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With a foreword by Prof. Dr. Alexander T. Nicolai

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Foreword

Most of us will be able to tell some "adventure stories" from working with presentation software. Presenting results to audiences by using PowerPoint (or similar tools) has become a widely established standard. Thus, it represents one of the rare technologies that has diffused homogenously into the fields of business, academia, education, and even politics, as the recent example of Al Gore winning the Nobel Peace Prize in 2007 (not only but also) by means of a slide show has illustrated. However, many users would describe their dependency on presentation software as a love-and-hate relationship – an estimation famously exemplified by Tufte's critical essay on PowerPoint.

In a very original way, Dennis Schoeneborn's dissertation points out an aspect that has been neglected in previous discussions on presentation software, but which is highly relevant for the practice of knowledge management in project organizations: To what degree does the usage of presentation software for the function of project documentation influence the effectiveness of knowledge management strategies that rely on exactly these presentation documents?

It is an outstanding feature of Dennis Schoeneborn's study that it succeeds in combining streams from a wide range of academic disciplines: the comparably abstract literature on organizational communication and Luhmann's theory of social systems, on the one hand, and the more pragmatic, down-to-earth topics such as knowledge management or the application of information and communication technologies in enterprises, on the other hand. Apart from rare exceptions, for example, Willke's work on knowledge management or Baecker's essays on management from a social systems perspective, these topics have previously been unconnected.

As it turns out, it has been an excellent choice by the author to concentrate on the concept of contingency as a bridge between these fields – a concept that has generally been underestimated in the international literature on organizational behavior. The study fills this research gap in a thoughtful and instructive manner. The question of how contingency is made visible in organizational decision processes is both relevant and original. Furthermore, it refers to recent international debates on the constitutive conditions of organizational communication and expands them by introducing contingency as a new criterion.

The empirical part of the study yields diverse new insights, particularly on the role of PowerPoint in corporate communication, the significance of genres, and their evolutionary development. In this part, the author shows that the combined choice of document analyses and qualitative interviews is an appropriate means to investigate the research question. Furthermore, the study generates a rare and valuable set of data: PowerPoint presentations that are drawn from consultants' knowledge management databases. On the basis of the analyses, the author is able to indicate that an abstract theory development based on the social systems paradigm can be fruitfully illustrated by empirical findings. This also holds true for a skillful discussion of results.

In closing, I would like to wish the readers of this volume an enjoyable journey into the concept of contingency and its relevance for organizational communication. Dennis Schoeneborn has pursued his research question in a thorough and dedicated way. This is also reflected by his original idea to apply the concept of contingency visibilization to this study itself. Although representing the final chapter, this outline might even be a good starting point for reading into the study.

Professor Dr. Alexander T. Nicolai

Preface

I would like to express my sincere gratitude to

- my supervisors, Professor Alexander T. Nicolai and Professor Anna-Maria Theis-Berglmair, for their faith in me, their steady support, and many stimulating discussions throughout the research process,
- Professor Sue Newell for the new perspectives she added to my research project and for having given me the chance to spend a wonderful and inspiring time at Bentley College,
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- my family and my close friends, with special thanks to my personal physician as well as my legal/philosophical advisors,
- last but not least, my wife Silja for her love, her patience, and all the healthy food she cooked during our unforgettable PhD student time.

Dennis Schoeneborn

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CCO	Communication as Constitutive of Organizations
CPL	Cross-Project Learning
DCV	Decision Contingency Visibilization
TSS	Theory of Social Systems

1 Introduction

1.1 Scope of the Study

Imagine the following situation: You start working in a new job and you have to deal with a task unfamiliar to you. It is known to you that there have been projects before which had dealt with the same kind of issues. However, the employees involved in these projects have already left the firm and you cannot get hold of them anymore. The only means to make sense of their work are some written documents, the communicative traces they have left behind. By browsing through the documents, you are impressed by their achievements, they have left extensive documentation of their success in fulfilling the particular tasks you are supposed to do from now on. However, the documents come short on any information regarding the processes and methodology behind their success. The presentation of results does not allow you to get an idea of decisive situations the project team was facing, what alternatives they had considered, and why they had chosen the way they proceeded in the end. In other words, the documents lack any information of the *contingency* of the project process.

Let us take a closer look on the concept of contingency before we will return to the described situation. The concept of contingency, despite its fundamentality and importance in modern and post-modern philosophy (cf. Sartre, 1956; Luhmann, 1984; Rorty, 1989; Bauman, 1991; Derrida, 2002), is not very common to use in everyday language. In its philosophical meaning, which links back to ancient philosopher Aristotle (Beyes, 2003: 10), the term contingency negates both necessity and impossibility (Luhmann, 1988: 183). In this sense, contingency describes a state of the world which is as it is – but which could have been different (Luhmann:

1984: 152). Framed this way, contingency relates to the alternatives inherent to a given situation. Instances of contingency are specified by large degrees of freedom. Accordingly, looking into the world's contingency means to expose its complexity. Not surprisingly, Luhmann suggests to grasp an increasing contingency as the defining attribute of the modern age (Luhmann, 1998: 67).[1]

One of the most powerful resources to cope with the modern society's inherent complexity is the *organization*. As Parsons puts it, organizations are "the principle mechanism by which, in a highly differentiated society, it is possible to 'get things done', to achieve goals beyond the reach of the individual" (Parsons, 1960: 41). How do organizations achieve this quality? Authors in the tradition of administrative behavior theory (cf. March & Simon, 1958), one prominent stream in organization studies, argue that *decisions* can be grasped as the constitutive element of organizations. It is assumed here that organizations are able to reproduce themselves by interconnecting one decision to the next. By means of this, they become "nested hierarchies of decisions" (Scott, 1998: 51). In recent work on organizations as decision systems, the communicative character of decisions is emphasized by defining organizations as essentially consisting of interconnected episodes of decision communication (Luhmann, 2000: 46).

This idea to grasp decisions as the defining element of organizations takes us back to the concept of contingency. Decisions are contingent by definition because they entail the necessity to make a selection among a range of alternatives. Furthermore, in the need to interconnect one decision to the next, organizations are forced to maintain an awareness of past decisions. As Luhmann argues, the organization's awareness of its decisions requires that a decision is made visible as having been a deci-

1 The multi-optionality of today's lives is described in a recent novel by Kunkel (2006). However, looking into the contingency of someone's own existence can cause severe feelings of vertigo or nausea (cf. Sartre, 1956: 343). As a prevention, Rorty suggests to adopt the role of the "liberal ironist" – being defined as "the sort of person who faces up to the contingency of his or her own most central beliefs and desires" (Rorty, 1989: xv).

sion, by highlighting the contingency inherent to it (Luhmann, 2000: 64). The way organizations achieve this visibility and connectivity of their decisions remains one of the largely unexplored issues in the study of organizations as decision systems (Knudsen, 2006: 109).

It can be assumed that the visibility and connectivity of decisions is particularly at stake in periods of organizational growth (cf. Geser, 1982; Eisenhardt & Schoonhoven, 1990; von Krogh & Cusumano, 2000). In a recent article, Kühl argues that the critical stage of small firms' growth is the transformation from a *face-to-face organization* to a more *formal organization* (Kühl, 2002). Decision processes can easily be overviewed in face-to-face organizations by help of personal and unmediated interactions, whereas formal organizations need to establish structures in order to cope with the increased complexity caused by the distributed character of their decision processes: "In the attempt to keep all organizational members informed about everything and to keep rigid rules and hierarchies dispensed, [the organization] is threatened to suffocate" (Kühl, 2002: 197). Thus, while the visibility of decision processes is not that problematic in small organizations, it is unclear how this visibility is actually accomplished in bigger-sized organizations.

In a similar vein, Luhmann points to *project organizations* as a critical type of organization in terms of decision contingency visibility by wondering how "the project organization survives its own projects" (Luhmann, 2000: 273; own translation). In delegating decision processes to work groups, established for a limited time, projects organizations allow for reacting flexibly to dynamic demands in their environment (cf. Hobday, 2000). However, the comparably loose and flexible form of work in project organizations which have reached a certain size has also created the problem that *one hand may not know what the other hand is doing*. In other words, decisions and their contingency in projects may remain uncoordinated on the organizational level. Consequently, there have been claims to establish forms of cross-project learning (CPL)[2] (Ayas & Zeniuk, 2001; Keegan & Turner, 2001; Carrick & Clegg, 2001; Newell,

2 To enhance readability, I will use the abbreviation CPL at various points of the study when referring to the idea of cross-project learning,

2004) in order to prevent a repetitive *re-invention of the wheel* in new projects (Lesser & Storck, 2001: 836).

In consequence, project organizations have established various processes to leverage a sharing of experiences among their members. In this context, recent publications point to the higher learning value from failure rather than success (Edmondson, 1996; Zhao & Olivera, 2006). It is assumed here that organizations which are too much focused on previous achievements tend to become inert in the long run (cf. Miller, 1994). Much more, mistakes and failure allow for continuous improvements of organizational processes and adapting to changing environmental circumstances but is hardly realized in practice (Michailova & Husted, 2004; Baumard & Starbuck 2005). The hypothesis of a learning value from failure again links to the concept of contingency. While a focus on success contradicts a visibilization of contingencies of past project decision processes, the learning-from-failure principle instead implies to make visible which mistakes were made and which contingencies were faced in the project process

Moreover, it is reported that most processes established in organizations for the purpose of cross-project learning rely on textual forms of documentation (cf. Newell et al., 2006). In a recent study, Yates and Orlikowski (forthcoming) emphasize that it is a common practice in project organizations, such as consulting firms, that presentation documents generated by help of the software Microsoft PowerPoint[3] increasingly substitute the classical project report. However, PowerPoint is initially designed to support face-to-face presentations in a persuasive fashion (cf. Tufte, 2003) rather than to generate an elaborate documentation of project processes. If we link this practice to the organizational requirement to assure a connectivity of decisions and their contingency, it can be asked to what extent an increasing usage of PowerPoint presentations in project documentation may affect the visibilization of decision contingency on a cross-project level.

3 Microsoft® and PowerPoint® are registered trademarks of Microsoft Corporation, Redmond/WA.

These considerations highlight that the concept of contingency is right at the center of all organization theories which assume that organizations are constituted by inter-related episodes of decisions. The need to achieve a connectivity of decisions and with this, a visibility of decisions and their contingency across the organization, can be presumed to be especially at stake in project organizations. However, it is doubtful that established forms of communication on a cross-project level do indeed contribute to a visibilization of decision contingency. Although a high learning value from failure is hypothesizes, its realization is often constrained in practice. Furthermore, it is put into question whether Power-Point-based project documentation practices allow for a visibility of decision processes and their contingency across the project organization.

Taken together, the main research question of this study can be introduced: To what extent do decision processes and their contingency become visibilized Power-Point-based practices of project documentation? Or, to put it differently, to what extent does the project organization become aware of its own decision history, as manifested in textual communication? In this sense, the study follows the objective "to observe how the organization observes itself" (Luhmann, 2000: 470; own translation). Moreover, the study aims to introduce the concept of decision contingency to the field of organization studies and organizational communication – based on the assumption that the concept sheds new light on existing problems of implementing processes of knowledge management and CPL in practice (cf. McDermott & O'Dell, 2001).

Finally, the introduced research focus allows us to return to the initially described situation: It appears that the situation described above appears not to be far-fetched. In consulting firms, for example, characterized by a high personnel turnover and competing in a fast-paced business, new employees are often thrown in at the deep end. In companies which have established processes of documentation on previous projects, the first starting point for getting familiar with a particular task often are textual documents, as exemplified by the increasing usage of PowerPoint presentations in project documentation. Seen from the perspective of a job novice, who aims to learn from experiences made in the past, it is

exactly the contingency inherent to previous decision processes which would be of a comparably high value. With respect to a presumably higher learning value from failure, a visibilization of project processes, the contingencies faced in these, and also mistakes made embed the comparably highest learning potential – much more than the presentation of results.

1.2 Relevance of the Study

This study investigates to what extent decision processes and their contingency are made visible in the practice of project documentation. The study particularly concentrates on the role of PowerPoint presentations in the visibilization or invisibilization of decision contingency if applied for the purpose of project documentation. The relevance of this study is threefold: With regards to organizational communication studies, the study aims to deepen the understanding of how organizations come into being and sustain their existence if theorized as essentially consisting of episodes of decision communication. With regards to the field of CPL, the analysis puts forth the notion of contingency-centered forms of project documentation. The concept of contingency allows for a critical evaluation of existing approaches in this field by asking to what extent decision processes and their contingencies are in fact made visible in textual forms of project documentation. Finally, the study represents one of the first systematic investigations on the role of PowerPoint presentations in organizational communication and, particularly, in processes of project documentation.

In the field of *organizational communication*, the study aims to contribute to recent discussions on the constitutive conditions of organizations as communicative entities (McPhee & Zaug, 2000; Taylor, 2000a; Cooren & Fairhurst, forthcoming). The study develops a suggestion how the organization's core operations can be approached empirically by focusing on the organizational necessity to interconnect episodes of decision communication to each other over time. In this respect, the study

also represents an illustration of how empirical research can be conducted based on the rather abstract theory of social systems, or to put it the other way around, how empirical research can enrich theory development in the study of organizations as social systems.

By introducing the concept of decision contingency visibilization (DCV)[4] as a constitutive requirement for organizations, the study suggests to combine previously separated theory traditions: on the one hand, the Anglo-American literature on organizations as communications (e.g., Taylor, 2003), and on the other hand, the continental European literature on organizations as social systems (e.g., Luhmann, 2000; Andersen, 2003). In this respect, the study also aims to build bridges between two previously unconnected bodies of research which share a similar perspective in the study of organizations as communication.

The weak mutual perception of both approaches can be partly explained by delays in the translation of the extensive work of Luhmann's work on the social systems framework from German into English language (Seidl & Becker, 2006b: 10). Thus, the study aims to contribute to making the work of Luhmann on organizations accessible to an international readership, as similarly accomplished in recent accounts on his work in English language (e.g., Bakken & Hernes, 2003; Nassehi, 2005; Seidl & Becker, 2006a; 2006b).

Furthermore, little is known so far to what extent various forms of project documentation differ in their ability to support the purpose of CPL. This study aims to enrich and expand existing theories on this subject which primarily originate in the fields of management studies and information system. This is realized by drawing on insights from media and communication studies, and within this field, especially from organizational communication studies. In this focus, the study is grounded in a research tradition which emphasizes the social and communicative character of any processes which attempt to initiate an exchange of experiences among organizational members. Moreover, and with respect to the learning value from failure principle, it is the study's aim to elaborate on

4 For practical reasons, I will use the abbreviation DCV at various points of the study to refer to the concept of decision contingency visibilization.

the concept of decision contingency and how it can expand existing practices of CPL on a theoretical level.

Finally, in the focus on *PowerPoint presentations* as a medium and genre of project documentation, the study relates to recent debates on the software's usefulness in organizational and educational communication (cf. Tufte, 2003; Yates & Orlikowski, forthcoming). Derived from the study's main research question, PowerPoint-based project documents are in the main focus of the theoretical and empirical analyses. In this respect, this study represents one of the first systematic investigations on the ambiguous role PowerPoint can play in organizational communication contexts.

Taken together, it is this study's objective to yield evidence relevant to both theory and practice. While the primary target is to contribute to existing research in the fields of organizational communication and CPL, it also aims to be accessible to practitioners in these fields. This is based on the assumption that an abstract and theory-driven approach is the essential precondition for being able *to make a difference* to practitioners. The introduction of abstracts concepts uncommon to use in everyday language is a burden indeed, in an ideal case, however, the reader is rewarded by an altered view on a previously familiar domain.

1.3 Structure of the Study

The study is structured as follows: Chapter two outlines the paradigmatic perspective of the study. The chapter briefly introduces two frameworks which share the notion of organizations as communicative phenomena. The perspective to grasp communication as the constitutive of organizations (Taylor & van Every, 2000; Cooren, 2000; 2004; Castor, 2005; Cooren & Fairhurst, forthcoming), on the one hand, represents a theoretical framework of growing prominence in organizational communication studies. The basic idea of this framework is to go beyond the notion of communication occurring *in* organizations by asserting that organizations are essentially consisting of inter-related networks of communication (cf.

chapter 2.1). The perspective of the theory of social systems (Luhmann, 1964; 1981c; 1984; 2000; Baecker, 1993; 1999; 2003; Bakken & Hernes, 2003; Hernes & Bakken, 2003: Andersen, 2003; Seidl, 2006a; 2006b; Seidl & Becker, 2006a; 2006b), on the other hand, defines organizations as social systems which differ from their environment in their most basic operation: the communication of decisions (cf. chapter 2.2). Based on the astonishment that there is a lack of mutual perception in both theory traditions, the chapter compares and contrasts ideas from both frameworks (cf. chapter 2.3).

Chapter three presents the theoretical analysis which is separated into two parts based on the idea that organizations and communication are essentially intertwined: In a first step, the organizational side of the organization-communication duality is highlighted by analyzing how the visibilization of decision contingency contributes to the organization's autopoiesis (cf. chapter 3.1). The analysis of the organizational side of the coin proceeds from general to more concrete considerations. This process of narrowing down the issue of decision contingency visibility follows the assumption that this issue is particularly relevant in organizations with distributed decision processes (such as project organizations), and even more so in firms with a particular emphasis on impression management techniques (such as consulting firms).

In a second step, the communicational side of the organization-communication duality is highlighted by asking to what extent a visibilization of decision contingency is achieved in communication (cf. chapter 3.2). Again, the analysis proceeds from a general analysis of communication as performative speech acts to the more specific case of textually documented communication, and it arrives at the examination of the ambiguous role of PowerPoint presentations for the visibilization of decision contingency in project documentation. Insights generated in the course of both sides of the analysis are cross-compared in a synthesis in chapter 3.3. This chapter points out that the visibilization of decision contingency in organizational communication resides in between two opposing powers: On the one hand, the necessity to achieve some form of decision contingency visibility in order to be able to interconnect present

decisions to past decisions, and the tendency to invisibilize decision contingency for the sake of a consistent presentation, on the other hand.

Chapter four presents a methodology for the investigation of decision contingency visibility in empirical practice. The outline starts with fundamental considerations on the empirical accessibility of the research issue by means of empirical methods (cf. chapter 4.1). Based on the assumption that qualitative forms of empirical research allow for a contextual enrichment of theoretical considerations, a case study design is presented which aims to generate an empirical reconstruction of the visibilization of decision contingency in project documentation practices of an actual organization. The particular case organization chosen for the analysis is a multi-national consulting firm which is introduced in its main characteristics (cf. chapter 4.2). The research design combines a triangulated methodology involving analyses of project documents drawn from two company-wide CPL databases as well as qualitative interviews conducted with members of the company (cf. chapter 4.3).

Chapter five starts with a presentation of empirical findings generated by the case study (cf. chapter 5.1). The presentation of these findings again proceeds from a more general to successively more concrete levels: In a first step, the CPL databases in use at the case company are described and a typology of the most common genres of project documentation is generated. In a second step, this typology is used to analyze differences in the visibilization of decision contingency. In a third step, a few examples where decision contingency is explicitly visibilized are examined in more detail.

The findings of the case study are linked back to the theoretical framework underlying this study in chapter 5.2. Here, the succession of analytic steps is reverted: In a first step, the results are linked to considerations on the communicational side of the coin. The empirical results allow for a revised understanding of the role of PowerPoint presentations in project documentation with respect to the opaqueness of decision processes in cross-project communication. In a second step, the results are linked to considerations on the organizational side of the coin. By means of this, it can be shown that the organizational institutionalization of CPL

processes does not significantly alter the way the project organization handles the issue of decision contingency visibility. Furthermore, the opaqueness of decision contingency in cross-project communication allows for examining how projects relate to the overarching project organizations based on the notion of organizations as communications. The discussion is synthesized in a re-description of CPL from a systems theoretical standpoint and a discussion of the constitutive conditions for the emergence of project organizations out of communication.

