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## ABSTRACT

Consulting is a major and established business sector in almost every Western economy representing, for instance, 42% of the EU GNP. About 29% of this market comprises IT-related consulting and especially ERP consulting. Here, the implementation of information systems and the inevitable change to organisational-technical systems is also a political process. An IT-consulting project can thus be perceived as an institutional arena for political activities where particular actors including management, employees, but also consultants, negotiate and promote their own interests. Despite the importance of the political nature of socio-technical system design, it has so far been underresearched and understated. Therefore, focusing on this political perspective, we will approach the analysis and design of IT-consulting projects by drawing on the theory of governance and modern system theory. We seek to develop a theoretical framework that facilitates the analysis and the design of IT-consulting projects. An actor-centred systemic view will facilitate an analysis of the organisation-consultant-system, taking into account especially the different actors' rationales and motivations. The domain of ERP implementation will be used to provide an application example in terms of a case study. Here, a governance theory analysis of an ERP consulting project will be conducted and relevant aspects for the design of ERP consulting processes derived.

## Keywords

IT-Consulting, Project Management, Design Science Research, ERP Implementation, Governance Theory.

## INTRODUCTION

Consulting is established as a major business in almost every western economy while a large share of this market (about 29%) is covered by IT-related consulting (Feaco 2004; Freedman 2004; Simons 2002), especially ERP consulting (Cecez-Kecmanovic et al. 2002; Ko et al. 2005). IT-consulting can be regarded as a specific context for bringing change to a socio-technical system, the organisation and its technology. When, for instance, it comes to researching IT-Consulting related to ERP implementation, the policy dimension is often analysed (Cecez-Kecmanovic et al. 2002; Soh et al. 2005): What should the organisation look like? Investigations into the nature of designing such desirable organisations – which take a process view – are oriented around project guidelines, generally sharing a consultants perspective (Bassellier et al. 2004; Pawlowski et al. 2004). However, despite the importance of the political nature of projects that change socio-technical systems (Boland et al. 1983; Hirschheim et al. 1991; Markus 1983) this element so far has been seriously underresearched (Knights et al. 1994; Wilson et al. 2005). In fact, system and governance theory can provide valuable perspectives for analysing and designing IT-consulting projects. Firstly, system theory not only provides a framework for analysing the organisational system, but also the repertoire for intervening and changing the system (Beer 1985; Checkland et al. 1990; Churchman 1971). Secondly, drawing on systems theory, governance theory emphasises that system intervention and the system regulation are not external processes. In converse, the theory demonstrates that system regulation primarily takes place within the system itself. Governance theory thus challenges the assumption of a dichotomy between the intervening subject (regulator) and the regulated object/system (Mayntz 1998; Mayntz et al. 1995; Scharpf 2000). This involves an actor-centred analysis (Scharpf 1997), especially regarding the actors' various rationales and motivations, of the reframed system which now includes the organisational system as well as the 'regulator', for instance, the consultant.

Accordingly, the aim of this paper is a) to provide a governance theory procedural framework to support the analysis and design of IT-consulting projects and b) to apply it in the domain of ERP consulting by means of a case study. The framework will question the dichotomy between consultants who regulate and the organisation which is regulated. This approach will

thus reshape the system in focus. In consequence, both consultants and other internal and external actors will be perceived as having roles with specific rationales and motivations which shape their options and actions. In order to achieve this research objective, we will address the following questions in the course of the paper:

- What are the basic principles of governance theory and can they add value to the analysis and design of IT-consulting projects? (Section 2)

- What are the aims of a theoretical procedural framework for supporting the analysis and design of IT-consulting processes and for guiding IT-consulting projects. How can these aims be reflected in the structure of the framework? (Section 3)

- Using the example of ERP implementation, how does the governance theory framework support the analysis and the design of IT-consulting processes in practice? What are the case study implications (in terms of governance theory) for guiding ERP-consulting projects? (Section 4)

