society as a self-ordering/self-organizing/self-reproducing (i.e. Autopoietic) system. According to Luhmann, social systems are self-referencing and hence the relationship between the observer and the observed must be seen as part of the system. Following this train of thought, the paradox of self-referentiality can be described through the paradoxal analogy of the eye seeing the eye seeing the eye (Rasch, 2000).

By regarding society as a closed system of observations (or more correctly communications using Luhmann’s terminology), distinction becomes input to the distinction and, to paraphrase Spencer Brown (1979), the snake eats itself. In the same manner the role of theory becomes problematic, since it is self-referential and hence impossible to separate from the practice which it seeks to address.

Paradox and Deparadoxization

Paradoxes can be seen as instances of logical parallelism, or statements that may seem contradictory. For instance, the statement “To walk is less tiresome than standing” can be seen as containing a paradox, since the general notion of walking is related to physical activity whereas standing is seen as motionless.

Luhmann (1995) describes paradoxes (or in his own words contradictions) as points of origin, and valuable resources for sociology and the study of social systems. Rather than being something to evade or deconstruct, the paradox can be seen as an instance of the social system itself, or in the words of Czarniawska (2005:2):

“Paradoxes are not attributes of social systems but the results of using the logical analysis as an observation tool.”

Paradox hence appears when the individual switches from the state of first-order observer to the state of second-order observer, or in other words when she is reflective of her own role/function/position in the system.

According to Luhmann (1995) and Czarniawska (2005;1997), this reflexivity results in an observational paralysis, leading on to an incitement of action. This oscillation between observation (reflection), contradiction (paradox) and action (ordering) is an inherent attribute of the social system.

Luhmann (1995) goes on to describe the existence of contradictions through describing them as acts of self-reference and functioning as something similar to an immune system for the self-ordering social system. The contradiction (paradox in our terminology) hence acts as autopoietic reproduction.

To deal with paradoxes, the individual applies one of three strategies (ie deparadoxization strategies), namely temporization, spatialization and relativization. These strategies are deployed to relate or separate the contradiction from the situation at hand.
**Temporization** can be seen as a detachment of the contradiction in time, and hence repackaging the contradiction into a narrative. Czarniawska (2005) relates this strategy to Gumbrechts (1991) strategy of narrativization, and further on to dramatist theory.

**Spatialization** acts in the same way to detach the contradiction but through separating the conflicting elements in space rather than time.

**Relativization** involves either bringing in an unbiased second-order observer (for instance a consultant) or switching role as first-order observer (taking on another observer’s perspective).

## Methodology

The study was undertaken in the spring of 2006 by researchers at Chalmers University of Technology, the Gothenburg School of Business, Economics and Law and the IT University in Göteborg. Initiated by Accenture, the basic outline of the study had previously been deployed in studies of IT Governance practice in Norway, Denmark and the Netherlands.

All in all a total of 25 interviews with mostly Chief Information Officers (CIOs) of large organizations based in Sweden was conducted. The interviews spanned from 90 to 180 minutes and were all conducted through face-to-face meetings at the offices of the respective CIOs. Out of the 25 interviews, seven were with organizations within the public sector, seven within the Finance and Banking sector, and eleven with other industries such as retail, automotive and biotechnology.

The outline of the interviews consisted of 40 structured questions within seven underlying areas. Apart from introductory and general questions, the questions focused on IT Value, IT Leadership, Strategic Alignment, Performance Measurement, Resource Management, Financial Management and Risk Management.

The respondents were invited to participate in the study via regular mail and then approached via phone for the scheduling of interviews. All in all a total of 40 companies were approached with an invitation to participate in the study, and out of these 15 declined the invitation mainly due to lack of interest, current reorganization activities, lack of time or the fear of being involved in a study where Accenture would have access to the results.

The respondents were promised total anonymity and feedback in the form of a standardized bench-mark where their individual results would be related to the aggregated results.

The interviews were documented by sound-recording and partially transcribed. Apart from this, a quantitative report of each interview was constructed.
The results were then reevaluated using Luhmann’s (1995) and Czarniawska’s (2002) perspectives on paradox and deparadoxization with the aim of identifying paradoxes in the seven underlying areas of the study. All in all a total of ten general paradoxes were identified as dichotomies were the respondents positioned themselves in a bi-polar manner, or in other words were they displayed contradictory logics.

These 12 dichotomies are presented first in a quantitative manner in order to give the reader a brief overview and then elaborated upon qualitatively through quotes from the interviews. The results are discussed solely in general, practical terms without any attention being paid to the theoretical implications. This is instead discussed in the last section under Discussion, where the usage of Luhmanns Paradox as a methodology for analytical selection is elaborated upon.