Based on the assumption that theoretically gained insights cannot be transferred to practice in a frictionless manner, a re-reading of the study's findings from a practitioner's stance is outlined which offers one of several contingent ways how the results may inspire individuals working in organizations which take up the challenge of CPL (cf. chapter 5.3).

Chapter six summarizes the study's central insights in form of concluding remarks (cf. chapter 6.1). Moreover, ideas are presented how the study may inspire future research in the field of organizational communication and CPL (cf. chapter 6.2). The study concludes in a self-reflection on contingencies faced in this research study itself (cf. chapter 6.3).

The linearity in the way this study is presented does not deny that it can be useful to start reading somewhere in the middle of the manuscript and to go back and forth from there in a contingent, iterative process. Similarly to the way the phenomena of organization and communication are intertwined, one sometimes needs to look from both sides to an issue in order to enhance its understanding (cf. Luhmann, 1981b). Throughout the study, this way of looking on the same issue from various ankles so that some aspects are put upfront while others remain in the background will prevail.

2 Paradigmatic Perspective: Organizations as Communications

In this chapter, the paradigmatic perspective of the study is introduced. According to Kuhn (1962), the concept of paradigm refers to a set of epistemological and methodological assumptions shared by a group of researchers. In his monograph "The structure of scientific revolutions", Kuhn introduces four primary functions of paradigms: (1) they serve as *spotlights* which means that they enable their followers to identify a certain set of problems and they usually also deliver a certain set of tools how to approach these problems, (2) they are *universalistic* in their ambition which means that they claim to be in principle applicable to all kinds of problems covered by the discipline, (3) they require some form of *consensus* by a group of researchers who follow the paradigm in its most basic assumptions, and (4) they are *incommensurable* which means that they usually cannot be easily combined with other paradigms due to mutually contradicting epistemological and methodological assumptions.[5] Moreover, Kuhn (1962) theorizes paradigms as being subject to revolutionary rather than evolutionary changes over time.

In the field of organizational communication, the idea to grasp organizations primarily as communicative entities has recently gained increasing attention. The notion of organizations as communications fulfills all four criteria of a paradigm outlined by Kuhn (1962): It sheds light on a

5 Kuhn (1962) puts forth a rather rigid notion of paradigms which implies that a discipline can only be called scientific if the vast majority of scientists agree on the same epistemological and methodological assumptions. Following this argument, no single discipline in the social sciences could be called scientific, because most commonly various paradigms co-exist here. Therefore, the concept of paradigm is used in its less rigid form as introduced by Friedrich (1970), for example.

new set of problems, i.e., how organizations are constituted by communication, it has a universalistic claim in that it grasps all kinds of organizations as communications, it is largely incommensurable to other paradigms which approach organizations in a conventional manner, and it has found a growing group of followers which share its most basic assumptions (cf. Castor, 2005), in both organizational communication studies (Taylor & van Every, 2000) and in social systems theory (Luhmann, 1984; 2000). It is this chapter's aim to point how these two traditions differ in their view on organizations and in their assumptions on how organizations as social systems emerge out of communication.

2.1 The Communication as Constitutive of Organizations (CCO) Perspective

Organizational communication represents a trans-disciplinary field of study which resides at the intersection of media and communication studies, on the one hand, and management and organization studies, on the other hand.[6] In a historical overview, Taylor (2003: 3) points out that the field of organizational communication has its origins in the United States and that it reaches back to the period between mid 19th century and World War I. During this time, immigration to the United States created the demand "to train people in the elementary techniques of communication: how to write a coherent paper and deliver an effective talk" (Taylor, 2003: 3). In these early days, the field of organizational communication was more common to call "industrial communication" or "business communication" (Taylor, 2003: 3). Taylor goes on to report: "World War II gave a boost to the field because the US army needed people with communication skills to be trained in a hurry. The field flourished"

6 This transdisciplinary state is also manifested in institutionalized form: Researchers in the field of organizational communication are members of both the International Communication Association (ICA; Organizational Communication Division) and the Academy of Management (AoM; Organizational Communication and Information Systems Division).

(Taylor, 2003: 4). In the 1950s, and especially in the 1960s, the field of organizational communication managed to establish itself more and more in the social sciences by grounding it in a more scientific methodology: "By the end of the decade, organizational communication (its new title) was an accepted field within the larger community: the second largest division (after mass media) in the International Communication Association (ICA)" (Taylor, 2003: 4).

However, like most fields in the social sciences (Friedrichs, 1970), the history of organizational communication as a field has been determined by competing paradigms (Corman, 2000; Taylor, 2000b) which shaped its development in the following decades.[7] In a historical account, Clair evaluates the field's paradigmatic eclecticism as being both advantageous and disadvantageous:

> Our eclectic past provided us with the means to open our arms to multiple perspectives from a variety of disciplines and be able to create our own compelling theories and perspectives. It may be this same eclecticism that drives contemporary scholars to attempt to tidy things up a bit through metatheoretical models. We may find a great deal of heuristic value, as well as efficiency and effectiveness, in that kind of metatheoretical tidiness, but we may also find that it obfuscates the beauty and the possibilities of the unmanaged field. (Clair, 1999: 290)

The paradigmatic differences in the understanding of organizational communication can be described by drawing on three *root metaphors* which symbolize the differing views on the relationship between organizations and communication. In a paper presented on the 1993 Annual Conference of the International Communication Association (ICA), Smith differentiates three of such metaphors:

7 Paradigmatic debates of this kind have taken place in comparable form in the field of organization studies, see the debate between Pfeffer (1993) and van Maanen (1995), for instance.

> (1) organization as a container in which communication occurs (...), (2) organization as either produced by or producing communication, and finally (3) an equivalence – organization and communication as really the same thing, but with a different name. (Smith, 1993; cited by Taylor, 2003: 7)

A growing body of literature in the study of organizational communication follows the third root metaphor which assumes an isomorphic relationship between organization and communication (Fairhurst & Putnam, 1999). According to this view, organizations are constituted by acts of communication and, vice-versa, acts of communication tend to promote the emergence of organizational structures (Taylor & van Every, 2000). As Castor highlights, "organizational communication scholars (...) are becoming increasingly interested in the communication as constitutive of organizations (CCO) perspective that views organizations as socially constructed through communication" (Castor, 2005: 480).[8] Accordingly, the authors of the CCO perspective emphasize the importance of communication for organizations in their definition of organizations as essentially consisting of "(nothing more and nothing less than) inter-related networks of communication" (Taylor, 2003: 12).

The CCO approach attempts a radical shift in perspective: It rejects the notion of organizations being constituted by their members, as exemplified by the assertion: "The business organization consists fundamentally of individuals" (Lee & Lawrence, 1985: 52). Instead, it adapts a somewhat counter-intuitive and abstract notion of the organization as being constituted by ephemeral acts of communication, be it verbal communication or manifested texts (Cooren & Taylor, 1997; Heaton & Taylor, 2002; Taylor & Robichaud, 2004; Cooren, 2004): „An organization is not a physical structure – a collection of people (or computers), joined

8 Throughout this study, I will use the abbreviation CCO to refer to this growing paradigm within the field of organizational communication which assumes a constitutive relationship between organizations and communication.

by material channels of communication, but a construction made out of conversation" (Taylor, 1993: 22).[9]

Framed like this, the CCO approach transcends conventional theorizations of organizations and offers an alternative perspective, closely related to the field of media and communication studies. What makes this perspective particularly attractive is that it opens common ground for the cross-disciplinary study of organizations as communication phenomena: "If, indeed, the two constructs are isomorphic, then all organizational theories contain implicit notion about communication and all communication theories, in turn, provide important insights about organizing" (Putnam, Phillips & Chapman, 1996: 396). In recent years, the CCO approach has been used, for instance, to analyze how texts shape organizations (Cooren, 2004), how social reality is communicatively constructed in decision making (Castor, 2005), and how interactions scale up to organizations (Cooren & Fairhurst, forthcoming).

The paradigmatic perspective to grasp organizations as communicative phenomena also corresponds with earlier work in the social psychology of organization by Weick and colleagues (Weick, 1979; 1995; Daft & Weick, 1984; Weick & Roberts, 1993; Weick, Sutcliffe & Obstfeld, 2005). Weick affirms that "the communication activity *is* the organization" (Weick, 1995: 75; own emphasis added). Hence, he understand organizations as ongoing processes of communication which construct their world from one communicative episode to the next, *in actu*. Consequently, he prefers the dynamic term "organizing" referring to an activity in comparison to the rather static term "organization" (cf. Weick, 1979; Weick, Sutcliffe & Obstfeld, 2005). As Taylor et al. summarize: "Communication is the core process in organizations, or, in Weick's terms, the core process of *organizing*" (Taylor et al., 2001: 100; emphasis in original).

9 On a more concrete level, this rather abstract notion of organizations corresponds with Mintzberg's empirical findings that communication accounts for more than 80 percent of a manager's daily activities (cf. Mintzberg, 1973).

The comparably long reaching tradition of organizational communication as a field in Northern America and its significant growth within media and communication studies up until today was not equally shared in other world regions with a comparably strong research tradition such as Europe or Asia.[10] This may be one of the reasons why in the established body of literature on the CCO perspective there are hardly any links to the theory of social systems (TSS) developed by Luhmann (1984; 2000)[11] – although this framework shares the most fundamental assumption of the CCO approach: a constitutive view on the relationship between communication and organization. Despite this paradigmatic parallel to the CCO perspective,[12] the TSS framework has only found weak reception in the literature on organizational communication thus far.[13] In the next section, the TSS perspective on organizations as communications is introduced in a basic outline.

2.2 The Theory of Social Systems (TSS) Perspective

The theory of social systems represents one of the main schools of thought in the German speaking social sciences (Seidl & Becker, 2006b: 8). It has been the project of sociologist Niklas Luhmann (1984; 2000) to develop a universal framework which can be applied to all social phenomena and which allows for a development of theory-consistent descriptions (Knodt, 1995). His work stands in a tradition of systemic world-

10 Earlier overviews on studies in the field of organizational communication outside of North America are provided by Wiio, Goldhaber and Yates (1981), Kieser and Hegele (1998), and Kieser and Müller (2003).

11 For practical reasons, I will use the abbreviation TSS at various points of the study to refer to the theory of social systems framework.

12 And despite to the fact, seen from the opposite side, that the CCO perspective originally roots in (open) system theories, as Taylor, Flanagin, Cheney and Seibold (2001: 108) highlight.

13 To mention some remarkable exceptions: Hatch (1997) includes a short introduction to the TSS framework in her monograph "Organization Theory". Moreover, Taylor (2001) acknowledges Luhmann's work by drawing on his article "What is Communication?" (Luhmann, 1992).

views rooted in general systems theory (von Bertalanffy), sociology of social systems (Parsons), cybernetics (von Foerster), and mathematics (Spencer Brown). With the *autopoietic turn* of his theory, Luhmann (1984) transcends the work of his theoretical ancestors, and concentrates on the self-reproducing capabilities of social systems.[14] Although the theory has been criticized for its focus on systemic phenomena rather than individual action (Schimank, 1985), its success is manifested in a growing body of publications not only in the German but also in the English speaking social sciences in recent years (e.g., Lee, 2000; Mingers, 2002; 2003; King & Thornhill, 2003; Bakken & Hernes, 2003; Hernes & Bakken, 2003; Nassehi, 2005; Seidl, 2006a; 2006b; Seidl & Becker, 2006a; 2006b; Knudsen, 2006; Moeller, 2006).[15]

In his monograph "Social Systems" (*Soziale Systeme;* published in German in 1984; translated to English in 1995*)*, Luhmann elaborates on his basic assumption that the world's evolution has put forth not only organic systems but also psychic and social systems. These systems have in common that they are assumed to be *autopoietic* (Maturana & Varela, 1975) in the sense that they "not only produce and change their own structures", but "everything that is used as a unit by the system is produced as a unit by the system itself" (Luhmann, 1986: 174). *Psychic systems* operate by means of a continuous (and unstoppable) reproduction of thoughts which leads to the emergence of consciousness. *Social systems*, in comparison, operate by means of a continuous reproduction of communicative episodes. Both system types, psychic and social systems, share the processing of meaning – a property which, in turn, distinguishes

14 The TSS framework in the versio of Luhmann (1995; 2000), however, significantly differs from other systems theories, especially in its rigid focus on communication as the key operation of social systems (Seidl, 2006a: 11).

15 In a critical account on the TSS framework, Blühdorn emphasizes that one can hardly adapt only singular aspects of Luhmann's social systems theory without agreeing on its epistemological foundations: "The particular problem it presents is that it defies a pick-and-choose approach. Because Luhmann was aiming for nothing less than a sociological paradigm change, it is hardly possible to adopt some elements of his thinking and reject the rest. The two options appear to be either the whole theory package or nothing at all" (Blühdorn, 2000: 339).

them from mechanic systems as well as other autopoietic forms such as organic systems. Luhmann (1984: 25) theorizes autopoietic systems as being *operationally closed*, but *structurally open* for coupling to their environment as well as mutual irritations between systems. To summarize Luhmann's understanding of social systems in his own words: "Social systems use communications as their particular mode of autopoietic reproduction. Their elements are communications which are recursively produced and reproduced by a network of communications, and which cannot exist outside the network" (Luhmann, 1986: 174).

Starting from here, Luhmann distinguishes three basic types of social systems: *Organizations* represent the meso-level of social systems – residing between *interactions* (the smallest and most elusive form of social gatherings) on the micro-level and *society* as a whole (which encompasses all forms of social systems) on the macro level (Luhmann, 1986: 173). The systems-theoretical worldview leads to the counter-intuitive notion that human beings are *environmental* to communication processes (Luhmann, 1992: 30) in that a clear distinction between communication systems ("social systems") and individual human beings ("psychic systems") is hypothesized: "Accordingly, social systems are not comprised of persons and actions but of communications" (Luhmann, 1989: 145). Despite this rather impersonal notion of social systems as inter-related sets of communications, the TSS perspective assumes that social systems require the participation of human beings in communication processes in order to be able to proceed their autopoiesis (Luhmann, 1990: 281).

Luhmann's understanding of communication (Luhmann, 1992) in principle applies to all forms of social systems. Thus, when it comes to organizations, Luhmann identifies a more specific type of communication which is unique in its potential to let organizational structures emerge: the *communication of decisions* (Luhmann, 1988; 2000). According to this view, the first and foremost function of organizations is to assure the continuous re-production of decisions out of decisions. Decisions, in turn, are understood as communicative acts which process distinctions between theoretically indefinite, but practically constrained alternatives. In the words of Luhmann:

> (...) Organised social systems can be understood as systems made up of decisions, and capable of completing the decisions that make them up, through the decisions that make them up. Decision is not understood as a psychological mechanism, but as a matter of communication, not as a psychological event in the form of an internally conscious definition of the self, but as a social event. That makes it impossible to state that decisions already taken still have to be communicated. Decisions are communications; something that clearly does not preclude that one can communicate about decisions. (Luhmann, 2003: 32)

In his focus on decisions as the constitutive element of organizations, Luhmann stands in a long reaching tradition of organization research, as Nassehi (2005: 185) points out. His theoretical focus links back to classical works of Weber on bureaucracy (Weber, 1958) as well as organizational behavior theorists such as Simon and March (e.g., March & Simon, 1958; Cyert & March, 1963).[16] However, he transcends their work by the radical communicative character he ascribes to decisions.

Moreover, Luhmann emphasizes the ephemeral character of decisions as communicative episodes. Decisions vanish in the very moment of coming into existence (Luhmann, 1988: 109). Therefore, social systems are imagined here as comparably instable phenomena which are only able to stabilize themselves by maintaining a continuous and interlinked flow of such episodes. According to Luhmann (2000: 417), autopoietic systems are always endangered in their existence: they either tend to lose themselves in pure self-referentiality without the sensitivity to environmental perturbations, or they get absorbed by their environment. The focus on instability as the normal case of decision communication suggests taking a closer look at the environmental conditions which constitute a successful knowledge reproduction.

The communicated decision is seen here as a comparably complex, somewhat provocative type of communication: It creates the illusion of an invariable past (because the decision was made), it increases the probability of dissent (because the consideration of alternatives can be put into question), and it makes the demarcation of power visible (Luhmann,

16 Luhmann also refers to their work rather extensively (e.g., Luhmann, 2000: 11ff.).

2000: 67; cf. Ortmann & Salzmann, 2002). In other words, decisions entail their "own self-critique" (Knudsen, 2006: 110). The provocative character of decisions defines their inherent capacity to create new decision necessities by being communicated. This way, decisions are able to stabilize the organization as a comparably formal social system over time – in contrast to rather elusive social systems called "interactions" (Kieserling, 1999; Seidl, 2006b).

In the TSS framework, decisions are closely related to the concept of *contingency* (Luhmann, 1984; 1993; 2000). Luhmann refers to the philosophical tradition of the term when he asserts: "Contingency is the state which is reached if necessity and impossibility are negated" (Luhmann, 1988: 183; own translation).[17] Decisions are contingent by definition because in a decision usually "only one conclusion [is] reached but others could have been chosen" (Andersen, 2003: 245). In this context, it is important to keep in mind that Luhmann's notion of the term contingency does not equal its notion in what has come to be known as "contingency theory" (Lawrence & Lorsch, 1967; Donaldson, 2001) where the term rouses connotations to the concept of risk.

An important aspect of decision communication in organizations is that decisions can only be identified as decisions if their contingency is made visible, as well, at least in the form of one or more alternatives explicitly taken into consideration:

17 This notion of contingency also equals the usage of the term in actor-network theory, a framework that goes back to Latour (1996) as well as Law and Hassard (1999): "The notion of contingency is central to [actor-network theory]. The accomplishment of a certain actor-network is always just one among (infinitely) many possible outcomes. Contingency then means that actor-networks are built on choices, there is no master plan prescribing the mobilisation of the network […]" (Noe & Alroe, 2006: 39).

> (...) Luhmann suggests conceptualising decision as a specific form of communication. It is not that decisions are first made and then communicated; decisions are communications. As has been said about communications in general, decision communications too are not produced by 'human beings' but by the social system, the organization. What is particular about decisions is that they are 'compact communications' (Luhmann 2000: 185), which communicate their own contingency (...). In contrast to an ordinary communication, which only communicates a specific content that has been selected (e.g., "I love you"), a decision communication communicates also – explicitly or implicitly – that there are alternatives that could have been selected instead (e.g., "I am going to employ candidate A and not candidate B"). (Seidl, 2006a: 39)

This implies that the communication of decisions, and with this, the self-reproducing capability of the organization as a social system, depends on the *visibility of its decision contingency*. The existential character of this aspect for the organization can be explained by drawing on the problem of *connectivity* (in German: *Anschlussfähigkeit*): "In the framework of social systems theory, the discussion of how the organization emerges is posed as a question of organizational strategies for the increase of probability for the connectivity between decisions" (Knudsen, 2006: 109). To sustain its autopoietic existence, the organization needs to assure that decisions can be connected to each other over time. Therefore, in order to increase the likelihood of connectivity, the organization needs to establish structures which make it more likely that decisions become observable as decisions. This, in turn, is achieved by flagging out that a choice has been made from a range of alternatives (cf. chapter 3.2.1).