In addressing this research objective, several methods will be applied. Especially in Section 2 (governance theory), we will focus on theoretical and logical arguments. Based on these theoretical insights, the framework for supporting the analysis and design of IT-consulting projects is presented in Section 3. The framework development process was supported by several expert interviews with experienced consultants as well as by interviews with experts from industry. Here, the underlying epistemology is that of linguistic interpretivism (Becker et al. 2006; Kamlah et al. 1973). Due to length restrictions, we cannot provide the interview analysis within this paper. However, we provide empirical evidence by applying the procedural framework to the domain of ERP implementation in the terms of a case study. The case study methodology (Cavaye 1996; Doolin 1996; Lee 1989; Yin 2003) will be given in Section 4. The reason for the empirical analysis taking the form of an ERP consulting case study is that we consider the paper to contribute to and to be part of design science research in IS (Boland 1989; Hevner et al. 2004; March et al. 1995; Rossi et al. 2003; Simon 1981). Our guiding research question is not only that of analysing IT-consulting processes from a governance theory perspective, but also that of supporting design tasks. At this point, we will also elaborate the extent to which governance theory can also be regarded as design theory for IT-consulting projects (Walls et al. 1992). Within the concluding section, we will furthermore provide a brief assessment of this present research, following the guidelines for evaluating design science in IS research given by Hevner et al. (2004) against the background of a linguistic interpretivist stance (Becker et al. 2006; Kamlah et al. 1973).

**GOVERNANCE THEORY**

Governance theory originates from policy research in political science. Here, empirical research in policy making showed that efforts to implement political decisions (policy implementation) often failed due to the implementation of decisions from the perspective of an external regulator (Mayntz 1998). Here, governance theory provides a specific perspective on 'decision making and decision implementation systems' and draws fundamentally on system theory. System theory is also fundamental to the field of 'Information Systems' (IS) and this is not only reflected in its name (Lee 2000). It has long been known and applied to IS studies (Beer 1985; Checkland 1981; Checkland et al. 1990; Churchman 1971; Churchman 1979). System theory primarily provides the means to identify, distinct, analyse, and to change a phenomenon of interest (a system). For instance, socio-technical approaches emphasise that IS comprises behavioural sub-systems, for instance, people or culture, as well as technological sub-systems, for instance, hardware or software (Keen 1981; Kvasny et al. 2003; Mumford et al. 1985; Mumford et al. 1979; Walls et al. 1992). System theory is thus also a fundamental principle in the field of IS (Lee 2000; Maturana et al. 1980). Here, governance theory challenges the assumption of a dichotomy between the system-external regulator (e.g., political power) and the regulated system (e.g., a policy field).[1] The following main reasons for such implementation faults have been identified (Mayntz 1997, pp 194):

- *Operational problems*: Many attempts to change systems based on the assumption of external regulation led to major implementation problems. Often, the capabilities of those authorities concerned with the implementation process (referred to as 'implementers') have not been appreciated correctly. This means that the policy goal and/or the implementation method have not been selected appropriately.

- *Motivational problems*. Several motivational problems have emerged when systems have been externally regulated. External regulations might not fully appreciate or understand implementers' norms, values, and own motivations.

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[1] System theory literature provides a comprehensive discussion of system autopoiesis, (cf., for instance, Maturana et al. 1980) which, in this context, can be interpreted as the general principle of systemic self-regulation. However, governance theory derives a similar stance by analysing the dynamics of decision making and implementation in complex (societal) systems, especially taking into account system internal resistance to external regulations (Mayntz 1997).

Furthermore, a policy addressees' perspective (for instance, the benefitors) might have been misinterpreted or, as frequently occurred, changed over time. In consequence, external regulations have struggled because of the system actors' having lacked motivational support.

- *Knowledge problems*. External regulations often cause (negative) side-effects which are not considered by an external regulator before. It is obvious, that decisions based on an external approach to the system often lack actual system knowledge.

- *Regulatory problems*. Pursuing a desired objective, external regulatory efforts struggle due to system internal contra-regulations. Regulation also takes place within the system, conducted by the system actors and often counteract external endeavours. Thus, exclusive external regulation is revealed as an assumption that does not hold true in most decision making and implementation systems.

Often, these problems are interdependent and occur at the same time. For instance, system-internal counter-regulation is often tied to motivational discrepancies. The systemic constraints, e.g. law or an employment contract within a corporate setting, do not fully restrict the system actors' operational options (see also the structuration theory of Giddens 1984). In this respect, due to motivational problems, counter-regulation takes place even within the system constraints. Decision making and implementation has thus to be perceived as a political process of regulation and counter-regulation, of motivations, rationales, conflicts and negotiations. Although political behaviour is often perceived as 'background myth' in the IS field, it is nevertheless equally important (Boland et al. 1983; Hirschheim et al. 1991; Knights et al. 1994; Markus 1983; Wilson et al. 2005). Therefore, in order to gain a greater understanding of the political counter-dynamics and problems of decision implementation, governance theory suggests performing a system reframing.