Results

The results are presented in relation to the seven underlying areas of the study. For each area we have identified a number of possible paradoxes and these are presented as quantified dichotomies (general positioning on a 5-degree Likert-scale) and further elaborated upon by quotes from the interviews. Due to the analytical selection, the areas of Strategic Alignment and Risk Management have been excluded from the results.

IT Value

IT regarded as Cost Center vs Strategic Asset

The perception of IT as a cost centre vis-à-vis strategic asset could be seen as one of the most central issues within the field of IT Governance. Depending on industry, the role of IT as either a means for rationalization, process improvement or radical redesign is constantly changing. As for the perception of IT as a strategic asset, this is especially significant for industries such as Finance and Banking, where IT has reshaped a large portion of the traditional services. Despite this, the level of insight into the full potential of IT in the reshaping of business processes and services is still not entirely widespread throughout the entire organization.

From the CIOs perspective, IT is not yet considered as full out imperative for business continuance and redesign, and support from for instance top-
management is still seen as something almost surprising, or in the words of one respondent from public administration:

“We are so fortunate that our new boss is technically competent. He understands how IT in a positive way may influence the organization.”

At the same time the tension between top-management’s perception of IT as a cost-centre or a strategic asset can be regarded in the light of the political dimension of the CIO-function. In many of the organizations investigated, the CIO currently was represented within top management and this would imply that IT as such had been identified as a strategically significant area. The inclusion of the CIO into the top management of the company could serve as both a symbolic, legitimizing action for the role of IT and as an indication for the importance of IT as a cross-functional department. With IT more and more becoming part of the services offered by companies, the role of the CIO and hence also IT Governance becomes more and more natural and less in conflict, or as one respondent from an insurance company put it:

“Top-management has during recent years become much better at synchronizing IT with the overall management, so you no longer constantly have to fight for your turf and your function.”

Investments as Separated vs Linked

Key to the relationship between the investments and the overall business objectives of the companies investigated is the role of the buyer. With much of the responsibility for the benefit realization being allocated to the system/process owners, the forums available for creating project specifications, business cases etc along with the distribution of representation within these forums become one of the most important elements of a successful IT Governance structure.

In general, the organizations investigated displayed a clear understanding of the importance of linking investments to objectives as well as the importance of a formalized and structured approach for facilitating this. Despite this, we found that the political dimensions of these forums could prove a problematic area, especially with the uneven distribution of power and responsibility between the business- and IT professionals.

Some of the organizations that were investigated had seen the IT Governance function and the role of the CIO come as a result of a direct initiative from the IT department. In these cases, the function of the forums for investment evaluation could be seen as forums were the IT professionals could secure their position against unclear demands and potentially risky post-investment evaluations. On the other side of this spectrum a number of organizations had an IT Governance
function that had come as a result of initiatives from the business side, mainly due to a feeling of lack of control over the development-side of the IT function.

Regardless of whether IT Governance was an initiative from the IT or business side of the organization, the tension between these two sides and the political dimension of the forums for investment evaluation/prioritizing proved highly problematic.

When it came to the alignment of investments on a more strategic level, the formulation we have found some indications of a shift from having a static IT strategy over a number of years to an annually revised strategy. Or in the words of one of our respondents, a CIO at a major bank:

“This year we did a retake on our entire IT strategy. Each year the bank creates a new strategic plan overlooking the next coming three years. This is something we do every year. Earlier years we have not included the IT strategy in this work, but instead we have had an old IT strategy, dated back to 97-98 as it appeared then, with some minor adaptations. Now we have taken a firm hold of this and from last year we have a formal process, where we at the same time as the banks strategic planning also make a review of the IT strategy. So that it holds up to the new strategic direction… We hence see to it that we keep the IT strategy aligned with the Business strategy… on a yearly basis.”

IT Leadership

IT Management vs Top Management responsibility for realizing value

“IT is responsible for delivering; the receiving, or ordering unit is responsible for the benefits realization.”

As the quote from a large insurance organization shows, the distribution of responsibility between the IT and the business side of the organization for the realization of value is often made perfectly clear by the CIO. The IT organization functions as an internal supplier where the success of the investment becomes directly dependent upon the competence on the buyer-side.

This is highly problematic and once again emphasizes the role of the CIO and IT Governance as a safety-net for historically fuzzy demands and unclear roles and responsibilities between IT and business.

However, not all organizations displayed the same relentlessness in the distribution of responsibility between IT and business, or in the words of the CIO of a major bank:

“Who is responsible? Well, it is business and IT, they have a shared responsibility.”
Regardless if the responsibility lies solely or shared on the cadre of middle managers constituting the bulk of system/process owners within the organizations, it still highlights a difficult position for these business professionals. Without the education of an IT professional and often also without the experience of acting in a position were you constantly have to evaluate a wide spectrum of IT-related products and services, these middle managers often find themselves stuck between a rock and a hard place.