2.3 Similarities and Differences of the CCO and the TSS Perspective

In its focus on the visibility of decision contingency as a core requirement for the emergence of organizations as social systems, the TSS perspective relates to current debates in the field of organizational communication on the constitutive conditions for the emergence of organizations out of

communication (McPhee & Zaug, 2000; Taylor, 2000a; Cooren & Fairhurst, forthcoming).[18] However, the TSS framework has only found weak reception in the Northern American tradition of the field thus far. This weak reception may be due to the fact that organizational communication as a field of study does not have a strong tradition within the German community of media and communication studies (Theis-Berglmair, 2003: 17)[19] and due to a certain self-centeredness of the North-American community in the field of organizational communication (Taylor, 2005).

Another reason may lie in the fact that up until today, Luhmann's work is only partly translated in English language (Nassehi, 2005: 179). As Hernes and Bakken highlight, an international attention to the TSS perspective is constrained by time lags in the translation of Luhmann's extensive work from German into English language:

> Whereas 'Social Systems' appeared in English in 1995, other works of [Luhmann] that deal explicitly with organizations (...) have not yet been translated into English. (...) Luhmann's autopoiesis has found little resonance in mainstream organization theory. We find this somewhat surprising, given that the idea of recursivity may force us to ask some new and provoking questions about our interpretations of organization. (Hernes & Bakken, 2003: 1513f)

Seidl and Becker share this astonishment and add a theoretical explanation which relates to the hermetic terminology of the TSS framework:

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18 See Theis-Berglmair (2003) for an earlier account on interrelations between the theory of social systems and organizational communication as a field of study.

19 This can also be shown by considering the field's institutional embeddedness in the DGPuK (*Deutsche Gesellschaft für Publizistik und Kommunikationsforschung*), the German association of media and communication scholars. Within the DGPuK, the division ascribed to the study of organizational communication is one of the smallest ones, whereas its counterpart on the international level represents one of the biggest divisions of the International Communication Association (ICA) (Taylor, Flanagin, Cheney & Seibold, 2001: 107). Moreover, most of the members of the German divisional equivalent are committed to the study of Public Relations (PR; cf. Theis-Berglmair, 2005), a subject field commonly regarded as being alien to the field of organizational communication in the Anglo-American tradition (Cheney & Christensen, 2004: 510).

> (...) given the fact that Luhmann's theory has been a classical topos of even undergraduate courses in sociology within German speaking countries for more than a decade, it appears very surprising that his works have received comparatively little serious attention within the international field of organization studies. In addition to the language barrier and the time necessary for translating his works into English, the main reasons for the rather hesitant reception so far probably lie in the theory itself. One reason is certainly the complexity of Luhmann's works and the enormous amount of topics and theoretical traditions they cover, which make it very difficult for first-time readers to access his works unaided by commentaries. Moreover, Luhmann developed a very distinctive terminology to express his concepts, which presents an additional hurdle. Because of that, it is often said that when starting to read Luhmann it takes a hundred to two hundred pages before one actually understands anything. This is quite a big investment in time and effort, considering that one can never really know beforehand what one will get out of it. (Seidl & Becker, 2006b: 10)

The comparably weak reception of the TSS framework in international organization communication studies does not diminish its potential relevance for the study of organizations framed as communicative entities. One major similarity of the TSS and the CCO perspectives lies in their shared acknowledgement of the work of Giddens (1979; 1984). In a recent paper, Hernes and Bakken (2003) outline the similarities of Giddens's and Luhmann's theories: A common denominator between Luhmann's autopoiesis concept and Giddens's structuration theory is the explicit focus on recursivity, which Giddens (1979: 5) places between structure and action: The *duality of structure* refers to "the essential recursiveness of social life, as constituted in social practices: structure is both medium and outcome of the reproduction of practices" (Hernes & Bakken, 2003: 1525). Consequently, both Luhmann and Giddens emphasize the recursive power of social systems, and relate the aspect of recursivity also to their own way of theorizing. According to structuration theory, social systems exactly consist of recurrent practices of communication (Berends, Boersma & Weggeman, 2003: 1042). Similarly to Giddens (1984), Luhmann (1986) understands communication as *both* being produced by the social system

(which consists of communications) *and* being the driving force for the reproduction of the system itself.[20]

If we enter the constitutive aspects of the organization-communication relationship more deeply, it can be shown that Luhmann furthermore shares the assumption with some authors of the CCO perspective (McPhee & Zaug, 2000; Cooren & Fairhurst, forthcoming) that not every type of communication has the inherent constitutive ability to let an organization emerge. Instead, both approaches assume certain additional requirements for the emergence of an organization. However, the TSS and the CCO perspectives differ with respect to the question *which* communicative characteristics are essential for the constitution of organization. While Luhmann and the authors of the TSS perspective concentrate on decisions as the constitutive element of organizations, it is in an ongoing debate within the CCO community which communicative characteristics can be theorized as the constitutive element of organizations.[21]

In a predominantly supportive account on Taylor's work, McPhee and Poole (2001) express their criticism of the isomorphism assumption:

> One limitation of Taylor et al.'s approach is that it attempts to use communication concepts that apply to all interaction, perhaps influenced by the idea the organization and communication are equivalent, all communication should be organizational. Since these concepts must of necessity apply to marriages, mobs, and communities that intercommunicate, they are hindered from finding crucial explanatory concepts for specifically organizational communication. (McPhee & Poole, 2001: 534)

In an earlier article, McPhee and Zaug (2000) distinguish four types of communication ("flows") which they assume to be essential for the constitution of organizations: membership negotiation, organizational self-structuring, activity coordination, and institutional positioning. These flows need to be seen as a *soft set* of criteria rather than a clear-cut defini-

20 See Mingers (2003: 105ff.) for further considerations on parallels between Luhmann's and Giddens's frameworks.

21 This aspect will be deepened in an analysis of textual vs. verbal modes of communication (cf. chapter 3.2.2)

tion of what it is that makes communication organizational. Seen from the TSS perspective, all types of communication mentioned by McPhee and Zaug (2000) can be integrated in the social systems framework by grasping them as sub-types of decisions: Be it the negotiation about memberships, the emergence of structures, or the coordination of organizational activities, all of these processes finally can be reduced to communicative episodes that take the form of decisions.[22] The communication of decisions, then, represents the fundamental underpinning of the existence of organizations.[23]

The distinction drawn by McPhee and Zaug (2000) is criticized by Cooren and Fairhurst (forthcoming) for approaching the organization from a too deductive, top-down stance. Instead, the authors suggest to transcend the micro-macro distinction by focusing on textual agency in organizations. This is supported by Putnam and Cooren's estimation that "a large-scale organization, with its inertia, relative stability, and capacity to tele-act (i.e., act from a distance), exists through the effects of stable texts" (Putnam & Cooren, 2004: 325). The key argument here is that the constitution of organizations essentially relies on texts as comparably long-lasting entities which ensure a stabilization of the otherwise too ephemeral communicative character of organizations.

22 In the TSS framework, *membership negotiations* lead to decisions who is included in or excluded from the organization and, therefore, contribute to establishing a distinction between the organization and its environment (Luhmann, 2000: 112). *Organizational self-structuring* is seen here as a general characteristic of all autopoietic systems so that recursive interactions with the system's environment lead to the establishment of system-inherent structures. This feature, in consequence, applies to all autopoietic systems and, therefore, also to organizations. *Activity coordination* relates to organizational objectives which are subsumable to decisions, either. *Institutional embedding*, in contrast, is seen to belong to the organizational environment in the TSS perspective (cf. Luhmann, 2000: 383).

23 This, in turn, contradicts McPhee and Zaug's assertion that "[…] a theory of constitution must be highly general, allowing organizations to occur in a variety of ways. Although specific messages can be decisive in the outcome of a decision-making session, for instance, no specific message or even decision session is necessary or decisive for making the group of members an organization" (McPhee & Zaug, 2000: no page).

According to Cooren and Fairhurst (forthcoming), textual and non-human agency enables to stabilize organizational communication and to assure its sustainable existence over time. The authors link this argument to Derrida's notion of *réstance* (Derrida, 1988) what they translate as "staying capacity" and what they define as the key property of machines and texts (Cooren & Fairhurst, forthcoming). In this view, procedures, documents, machines, computers, and architectural elements significantly contribute to the emergence and stabilization of the organization as a social system. Cooren and Fairhurst conclude: "If the idea of the communicative constitution of organization makes any sense, it is for us on the sole condition that the concept of 'communication' is extended to what non-humans do" (Cooren & Fairhurst, forthcoming: no page).

In correspondence to Cooren and Fairhurst (forthcoming), Luhmann also highlights the importance of textual agency in organizations and connects it to the concept of organizational memory:

> Decisions can only take place on the basis of recursions which require some form of [organizational] memory. (...) [The] organizational memory presupposes a continuous re-impregnation by means of decisions. These interconnections explain the constitutive, not only technical-supportive significance of textuality for organizations. (Luhmann, 2000: 159; own translation)

The differences between the TSS and the CCO perspective, however, become more significant considering the view of Cooren and Fairhurst on the organization as a communicative entity (Cooren and Fairhurst, forthcoming). They deny the notion of decisions as the core operation of organizations (Luhmann, 2000) as well as the sufficiency of the four flows introduced by McPhee and Zaug (2000) when they write:

> For example, a group of individuals can organize themselves to accomplish a common objective (for example, moving) and develop some patterns of interaction, but this does not necessarily means that this group constitutes a formal organization (for example, a moving company). They could just be a bunch of friends trying to help one of them to move. (Cooren & Fairhurst, forthcoming: no page)

Of course, as Luhmann (1988: 170f.) concedes, decisions also exist outside of organizations. However, only decisions have the inherent capability to let organizational structures emerge by being tied together in a recursive, self-referential system. Seen from the TSS perspective, the situation described by Cooren and Fairhurst may (forthcoming) exactly represents a reference point where loose form of interactions can transform into more formal organizations systems. Or, to stay in the picture, when the friends realize that moving is so charming so that they want to found a moving club. In other words, decisions themselves are a necessary though not sufficient condition for the emergence of organizations out of communication.

To conclude, despite undeniable similarities in the basic understanding of organizations, the CCO and the TSS perspectives differ in the question what specific conditions are constitutive for the emergence of organizations out of communication. Even if both approaches acknowledge the role of textual artifacts, the TSS framework transcends the CCO perspective in its specification that the communication of decisions represents the main constitutive characteristic of organizations. With this theoretical choice, the TSS perspective points to a question which can be subject to theoretical and empirical investigation: How does the organization manage to maintain an interconnected flow of communicated decisions which are defined as ephemeral, perishable episodes?

Just as it is the typical function of a paradigm, the combined perspective leads to the identification of a common problem, the constitutive conditions for the emergence of organizations out of communication. Hence, the TSS perspective suggests two conditions which go beyond the debate in organizational communication research thus far – that it is essential for organizations that their communications have the form of decisions and that they become *visible* as decisions in order to establish an process of self-production of decisions out of decisions. However, it is unclear how this visibility is achieved in organizational communication. The theoretical analysis which is outlined in the next chapter will concentrate on the visibility of decision contingency in organizational communication – based on the idea to grasp organizations as communications.

3 Theoretical Analysis: The (In-)Visibility of Decision Contingency in Organizational Communication

The issue of decision contingency visibilization (DCV) in project organizations is derived from an abstract question: What are the constitutive conditions for the emergence and stabilization of organizations out of communication? The isomorphic view on the organization-communication relationship (Taylor & van Every, 2000) suggests to grasp organizational communication processes as two-sided phenomena. While the analysis of the organizational side arrives at the conclusion that the visibilization of decision contingency plays a constitutive role for the autopoiesis of organizations, and even more so for project organizations, taking a look on the communicational side can help to develop an understanding of DCV as occurring in communication. In this chapter, this issue is approached by a twofold analytic procedure which links back to the notion of organizations as communications introduced in the previous chapter.

In a first step, the issue of DCV is analyzed by highlighting the *organizational side* of the organization-communication duality (cf. chapter 3.1). This allows for investigating the role of DCV for the autopoiesis of organizations as social systems and applying this analysis to more specific organizational forms, such as project organizations and, even more specific, consulting firms. In a second step, the issue of DCV is analyzed by emphasizing the *communicational side* of the duality (cf. chapter 3.2). This allows for investigating to what extent decision contingency can indeed become visibilized by communication processes initiated for the purpose of CPL. A special emphasis is given to the role of textual forms of docu-

mentation and, even more so, to the role of PowerPoint as a medium and genre of project documentation in their contribution to the visibilization of decision contingency (cf. figure 1).

3.1 Organizational Side of the Duality	**3.2 Communicational Side of the Duality**
3.1.1 DCV in Organizations	3.2.1 DCV in Communication
3.1.2 DCV in Project Organizations	3.2.2 DCV in Project Documentation
3.1.3 DCV in Consulting Firms	3.2.3 DCV in PowerPoint Presentations

Figure 1: The Two-Sided Analysis of Decision Contingency Visibilization (DCV)

The analysis concludes in an outline of distinctions and research questions (cf. chapter 3.3) which will guide the empirical analysis the issue of DCV (cf. chapter 4 and 5), in a next step.

3.1 Analysis of the Organizational Side of the Duality

3.1.1 The (In-)Visibility of Decision Contingency in Organizations

In a first step of the analysis, the importance of decision contingency visibility for the autopoiesis of the organization as a social system (Luhmann, 2000) is explored and illuminated from various theoretical perspectives. As argued above (cf. chapter 1.1 and 2.2), the organization as a self-reproducing system of communicated decisions requires at least some form of awareness for previous decisions where future decisions can be based on. The investigation, therefore, begins with an examination of the special relationship between decisions and their contingency.

An Illness Called Decisionitis

In Luhmann's view, *decisions* and *contingency* are naturally intertwined phenomena. Decisions cannot be identified as being decisions if their contingency is not made visible, at least in the form of one or more alternatives explicitly taken into consideration: "Decisions can only be communicated [as decisions] if the rejected alternatives are communicated, too" (Luhmann, 2000: 64; own translation). Knudsen elaborates on this assumption: "The decision must communicate itself as a decision, but by doing that it also communicates its own alternative. A decision cannot help but communicate its own self-critique, i.e., communicate that it could also have been made differently" (Knudsen, 2006: 110). In other words, without flagging out that there have been several possible alternatives to a given situation, decision necessity would not be identifiable: We have options A, B, C here – what to do? This implies that the communication of decisions, and with this, the successful autopoiesis of the organization *per se*, requires the *visibility of decision contingency* within the organization.

How does the organization manage to interconnect episodes of decision communication? Furthermore, how does the visibility of decision contingency contribute to this connectivity? Andersen sheds light on this question by drawing on the distinction between *open* and *fixed contingency*:

> A decision divides the world into a before and an after. (...). In the light of the decision, 'before the decision' stands out as the point of open contingency with respect to which social expectations among the members will dominate in the future. (...) After the decision this contingency, this openness regarding the end, appears in a fixed form. (Andersen, 2003: 244f.)

To communicate a decision means to transform and shift its contingency. Every decision can become the decision premise for new contingency to be decided upon. Contingency is inherent to any form of decision where, by means of the decision, previously open contingency is transformed into fixed contingency (Luhmann, 2000: 170). To give an example, a com-

pany's decision to invest in a certain country (instead of another) opens up new contingencies and, therefore, necessities for follow-up decisions: What decisions need to be made on marketing activities, legal issues, logistics, etc. By means of this, organizations act as the producers of their own decisive capacity (Luhmann, 2000: 181). Organizations, then, are able to reproduce themselves by means of their own operations – driven by an inherent decision necessity (Luhmann, 1988: 169). In other words, organizations are indeterminate in their complexity. The range of possible connections of elements exceeds the realizable connections. Therefore, the organization as a social system is constituted by the continuous need to realize selections which communicatively condense in form of decisions (Luhmann, 1988: 110). Consequently, Luhmann describes organizations as suffering from an illness he calls *decisionitis*. (Luhmann, 1981c: 355).

The Paradox of Undecidability and Its Deparadoxification

In the TSS perspective, the necessity to interconnect decisions to each other is based on a paradox: the paradox of the *undecidability of decisions* (cf. von Foerster, 1992; Derrida, 2002). Luhmann's understanding of this paradox comes close to von Foerster's assertion: "Only questions that are in principle undecidable, we can decide" (von Foerster: 1992: 14). In other words, questions where an appropriate decision can be deduced do not have the impetus to enforce the communication of decisions, and with this, to let organizations emerge: "(...) if a decision can be reached through absolute deduction, calculation, or argumentation does it lead to a final closure or fixation of contingency without simultaneously potentializing alternatives. (...). So called rational decisions are not decisions at all" (Andersen, 2003: 246). Thus, what we have come to call decisions in everyday language does not necessarily correspond with the notion of the term in the TSS perspective. Here, the inherent undecidability, ambiguity, and contingency instead become the defining aspects of the decision.

Moreover, as Luhmann (2000: 157) highlights, the relationship between decisions and contingency changes if the decision is reconstructed in retrospect: Now previously open contingency appears in a fixed form, but the decision can be constructed as having been contingent, it could have been proceeded differently. This paradoxical relationship is summarized by Seidl: "Every decision communicates that there are *alternatives* to the decision – otherwise it would not be a decision – and it simultaneously communicates that since the decision has been made, there are *no* alternatives – otherwise, again, it would not be a decision (Luhmann, 2000: 142)" (Seidl, 2006b: 146; emphasis in original).

In this context, the TSS framework enables us to observe the organization as a communicative entity by identifying system-inherent strategies of *deparadoxification*. As Andersen points out:

> In relation to decision communication it is important *to make decisions look decidable*. Decision communication is able to deparadoxify itself by basically *making freedom look like restraint*. In a certain sense, organizational communication through the form of decision consists of nothing but continual attempts to deparadoxify decisions. The way they do is an empirical question. (Andersen, 2003: 249; emphasis in original)

One way to approach the observability of decision contingency empirically is to take a closer look at strategies established in organizations to overcome the fundamental paradox of decision making. In this context, Andersen distinguishes three strategies of deparadoxification which all can be subject to empirical investigation: (1) *temporal*, (2) *social*, and (3) *factual* deparadoxification (Andersen, 2003: 250):

The *temporal* deparadoxification of decisions means to overcome the pressure of social expectations by postponing the decision in time. Temporal deparadoxifications can be found empirically, for example, when it is said that a decision had needed to 'ripen' before it can be made. The *social* deparadoxification of decisions means to justify the decision by relating it to social expectations. Empirically, this can be observed in organizations when there is a claim for an 'interest analysis' or 'stakeholder analysis' in order to fulfill social expectations appropriately. Instruments

like these serve as a legitimation for the decision by creating social imperatives constructed to exist in the organization's environment. The *factual* deparadoxification is the most common type of the three. This strategy involves to render a decision as a reaction to the 'nature of the case'. Here, decisions are framed as a choice of certain pre-defined alternatives. Typically this is realized by reference to the 'environment', for example the market situation an organization is facing, as the compelling imperative. This insight can be summarized with Czarniawska:

> Work organizations are full of absurdities, most of which are caused by the attempts to enforce formal logic and rationality on their operations. Revealing this fact does not have to lead us to blame attribution and betterment programmes introducing more rationality. Instead, it may reveal the everyday heroism concealed in mundane actions of de-paradoxifying that engage most of the time of the organizers. (Czarniawska, 2001: 15)

Deparadoxification as the Driving Force of Organizations

In a recent account on Luhmann's organization theory, Nassehi (2005) describes organizations as *decision machines* or, to be more precise, *decision deparadoxification machines*. Framed like this, the organization is driven by the continuous necessity to invisibilize the very fact that its main operation is based on a paradox, the undecidability of decisions:

> If there were any secure knowledge on how to decide, there would not be a choice. To have the choice means *not to know what to do*. This is the main problem of organizations as social systems, consisting of the communication of decisions to perform strategies to make this problem invisible. As emphasized above, the autopoiesis of communication must make the problem invisible: the only basis of the system's operation is the system itself. This permanently menacing problem of self-deconstruction has to be overcome by constructing accountable anchors or by stabilizing expectable connectivities in time. (Nassehi, 2005: 186; emphasis in original)

Nassehi goes on to argue that the organization develops various strategies how to cope with the undecidability paradox, for example by "construction of a decider as an accountable address" or by making decision processes visible: "This means to stage-manage them [the decisions] in meetings, in special rooms, at special times, with special rites, and on special documents" (Nassehi, 2005: 186). However, "that does not mean that decisions really are observable, but it means that organizations have to supply themselves with forms of visibility which cloak the basic problem of self-reference" (Nassehi, 2005: 186).