This reframing means that not only the regulatory processes, but also the regulator has to be part of the system in focus. A governance theory view on the system, often referred to as actor-centred institutionalism, has the following basic characteristics (Mayntz 1998; Mayntz et al. 1995; Scharpf 1997):

- *Actors* have certain perceptions, capabilities, motivations, and preferences (regarding this 'political view' see Mintzberg 1980; Pfeffer 1981; Wilson et al. 2005). Due to the non-deterministic system environment, these features shape the actors' choices and operations. As a result, in principle all actors have the means to regulate and counter-regulate within the system. A situation in which there is more than one actor is described as an 'actor constellation' which, for instance, allows interrelated action, group decisions, and negotiation.

- *Institutions* (formal as well as informal rules) shape the context and circumstances in which actors' behaviour occurs. These institutions facilitate, structure, but also restrict systemic action. However, they do not fully determine all possible actions, especially if they refer to complex systems, such as organisations or socio-technical systems.

As a consequence, governance theory can be considered as a research heuristic which seeks to shift the emphasis of analysis to actors (with their own rationales and motivations) who perform within an institutional setting which shapes, but does not ultimately determine every option. The system in focus can thus be considered as an institutional arena for political activities where actors negotiate their own interests (Mintzberg 1980; Pfeffer 1981; Scharpf 1997; Scharpf 2000; Wilson et al. 2005). Here, regulating power is considered as system-inherent. At this point, it becomes clear that governance theory does not explain or predict specific actor behaviour. It also does not seek to explain a specific system setting, for example, a particular industry or domain. By contrast, it directs system analysis towards certain elements, such as actors and institutions. On the other hand, several of these elements, for instance, institutional rules or certain actions, can potentially be subject to intentional change (design) which is, however, inherent to the system (Scharpf 2000). Hence, governance theory can be considered both as an analytical and a design theory.

## GOVERNANCE THEORY FRAMEWORK TO SUPPORT THE ANALYSIS AND DESIGN OF IT-CONSULTING PROJECT

A design science perspective on IT-consulting addresses the application phase. Here, IT-consulting is a contextual factor in artefact design (Benbasat et al. 2003), a particular mode of the design process. It regularly takes into account the technical design (IT itself) as well as the surrounding structures (Benbasat et al. 2003), for instance, the organisation. Consequently, IT-consulting shapes the so-called socio-technical system within a given setting. (Keen 1981; Kvasny et al. 2003; Lee 2000; Mumford et al. 1985; Mumford et al. 1979; Walls et al. 1992) Because design science seeks to provide new knowledge within the application phase, it contributes to answering the question of how to create and implement (new) solutions efficiently and effectively. Possible ways to codify such knowledge are design artefacts like constructs, models, methods, and instantiations (Hevner et al. 2004; March et al. 1995), but also artefacts addressing the context as well as the surrounding structure of the IT artefact, for instance, procedural models (for instance, Becker et al. 2003). Consequently, a procedural model (blueprint) of IT-consulting processes can be regarded as a design artefact which specifically addresses contextual and structural aspects.

Designing consulting processes is of the greatest importance in consulting practice and has, to some extent, been addressed in the consulting literature (for instance, Cope 2003; Dichtl 1998; Hollai 1961; Lippitt et al. 1986). However, some significant shortcomings can be identified. While modern system theory has often been applied to consulting research (Luhmann 1989; Mingers 1996; Mohe 2005), a governance theory perspective has not yet been used. Consequently, the political nature of socio-technical system design, not only at a consulting, but also at a general level, has despite its importance (Boland et al. 1983; Hirschheim et al. 1991; Markus 1983) been seriously underresearched (Bloomfield et al. 2002; Bloomfield et al. 1995; Knights et al. 1994; Wilson et al. 2005). A governance theory perspective on IT-consulting processes can contribute to this debate. This approach suggests the need for a systematic analysis and design of a system as an institutional arena for political activities in which actors negotiate and promote their own interests (Mintzberg 1980; Pfeffer 1981; Scharpf 1997; Scharpf 2000; Wilson et al. 2005). Because governance theory challenges the assumption of successful external regulation, it advocates that neither consultants nor management should be perceived as external regulators to the organisational system. In contrast, they should be considered as part of the system and as having their own rationales and motivations. Therefore, governance theory provides a perspective on IT-consulting processes that focuses on institutional settings and actors with their motivations and rationales. This view can be helpful for both the analysis and design of IT-consulting processes.