This difficult position is also influenced negatively by the political minefields that often surround IT related issues, and hence the middle managers are left in a position were they have responsibility over the realization of benefits and value of investments that they have little competence regarding and little influence over over.

### Bottom-up vs Top-down establishment of the IT agenda

Despite the fact that many of the organizations investigated did not use terminology that included the concept of IT agenda, the overall situation displayed a high degree of focus on the IT agenda as something that a chosen few had influence over.

At the same time many of the respondents displayed an ambiguous attitude towards this autocracy, and many also tried to give a more nuanced description of a process of more or less pseudo-democracy, or in the words of the CIO of a bank:

"It is bottom-up… and they you get a complete list that is top-down prioritized."

In this manner, top management is more or less autonomous in their setting of the final IT agenda, despite the need for securing the process at lower levels.

### Unformalized vs formalized decision process for IT-investments

The overall level of formalization when it comes to the decision process in relation to IT specific investments was very high. This could be regarded in relation to the historical lack of investment evaluation within IT, or in the less
flattering political dimension of the evaluation as a means for investment justification rather than evaluation.

Regardless of how you look at it, the CIOs that participated in this study highlighted the importance of the formalized investment process in the overall work concerning IT Governance. With the focus of this study being on the role of the CIO, there are however some limitations to this claim.

We believe that we would have gotten an entirely different picture if we targeted for instance middle managers throughout the organization as well as CIOs.

Another interesting aspect of the formalization of the decision process for IT investments was the lack of IT-based solutions as support for this process. Or in the words of one CIO within the Finance industry:

“The process, well we’ve got that… we don’t have any IT tools though, but we have a formalized process, where it is very clear what is to be included as documents and such.”

Performance Measurement

Unformalized vs Formalized performance measurement

The distribution of results showed a high degree of variance in the degree of formalization when it came to performance measurement. Most organizations highlighted the importance of adequate performance measurements as a means for securing the continued high level of quality within the IT organization, yet the number of organizations that actually were able to talk about these measurements in more detail were more scarce.

The most common approach towards performance measurement within the organizations that participated in the study was to adopt the same method for performance measurement as the rest of the organization. If the rest of the organization for instance had adopted balanced scorecards as a performance measurement, then the IT organization used the same methodology. Or in the words of a CIO at a major bank:

“Then we are well on the way, you could say. We have what we call scorecards on both the business side and the internal support side, even though they continuously come out in new releases. We are in the process of publishing a scorecard for private bankers, and we have a scorecard for the corporate side, and we have a scorecard for markets…”
Some of the organizations had started to glance in the direction of IT balanced scorecards, but no one had yet implemented or fully evaluated this approach.

Cost vs Value Added of IT

The previously mentioned differentiation between the role of IT as cost or value-adding also influenced the performance measurement of the organizations that participated in the study. Many of the CIOs went to a great extent in trying to validate the means in which they measured their performance, and often in relation to the adding of value and the realization of benefits.

“We work a lot with performance measurement in our everyday business, and try to mirror this into the IT organization as well… There are balanced scorecards for the IT organization both in a scorecard for the development organization and one for the maintenance organization, so… well I feel that we always have a purpose in measuring our improvements in relation to our selves.”

When it came to the importance of these performance measurements, some organizations were rather ambiguous regarding the importance of the information as a means for operational control, especially in relation to the matching of business cases and outcomes of budgets from the specific projects. In the words of a CIO from the Finance industry:

“Since budget generally within the culture does not mean that much it is very important to make a qualified assessment before you start and we, off-course, do not like it when you don’t do it… but it is naturally not so that if you do not reach a certain level, or you reach a certain roof you go ‘NONONO, now you have to stop. Now we have spent 70 million on this, so now...’ “

Resource Management

Ad-hoc vs Enterprise wide resource pool

“We use portfolio management for everything, everybody is going through the same needle’s eye, and compete for the same resources.”
The resource management of the companies that participated in the study more or less all displayed a highly centralized control in the means of having one pool of human resources and staff, at least per country. Contrary to this, most of the organizations were highly decentralized.

This seems to have some implications for the professionalization, were the general perception of IT professionals are regarded as resources that easily can be moved around the organization depending on the current level of resource-strain.

Financial Management

Corporate insight into Cost vs Benefit of IT

On the financial management side, a large emphasis was once again put on the assessment of IT related investments, and many of the organizations gave dazzling displays of ingenuity when it came to the control of the investment process, or in the words of one respondent from the Banking sector:

“IT is impossible to simply set up a business case in order to get a decision, because we have controllers positioned within the investment process and include the described benefits of the business cases in the following years budgets.”

As the quote shows, the configuration of the forums for IT related investments are distinct in many ways, and have in this specific example even gone so far as to make it impossible for people to push their specific investments without repercussions on next years budget.