With this, Nassehi points to a relevant aspect for the further investigation of DCV processes in organizations. On the one hand, organizations are forced to find some way to deparadoxify the undecidability of their decisions, for example, by making the decision process visible and by making decisions look decidable (Andersen, 2003). On the other hand, the 'stage managing' of decision processes does not allow for observation of factual decisions processes (cf. Luhmann, 2000: 135), instead we empirically have to deal with the way organizations handle the undecidability paradox *as if* there were rational decisions (cf. Ortmann, 2004; Armbrüster, 2004). In Luhmann's words, "the paradox character needs to be packaged and sealed in communication" (Luhmann, 2000: 142).

Given that organizations sustain their existence based on the continuous production and reproduction of decisions, they are forced to decide even if they cannot decide. Organizations solve this problem by means of a "gap-filling presumption of decisions" (Luhmann, 1981c: 353; own translation) even in cases when behavior has not been meant to represent an explicit decision (Ortmann, 2004: 207). In line with this view, organizations seem to be dependent on the creation of a *decisional language game* and have to treat the communicative events caused by these efforts *as if* decisions were developed: "Let's act as if we had something we could safely rely on" (Ortmann, 2004: 208; own translation).

Consequently, it is in line with the TSS framework (Luhmann, 1988; 2000) to assume that decision making processes do not necessarily follow a rationalist and deductive way. This also corresponds with the "garbage can model" by Cohen, March and Olsen (1972) which emphasizes that

decision making in organizations needs to be understood as a rather chaotic and improvized process which is rationalized in retrospect. Accordingly, even project members directly involved in the decision making process within a project may be unaware of the contingencies inherent to decisions made. As Nassehi puts it, "Luhmann comes to the conclusion that rationality is a *retrospective scheme of observation*, dealing with the contingency and the paradox of decision making processes" (Nassehi, 2005: 186; own emphasis added). This is again in line with the work of Weick, as Heaton and Taylor remind us: "When Karl Weick (1979) asks, 'How can I know what I think until I see what I say?' he is dealing with a general communicational principle that applies to all organizations" (Heaton & Taylor, 2002: 223). For the empirical accessibility of DCV this implies that the scientific observer can only indirectly approach to what extent decision contingency has become visible to the organization. This investigation requires to look into traces of retrospective rationalization and deparadoxification as manifested, for example, in a posterior documentation of decision processes.

In conclusion, the TSS perspective grasps the organization as a self-reproducing system which is driven by the continuous necessity to deparadoxify its own operations, the communication of decisions. This process is self-reproducing in that decisions transform open contingencies and uncertainties into intermediate states of fixed contingency (Andersen, 2003: 244) which again cause a demand for follow-up decisions. Past decisions are premises for present decisions which, in turn, become premises for future decisions. The recursivity of this process tends to the creation of organizational structures by means of redundancy (Luhmann, 1988: 167). Whenever a decision serves as a premise for next decisions, structures are likely to emerge that restrict the contingency of future decisions (Luhmann, 1988: 172).

Nevertheless, the question remains how organizations maintain their existence in the long run: "The very existence of organizations testifies to the fact that they evidently found ways of handling the paradox and contingency of their decisions. Studying how an organization comes into being, then, means considering the ways in which it handles [this] para-

dox (...)" (Knudsen, 2006: 110). As Andersen emphasizes, the communicative acts emerging for the purpose of deparadoxification represent an anchor point for empirical analyses where decisions are made visible in order to flag out a decision as a decision (Andersen, 2003: 249). Hence, in order to identify where this visibilization of decision contingency manifests in the communicative practices of organizations, a further specification needs to be made in what type of organization such deparadoxification strategies are most likely to be found. This specification is introduced in the following chapter by relating the issue of DCV to the special case of project organizations.

3.1.2 The (In-)Visibility of Decision Contingency in Project Organizations

The starting point of the analysis has been a rather abstract and general notion of organizations – without taking into account that there can be sub-forms of organizations where special conditions to the visibility of decision contingency apply. In this chapter, it is argued that the visibilization of decision contingency is especially at stake in organizations where decisions occur in a distributed and dislocated form – such as in *project-based organizations*.

The Issue of Cross-Project Learning

Shenhar defines the project organization as a "temporary organization that has been established to complete a specific goal" (Shenhar, 2001: 394). The defining aspect of a project is its limited time span, most commonly predetermined in advance (cf. Lundin & Söderholm, 1995).[24] Projects usually bring together organizational members from different functions who either return to their main jobs after retiring from a project or are again recombined in new projects. Over the past decades, project

24 This does, of course, not deny that also organizations themselves most commonly terminate their existence after a certain life span (cf. Hannan & Freeman, 1977; Quinn & Cameron, 1981).

organizations have become increasingly frequent and important in business practice: "Today, virtually all construction, product development, or engineering efforts are using some formal project management structure" (Shenhar, 2001: 394).

Project organizations are presumed to be particularly successful in adapting flexibly to changes in their environment (cf. Hobday, 2000). However, at the same time, the loose and ephemeral character of their work has created the problem to sustain an organizational awareness of what decisions have been made and what knowledge has been generated within projects (Ayas & Zeniuk, 2001). Hence, project organizations face the challenge that "knowledge is generated in one project and then lost" (Leseure & Brooks, 2004: 103). Organizations with only loosely interlinked projects are endangered to "re-invent the wheel" repetitively in new projects (Lesser & Storck, 2001: 836).

The problem of establishing a sustainable sharing of experiences across projects has been a repetitive issue in the literature on *knowledge management* since the mid 1990s (Nonaka & Takeuchi, 1995; Davenport & Prusak, 1997; Davenport, DeLong & Beers, 1998; Probst, Raub & Romhardt, 1999; Argote, McEvily & Reagans, 2003). However, the early optimism of the knowledge management movement has been challenged in recent years by reports that the first, mainly IT driven knowledge management models did not succeed in practice because they fail to take the social and communicative character of knowledge-based interactions into account (cf. Ruggles, 1998; McDermott, 1999; McDermott & O'Dell, 2001; Huber, 2001; Zorn & Taylor, 2003; Currie & Kerrin, 2004; Wyssusek, 2004; Newell, Bresnen, Edelman, Scarbrough & Swan, 2006). Therefore, in a second phase of the knowledge management idea, the early optimism is put into question. The literature of this phase transcends the reified notion of knowledge as a commodity (cf. Currie & Kerrin, 2004) by focusing on the social processes underlying knowledge-based interactions, be it the communities of practice approach (Brown & Duguid, 1991), the situated view of learning (Lave & Wenger, 1991), or the idea to grasp knowledge management as a sub-form of organizational communication (Zorn & Taylor, 2003). Borgatti and Foster summarize: "The current mantra is

that knowledge creation and utilization are fundamentally human and above all social processes" (Borgatti & Foster, 2003: 997).

In project organizations, the sharing of experiences across projects, sometimes referred to as *project-based learning* (Ayas & Zeniuk, 2001; Keegan & Turner, 2001; Garrick & Clegg, 2001), or *cross-project learning* (Newell, 2004) has gained increasing importance. Driven by the knowledge management idea, and successfully catalyzed by management consulting firms, project organizations have embraced the challenge to enforce an exchange of experiences among their employees on a cross-project level. These changes include an emphasis on digital forms of documentation as a medium for the sharing of project experiences, e.g., in form of documents submitted to an electronic database which is accessible to organizational members (Newell et al., 2006). Learning effects then are aimed to be accomplished horizontally across projects instead of vertically along established lines of the hierarchy.

The Learning Value From Failure

In a critical perspective, existing models of knowledge management and CPL are accused for being too much focused on "best practices" or "success stories" (Swan, Newell & Robertson, 1999), and for neglecting the value of learning from past mistakes made (Sitkin, 1992; Fortune & Peters, 1995; Edmondson, 1996; Vicari & Troilo, 1998; Cannon & Edmondson, 2005; Zhao & Olivera, 2006). The advocates of this perspective reason that successful learning from project experience requires the visibility of past mistakes, for example in establishing an anonymous error-reporting system (Weick & Sutcliffe, 2001; Zhao & Olivera, 2006). This view on the learning value from failure originates in Argyris's earlier definition of organizational learning as the "detection and correction of errors, and error as any feature of knowledge or of knowing that makes action ineffective" (Argyris, 1976: 365; cf. Argyris & Schön, 1978). Framed like this, the learning-from-failure idea comes close to the epistemological principle of falsification (Popper, 1959).

The emphasis on the *learning value from failure* is supported by empirical findings "that learning from repeated success makes future failure very likely. Long periods of continued success foster structural and strategic inertia, extreme process orientations, inattentions and insularities" (Baumard & Starbuck, 2005: 283). In other words, continuous success can hinder organizations from drawing attention to erroneous developments (cf. Argyris, 1976; 1992) and to take measures to go against an inertia caused by a reliance on the continuity of past success (cf. Hedberg, Nyström & Starbuck, 1976; Miller, 1994; Starbuck, Barnett & Baumard, forthcoming). Seen this way, established practices to look for "best cases", e.g., by means of *benchmarking* techniques[25] do not necessary lead to positive learning effects, keeping in mind the limitations to the transferability of "success factors" (cf. Nicolai & Kieser, 2002) from one case to the other due to varying situational circumstances. Instead, a comparably higher learning potential for organizations is assumed to lie in a learning from "worst cases" (cf. Clarke, 2005) by exploring the limitations of their own operations.[26] This resembles March's assertion that organizations require to take the liberty of "foolishness" to assure their flexibility and adaptability to dynamic environments (March, 1988).

Although seemingly a commonplace, the learning-from-failure principle is far from effectively realized in current organizational contexts (Edmondson, 1996). For instance, in an empirical study conducted at formerly state-owned organizations in Russia, Michailova and Husted show the difficulties that arise to the sharing experiences from mistakes made in an environment which is hostile to knowledge sharing (Michailova & Husted, 2004). In a recent article, Baumard and Starbuck (2005) investigate large-scale failures in a telecommunications firm and why there has been no learning from failures. The authors report that "in only 8 of the 14 ventures were any problems reported at all" (Baumard & Starbuck, 2005: 294). They arrive at the conclusion:

25 See Walgenbach and Hegele (2001) for a critical account on benchmarking techniques.

26 This is comparable to the way the neurosciences have realized major achievements in understanding the human brain by studying its malfunctioning caused by either congenital abnormalities, tumors, or accidents (cf. Sacks, 1987).

> It seems that learning from failure is unlikely to occur at all in a large, divisionalized firm. Because other people associate managers with the ventures under their supervision, such managers resist analyses that might hold them responsible for errors or oversights or failed promises and they conceal the cause of failure. (Baumard & Starbuck, 2005: 295)

The emphasis on the learning value from failure can be linked back to the assertion by Luhmann (2000: 64) that the organization relies on the visibilization of contingency in order to assure its existence in the long run. Framed like this, Luhmann's notion of contingency also becomes a relevant matter for CPL. Mistakes and failure can open up paths for a revelation of contingencies. Consequently, a contingency-centered mode of CPL would involve to explicitly entail a communication of "the subjective and inter-subjective experience of ambiguity, doubt, confusion, and conflict" (Garrick & Clegg, 2001: 124). In other words, a critical reflection on the project process would involve to highlight that the particular path chosen did not represent the only possible way and that there might have been better ones. It is assumed here that exactly this *other side* of the decision process, its *alternativity*, can be valuable for similar future projects.

The Project Organization's Memory and Cross-Project Forgetfulness

In his monograph on the theory of organizations, Luhmann points to project organizations as a critical type of organization when it comes to the visibilization of decision contingency by wondering how "the project organization survives its own projects" (Luhmann, 2000: 273; own translation). Luhmann links this issue to the concept of organizational memory: "How can project experiences be remembered and made useful for subsequent projects? Project-based organizations pay for their high variety of tasks with high rates of forgetting. Completed project are forgotten, although they furthermore could provide useful experiences" (Luhmann, 2000: 273; own translation). These questions are grounded on his understanding of organizations as processors of decisions and their contingency: If organizations rely on the self-reproduction of their experiences

and the decisions inherent to them, how is this problem solved in project organizations? Moreover, the question arises to what extent project organizations can develop an *organizational memory* (Walsh & Ungson, 1991; Olivera, 2000) which goes beyond the individual memories of the project's participants.

The special conditions of organizational autopoiesis and the visibility of decision contingency in project organizations can be understood more thoroughly if we introduce the distinction between *decision communication* and *organizational interactions* as outlined by Seidl (2006b). In the TSS framework, interactions are ephemeral episodes of communication[27] which require the synchronous and physical co-presence of individuals involved (Kieserling, 1999). Organizational interactions differ from decision communication in that they do not directly proceed decisions but can become subject to decisions later on (Seidl, 2006b: 148). The term then encompasses all forms of communication occurring in the organizational settings which, however, only indirectly contribute to the system's autopoiesis consisting of decision communication as the basic operation. Seidl goes beyond Luhmann when he asserts that "most communications [occurring in organizations] – even in formal meetings – are non-decision communications" (Seidl, 2006b: 149).

Seidl argues that decisions are used in both system types, organizations and interactions, but they have different meanings in both of these:

> In the interaction [the decision] has to be understood in the context of other interactional communications – in reaction to what other interactional communications can follow. In the interaction one is interested in who said what, in response to whom, with what reactions to others. (...). For the organization the communication has a very different meaning. It has to be understood in the context of other *decisions* which might even lie outside the interaction: earlier decisions that served as decision premises and later decisions for which this decision serves as decision premise. (Seidl, 2006b: 157; emphasis in original)

27 Compare to Hendry and Seidl's work on strategic episodes in organizations (Hendry & Seidl, 2003).

This also has implications for the issue of DCV:

> What counts for the further decision process is the decided alternative, the process of the decision and the uncertainty involved in it are irrelevant or absorbed (cf. Luhmann, 2000: 193). For the interaction, in contrast, it is exactly these *personal* aspects of the communication that are important and in the continuation of the interactional communication this personal aspect will be referred to (...). (Seidl, 2006b: 158; emphasis in original)

In analysis of the interconnection between decision communication and organizational interactions, Seidl derives the conclusion that interactions can regulate to a certain extent what kind of communication becomes observable for the organization as a decision processing system (Seidl, 2006b: 160). However, he also emphasizes that the "interaction can only make 'suggestions' to the organization but it cannot determine what communications are observed and how they are observed" (Seidl, 2006b: 160). Suggestions like this are realized in organizational interactions by 'marking' or 'flagging out' shared elements between organizations and their interactions: "The interaction can highlight certain 'culmination points' (Luhmann, 1993: 339) in the flow of interactional communications in order to signal to the organization possible points of connection. Such markers could be an explicit declaration of a communication as decision – 'I thus conclude: we have reached the decision to…'" (Seidl, 2006b: 161).

The structures established for this purpose can be theorized as representing the *organization's memory*. In a classical understanding, Walsh and Ungson define organizational memory as a construct "composed of the structure of its retention facilities, the information contained in it, the processes of information acquisition and retrieval, and its consequential effects" (Walsh & Ungson, 1991: 61). Luhmann differs from this understanding in stating that memory much more equals a control procedure which enables organizations to distinguish between what is worth remembering and what is worth forgetting (Luhmann, 2000: 158). According to Luhmann (1996; 2000), the first and foremost function of memory

is *forgetting*;[28] otherwise the organization would be paralyzed by its own historical redundancies:[29]

> (...) organizations tend to remember only the results of decision processes and to forget the concrete developments. This radical forgetting – although a lot of potentially 'useful' references to earlier situations get lost – is necessary for the organization so that its capacity for information processing does not get clogged up (...). (Seidl, 2006b: 166)

Consequently, it can be presumed that the organization does not necessarily need a full or 'real' visibility (in the sense of correspondence) of its decisions and contingencies in order to proceed its autopoiesis (Luhmann, 2000: 156). In order to interconnect one decision to the next, it is sufficient for the organization to be able to refer at least to some communicative episodes, even if *retrospectively* defined as having been decisions. This again points to a fundamental difference between decision communication and organizational interactions: "The memory of the organization remembers only decisions and forgets everything else. The memory of the interaction and its participants, in contrast, is conditioned in a totally different way. They might remember the process more than the result and the defeated more than the finally victorious candidates" (Kieserling, 1999: 385; translated by Seidl, 2006b: 167).[30]

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28 According to Luhmann, this understanding does not only apply to the organizational memory but also to the human mind's memory (cf. Luhmann, 1996).

29 On an economic level, this can be compared to Schumpeter's notion of "creative destruction" necessary for innovation (Schumpeter, 1943: 83ff.).

30 Seidl concludes that organizational interactions can serve an externalized memory function for the organization: "If a decision is discussed within organizational interactions, the participants are likely to draw on past experiences in connection with similar decision situations, arguments they might have had previously about similar things. Although these communications are inconceivable for the organization they have an effect on the communication that ultimately will be interpreted by the organization as its own decision and will thus have an effect on the organizational autopoiesis. Organizations might, in this sense, instrumentalise interactions for remembering what they themselves have forgotten" (Seidl, 2006b: 167).

These considerations highlight that organizations, and with this, also project organizations, seem to require a certain *forgetfulness* in order to remain functional. While individuals or interactions tend to remember the process of decision making, organizations instead seem to remember only the results of this process. Organizational memory usually does not keep track of *why* decisions have been made (Luhmann, 2000: 154). The system does not coordinate which alternatives were considered and which not (Luhmann, 2000: 156). In other words,

> [organizational memory] forgets the generally underlying uncertainty, unless it has become part of the decision in the form of doubts or reservations. But it forgets also the numerous contributing decisions (the invitation to a meeting, the unsuccessful attempts at pushing through a request); it represses also most of what contributes to the autopoiesis of the system. By and large (...) it only retains what later decisions draw upon as decision premises. (Luhmann, 2000: 193; translated by Seidl, 2006b: 166; footnote omitted)

With this, Luhmann (2000) points to a central tension in organizations: The organization's autopoiesis, on the one hand, needs to assure a visibilization of decision contingency in order to connect episodes of decision communication to each other. The organization's memory, on the other hand, tends to forget the contingency inherent to decisions in order to avoid to become blocked by facing contradicting and paradox contingencies.

If applied to project organizations, the distinction between decision communication and organizational interactions (Seidl, 2006b) allows for the hypothesis that projects are able to establish a (temporary) systemic border which distinguishes the project team's communication from the rest of the organization which instead becomes its environment. The distinction between the project and the overarching organization, however, complicates the sharing of experiences in projects across the organization. Similarly to the human mind's closure to its environment (Luhmann, 2002), the project system's experience becomes a system-inherent feature which condenses in its core operations, the communication of decisions.