In view of the processual nature of IT-consulting, we regard the governance theory framework to consist as consisting of different process steps. Based on a) an extensive literature review (for instance, Cope 2003; Dichtl 1998; Hollai 1961; Lippitt et al. 1986), b) analysing five IT-consulting case studies in the manufacturing industry, public administration, and banking, and c) eight interviews with experienced IT-consulting experts, simple archetypical project phases and critical issues were identified.[2] Each of these process phases is defined by an object in focus, for instance, problem definition, solution, implementation method, or measures. Taking an actor-centred view on these objects and treating an actor as a role type, certain governance theory-driven questions were derived. They aim specifically at providing insight into the various possible actor views on the IT-consulting process and its objects (see Table 1 and Table 2).

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[2] As described in Section 1, due to length limitations, we cannot provide a full discussion of the empirical results. Rather, this section will contain the governance theory framework itself as a research result. However, we provide empirical evidence by applying the framework on a case-study basis in the manufacturing industry, which is presented in Section 4. Nonetheless, while conducting the interviews and analysing the case studies, a linguistic interpretivist approach was taken (Becker et al. 2006; Kamlah et al. 1973). Assuming that a real world' exists, the perceptions of it are influenced by the subject (see also (Weber 2004)). The reason for such subjective perceptions of reality is assumed to be language differences, as languages not only provide representative means, but also form perceptions and constitute a differentiation instrument. As a consequence, while conducting interviews and analysing case studies, our aim was to create a language community relating to the issue of interest.

| Phase | Object in Focus | Governance-Theory-Driven Central Questions |
|---|---|---|
| | Short Description | |
| [1] Pre-Project System Analysis | Actors, Pre-Project Institutional Settings <br><br> Goal of this phase is a) to identify the pre-project institutional setting which frames possible actions and b) to analyse the actors' historical and motivational background which potentially influences their choices of action. | ▪ What is the system of interest (institution/s and actors)? <br> ▪ Which actors are actively involved and which are passively affected? <br> ▪ Are there any expected changes in actor constellations within the institutional setting during the course of the project? <br> ▪ What is the historical and motivational background of the actors? <br> ▪ What is the general relationship between the actors? Prior experiences? <br> ▪ Are there general issues regarding the institutional setting and the constellation of actors that could be generally critical to the project success? <br> ▪ Are there general issues that could pre-influence or determine the consulting process design? |
| [2] Project Initialisation | Project Initialisation <br><br> The aim of this phase is to analyse the drivers behind and the perspectives on the project initialisation. | ▪ What is the system of interest (institution/s and actors) at this stage? <br> ▪ Why should the project be initialised now? What/Which actor is driving the project initialisation? <br> ▪ Actor-Views: Are there different actor perceptions of the reasons behind the project initialisation (problem views) and on the timing? <br> ▪ What are possible explanations (rationales, motivations etc.) underlying the different perceptions? <br> ▪ Which actors are actively involved and decide upon the project initialisation and how does the decision making process affect other actors? |
| [3] Problem Analysis | Problem Definition <br><br> The result of the problem analysis is the problem definition. At this stage, the aim is to analyse the actors' different views on the problem/s. Here, also the problem analysis methods must also be designed. | ▪ What is the system of interest (institution/s and actors) at this stage? <br> ▪ Which actors benefit or suffer particularly from the current system state? <br> ▪ What is the major problem which should be addressed by the project? <br> ▪ Actor-Views: Are there different actor perceptions of the problem definition? <br> ▪ What are possible explanations (rationales, motivations etc.) underlying the different problem perceptions? <br> ▪ Which actors are actively involved and decide on the problem definition and how does the decision making process affect other actors now and possibly in later project stages? |
| [4] Solution Development | Solution to the Problem <br><br> The aim of this phase is to analyse and/or design different possible solutions as well as to analyse different actors' views on the solution/s. | ▪ What is the system of interest (institution/s and actors) at this stage? <br> ▪ Which actors are particularly involved in developing the solution, which actors decide on the solution, and which actors are affected by the solution? <br> ▪ Actor-Views: What are the different solutions suggested? How do the actors perceive those different solutions? <br> ▪ Are the solutions suggested by certain actors addressing the defined problem or are they rather oriented towards the actors' perceived problem? <br> ▪ How is the final solution decided upon? What are the selection criteria and do all actors value these criteria equally? <br> ▪ What are systemic and environmental restrictions to the solution(s)? What can (not) change? How flexible are the suggested solutions? <br> ▪ Any solutions to the defined problem that have been tried before? |