This could function as a good example of the way in which the CIO and the IT Governance function has created a setup were the IT professionals back is always free and the responsibility for the investments are regularly moved away from the IT organization to the middle-managers and business unit managers.
On the issue of how the IT organization distributes the cost of IT to the overall business, the study showed that there was generally a high degree of transparency when it came to costs. On the other hand the transparency when it came to the benefits was, as mentioned previously, not that apparent.

When it came to the level of specificity of the distribution of costs, many organizations had highly elaborate methods for ensuring that the right costs were related to the right internal clients.

“Every time you sit and make a transaction out in an office, it generates a cost of 0,07 ören or something like that. That’s the degree (of specificity) we are talking about.”

Very few organizations had a simple overhead structure of cost allocations, mainly due to the overall necessity for relating the cost of IT to the factual usage, or more bluntly expressed in the words of the CIO of an insurance organizations:

“…it soothes the regional offices.”

**Discussion**

The IT Governance function and the CIO have during the last couple of years been discussed as prerequisites for a successful corporate organizing of the IT function. This study, on the other hand has highlighted a slightly different aspect of IT Governance and the CIO, namely the interim attributes of the CIO as an intermediary between business and IT.

Many of the CIOs interviewed in this study were middle-aged men with a background from the business side rather than the IT side. As we see it, the existence of an organization for IT Governance and a role for the CIO is dependent on a separation of IT and business that (at least according to this study) is more and more becoming something of an oddity.

With the introduction of more and more elaborate ways of measuring the value of IT in parallel with the ever growing inclusion of IT in services and products, many of the companies that we have investigated have for instance chosen to avoid categorizing projects after their relationship to IT (IT/IT-related project), and this could be seen as a first step towards a perception of IT as a naturally integrated part of all elements of business.

At the same time we see the technological developments within Service Oriented Architectures as well as the trends towards multi-sourcing (instead of megadeals) as steps towards a more differentiated and nuanced perception of the added value of IT. When these developments have been fully institutionalized AND the competence on the middle manager side when it comes to the procurement of IT has been greatly increased along with the empowerment of the manager, the interim solution of CIO may not be necessary any more.
The potential value of Luhmann’s theorizing

This paper has attempted to use some of the basic elements of Luhmann’s theory of social systems to approach the issue of IT Governance in large Swedish organizations. By using the concept of paradox as a vehicle for analytical selection, the paper has taken a first step towards incorporating sociological building blocks into the study of the organization of IT.

Luhmann’s main contribution is a universal theory, counterintuitive separated from empirical evidence. Hence, any application of elements of this grand theory towards empirical selection could be considered sacrilegious in at least two ways. Departing from the clear differentiation between empirical evidence and theoretical consistency, the usage of Luhmann’s theory for anything other than theorizing would (according to Luhmann) be counterproductive due to the claim of totality and self-referentiality of the theory. Further on, the usage of elements of the grand theory would in itself be absolutely destructive for the holistic claim. Luhmann (1983:988) was well aware of the usage of theory as legitimization and the potential pitfalls of it:

“The ship of theory is no longer navigated with the aid of a compass, but rather by looking at the figurehead.”

Despite this, we feel that the approach of the paper is valid as a first step towards infusing the analytical toolbox for IT-related studies. Luhmann’s work has during recent years transgressed the German language barrier and with more and more of his publications becoming available to the English speaking majority of researchers, a certain degree of sacrilege and lack of apparent respect for the theory itself is necessary.

And as for the issue of deparadoxization…

As stated in the title of this paper, our approach towards studying IT Governance with the aid of Luhmanns theory of social systems encompassed the issue of deparadoxization.

The most common strategy for deparadoxization that we found in the results was the usage of a third-party or second-order observer in the form of external consultants or in other words relativization. This could for instance be seen in the highly emphasized process of project prioritization, a key-element of the IT Governance approach of most of the companies investigated. To name but one example, one respondent within the retail industry made it very clear that the entire process had been designed by external consultants that had ample expertise within this area and experience from setting up the same process at several other large corporations. In this case, the relativization seemed to fulfill both a deparadoxization as well as a legitimization affect, making it extra potent.

This close relationship between the strive for legitimacy and the cognitive management of paradoxes by the IT professionals is one area that we feel should
be investigated further. This could perhaps be done by introducing some of the elements from neo-institutional theory into the arena of social systems theory, a notion that is discussed more in detail by for instance Hasse (2005).

As for the strategies of temporization and spatialization, this could be studied in more detailed through a further methodological emphasis on narratives (Czarniawska, 2005). With the design of this study being highly structured and handed down for comparability with other instances of this pan-european study, the narratives inherent in the historical background of how the paradoxes had been resolved were seldom triggered by the researcher conducting the interview. As we see it, the biased distribution of mainly relativization as a strategy of deparadoxization could be seen as a direct affect of the design of the study.

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