Knowledge inherent to the project, generated in the project process and manifested on a social level, can hardly 'leave' the project as a social system, it can only be subject to outside observation by means of communicative visibilization.

Taken together, the issue of DCV can be translated into a concrete and practical problem: How can the project organization establish a sustainable sharing of experiences across projects which takes the contingencies of decisions faced in projects into account? How to leverage CPL processes based on this contingency, e.g., with reference to alternatives considered, side-paths opened up, or mistakes made? As argued above, the issue of DCV appears to be especially salient in project-based organizations. The next section aims to show that the issue of DCV is even more so at stake in consulting firms, a specific sub-type of project organizations.

3.1.3 The (In-)Visibility of Decision Contingency in Consulting Firms

The issue of DCV is assumed to gain additional relevance if set in relation to a more specific form of project organizations: the *consulting firm*. Consulting firms generate their revenues from providing professional advice to the management of other firms or non-commercial organizations. Most typically, consulting firms organize their work in form of projects (cf. Koch & Bendixen, 2005), i.e., by a continuous recombination of consultants to fulfill certain tasks for a limited time frame. In past years, the consulting business has achieved a steep rate of growth which is presumed to continue in future years (Kipping, 2002; Lünendonk, 2006). In consequence, Lundin and Söderholm hypothesize that the Western economies head towards becoming "projectified societies" (Lundin & Söderholm, 1998). In this chapter, a particular trade-off between knowledge management and impression management in consulting firms is hypothesized and related to the issue of DCV.[31]

31 This specific trade-off is investigated in more detail the issue of DCV is re-visited from the communicational side of the coin (cf. 3.2.3).

Consulting Firms and Knowledge Management

Project work, as shown in the precedent chapter, creates special conditions for the problem of DCV if seen from the organizations as communications perspective. However, it is unclear how project organizations manage to establish a visibility of decision processes and their contingency across projects and with this, across the organization as a whole (Luhmann, 2000: 273). Because of the distributed nature of decision processes and knowledge creation in project organizations, consulting firms have also been at the forefront to develop processes of *knowledge management* which aim to promote an exchange of experiences across projects (Werr & Stjernberg, 2003; Bogenrieder & Nooteboom, 2004).

In the same context, Werr and Stjernberg point out that consulting firms differ in their assumptions about the transferability of knowledge and, therefore, have established fundamentally varying types of knowledge management systems (Werr & Stjernberg, 2003: 883). IT focused consulting firms such as Accenture or Capgemini follow a *knowledge as theory* approach which assumes a general transferability of knowledge in codified form (Prencipe & Tell, 2001; Zollo & Winter, 2002): Hence, these firms concentrate on electronic databases which collect digital documents aiming to preserve the knowledge generated in projects and share them across projects. This approach favors a commodification of knowledge into "packages" (Heusinkveld & Benders, 2005: 285).

In contrast, strategy consulting firms such as McKinsey & Company or The Boston Consulting Group tend to follow a *knowledge as practice* approach which rather emphasizes the tacit aspects of knowledge (Nonaka & Takeuchi, 1995). The tacit character ascribed to knowledge is the reason why knowledge cannot be easily shared because knowledge is assumed to be inherent to work processes and practices. In consequence, these companies concentrate on processes which allow for a direct and personal exchange of experiences instead of a rigid project documentation, as most prominently suggested in the *communities of practice* approach (Lave & Wenger, 1991; Brown & Duguid, 1991). This concept suggests to promote that organizational members get directly in touch with

each other, independent from divisional affiliation or existing personal networks, in order to exchange their expertise concerning specific topics they are interested in. However, these strategy consulting firms also rely on documented forms of communication to complement the sharing of knowledge across their employees (cf. Hansen, Nohria & Tierney, 1999).

Consulting Firms and Impression Management

As Werr and Stjernberg (2003) highlight, the special focus of consulting firms on practices of knowledge management is presumed to go along with a special affinity to techniques of *impression management*, as well: "All knowledge workers are concerned that potential clients or stakeholders will 'buy' the knowledge (or its applications) that they have to offer" (Legge, 2002: 76). The value creation from a purely service-based work can presumed to have enforced the tendency to establish selling strategies which allow for a management of impressions rather than the management of knowledge and expertise. This estimation links back to research which draws on a critical perspective on the consulting business (e.g., Clark, 1995; Clark & Salaman, 1996; Kieser, 1997; Sturdy, 1997; Wright & Kitay, 2002; Clark & Fincham, 2002; Salaman, 2002; Habscheid & Weik, 2003; Armbrüster, 2004; Collins, 2004).

The concept of impression management originates in social psychology (Goffman, 1959; Jones & Wortman, 1973; Tedeschi & Melburg, 1984) and has been applied to organizational contexts, as well (e.g., Gardner & Martinko, 1996; Elsbach & Sutton, 1992; Sosik & Jung, 2003). According to Goffman, all human interaction involves aspects of "self-presentation", "secrecy", and "political gamesmanship" (Forster, 1994: 150). In this sense, the impression management concept relates to strategies in use by individuals to control the impressions they give off in order to favorably influence attributions made by target persons (cf. Jones & Wortman, 1973). McCloskey and Klamer even affirm that persuasive forms of communication account for one quarter of the US gross domestic product (McCloskey & Klamer, 1995).

In its original framing by Goffman (1959), the impression management concept is closely connected to the distinction between frontstage and backstage modes of communication what he assumes to be permanently present in everyday communication. Derived from an analogy to the theater stage, Goffman distinguishes two categories of social life – one of which takes place "on the scene" (frontstage) and one of which takes place "behind the scene" (backstage). In backstage settings, the subject is safer and, hence, can risk a more vulnerable communication. The frontstage instead has a more public orientation and fosters risk-avoiding behavior. Being on frontstage, human actors aim to control the impressions they give off and to control how others will relate to them.

Impression management in organizations (cf. Gardner & Martinko, 1988; Elsbach & Sutton, 1992; Sosik & Jung, 2003) then refers to strategies by means of which individuals aim to control their frontstage image and perceptions in organizational settings. Sturdy (1997) highlights that the consulting business's affinity to strategies of impression management corresponds with an insecurity and ambiguity inherent to the contingent form of service work. Alvesson (1993) as well as Glückler and Armbüster (2003) point out that businesses like consulting face the constant necessity of legitimization. Therefore, consulting firms tend to invest efforts in creating credibility by avoiding ambiguities and creating an impression of consistency, especially in communication about their actions.

In this context, it needs to be emphasized that the majority of studies in the field does not demonize strategies of impression management but treats them as social facts necessary for the stabilization of organizations as communicative systems (cf. Sosik & Jung, 2003). Moreover, it is important to note that the frontstage-backstage distinction is inherently relativistic: The same situation can be interpreted as backstage or frontstage setting depending on the perspective. While an internal meeting where only company members are allowed to take part is clearly a backstage setting if seen from outside the organization. Seen from inside the organization, it would instead represent a frontstage and becomes subject to applying techniques of impression management.

The Trade-Off Between Knowledge Management and Impression Management

As argued in this chapter, consulting firms not only seem to heavily rely on project work, they also face special demands in controlling the impressions they give off because of their close environmental coupling with their clients (cf. Czarniawska & Mazza, 2003). This can be presumed to create a trade-off situation between impression management and knowledge-oriented modes of communication which will guide the analysis of the communicational side of DCV. The dominance of frontstage situations in consulting work, for example project presentations held in meetings with clients, can be assumed to foster modes of impression management which, in turn, can also mediate the way communication is held in backstage settings of the organization, e.g., in organizational interactions between colleagues. In a term borrowed by Habermas (1987: 332), this process can also be described as a an *internal colonization* of backstage settings of the organization by frontstage modes of communication.

However, strategies of impression management may undermine efforts of DCV at the same time. In the aim to control someone's impression for the sake of a good reputation in interactions with the client, individuals may tend to mask alternatives considered and mistakes made in the project process. A consistent storyline may prevail over a contingent presentation in project documents. For the purpose of our study, this implies to examine the communicative conditions in project organizations with a special emphasis on the interrelations between communicative settings (frontstage vs. backstage) and the visibilization of decision contingency.

The trade-off between impression and knowledge management represents an additional distinction which will guide the further analysis based on the communicational side of decision contingency (cf. chapter 3.2) and will be resumed in a synthesis of the two sides of the analysis (cf. chapter 3.3). The next part of the theoretical analysis particularly concentrates on the question to what extent organizational communication will

make a distinction in its communicative practices between an orientation towards impression management in interaction with its environment (e.g., clients) and an orientation towards knowledge management in internal communication processes (e.g., among organizational members).

3.2 Analysis of the Communicational Side of the Duality

3.2.1 The (In-)Visibility of Decision Contingency in Communication

In a second part of the theoretical analysis, the communicational side of decision contingency visibility is highlighted. This part of the analysis asks to what extent decision contingency can become visible in organizational communication (cf. chapter 3.2.1) and what role is played particularly by textual media of communication (cf. chapter 3.2.2) such as Microsoft PowerPoint presentations (cf. chapter 3.2.3).

The Concept of Communication

The question how decision contingency can become visible in organizational communication requires to first investigate the concept of *communication* in more detail. Luhmann (1984; 1992) theorizes communication as a synthesis of three selections: *information*, *utterance*, and *understanding*. *Information* represents a selection from a potentially infinite range of meaningful combinations, *utterance* represents a selection from a potentially infinite range of ways to express an information, and *understanding*, finally, represents a selection from a potentially infinite range of ways to contextually reconstruct the meaning of an uttered information. According to this definition, communicative events only occur when all of these selections are synthesized: "A central point in Luhmann's concept of communication is that the three selections form an '*insoluble unit*'; undoubtedly, this unit can be divided *analytically* into its three components (for example by other communications), but only as a unit does it constitute a communication" (Seidl, 2006a: 29; emphasis in original).

Another important assumption underlying this definition of communication is that human beings as psychic systems themselves cannot communicate but only participate in communication, either in the role of *Alter* (by processing the information and utterance selections) or *Ego* (by processing the understanding selection). Alter and Ego are theorized as symmetrical roles. A dialogue, for example, involves a continuous switching between the two roles of communication. With this conception, Luhmann (1992) transcends communication models which assume a package-like transferability of information from a sender to a receiver (e.g., Shannon & Weaver, 1949). Far from it, and due to the selectivity of understanding, misunderstanding needs to be seen as the normal case of communication (cf. Luhmann, 1981a).

For a successful autopoiesis of communication the main requirement is the *connectivity* of communicative events. This means that uttered information only requires to be understood *somehow* and not to be understood *properly* (in the sense of correspondence; cf. Popper, 1972). Communication then can be seen as successful as long as it maintains its continuous reproduction: "Only in the process of connecting one can tell whether one has been understood" (Luhmann, 1995: 143). Consequently, understanding, just like the selection of information and utterance, is seen here as a feature of communication itself and not of the psychic systems involved in organizations.

> (...) understanding for Luhmann is not a psychic reality but a part of the three-selection-process of communication, in which communication itself has understood if and how the next communication connects. This does not foreclose psychic understanding, but only communication can understand what has been communicated. Social systems are operationally different from psychic systems, which does not mean that communication could occur without psychic complexity. (Nassehi, 2005: 182)

Decisions as Communication

Luhmann's concept of communication originates in *speech act theory* (Austin, 1962; Searle, 1969) which distinguishes between *constative* and *performative speech acts*. Performative speech acts differ from constative speech acts in that the action a sentence describes is performed by the sentence itself. Consider, for example, the sentence, "I promise to be back home early tonight". Without the assertion, there would not be a promise. As Cooren puts it, "(...) language does not only describe a (real or imaginary) world, it also creates new situations that structure our social universe" (Cooren, 2000: 2).

Framed like this, the concept of performative speech acts also applies to *organizational communication*. As Ortmann (2004: 62) shows, organizations are full of performative speech acts of all kinds ("to give orders", "to persuade", "to present", etc.) which in some cases can take the form of decisions: "Accounting, reporting, all kinds of organizational information systems operate by means of performative effects" (Ortmann, 2004: 124; own translation). Accordingly, decisions are performative speech acts in that the decision as a decision exactly comes into existence by being communicated. Decisions do not describe an existing state of the world, they create a new state of the world by the very fact that they have been communicated.

What does this notion of performative speech acts imply for the visibilization of decision contingency in organizational communication? As defined here, decisions represent a special form of communication which rather equals an action than mere description. This framing allows to derive two basic communicative requirements for the visibilization of decision contingency: First, decision communication necessitates the explication of a range of alternatives out of which a selection has been made (Luhmann, 2000: 64) in order to achieve the state of a performative speech act. This requirement particularly relates to the first two of the three selections of communication (Luhmann, 1992): the selection of an information and an utterance. The information needs to be uttered that there have been alternatives and that a decision has been made based on

these options. Second, not only the information needs to be uttered that a selection has been made on a self-defined range of possibilities, a decision also needs to become perceivable and interpretable in communication. This, in turn, leads over to the third selection necessary for the connectivity of communicative events: the *understanding of a decision as a decision*.

How does the decision differ from other forms of communication? According to Luhmann (2000: 67) decisions are special in that they create the impression of an invariable past (i.e., they represent the past as being non-contingent) and, therefore, provoke to dissent – more than other forms of communication do. As Mol phrases it, decisions "(...) displace the decisive moment to places where, seen from here, it seems no decision, but a fact" (Mol, 1999: 80). Seidl argues that this leads to an inevitable tension inherent to decisions:

> (...) every decision communication contains a performative self-contradiction: the 'report' aspect and the 'command' aspect (Ruesch & Bateson, 1951) of the decision communication contradict each other. The more clearly the decision is communicated as a selection among possible alternatives (report aspect), the less the decision will be accepted by later communications as a decision (command aspect). (Seidl, 2006a: 40)

For the visibilization of decision contingency this assertion implies that decision communication in organizations can be expected to occur in a trade-off between the *report* and the *command aspect* which are inseparable from each other (cf. Luhmann, 2000: 143). In consequence, an extensive visibilization of decision contingency and ambiguity diminishes their likelihood to become identifiable as a clear-cut decision. Therefore, it is expectable that decision communication in organizations will tend to flag out only a limited range of alternatives from which a selection is made.

The Visibility of Decision Contingency Achieved in Communication

The issue of DCV is newly raised and elaborated in this study and, therefore, lacks a systematic investigation in previous literature. Nevertheless,

the term *visibility* allows for linkages to literature in the field of organizational communication as well as in the field of knowledge management and CPL. In the following, these cross-links are discussed in the objective to shed light on the question to what extent decisions and their contingency can become visible in communication.

In the *organizational communication* literature, some authors advocate an increased visibility of work processes in organizations by criticizing the invisibility of "background work" in organizational communication (Strauss, 1988; Suchman, 1995; Star & Strauss, 1999). It is assumed here that an enhanced visibility of decision and work processes can prevent a devaluation of simpler or minor jobs in organizations, especially in the relationship between superiors and subordinates. According to Strauss (1988), the visibilization of work processes can be achieved by means of articulation. The problem of visibility is assumed to have become complicated in time of project work and increased specialization of work processes:

> (...) we can ask under what circumstances it might be in the interest of some organization members not to know in detail the activities of others differently placed. Among the recognized benefits of job specialization are the ways in which we are able effectively to 'black box' the work of others. (...) In the case of many forms of service work, we recognize that the better the work is done, the less visible it is to those who benefit from it. (Suchman, 1995: 9)

The claim for an enhanced visibility of (background) work processes appears to follow a prescriptive understanding. However, it needs to be emphasized that, similarly to related work in the human relations tradition (cf. Kieser, 1999), the authors of this perspective argue that a stronger participation of employees does not at all contradict an improvement of organizational efficiency. Moreover, it is important to note that these authors also acknowledge the complexity of the relationship between work visibility and its appreciation: "(...) we are not recommending 'more visibility' in any simple sense. (...) the relation between invisible and visible work is a complex matrix, with an ecology of its own. It is

relational, that is, there is no absolute visibility, and illuminating one corner may throw another into darkness" (Star & Strauss, 1999: 24).

In the fields of knowledge management and CPL, the claim for a stronger visibilization of decision contingency is matched by theory developments which advocate an enhanced visibility of learning from projects across the organization (cf. Donaldson, Lank & Maher, 2005). A special learning value is assumed to lie in the visibilization of knowledge bound to work processes ("procedural knowledge"; Newell, 2004), and in the visibilization of experiences gained from a critical reflection on the effectiveness of work and decision processes ("learning from mistakes"; Edmondson, 1996). In analogy to Strauss (1988), visibilization is assumed here to be achievable by articulation (Zollo & Winter, 2002). In consequence, the implementation of knowledge management processes in organizations can be presumed to have contributed to the visibility of work processes and the knowledge developed by means of them.

The claims for an enhanced visibilization of work and decision processes in organizational communication, however, are opposed by critical accounts on the visibility's usefulness. Eisenberg and Witten argue that "a free flow of task-related, non-personal information increases organizational effectiveness is true only under certain conditions" (Eisenberg & Witten, 1987: 420). Instead, they identify a "need for ambiguity in organizations" (Eisenberg & Witten, 1987: 423; cf. March & Olsen, 1976) which is also manifested empirically in organizational practice: "(...) the norms and political realities of organizations (...) reward people for closed, not open communication" (Conrad, 1985: 104). In other words, these authors argue that the claim for a far-reaching transparency of work processes in organizational communication is doomed to fail in practice.

The main argument refers to a fundamental difference in organizational communication between institutionalized convictions and communicative practices (Ortmann, 2004: 116). New institutional demands, e.g., attempts to enhance the visibilization of work processes, are endangered to become incorporated into organizational members' established communicative practices on a surface level only. As Ortmann points out, this equals a balancing act: Formal demands which are perceived as

being inefficient are followed to a minimal extent "to save face" (Ortmann, 2004: 102). Efficiency, in turn, is preserved by sticking to established informal communicative practices. As Cooren puts it: "(...) resistance, sabotage or even misappropriation are, as well known, very common in the workplace. The submission process that is implied *inherently* in any organization can always be *subverted*" (Cooren, 2000: 215; emphasis in original). This assertion recalls Meyer and Rowan's notion of institutionalized practices in organizations: "(...) individuals are left to work out technical interdependencies informally (...) by means of avoidance, discretion, and overlooking" (Meyer & Rowan, 1977: 358).

The considerations on the organizational requirement for an invisibilization of decision and work processes lead to the conclusion that organizations may react to paradoxical, opposing demands by a decoupling of *talk* and *action*, or to put it more provocatively, by *hypocrisy* (Brunsson, 1989). The organization's indisposition caused by a decoupling of talk and action is typically bridged by establishing *fictional accounts*: "The demand for fictions typically arises if there is no full correspondence between the legitimate order of expectations and factual communicative structures" (Luhmann, 1964: 278). According to Ortmann, the organizational need for fictions roots in a strive for internal consistency (Ortmann, 2004: 106). Consequently, organizational members rather tend to apply "façade-creation strategies" (Starbuck, 1982: 9f.; Cunha, 2006: 213ff.) than to make themselves vulnerable to become accused for failure attributable to them. This also involves the anticipative disposal of arguments for the fallback case that a decision turns out to be the wrong one, if seen from retrospect (cf. Harrison & March, 1984). Accordingly, it is in every organizational member's interest to appear later on as the one "who had known it beforehand" (Luhmann, 1988: 167; own translation).[32]

32 Baumard and Starbuck share this estimation: "Managers find it easy to explain both large and small failures as having idiosyncratic or exogenous causes that no one could have foreseen, and to rationalize their personal actions in terms with their firm's core beliefs" (Baumard & Starbuck, 2005: 295).