**Table 1.  Governance Theory Framework for IT-Consulting Processes (Steps 1 to 4)**

Because the framework seeks to mediate between analysis and design (see Section 2), often both analytical and design issues are addressed, for instance, '[…] the aim of this phase is to analyse and/or design possible implementation methods' (see

Table 2). This results in a dual perspective on the IT-consulting process: the descriptive view ('What did …?') as well as the prescriptive view ('What should …').

| Phase | Object(s) in Focus | Governance-Theory-Driven Central Questions |
|---|---|---|
| | Short Description | |
| [5]<br>Solution Implementation | Methods of Implementation, Actual Implementation | ▪ What is the system of interest (institution/s and actors) at this stage?<br>▪ Which actors are particularly actively involved in implementing the solution and whose support is also crucial? Variations over time? |
| | The aim of this phase is to analyse and/or design possible implementation methods as well as to analyse the different actors' views on this issue. | ▪ Actor-Views: What are the different implementation methods suggested? How do the actors perceive these different implementation methods?<br>▪ Do all necessary actors commit to the implementation? Beforehand and during the actual implementation?<br>▪ Do the implementation methods address the defined problem and are they capable of implementing the desired solution?<br>▪ What are systemic and environmental restrictions to the implementation (methods)? What can/not change? What changed during the course of the project? |
| [6]<br>Project Close | Measures of Success, Project Close | ▪ What is the system of interest (institution/s and actors) at this stage?<br>▪ How do the different actors perceive what is a 'good' and successful project? |
| | The aim is to conclude the project, especially to analyse and/or design measures for success as well as to analyse the different actors' views on this issue. | ▪ What are possible means and dimensions for measuring the success of the project?<br>▪ Actor-Views: Do all the actors involved in the system see this the same way?<br>▪ Did/Should the project evaluation dimensions change during the project?<br>▪ What are the preconditions which would ensure the preferred system state is sustainable after the project? How does the fact that certain actors (e.g. consultants) leave the system (e.g. organisation) affect this? |
| [7]<br>Post-Project System Analysis and Design | Actors, Post-Project Institutional Settings | ▪ What is the new system of interest (institution/s and actors, often the 'regular' organisation without the actor consultant)?<br>▪ Which actors will still be involved in the post-project system (here, often the organisation)? |
| | The goal of this phase is a) to analyse the post-project institutional setting which has/should develop/ed and b) to analyse the actors' changes in motivation and rationale. | ▪ How did/should the actors' rationales and motivations change during the project?<br>▪ In what way did/should the actors' relationship towards each other change due to the project? |

**Table 1.  Governance Theory Framework for IT-Consulting Processes (Steps 5 to 7)**

## CASE STUDY: ERP IMPLEMENTATION IT-CONSULTING PROJECT

The governance theoretical framework has been applied on a case-study basis (Cavaye 1996; Doolin 1996; Lee 1989; Yin 2003) in a specific ERP-IT-consulting project. A linguistic interpretivist epistemology (Becker et al. 2006; Kamlah et al. 1973) forms the basis of this research and shaped the methods of data collection. These are primarily action research (cf. McNiff et al. 1992; Whyte et al. 1998) and secondarily expert interviews which were applied to the case study environment. In this project, an ERP system was implemented at a medium-sized manufacturer in the construction industry. The purpose of the project was to replace an outdated, individually programmed enterprise system that only covered some functional areas of the company, with an integrated packaged ERP system. The project described in the following had to rely on an ERP system that had already been selected in a previous project conducted by another consulting agency.

**Phase 1: Pre-Project System Analysis**

Following the governance theory framework (see Section 3), we firstly introduce the actors involved and the pre-project institutional settings:

- ALPHA[3] the manufacturer, is a medium-sized German producer of gratings and grid stairs which are used in small and large construction projects (e. g. fire escapes, gangways in production halls, high-rack warehouses, or oil platforms). ALPHA was founded in 1971 and employs approx. 120 persons (of which about 30 work in administration and 90 in production). Within the ERP System implementation project, the CEO and the staff members of each functional area played major roles. However, the change management activities affected nearly every employee of the company.

- The ERP system vendor has been providing ERP solutions for medium-sized firms in the retail and industry sector for more than 20 years. The main task of the ERP system vendor was the transformation of business requirements into the ERP system. Therefore, one project manager, one programmer, and several module experts were involved in the project.

- An IS consultancy was hired in order to conduct the ERP project on behalf of ALPHA, due to the fact that the company did not, at that point, have a permanent in-house IT department. Thus, a small-sized German consultancy was signed up which focuses on integrated information system and organizational (process) design. The primary tasks of the IS consultancy were to ensure a sound alignment of the ERP system and the organisation and to effect a holistic change management. After implementation, it was intended that the IS consultancy act as a help desk for day-to-day-business-related problems. On the consultancy side, two consultants were actively involved in the project.

The pre-project institutional setting comprised several critical issues. Firstly, the CEO of the manufacturer was replaced shortly before the ERP project commenced. The new CEO initiated several reorganisation actions, which were again intensified by starting the ERP project. Secondly, the IT knowledge of the majority of ALPHA's staff members was outdated. In particular, there was an insufficient understanding of the ERP concept, its advantages, and disadvantages.

**Phase 2: Project Initialisation**

The second framework phase was characterized by contract negotiations. Two contracts were concluded within the case study setting. The fist comprised software licenses and implementation services from the ERP system vendor. This contract was negotiated primarily between ALPHA's CEO and an ERP vendor sales representative. Based on the requirements analysis of the previous software selection project, the two parties agreed to install the ERP system in its so-called "vanilla" version.4 As a result, the ERP implementation should be performed within a short period of time, requiring only a relatively small budget. Here, different actor perceptions became obvious. The software vendor agreed to the tight schedule and small budget, because he was afraid of losing a major customer, even though the underlying requirements analysis only covered the organisational context of ALPHA at a rather high level. On the other hand, the ALPHA CEO demanded a rapid ERP system rollout due to the shortcomings of the current system. Moreover, neither party expected any problems in aligning ALPHA's business context to the modern and manifold ERP system. The second contract was concluded between ALPHA and the IS consultancy, negotiated between both ALPHA's and the IS consultancy's CEO. The two parties made the agreement that the IS consultancy would conduct the ERP project until the system was finally implemented. From ALPHA's perspective, this contract was necessary due to the fact that there was no IT department within the company. Thus, there was no substantial IT knowledge available. Because the IS consultancy was involved neither in the former software selection project nor in prior contract negotiations, the consultancy was not able to fully understand the project circumstances at this point of time.

**Phase 3: Problem Analysis**

The third framework phase is determined by the definition of the problem which is supposed to be solved during the project. As a result of the case study setting, the overall problem was to ensure an appropriate implementation of the ERP system with respect to ALPHA's business processes and context. The overall problem was shaped by several problem dimensions, in particular the requirements definition, business process redesign, ERP system customizing, staff training, and adherence to time schedule and budget. The problem analysis was conducted mainly by the project managers of the ERP system vendor and of the IS consultancy. Furthermore, a controlling staff member of ALPHA was involved occasionally. In addition, the CEO and ALPHA core staff members from each functional area were available for functional area-specific interviews and discussions. The parties concerned had very different perceptions of the problem dimensions. Form the ERP system vendor's point of view, it was most important to implement the system in its "vanilla" version in order to keep on schedule and within

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[3] Company's name is changed due to nondisclosure reasons.
[4] "Vanilla" version means that the organisation implements the package without individually programmed modifications. (see, for instance, Soh and Sia 2005).

the budget. As a result, ALPHA's business processes needed to be adapted to the processes required by the software package. From the IS consultant's perspective, it was of major interest to obtain the best possible fit between the business context of ALPHA and that of the ERP system, because the consultant was hired to implement the change management process. Thus, he had to promote the new system and to manage end user feedback. Furthermore, he was not responsible for time and budget restrictions. ALPHA's members of staff expected a system implementation which included a 1:1 mapping of the functionality of the old system extended by new features that provide labour saving-enhancements.