The necessity of a partial invisibilization of decision contingency in organizational communication has severe implications for the notion of organizations as autopoietic communicative systems. In a comparison of the TSS perspective to *actor-network theory* (Latour, 1996; Law & Hassard, 1999), Noe and Alroe point out that decision contingency is invisible in the very moment of being made but becomes observable in retrospect: "From an autopoietic understanding, the self-referential process of selection of meaning will, as a first step, be hidden to the system, because it is not a social system until a selection has been made. (...) Only through reflexive (re-entry) processes can these choices be made open for observation to the system" (Noe & Alroe, 2006: 42).

Noe and Alroe go on to argue that the system's internal complexity limits its capability to observe itself and the encompassing world (Noe & Alroe, 2006: 43). Thus, the achievement of a full-fledged visibilization of decision contingency in organizational communication is not only limited by organizational attempts to cloak the paradoxical nature of its existence but also by a limited system complexity: „The empirical challenge and provocation for the sociology of organizations then, is to give an answer to the question of how organizations are able to hide their self-referential conditionality and to simulate their own constructions of the 'real world' they find themselves in" (Nassehi, 2005: 187).

In this chapter, the issue of DCV has been grounded in considerations on communication and the role of performative speech acts in organizations. Based on the centrality of decisions in the "gradual fabrication of the organization by means of communication" (Kieser, 1998: 45; own translation), the analysis shows that the claim for a visibilization of decision contingency in organizational communication can be undermined by existing communicative practices which foster an invisibilization of work and decision processes for the sake of consistency. The next sub-chapters break down DCV in communication by analyzing the special cases of textually mediated communication, and the application of PowerPoint presentations for the purpose of project documentation.

3.2.2 *The (In-)Visibility of Decision Contingency in Project Documentation*

In analogy to the analysis of the organizational side of the coin (cf. chapter 3.1), the communicational analysis is conducted in an iterative process. The objective is to narrow down the abstract notion of communication by successive steps of substantiation. For this reason, an additional distinction is introduced: the distinction between *verbal* and *textual* modes of communication. In this section, it is argued that it makes a difference for the visibility of decision contingency in organizations if decisions are communicated verbally, for example in a chat among colleagues on the office corridor, or if they are written down and become manifested in textual form, for example in an email-based conversation or in handwritten notes.

Textual vs. Verbal Modes of Communication in Organizations

What is it that makes textually manifested communication differ from verbally spoken communication? This question represents one of the classical problems of organizational communication studies (cf. Smith, 1984). In this context, McPhee (2004: 356ff.) proposes three defining properties of manifested texts: (1) the composition of signs and symbols, (2) their permanence, and (3) a coherent structure:

> It is important to recognize that texts are not the only permanent elements in societies, not even the only enduring symbolic realities. The memories of organizational members can include words and performed discourse. Moreover, all sorts of material contextual features are permanent and thus can constrain us, remind us of organizational matters that a text might also capture, etc. But texts are distinctively functional in their accessibility to multiple people, their ability to be preserved in a legitimate form, and their flexible utility. Minutes are kept of organizational meetings simply because of these advantages of text over the memories of members present at the meeting. (McPhee, 2004: 359)

Among the three criteria introduced by McPhee (2004), it is particularly the second one, the "extra-temporality" (Smith, 1984: 60) of texts, which distinguishes them from verbally spoken communication. This is in line with authors from both the CCO and the TSS perspective: Going back to Derrida (1988), Cooren and Fairhurst emphasize that texts are special in their *réstance*, their "staying capacity" (Cooren & Fairhurst, forthcoming: no page). Analogously, Menne-Haritz ascribes a "durable character" to texts which is based on their materiality (Menne-Haritz, 1999: 141).

Thus, it is the special feature of texts that they do not need to rely entirely on the memories of individuals but to sustain a life on their own. Texts allow for transcending space and time and, therefore, can go beyond the physical co-presence of interactional episodes (cf. Luhmann, 2000: 159). This leads us to another distinctive feature: In order to achieve their "staying capacity", texts always needs some form of *medium* to become condensed in artifactual form. Derrida links the staying capacity of texts to the notion of speech acts: "Derrida (...) questions speech acts from what constitutes, for him, one of their essential characteristics, i.e., their materiality. Every speech act is ultimately based on a mark, a trace produced by an agent" (Cooren, 2000: 36; emphasis in original). Consequently, in the history of communication, various media have emerged which are able to contain such information starting from cave walls or paper, or the electronic media of today's time (cf. Flusser, 1996). In line with this argument, artifacts also allow for transforming verbal forms of communication into texts, e.g., by creating a video recording and by making it accessible at a later point of time (cf. Linstead, 1999).

The comparably long-lasting character of textual communication can now be related to the special case of organizational communication. It is the texts' capacity to transcend the ephemeral character of communication which predestines them for the visibilization of decision contingency in organizations and which makes them accessible for empirical research, as well. Seidl (2006b: 161) emphasizes that texts in organizations, e.g., project reports, represent "markers" or "culmination points" (Luhmann, 1993: 339) which highlight where decision communication and organizational interactions do intersect:

> One of the most prominent markers is the record (...); if a communication is put on record it is a strong signal for the organization that the communication lends itself to being treated as an organizational decision. Many organizations will only recognise something as an organizational decision if it is put on record. For the interaction this means that it can regulate its relation to the organization – or better: the boundaries of the organization – by distinguishing between communications 'on record' and 'off record'. (Seidl, 2006b: 161)

The materiality of texts allows for a repeated closure of the communication synthesis based on the same uttered information (Luhmann, 1992) and, therefore, allows for different reactions to the same information. However, this complicates the control of communication for the author of a text at the same time (Menne-Haritz, 1999: 141). In a similar vein, Mayntz and Szyperski (1984: 11) point to a potential gap between the "creation and application context" (*Erzeugungs- und Verwendungszusammenhang*) in the usage of textual records – there is not necessarily a correspondence between the gathering of an information and its actual use. By "putting it on file", the textuality of the record separates the message from the person (Menne-Haritz, 1999: 146).

This assertion corresponds with Luhmann's hypothesis on misunderstanding as the normal case of communication (Luhmann, 1981a). Because textual communication has the ability to bridge space and time, the necessity arises to minimize the likelihood of misunderstanding, e.g., by a formalization of communication (Mayntz & Szyperski, 1984: 11). Consequently, textual documents gain a specific importance in high-risk-industries (cf. Vaughan, 1999; Weick & Sutcliffe, 2001).[33] To conclude, a somewhat higher degree of formality and exactness is characteristic for text-based communication in order to ensure a reconsideration at a later point of time independently from concrete situational circumstances (cf. Kieser & Kubicek, 1977: 166).

33 For an extensive account on the role of "fantasy documents" to tame disaster in high-risk settings see Clarke (1999).

Textual Communication and Cross-Project Learning

As outlined earlier in this study, project organizations have embraced the issue of the distributedness of their decisions by establishing processes of cross-project learning (Ayas & Zeniuk, 2001; Keegan & Turner, 2001; Garrick & Clegg, 2001; Newell, 2004). Most CPL models, especially the ones created in the early days of the knowledge management idea, rely on textual forms of communication stored in IT databases for establishing a sustainable sharing of experiences across the project organization (Newell et al., 2006). The reliance on textual modes of communication for this purpose is not surprising given their stabilizing character for organizational communication, as emphasized by Cooren and Fairhurst (forthcoming). Much more than verbal interaction, manifested texts can serve as a long-lasting reference for future decisions of the organization. In communicative terms, CPL databases establish a *metaconversation* across project organizations: "The metaconversation is of special relevance to the giant, largely knowledge-based corporations (...). We believe that such organizations (...) must develop a metaconversation that bridges the divisions" (Robichaud, Giroux & Taylor, 2004: 631).

Consequently, the idea of knowledge management and CPL can be presumed to have led to a *renaissance of textual modes of communication in organizations* (Totzke, 2004).[34] In the attempt to capture knowledge as an "asset" or "commodity" in project documentation (Currie & Kerrin, 2004), companies have created databases in which they aim to store experiences and further information relevant for work processes in textual form (Feldman & March, 1981; Markus, 2001; Schindler & Eppler, 2003; Newell et al., 2006). This renaissance of texts in organizations may be part of a more general trend of textualization in communication, strongly enforced by the success of electronic forms of communication, such as Emails or mobile text messages (Türcke, 2005). Equally so, the increase of

34 Totzke (2004: 86) calls attention to the fact that this reliance on textuality corresponds with a dominance of written knowledge in the Western world. Other forms of knowledge oriented communication, be they narrative or anecdotic, are instead seen as deficitary due to their unreliability and fuzziness.

textual forms of communication in organizations is assumed to be originated in the dispersion of electronic forms of communication in organizations (cf. Menne-Haritz, 1999: 155).

Following Zorn and Taylor (2003), it can be asked to what degree textual modes of communication are appropriate to fulfill the social and communicative demands inherent to knowledge-oriented communication and what role do different types of documents play in this context? The authors emphasize that flexible and more successful forms of knowledge management approaches correlate with verbal modes of communication: "As a number of empirical studies have shown (...), tightly coupled professional communities function on the basis of a well-understood distribution of responsibility and authority, mediated by verbal channels of communication. Paperwork is largely absent. Verbal modes of interacting are the prevailing style" (Zorn & Taylor, 2003: 106). Hendry and Seidl support this estimation: "We can also observe empirically that the results of strategic workshops or planning committees are often elaborately documented, but rather than being read and taken notice of they are filed and forgotten" (Hendry & Seidl, 2003: 186).

The tendency to prefer verbal over textual forms of communication in certain organizational settings does not contradict Luhmann's assumption of a constitutive character of textual communication for the organization's autopoiesis. According to Luhmann (2000: 215), there can be various reasons for preferring verbal over textual modes of communication: A communication's content may affect legal issues and can therefore be too risky for being textually manifested. Moreover, there can be reasons to invisibilize the authorship of an idea. Or, verbal communication can also be used to 'pre-test' to what extent an intention is acceptable by peers before someone risks to reveal the intention to larger audiences. Luhmann concludes: "(...) it is important that a [social] system is aware of the distinction between verbal and textual communication and is able to choose between them" (Luhmann, 2000: 215; own translation). In other words, the organization as a social system does not only rely on textual communication for its autopoiesis but exactly on the distinction between what information is conveyed verbally or textually. Nevertheless, this

study concentrates on one side of the distinction, the textual one, because of the theoretically presumed importance of texts for the emergence of organizations out of communication, as argued in the next sections.

Textual Communication and Organizational Autopoiesis

How does the organizational necessity to ensure its autopoiesis relate to the distinction between textual and verbal modes of communication? According to Luhmann, the formality of textual communication in organizations becomes a precondition for the emergence of an *organizational memory* over time (Luhmann, 2000: 158). Luhmann argues that in order to discriminate between memorizing and forgetting, organizational memory requires a continuous recalibration by means of decisions. The continuous character of this process "explains the constitutive, not only technical-supportive importance of textuality for organizations" (Luhmann, 2000: 159; own translation). Nevertheless, Luhmann grasps *forgetting* as the primary function of memory, independent from which system type we look at, be it psychic systems or social systems: "Textual records not only organize memorization but also forgetting" (Luhmann, 2000: 160; own translation). This prevents the organization from being overwhelmed by its past decisions (Menne-Haritz, 1999: 153).

Textual documents particularly become relevant in companies which have a high personnel turnover (cf. Carley, 1992), i.e., where it is difficult to get in direct touch with organizational members that have already left the company. In the need to interconnect decision processes over longer periods of time, organizations can be presumed to rely on the visibilization of decision contingency in form of textual documents. However, the relationship between DCV and textual forms of communication appears to be paradoxical in its nature. In an article based on the TSS framework, Menne-Haritz (1999) explores the role of textual records in organizational communication. She points out that in the aftermath of a decision, the communication process which has led to the decision remains *opaque* for organizational members who were not involved in the process.

This paradoxical interrelation between organizational routines and their textual manifestations resembles Feldman and Pentland's findings in their investigation of recruiting routines in a university setting (Feldman & Pentland, 2003: 104). Here, only the textual artifacts allowed for approaching what actually had happened in the routine. However, the performative aspect of the routine inevitably remained opaque. The organization's unawareness for its own decisions can be explained by drawing on the distinction between decision communication and organizational interactions: For the organization, Seidl asserts, "(...) the interactional processes (...) are incomprehensible. (...) The interaction has decided the undecidable but from outside one cannot say how" (Seidl, 2006b: 164). Therefore, although texts often represent the only means to comprehend the decision in retrospect, they need to be seen as a limited representation of the actual decision process (Menne-Haritz, 1999: 143).

Nevertheless, the analysis has led to distilling some essential characteristics of textual in comparison to verbal communication. As we have seen, textual records play a constitutive role for the autopoiesis of organizational communication in the long run (cf. Cooren & Fairhurst, forthcoming). The usage of texts helps to stabilize that organizations emerge out of decisions by becoming "nested hierarchies of decisions" (Scott, 1998: 51). As such, textual records organize what the organization can memorize (the exceptional case) and what it tends to forget (the normal case) (Luhmann, 2000: 158; cf. de Holan & Phillips, 2004; Blaschke & Schoeneborn, 2006).

However, it remains unexplored so far to what extent the presumed renaissance of textuality in organizations (Totzke, 2004) affects the relationships under investigation in this study: To what extent do new forms of textuality lead to a recalibration of frontstage and backstage modes of organizational communication? How does a renaissance of textuality affect the visibility of decision contingency and, with this, the organizational capacity to become aware, remember, and forget its most basic operations, the continuous reproduction of decisions? In the next subchapter, the hypothesis of a renaissance of textuality in organizational communication is explored by relating it to the specific role of Power-

Point presentations as a medium and genre of organizational communication (Yates & Orlikowski, forthcoming).

3.2.3 The (In-)Visibility of Decision Contingency in PowerPoint Presentations

In a third step of pinning down the question how decision contingency is visibilized in project documentation the distinction between verbal and textual modes of communication is investigated in more detail. This is realized by drawing on the distinction between media and genres of organizational communication introduced by Yates and Orlikowski (1992). The distinction allows for the analysis to what extent the visibilization of decision contingency in organizational practice correlates with certain communicative practices established in the organization. The main research issue's inherent abstractness is reduced by focusing on the specific role of Microsoft PowerPoint presentations as a medium and genre of project documentation (Yates & Orlikowski, forthcoming) – what also cross-links to the study's focus on consulting firms (cf. chapter 3.1.3) because the role of PowerPoint is assumed to be particularly relevant in organizations of this industry.

PowerPoint as a Medium and Genre of Organizational Communication

The distinction between *media* and *genres* of organizational communication (Yates & Orlikowski, 1992) helps to examine to what extent different forms of project documentation vary in their ability to make project decision processes and their inherent contingency visible to organizational members who did not participate in the project themselves. According to the authors' definition, *media* represent the pure communication instruments, while the term *genre* specifies a typified and recurrent practice of a medium's application: "A genre of organizational communication (e.g., a recommendation letter or a proposal) is a typified communicative action invoked in response to a recurrent situation. The recurrent situation or socially defined need includes the history and nature of established

practices, social relations, and communication media within organizations" (Yates & Orlikowski, 1992: 301).[35] The distinction between media and genres thus allows for the analysis of the evolution of communicative practices in organizations over time.

In a subsequent article, Yates and Orlikowski (forthcoming) underline the increasing importance of the *PowerPoint presentation genre* in organizational communication. Powerfully driven by the work practices of consulting firms, *slideware* applications such as Microsoft PowerPoint increasingly enter communication settings in business and education. According to Microsoft numbers, PowerPoint reaches a share of 95 percent in the market of slideware, day per day 30 million presentations are created with the help of it worldwide (Parker, 2001: 76). Yates and Orlikowski argue that the software's success is rooted in the historical development of the business presentation genre: "(...) the business presentation genre emerged in response to the recurrent requirement to share complex information with multiple people in face-to-face meetings" (Yates & Orlikowski, forthcoming: no page). The technology is presumed to be especially wide spread in consulting firms where PowerPoint decks most commonly represent the main work product of a deployment. In this respect, consulting firms can be termed as primarily representing *slide producing companies.*

The rise of PowerPoint has been subject to a number of critical articles in popular media (Zuckerman, 1999; Nunberg, 1999; Stewart, 2001; Parker, 2001; Keller, 2003; Schmundt, 2004; Kaube, 2006). In particular, a critical essay by Tufte (2003) has initiated academic attention to the subject of PowerPoint.[36] Tufte argues that PowerPoint presentations tend to elevate format over content. Typical formal characteristics of PowerPoint

35 Framed this way, genres as communicative practices involve restrictions to selectivity which can presumed to become particularly salient on the level of the utterance selection. Restrictions to the selection of utterance, in turn, can have implications to both remaining selections of communication: information and understanding (cf. Luhmann, 1992); following Te'eni, it can be added that information technology "can affect not only *how* we communicate but also *what* we communicate" (Te'eni, 2001: 251; own emphasis added).

36 See Worley and Dyrud (2004) for a recent overview.

presentations are bullet point lists, an extensive usage of graphical elements to support textual information, and large-scale fonts. Furthermore, the software is assumed to have a simplifying effect on the presentation of information: „A PowerPoint slide typically shows 40 words, which is about 8 seconds-worth of silent reading material" (Tufte, 2003: 12). Tufte illustrates the relevance of this hypothesis by drawing on the case of NASA's Columbia disaster in 2003. He develops the argument that the application of Microsoft PowerPoint by NASA's technicians for documentation purposes led to an underestimation of the crucial fault which finally caused the fatal accident (Tufte, 2003: 8).

Tufte's arguments are relativized by authors who reject a deterministic or causal influence of a medium's application on organizational communication (e.g., Thompson, 2003; Shwom, 2003). In their account on PowerPoint presentations as a genre of organizational communication, Yates and Orlikowski (forthcoming) disagree with Tufte's assumption that it is the software as a technology which is able to determine organizational communication. Instead, they base their analysis on structuration theory (Giddens, 1984; DeSanctis & Poole, 1994) which emphasizes the duality of genres as a social structure: Genres *both* shape *and* are shaped by the practice of organizational communication.

The Genre Conflict of PowerPoint

With reference to empirical studies, Yates and Orlikowski highlight that in the evolution of communicative practices in consulting firms, PowerPoint presentations have gained importance in replacement of the traditional business report genre: "We have also found that in many consulting firms, the written report that traditionally served as a final 'deliverable' to the client (sometimes in conjunction with a verbal presentation) has been replaced with a PowerPoint 'deck', or stack of paper printouts of PowerPoint slides" (Yates & Orlikowski, forthcoming: no page).

If Yates and Orlikowski's account is valid that written reports in consulting firms are more and more replaced by PowerPoint presentations (Yates & Orlikowski, forthcoming), it can be assumed that PowerPoint also finds increasing usage as project documentation for internal CPL purposes.[37] However, in case PowerPoint presentations serve as the only textual reference of what has actually happened in a specific project, a *conflict of genre functions* is likely to emerge: a conflict between the external *presentation function* and the internal *documentation function*:

> This informal presentation practice and the PowerPoint deck challenge aspects of both the PowerPoint presentation and the business report genre. In particular, the deck of PowerPoint slides is expected to serve two different purposes: first, to function as a visual aid supporting an oral (informal) presentation; and second, to perform as a stand-alone deliverable (in many cases the only deliverable) reporting the results and conclusions of a project. PowerPoint texts created with this dual purpose typically have too much content to be effective presentation aids (...) and too little content and context (...) to fulfill expectations for the report genre (Yates & Orlikowski, forthcoming: no page).[38]

The genre conflict of PowerPoint documents applied as a means for both presentation and documentation purposes recalls Goffman's distinction between backstage and frontstage settings of communication (Goffman, 1959). While PowerPoint as a medium of presentation is primarily designed for frontstage settings, e.g., in communication to the client, the documentation of project processes as applied in CPL settings is aimed to

37 In this sense, PowerPoint presentations can represent "collaborative mass media" (Rafaeli & LaRose, 1993), defined as combining features of both media of interpersonal communication and mass media, if applied in company-wide databases accessible to multiple users in an organization.