**Phase 4: Solution Development**

The fourth framework phase is characterized by the method(s) that facilitate a structured and appropriate solution to the problem, here, the ERP system rollout and its underlying problem dimensions. In collaboration with ALPHA's controlling staff member, a project schedule (including milestones and tasks prioritisations) was developed by the two project managers. Due to the fact that ALPHA intended to use the "vanilla" version of the ERP system, a prototyping approach was chosen. Moreover, the project schedule allowed a successive implementation of the system, starting with the logistics area purchasing, material management, production planning and scheduling, and sales and distribution. After establishing the logistics part of the system, financial areas such as accounting and controlling were to follow at a later date. By means of expert interviews, the requirements for process implementations in the logistic areas were defined and business process interfaces specified. Furthermore, concepts for the creation of master data (for example, material and customer master, storage locations, bill of materials, routings, and price lists) were developed. The project procedure was shaped especially by the project manager of the ERP system developer, who had successfully implemented the procedure in previous projects. Hence, based on the experiences of the ERP vendor, the other parties agreed to the project schedule. However, in the course of the requirements analysis phase, conducted by the IS consultancy, several misalignments emerged which demanded numerous modifications of the package. Thus, it already became clear that a timely implementation within the budget was going to be difficult. Furthermore, ALPHA's core members of staff were strongly preoccupied with their operational business.

**Phase 5: Solution Implementation**

The focus of the fifth framework phase is the solution, in terms of the case study, the implementation and rollout of the ERP system. The customizing was performed primarily by the ERP vendor's project manager and several module experts. Necessary modifications were performed by a programmer. Afterwards, the prototypically configured ERP system was presented to ALPHA's end users. Here again, very different perceptions of the first solution implementation evolved. From the end user perspective, the implemented ERP solution was unacceptable, because further misalignments between the package and business context became apparent. Additionally, the performance of the new system was significantly slower than that of the old system. From the ERP vendor's point of view, the package was appropriately configured. Misalignments were to be eliminated by adopting ALPHA's business processes to the ERP system. Over the course of the project, it became obvious that this was difficult to achieve. As a result, adherence of the initially negotiated budget was impossible. At this point, the project was in danger of failing. Consequently, the steering committee was appointed, consisting of ALPHA's CEO, the two project managers and a board member of the ERP vendor. Based on an extra budget, the project teams on both sides were enlarged in order to ensure both a sound implementation of necessary modifications and the overall success of the project. After drawing up a new project schedule, several new versions of the ERP prototype were implemented, and they were finally accepted by all parties concerned.

**Phase 6: Project Close**

The sixth framework phase is determined by the tools and measurements used for a (final) evaluation of the project. Within a closing steering committee meeting, a final evaluation of the project was conducted. The evaluation dimensions were ERP System functionality, project conduction, quality of consultant services, adherence to the time schedule, and overall project costs. From the CEO's perspective, the project was undermined by an insufficient initial financial offer by the ERP vendor, due to the fact that it was not feasible to perform a sound ERP implementation within the originally negotiated budget. From the ERP vendor's perspective, too many additionally requirements arose within the course of the project. However, the ERP vendor agreed that they underestimated the complexity of ALPHA's business context. From the perspective of the IS consultancy, the initial setting of the project could have been improved by considering the IS consultancy earlier during pre-project phases (especially within the software selection phase). Moreover, the initial documentation of the requirements was too coarse-granular.

**Phase 7: Post-Project System Analysis and Design**

Up to this point, the ERP System had only been implemented in its logistical areas. Next steps focus on the financial aspects. Here, the same parties are involved. However, new experts accomplish the customizing of the financial modules of the system. Due to the lessons learned from the previous course of the project, the parties agreed to negotiate an adequate budget on the basis of an extensive requirements analysis.

As shown above, our governance theory framework facilitated an actor-centric analysis of different perceptions on ERP implementation phases. Moreover, the analysis exposed several design improvements to the examined ERP project. Firstly, the offer of the ERP vendor should have relied on a sound requirements analysis. An inaccurate estimation of cost may lead to project escalation and unsatisfied customers. Secondly, all parties concerned should be familiar with the requirements definition. Hence, they should be involved in the project as early as possible. Thirdly, core employees from functional areas need a basic understanding of the ERP concept and sufficient time to commit themselves to the project in addition to their operational business.

**LIMITATIONS, CONCLUSION AND FUTURE RESEARCH**

Design science in IT-consulting takes into account the implementation and application phases of the research process. This approach emphasizes the interconnection of problem understanding and problem solving (Hevner et al. 2004). In this respect, governance theory provides a useful perspective for analysing and designing organisation-consultant-systems. This system is perceived as an institutional arena for political activities where specific actors such as management, employees, and also consultants, negotiate and promote their own interests. In this context, a governance theory framework facilitates an examination of political behaviour in IT-consulting projects – which is often described as the 'background myth' in the IS field (Boland et al. 1983; Hirschheim et al. 1991; Knights et al. 1994; Markus 1983; Wilson et al. 2005). From a practical perspective, our framework should help IS consultants a) to become aware of politically-motivated behaviour of project members and b) to identify hidden agendas in different project phases.