38 The distinction between the documentation and presentation function resembles Habermas's distinction between communicative rationality (following the goal of mutual understanding) and instrumental rationality (following the goal of achieving successes which lie outside of communication; cf. Habermas, 1987); however, his theorization appears to be incompatible with the paradigmatic framework underlying this study, particularly in its assumption of an objective reality and a generalistic notion of rationality.

be perceived backstage exclusively, e.g., by other colleagues of the same firm. In a relativistic notion of the frontstage-backstage distinction (cf. chapter 3.1.3), a company-wide CPL database can nevertheless be interpreted as representing a frontstage, especially in rather anonymous organizations with a large number of employees where it is impossible to know everybody in person.

In frontstage settings, for example in client meetings, demands for maintaining an elaborate impression management can be presumed to conflict with the organizational necessity of decision contingency visibilization. In order to be persuasive, the project document's narrative is most commonly optimized with respect to its *consistency* (rather than its *contingency*). As Bloomfield and Vurdubakis point out, "to a certain extent the style of reports may serve to immunise them against ambiguity. (...) The price to be paid for allowing the frame to become too expansive would be to open up gaps: the possibility of alternative readings and therefore disagreements about the solutions" (Bloomfield & Vurdubakis, 1994: 462). Garrick and Clegg add that organizational identity can have effects of "privileging what is visible – competent, observable performance" (Garrick & Clegg, 2001: 124). It can be assumed that additional cultural constraints apply in organizations which follow a rather knowledge-intensive, immaterial type of work (cf. Starbuck, 1992; Glückler & Armbürster, 2003), and by an organizational culture which devalues mistakes (cf. Hofstede, 1991; Husted & Michailova, 2002). As Eisenberg and Witten assert, "the disincentives to reveal negative information are well documented" (Eisenberg & Witten, 1987: 422).

PowerPoint and the Hypothesis of Invisibilization

The ambiguous role of PowerPoint in project documentation can now be linked to the distinction made by Seidl (2006b) between decision communication and organizational interactions (cf. chapter 3.1.2). In the continuous necessity to deparadoxify the undecidability of decisions, organizational communication tends to attribute decisions to interactions –

similarly to the way the communicative selections of information, utterance, and understanding commonly are attributed to persons and not to communication itself. In this context, PowerPoint presentations appear to be an artifactual representation of the organization's requirement to cloak the paradox of its most basic process: deciding in situations of undecidability. In the need to *invisibilize* the processes which have led to a decision, PowerPoint-based project documentation can serve as a means to post-rationalize the way decisions have been made:

> Decision making, in this sense, is less oriented according to organizational and more to interactional structures. Retrospectively, however, the decision premises for the decisions can be – and probably have to be – sought, reconstructed, reinterpreted or even invented. In other words, decisions can be presented retrospectively as if they had been guided by decision premises – decisions are 'post-rationalised'. (Seidl, 2006b: 165) [39]

If we relate this estimation to the focus of our study, it appears to be doubtful that PowerPoint presentations indeed do contribute to a visibilization of decision processes and their contingency if applied for the purpose of project documentation. As Nass puts it, "PowerPoint gives you the outcome but it removes the process" (cited by Parker, 2001: 76). In its usage as a project report, the PowerPoint presentation genre may instead abet a general tendency in textual forms of organizational communication "to protocol only the result, not the process of uncertainty absorption" (Luhmann, 2000: 215; own translation).

This finally points to the question to what extent PowerPoint presentations as a medium and genre of project documentation can *causally* influence a retrospective visibilization or invisibilization of decision processes and their contingency. According to actor-network theory (Latour, 1996; Law & Hassard, 1999; Harris, 2005; Noe & Alroe, 2006), artifacts are theorized as agents in their own right and, therefore, are assumed to actively shape organizational communication processes:

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39 In this respect, organizations may resemble *post-hocracies* rather than *ad-hocracies* (cf. Mintzberg & McHugh, 1985).

> (...) mediation begins with *goal translation*: technical means involve a certain displacement or detour of the original actor and aim in order to accomplish their goal. Technological mediation is always an instance of 'shifting'; a task or goal that would initially be performed in a certain fashion, is shifted into an ensemble of alternate materials that can carry out this task and as a result it is subject to a certain 'function creep'. (Harris, 2005: 166; emphasis in original)

In line with this argument, Latour hypothesizes a "delegation of actions in technology" (Latour, 1999: 182). The structuration perspective underlying the distinction between media and genres of organizational communication (Yates & Orlikowski, 1992; forthcoming; Zillien, 2005; 2006) suggests to assume an intertwined relationship between the performative usage of media and its recurrent usage patterns, their genre. In this framing, media and genres do not causally determine a specific communicative practice,[40] they rather represent artifactual manifestation of the evolution of communicative practices over time, constrained by their genre specific history.

Taken together, the analysis yields relevant aspects for the empirical investigation of PowerPoint presentations in the practice of project documentation. It can be asked to what extent a PowerPoint-based project documentation does indeed contribute to the visibilization of decisions processes having taken place in a project (as an organizational interaction), even if done so in the sense of a retrospective rationalization, or if they rather tend to mask that there have been decision processes, and to present decisions as being inevitable. As Seidl puts it, "(...) in order to understand the interactional communications one has to understand the 'interactional meaning' *behind* the façade of decision communications" (Seidl, 2006b: 159; emphasis in original).

40 This, in turn, relativizes McLuhan and Fiore's classical term: "The medium is the message" (McLuhan & Fiore, 1967).

3.3 Synthesis: The Two Forces of Decision Contingency (In-)Visibility

In the theoretical analysis, the visibility of decision contingency has been approached from two directions: In a first step, the organizational side of the coin has been analyzed by asking to what extent the visibility of decision contingency does contribute to the autopoiesis of the organization as a social system and to what extent this contribution is at stake in the special case of project organizations such as consulting firms. In a second step, the communicational side of the coin has been analyzed by asking to what extent decision contingency can become visible in organizational communication and what role is played in this context by textual media of communication such as Microsoft PowerPoint. This chapter summarizes main insights generated by the twofold analysis. Moreover, theoretical distinctions and research questions are introduced which will guide the further course of the analysis.

Summary of Insights From the Organizational Side of the Duality

The analysis of the organizational side of the coin highlighted that contingencies are inherent to decisions. By means of decisions, organizations transform states of open contingency into fixed contingency. For organizations as autopoietic systems, which essentially consist of communicated decisions, the problem arises to ensure a connectivity of decision communication over time:

On the one hand, this connectivity requires to highlight that there have been alternatives taken into consideration and that a selection has been made from them. On the other hand, the necessity to mark decisions as decisions is opposed by the paradox of the undecidability of decisions. Organizations need to cloak the paradox character of their basic operations in order to remain capable for action. However, it is largely unexplored thus far how organizations cope with the contradicting forces to visibilize the contingency of decisions and to invisibilize their basic operations. Existing organizational strategies of deparadoxification can then serve as a reference point for the empirical investigation of this dilemma.

The organizational dilemma between the two forces of decision contingency visibilization and invisibilization is presumed to be particularly salient in project organizations. The feature of distributed decision processes has put forth the challenge of CPL in order to prevent to "re-invent the wheel" repetitively in projects. Recent work on CPL, however, emphasizes that the learning value from failure is underrated in comparison to strategies of learning from success. Highlighting the contingency of the project process, it is assumed here, will allow an expertise-seeking novice to learn more about a project than from a mere presentation of results. Nevertheless, the distinction between decision communication and organizational interactions shows that project organizations tend to cultivate a forgetfulness of their decisions in projects on an overarching level in order not to become overwhelmed by the contingencies of their distributed operations.

A typical example for project organizations are consulting firms. Because the business model of consulting firms is essentially knowledge-based, they have also been at the forefront in establishing processes of knowledge management and CPL. However, the ambiguity of their work has forced consulting firms to establish elaborate strategies of impression management, as well. With this, we approach another instance where the decision contingency visibilization and invisibilization in project organizations collide. The study argues that the consulting firms' emphasis on both knowledge management and impression management creates a dilemma situation: Efforts to make project processes and their contingency visible are opposed by efforts to maintain a consistent presentation of the consulting project.

Summary of Insights From the Communicational Side of the Duality

The analysis of the communicational side of the coin started with a definition of communication as a threefold selection consisting of information, utterance, and understanding. Decisions, in turn, are grasped as a specific sub-type of communication. They represent performative speech

acts in that they create the state of the world they are referring to. Moreover, decisions create the impression of an invariant past and, therefore, provocate to dissent. In this respect, decisions inherently create new contingencies, and with this, contribute to the emergence and stabilization of the organization as an autopoietic system. Nevertheless, the visibilization of decision contingency in organizational communication needs to be estimated as being ambivalent: On the one hand, the organizational communication literature on the aspect of visibility have put forward the claim for an enhanced visibility of work and decision processes. On the other hand, the theoretical analysis brings forth skeptical accounts on the realizability of a visibilization of decision contingency in organizational communication.

The challenge of CPL is hypothesized to have promoted a renaissance of textuality in project organizations. Textual modes differ from verbal modes of communication with respect to their inherent capacity to stabilize communication over time. Consequently, texts can be assumed to constitute the project organization's communicative memory. But again, this does not guarantee a full-blown visibilization of decision contingencies in textual form. Particularly, because of the long-lasting character of texts, they create special requirements for the project organizations to handle the dilemma not only to achieve some form of decision contingency visibility but also to establish façades in order to cloak the paradox of decisions as their basic operations.

In consulting firms, PowerPoint presentations have gained increasing importance as a medium and genre of organizational communication. Not only they are used to generate presentation to be held in client meeting, they are also applied for the purpose of CPL by documenting what has happened in a particular project. This is assumed to cause a genre conflict between the presentation and the documentation function of PowerPoint. It is unexplored thus far how the PowerPoint genre develops in between these two contradicting functions. The question arises to what extent the PowerPoint presentation genre promotes or inhibit the visibilization of decision contingency in project documentation.

Guiding Distinctions and Research Questions

Taken together, all six parts of the analysis illuminate from different ankles that project organizations, and consulting firms in particular, reside in between the two forces of decision contingency visibilization and invisibilization: One of them coerces the project organization to reveal its contingencies. This is due to the organizational necessity to highlight decisions as decisions in order to accomplish their connectivity over time. Furthermore, a revelation of contingency can be assumed to be promoted by efforts spent on CPL practices which focus on the learning value from mistakes made and alternatives considered. The other one of them coerces the organization to cloak the paradox and contingent character of decisions in order to avoid a paralysis by becoming overly aware of them. Moreover, the analysis yields that organizational constraints may inhibit to reveal mistakes and ambiguities in communicative work practices.

These insights can be summarized by an outline of theoretical distinctions which are helpful to guide the further analysis of the visibilization of decision contingency in organizational practice. The guiding distinctions are summarized by figure 2:

Comparative Criterion	**Visibilization of Decision Contingency**	**Invisibilization of Decision Contingency**
Main Document Function	documentation function (knowledge management)	presentation function (impression management)
Communicative Setting	backstage setting	frontstage setting
Narrative Focus	focus on contingency	focus on consistency

Figure 2: Guiding Distinctions of the Empirical Analysis

The distinctions between the presentation and documentation function, impression management and knowledge management purposes, frontstage and backstage settings, as well as consistency and contingency-centered communication define the tension in which PowerPoint presentations prolong when applied as documents for the purpose of cross-project learning. Originally created in a frontstage setting for presentation to the client, PowerPoint presentations are presumed to remain in a consistency-centered narrative in order to fulfill impression management purposes. The theoretical distinctions introduced here are useful for the empirical analysis in that they allow to evaluate whether the PowerPoint genre in practice rather develops towards one or the other side of the distinctions.

Accordingly, the main research question of this study, to what extent do decision processes and their contingency become visible in PowerPoint-based forms of project documentation, can be further differentiated. Based on the two-sided analysis of the DCV issue, two general sets of research questions can be derived – one of which relates to the communicational side and, the other one to the organizational side of the organization-communication duality:

By looking at the communicational side of the coin, it is central to ask how decisions and their inherent contingency are actually made visible in organizations by means of communication. Is PowerPoint indeed increasingly used to replace previous forms of project documentation? And if this is valid, to what extent does the usage of PowerPoint presentations for the purpose of project documentation promote or hinder a visibilization of decision contingency in the project organization? How does the PowerPoint presentation genre develop between its partly conflicting functions – on the one hand, to create a linear, consistent, and ambiguity-reduced "storyline" in communication to the client, or, on the other hand, to make the process of project decisions observable to colleagues which involves the consideration of alternatives, doubts, and side-paths? Finally, to what extent does the genre conflict of PowerPoint transform the genre as such, e.g., to what extent is the narrative transformed into a

contingency-centered mode of communication in order to satisfy knowledge management purposes?

By looking at the organizational side of the coin, the issue of DCV becomes a matter of organizational autopoiesis. However, because of the abstract notion of organizations as communicative systems, these research questions can hardly be validated in a direct empirical way. For the empirical investigator, the organization as a social system appears to become visible first and foremost from its communicational side. Therefore, the following questions will require to draw theoretical inferences from the empirical material with the help of this study's theoretical framework: To what extent do PowerPoint-based project documents contribute to the visibilization of decision contingency and with this to maintain a connectivity of episodes of decision communication? How does the project organization oscillate between the contradictory functions, the project's necessity to sustain a border between itself and its environment and the organization's necessity to assure a visibility of decisions contingency? And finally, what does it mean for the project organization's autopoiesis and memory if the dilemma of decision contingency (in-) visibility is either solved in favor of a visibilization or invisibilization of contingencies?

Having arrived at this point of the analysis, the theoretical considerations can be grounded in an empirical analysis of DCV in organizational practice. Arguments for applying an empirical investigation can be derived from this study's main research focus which relates to project documentation as an empirical issue. Moreover, the empirical part of the analysis can help to avoid a theorization on a merely abstract level which lacks any connection to performative social reality in organizational communication. In other words, the empirical analysis to yield a basic sense for the idiosyncrasies of project documentation in the everyday practice of an actual organization. Consequently, the following chapter presents a methodology how the visibilization of decision contingency can be approached empirically.

4 Methodology: How to Investigate the (In-)Visibility of Decision Contingency in the Practice of Project Documentation

This chapter introduces the methodology of the empirical part of the analysis. The outline begins with basic methodological considerations on the empirical accessibility of the research issue, interrelations between theory and empirical data, and the case study approach the further analysis is based on (cf. chapter 4.1). In a next step, the specific case organization selected for the analysis is presented in its main characteristics (cf. chapter 4.2). Finally, the particular combination of methods is described in detail: This involves considerations on the application of methods, sampling heuristics, and data analysis techniques (cf. chapter 4.3).

4.1 Basic Methodological Considerations

4.1.1 The Empirical Accessibility of the Research Issue

The contingency of decisions and its visibility in organizational communication is highly abstract in its theoretical origin. The research issue is grounded on the theorization of organizations as emergent social systems consisting of nothing else than ephemeral but inter-related episodes of communication (Luhmann, 2000; Taylor & van Every, 2000). Therefore, the question is legitimate, how can the phenomenon of contingency visibilization empirically at all, if it is based on the abstract and somewhat counter-intuitive concept of organizations as communication?

With the term *recalcitrance*, Latour (2000) identifies one specific aspect that distinguishes research objects in the natural and the social sciences. Research objects in the natural sciences, such as molecules or atoms for example, are recalcitrant which means that they are not able to take the intentions of the researcher who investigates them into account. They "provide answers on their own terms" (Sørensen et al., 2001: 301). In contrast, the research objects in the social sciences, human beings, actually *do* have their own resentments, assumptions, reluctance, and curiosity about the intentions of the social scientist who observes or interviews them. Their reflexivity enables human beings to adapt or oppose their behavior to the scientific intervention. Objects like a ball, instead, will roll down the hill after the second or third attempt given constant environmental conditions, even when being observed.

In a similar vein, Giddens (1984) has framed the notion of the *double hermeneutic* to define a distinct feature of the research process in the social sciences: The researcher is trying to understand the research object in a hermeneutic way, whereas the research object itself also tries to understand the researcher: "All social actors, it can properly be said, are social theorists, who alter their theories in the light of experience" (Giddens, 1984: 335).

Latour's notion of recalcitrance can be used to evaluate the empirical accessibility of organizational communication in practice. Let us consider that the TSS perspective imagines the organization as an autopoietic system which operates on its own terms, by means of a continuous reproduction of decisive episodes and a transformation from open into fixed contingency. The organization is theorized here as a phenomenon which relies on the participation of human beings bound to it as organizational members but which operates autonomously to a large extent. This abstract and immaterial concept of the organization, however, complicates its direct empirical investigation. As argued in the theoretical analysis (cf. chapter 3.2.2), textual forms of communication can then serve as an empirical anchor to approach organizational communication processes (cf. Andersen, 2003). This also justifies a focus on textual project documents as the key focus for the empirical analysis (cf. chapter 4.3.1).

4.1.2 Interrelations Between Theory and Empirical Data

The status of empirical research in studies based on the TSS perspective is subject to an ongoing debate in the social sciences (e.g., Nassehi & Saake, 2002; Hirschauer & Bergmann, 2002). In a positivistic interpretation of the TSS framework, the theory is criticized for lacking any interest in the investigation of cause-effect relationships and for neglecting the influence of individuals in an over-emphasis on social aspects (cf. Esser, 2002). This position is opposed by researchers who follow the TSS framework: „Although Luhmann's theory often gets characterized as a very abstract and over theorized sociology, it is in fact a remarkably empirical theory because it is interested in the basic processes in which social systems occur and in which structures come into being" (Nassehi, 2005: 183).

According to Andersen, the TSS framework differs from other approaches in its focus on functional analyses rather than causal explanations:

> Luhmann's theory about decision and organisation is not a theory about what decisions are, what an organisation is, or why organisations reach particular decisions. It is not a theory of explanations and probably not even a theory of understanding. The theory merely serves as program for the observation of how organisations emerge through observations. (Andersen, 2003: 255; emphases omitted)

It is argued here that a profound interest in social reality is instead testified by the theory's aim to explore the "pre-empirical conditions of the possibility of systems" (Nassehi, 2005: 181).[41] In similar fashion, this study is focused on uncovering the pre-empirical conditions of the existence of project organizations as autopoietic social systems: How is it possible that organizations are able to sustain their existence in the attempt to connect one decision to the next one – and how does the visibilization of decision contingency contribute to this phenomenon?

41 This relates to Kant's epistemological assumption to focus "conditions of possibilities" instead of a focus on mere causality (cf. Monod, 2004).

Another objection frequently put forth against the TSS framework is the criticism of its *hermetic terminology* (Seidl & Becker, 2006b: 10) – and that this terminology hinders the theory from becoming empirically applicable at all. For the followers of the TSS framework, establishing a strict and hermetic border between the theory's terminology and everyday language represents an essential precondition for being able to observe the social world (cf. Soentgen, 1992). This assumption is consistent with the systems-environment distinction placed right at the center of the framework: In order to be able to observe its surrounding world, a system needs to establish a distinct border between itself and its environment (Luhmann, 1984: 22). In analogy, the theory of social systems in itself represents a communicative system which needs to be terminologically distinct from its communicative environment (interactions, organizations, and society) in order to be able to observe these systems (Nicolai, 2004: 956).