A governance theory perspective on IT-consulting projects results in an actor-centred view, based on the assumption that regulation is not external to the system but internal, and in the perception of consultants as being part of that system. This reveals essential issues for the design of IT-consulting processes. By means of the case study in ERP implementation, in particular the different actor perspectives on an IT consulting project were analysed in practical terms. In summary, a brief paper self-assessment seeks to provide further clarity by presenting our research findings (including major research limitations) using adapted Hevner et al.'s (2004) guidelines for design science research evaluation against the background of a linguistic interpretivist position (Becker et al. 2006; Kamlah et al. 1973) (see Table 3).

Future research should address the question of the domains to which the framework can be applied. So far, we have argued that it can be applied to the area of IT-consulting, also due to the fact that we have derived the research question from this field. However, further analysis is necessary to determine which framework features and governance theory insights can be applied to other areas, for instance, general management consulting or general project management. Furthermore, we consider it a potential valuable contribution to assess, by quantitative methods, certain features of our theoretical framework (which have so far been supported by empirical qualitative research).

| Guideline | Attempts in the paper to address these guidelines |
|---|---|
| Epistemological Positioning | ▪ The epistemological position taken is that of linguistic interpretivism. Assuming that a real world' exists, the perceptions of it are influenced by the subject (Weber 2004). The reason for such subjective perceptions of reality is assumed to be language differences, as languages not only provide representative means, but also form perceptions and constitute a differentiation instrument. As a consequence, an aim is to create a language community relating to the issue of interest (for more details see Becker et al. 2006; Kamlah et al. 1973). |
| Addressing a relevant problem | ▪ Analysis and design of IT-consulting processes are subject to theory and practice. However, one can observe a high number of project failures in IT-consulting, especially regarding those projects that aim at changing socio-technical systems.<br>▪ Despite the importance of analysing the political nature of socio-technical system design, it has so far been underresearched ('background myth' o IS). In particular, critical research in IS (CRIS) emphasizes this aspect. |
| Making a research contribution | ▪ We developed a governance theory framework that seeks to facilitate the analysis and design of IT-consulting processes and to guide the change processes in IT-consulting-related projects.<br>▪ The framework advocates an explicit political stance and perceives the organisation-consultant systems as an institutional arena in which various actors, including not only management and employees, but also consultants, negotiate their own interests.<br>▪ Such a perspective on IT-consulting processes has not yet been presented in the literature. Nonetheless, it does, as shown in our research, provide fruitful insights into the topic. |
| Choosing an adequate research method | ▪ This research has been based on several distinct research methods. In Section 2, we provided mainly theoretical and logical arguments (argumentative method). Furthermore, several expert interviews and case study analyses were conducted in order to develop the procedural theoretical framework. Finally, a case study application was chosen to provide further empirical evidence of the framework applicability. All research method applications were based on a linguist interpretivist epistemology (Becker et al. 2006; Kamlah et al. 1973). |
| Addressing the question of research rigour | ▪ Both expert interviews and the case study in ERP implementation are empirical research methods. However, due to length restrictions, we could not provide an explicit interview analysis. The empirical investigations were, however, rigorously conducted against the background of the underlying linguistic interpretivist epistemology. |
| Designing an artefact | ▪ The theoretical framework is a procedural model (blueprint) of IT-consulting processes and can be regarded as a design artefact which specifically addresses contextual and structural aspects. It thus follows the broader definition of design artefacts which is derived from the literature (for instance, Orlikowski et al. 2001). |
| Research evaluation | ▪ The case study application was used as a first step in evaluating the theoretical procedural framework and has demonstrated its applicability. However, more evaluative research is necessary in future research. |
| Discussing research limitations | ▪ The governance theory framework has so far been developed on the basis of case study analyses and expert interviews against the background of governance theory. The presented research does not (yet) include a literature analysis that would reveal similar arguments which were presented against the background of alternative theories.<br>▪ Due to paper length restrictions, the paper does not contain an exceedingly extensive and systematic comparison of alternative theories from the field of IT- and management consulting, ERP implementation, or IS development.<br>▪ The presented case study cannot claim generalisability, but rather has to be understood as one possible example case. Therefore, further (especially quantitative) research is required. |

**Table 3. Design Science Research Assessment**

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