In general, the assertion that the TSS framework comes short on any interest in empirical social reality needs to be estimated as inappropriate: "When a social scientist theorizes on the basis of the theory of social systems, he automatically generates concepts which relate to empirical objects" (Vogd, 2005: 21; own translation). Vogd compares the theory's interest for empirical phenomena to structuralist approaches which strive for uncovering the *latency* of social structures. In consequence, he recommends to those who work with the TSS paradigm to base their work on *reconstructive methodologies*. This is in line with Knudsen's assertion that "Luhmann's analytical move consists in reconstructing – not primarily in revealing – the organization" (Knudsen, 2006 110). In contrast to ethnographic methods which primarily strive for a *thick description* of social phenomena, reconstructive methods aim to develop theories in form of "sociogenetic typologies" (Vogd, 2005: 27), typologies which are generated by uncovering latent structures of social phenomena, inconceivable in everyday language. Typologies then allow for comparative analyses and, with this, to further develop and improve the theory-driven terminology of the TSS framework (Vogd, 2005: 27).

In the attempt to adapt empirical methods to the TSS framework, its followers have mostly leaned towards qualitative rather than quantitative methodologies (e.g., Schneider, 1995; Nassehi & Saake, 2002; Vogd, 2005; Gibson, Gregory & Robinson, 2005; Knudsen, 2006). However, the data gathered by help of these methods have a different status in relation to the theory than in conventional approaches. Rather than generating theory from scratch in an explorative way, empirical investigations aim to enrich and ground analytical advancements that are supposed to take place primarily on the level of theorization. Accordingly, researchers who work with the TSS framework have empirically applied it, for instance, to shed new light on the fields of knowledge management (Willke, 1998; Hilse, 2000), strategic change (Hendry & Seidl, 2003) and decision making (Knudsen, 2006). The perspective furthermore has inspired to reconsider existing methodologies in hermeneutics (Schneider, 1995), grounded theory (Gibson, Gregory & Robinson, 2005) and social simulations (Kron, 2002). In line with this tradition, this study follows the nonpuristic argument that qualitative forms of research can generally enrich the theory development based on the TSS framework.

4.1.3 Case Study Approach

The choice of an empirical analysis based on the TSS framework does not predetermine the choice of a specific methodology. In this chapter, it is argued that the *case study approach* (Yin, 1984; Eisenhardt; 1989; Miles & Huberman, 1994), a well established empirical framework in organization studies (cf. Hartley, 1994), is best suited for this study's purpose to analyze communicative practices in organizations. The case study approach suggests to combine qualitative and quantitative methodologies in an integrated research design for the in-depth study of a small number of empirical objects. With this, the approach transcends concurrent debates which favor either a quantitative or a qualitative empirical scope. This is in line with Miles and Huberman: „the quantitative-qualitative argument

is essentially unproductive [and there is] no reason to tie the distinction to epistemological preferences“ (Miles & Huberman, 1994: 41).

The empirical objective of a case study usually is reconstructive or explorative rather than confirming (Bohnsack, 1989). Its main focus is the development of theories rather than the validation or falsification of existing theories (Eisenhardt, 1989: 532). Bohnsack (1989: 33) recommends comparative analyses as the key method for the theory development based on case studies. While a focus on only one organization as a single case study is advantageous for an in-depth investigation of DCV in organizational practice, a broader set of organizations would allow for contrasting and comparing different types of organizations with respect to the problem of DCV.

The explorative character of this study suggests to concentrate on only one single case for the analysis of DCV in practice. Research pragmatic reasons support the argument to focus on a single case study. Moreover, the confidentiality of the documents under investigation complicate the process of acquisition of a case organization for this thematic focus. Establishing a trustful relationship between the researcher and the case company needs to be developed over a longer period of time (cf. Burgleman, 2002). In consequence, the given time restrictions of this research project inhibited to include additional organizations in the analysis (cf. chapter 6.3). The advantages of studying only one singe case are assumed to balance out the disadvantage of a diminished generalizability of the empirical study. Insights generated in this methodology allow for tentative inferences on a bigger population of similar organizations. The next sub-chapter explains the decisions which have led to the choice of a specific case organization and introduces the organization in more detail.

4.2 Case Selection and Description

The choice of a specific case for the empirical analysis follows the heuristic of *theoretical sampling* (Glaser & Strauss, 1967: 45). Depending on the research question, theoretical sampling suggests to choose either an *extreme* or a *typical case* for the exploration of a research issue. *Extreme cases* are well chosen to illustrate deviations from the norm or to construct *ideal types* (cf. Weber, 1969). *Typical cases* instead are appropriate to diminish problems of generalizability in qualitative studies. Taylor and Trujillo expand on the problem of generalizability: "(...) when judged by positivist standards, qualitative studies of organizational communication usually have been found wanting. Indeed, they have been dismissed using such stereotypes as 'soft', 'imprecise', 'unverifiable', 'unreliable', and 'non-generalizable'" (Taylor & Trujillo, 2001: 181).

However, a logically coherent and systematic development of theoretical criteria for case selection can help to identify typical cases which are likely to be *analogically generalizable* (Schofield, 1990). In a broader notion of generalizability, the study indeed allows for a generalization *from concepts to theory* in that the concepts explored in the case study can help to develop a theory of DCV in organizational communication (cf. Lee & Baskerville, 2003). This way, it can be asserted that case studies can facilitate theoretical advancements "(...) if not statistical generalizations about the distribution of variables within a population (...)" but a "*theoretical* understanding of the *operations* of those variables within that population" (Taylor & Trujillo, 2001: 183).

In this study, the question is investigated to what extent decision processes and their contingency become visible in documented forms of communication within project organizations. Because the study aims to explore empirical phenomena which are assumed to apply not only to a single organization, a case needs to be chosen which is hypothesized to be generalizable to the overall population of project organizations, and especially the ones which face the challenge of CPL. Both criteria apply to the consulting business, as argued in the theoretical analysis (cf. chapter 3.1.3). Consulting is typically executed in form of project work. Given a

certain size of the organization, consulting services are often distributed to several locations. Accordingly, consulting services are essentially based on the consultants' expertise, while the services they provide are immaterial and, thus, difficult to share.

For the selection of a specific case organization, additional criteria can be derived from the main research question what increases the likelihood to be able to investigate the phenomena in focus. First, the accessibility of analyzable documents is more likely in organizations with a strong focus on IT solutions as they tend to store their records in an electronic form. Furthermore, a longitudinal analysis requires to choose an organization which has a comparably long-reaching tradition in sharing experiences across projects based on an IT solution. All of the introduced criteria apply to the specific organization that has been chosen as a typical case for the analysis of contingency visibilization within project organizations. Due to confidentiality agreements, I will use the anonymized terms "case organization" or "case company" throughout the study in replacement for the company's real name.

The particular case organization chosen for this study is a multinational business consulting firm. The company is headquartered in North America but it has also large operations in Europe and Asia. The company offers a broad range of services from strategy consulting to more specialized IT consulting. Most of its employees work as consultants on various hierarchical levels. In their daily work, the consultants are supported by assisting staff, for example, by members of the company's knowledge management section. The company has a long reaching tradition in the field of IT-based knowledge management solutions. For the empirical analysis, this is advantageous in that the CPL databases in use at the company reach back to the early 1990s. This allows for a longitudinal analysis of project documents over a period of ten years (1995 to 2004). However, the full time range could not be taken into account in all instances because of too small numbers of documents for some years in the sample, especially in the earlier days of the database.

With respect to the company's history, it needs to be considered that the company has grown due to mergers and acquisitions in recent years and has spent significant efforts in integration processes. The biggest one of the firms which were taken over recently had an eventful history itself, characterized by several acquisitions of smaller competitors. This heterogeneity of the case company's history needs to be kept in mind when the study approaches the analysis of the company's CPL databases. Various project entries relate to earlier consulting projects conducted by parts of the company which were integrated later on in the course of mergers and acquisitions. Moreover, the two company parts originally differed in their knowledge management approaches, as it will be described in chapter 5.1.1.

4.3 Methodology of the Research Study

The combination of distinct methods in a case study design can be realized in two ways: either in following a classical *phase model* which applies a subsequent chain of methods of exploration and confirmation, or in form of a synchronous methodology based on the principle of *triangulation* (Taylor & Trujillo, 2001: 183). With the concept of triangulation, Denzin (1970) as well as Flick (1992) suggest to combine different empirical methods by drawing on a metaphor which originates in the field of geodesy. Triangulation essentially means to locate the position of a specific landmark by looking at it from (at least) two different viewpoints. The authors transfer this notion to the social sciences by stating that an exact location of social issues can be validated by a combined application of at least two distinct methods. Repeated findings then confirm the robustness of the theory and the empirical methodology.

In this study, a triangulated methodology is chosen for the investigation of DCV in organizational practice. The combination of methods for the analysis is derived from the main research question: To what extent do decision processes and the contingency of decisions become visibilized in PowerPoint-based project documentation? The focus on textual

forms of communication favors to select textual artifacts, such as project documents, as the central reference point of the empirical analysis. However, a focus on *document analyses* does not predetermine whether to approach this empirical material in a rather quantitative or qualitative manner. A combined quantitative and qualitative approach has the advantage of integrating insights gained from a quantitative analysis of a big number of documents in a standardized form with insights gained from a qualitative analysis of typical or extreme examples of documents (cf. Yin, 1984). Gherardi and Turner add the estimation that „in qualitative analyses, there are no reasons why numbers should not be appropriately deployed" (Gherardi & Turner, 2002: 91).

In the range of the most prominent social scientific methodologies, *textual analyses*, *interviews*, and *observations* (Kromrey, 1998: 369), again a selection needs to be made regarding the appropriate methods to realize a triangulated view on the research question. *Interviews* allow for a recontextualization of the documents analyzed in the textual analysis. The same advantage applies for the method of observation: A direct *observation* of project decision processes would allow to enhance the researcher's understanding of the relationship between the performative and the ostensive aspect of the project process (cf. Latour, 1986; Feldman & Pentland, 2003). However, observations are particularly costly in their realization: "[The] observation is certainly a powerful and reliable method, but extremely demanding of research resources (...) therefore, the researcher is obliged to rely heavily on interviewing. The best trace of the completed process remains in the minds of those people who carried it out" (Mintzberg, Raisinghani & Théorêt, 1976: 248). Furthermore, a participant observation causes the problem that the situation under investigation is altered by the mere presence of the researcher (Kromrey, 1998: 370).

For the given reasons, the method of qualitative interviews is chosen in order to realize a triangulation of insights gained from the document analysis. In this context, a qualitative character of the interviews wins over a quantitative character mostly because it allows for an in-depth inquiry on the phenomenon of DCV and an iterative optimization of the interviewing approach (cf. Witzel, 2000). The following sub-chapters

explain further methodological decisions on the application of empirical methods (cf. chapter 4.3.1), heuristics of sampling and data gathering (cf. chapter 4.3.2), and techniques of data analysis (cf. chapter 4.3.3).

4.3.1 Empirical Methods

Document Analysis

In this study, the document analysis is right at the center of the empirical scope on the (in-)visibility of decision communication in PowerPoint-based project documents. The analysis of organizational documentation is a well established method in research on organizations (Forster, 1994: 148). According to Forster, organizational documents represent easily accessible and robust indicators for an analysis of communication practices within the organization in retrospect. As he points out, organizational documentation can provide „a rich source of insights into different employee group interpretations of organizational life, because they are one of the principal by-products of the interactions and communication of individuals and groups, at all levels, in organizations“ (Forster, 1994: 148).

A central advantage of document analyses relates to the dimension of time: Organizational documents “are often contemporaneous closely at historical processes and developments in organizations and can help in interpreting informants’ ‚rewriting’ of history in later verbal accounts“ (Forster, 1994: 148). In this respect, document analyses also fulfill the criterion of recalcitrance (cf. chapter 4.1.1). Project documents represent condensed organizational communication which does not react to be investigated by the researcher. The method shares the general advantage of non-reactivity with techniques of content analysis which are widely used in media and communication studies (cf. Krippendorff, 1980), but transcends their focus on enumerating, micro-textual analyses (Forster, 1994: 150).

These advantages, however, need to be confronted with the method's weaknesses, as well. Forster mentions the subjective and fragmentary character of organizational documentation which complicates a generalization to the organization as a whole (Forster, 1994: 149). In general, the communication manifested in project documents can be presumed to be in discrepancy to actual verbal forms of organizational communication.[42] Finally, to make sense of organizational documents is highly context-dependent and, therefore, requires to be cross-compared with other forms of research.

Despite the significance of these weaknesses, each of them can be invalidated if we consider the characteristics of the project documents under investigation in this study. In contrast to the concerns regarding the fragmentary character of organizational documentation, the project documents in use at the case company chosen for this study are generated in a large-scale and systematic manner (in their function as a reference for each project deployed). Discrepancies to verbal forms of organizational communication and the context-dependency of organizational documents are aimed to be balanced out by qualitative interviews which accompany and triangulate the document analysis.

Within the range of possible document analysis techniques, a combination of a qualitative and a quantitative approach is applied. This means to develop project document typologies inductively from the empirical material, on the one hand, and to compare various types of project documents with regards to questions deductively. The specific data analysis techniques which combine these inductive and deductive perspectives are presented in chapter 4.3.3.

Qualitative Interviews

Within the range of methods in the social sciences, qualitative interviews intentionally create conversation settings with individuals in order to

42 This again links to the distinction between the ostensive and the performative side of organizational routines (cf. Latour, 1986; Feldman & Pentland, 2003).

approach their perception with the regards to the social situations being studied (cf. Lamneck, 1995: 35f.). Qualitative interviews differ from quantitative techniques in that they leverage narrations in the terminology of the interviewees. This is achieved by asking open rather than closed questions. The heterogeneity of answers generated this way follows the aim to maximize the variance of perspectives. The qualitative approach, however, gives away opportunities for a large-scale comparability which would instead require to apply quantitative survey methods. In the study of organizations, qualitative interviews represent the most frequently applied research method (King, 1994: 14).

In this study, the qualitative interviews follow the objective to enrich and triangulate insights gathered from the document analysis. Among the range of possible interviewing techniques, a rather narrative form was chosen. This choice matches the interview's objective "to gather descriptions of the life-world of the interviewee with respect to the meaning of the described phenomena" (Kvale, 1983: 174). Narrations by the interviewees were initiated based on the methodology of the *problem-centered interview* (Witzel, 1982; 2000). The idea behind this technique is to stimulate narrations by problematizing a certain issue which relates to the life-world of the interviewee. The interviewee is asked to personally position himself or herself with respect to a suggested issue.

In contrast to other qualitative interviewing techniques, the problem-centered interview acknowledges that, being a second order observer, the researcher is not able to consciously *turn off* his or her theoretical pre-understanding of the issue under investigation. This links back to the assumption that a theoretical understanding of the world is already inherent to any distinctions, categories, concepts, and with this, to language *per se*. Hence, it is legitimate for the researcher to bring in his or her theoretical pre-understanding in the interviewing situation. In this respect, the method allows for mutually controlling an *emic* and an *etic* perspective on the subject matter (Pike, 1967). While an *emic* account of behavior is a description in terms meaningful to the actor, an *etic* account is a description in terms familiar to the scientific observer. By grounding the researcher's perspective in descriptions by the interviewees personally

involved in the social situations being studied, the theoretical concepts can be grounded in their own lifeworld. This allows for avoiding a mere theorization which lacks any connection to the social phenomena being studied.

4.3.2 Sampling and Data Gathering

Document Analysis

The document analysis has been executed in the months from September to December 2004 at one of the company's offices in Frankfurt/Germany. During this time, the researcher worked as a graduate student intern in the company and had full access to company-wide project databases. Furthermore, special access was given to a few project specific or practice specific databases.

The sample of project documents has been generated in two successive steps: In a first step, the given range of project databases in use at the case company was screened and a selection was made out of it. The main selection criterion has been if data were accessible not only by the members of a particular project but across the company as a whole. A narrower focus of the databases, for example if an access was given only to a specific practice or to one single project, would not have allowed for providing an answer to the main research questions which refers to the visibility of decision processes within the organization as a whole. This way, two databases were chosen which both were accessible to all consultants working for the company worldwide. Project entries in these databases reached from year 1995 to 2004 – with a generally increasing number of documents submitted to the databases in recent years.

The second step required to make a selection of project entries in order to generate a dataset of an analyzable size. To avoid any researcher bias, this selection was randomized. A computer generated list of random numbers was matched with a list of project entries. By means of this, a total number of 640 project entries were chosen from each database

which represented 10 percent of their overall size of more than 6,400 project entries at that time (i.e., in November, 2004). Within this sample, a quota 88 percent of project entries turned out to be analyzable because in some cases, fundamental project data were missing. In result, a set of 565 project entries were finally included in the analysis (cf. figure 3). A project entry typically contained a standardized template with basic information about the project: the project name, consultant team, client name and industry, project duration, as well as a short project description in form of an abstract text. In most cases, the project entry also included an attachment of separate project documents which were usually generated with either Microsoft PowerPoint, Word, or Excel.[43]

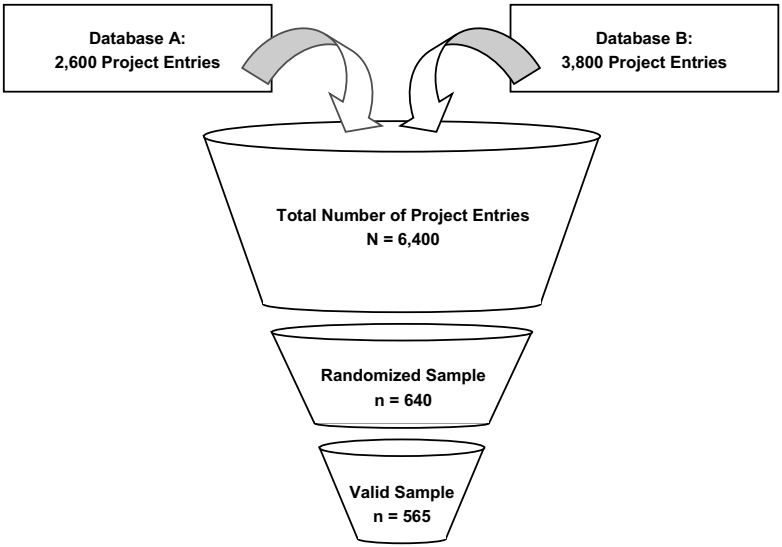

Figure 3: Sampling Procedure of the Document Analysis

43 In rare cases (usually in older project entries), attachments were generated by means of Lotus Freelance, an older PowerPoint equivalent. Lotus® and Freelance® are registered trademarks of Lotus Development Corporation (an IBM company), Cambridge/MA.

Within each project entry, a selection had to be made which document or which textual element to include in the analysis and which not. In order to ensure selections in line with the theoretical interest of the study, a heuristic was generated which allowed for the execution of reliable and distinct choices. Within each project entry, one document was defined as the *primary document* – the one which provided an "expertise-seeking novice" (Markus, 2001: 59) with the comparably most detailed information what the project was about and how it was proceeded. In practice, this procedure meant for the researcher to browse through the documents attached to each selected project entry and to get a quick overview of their content in order to identify the primary document. In an iterative way, this procedure led to crystallizing a typology of most common documents attached. This again fortified the procedure's reliability.[44]

It is important to note that *textual abstracts* in fact were found to be included in most of the project templates. However, in frequent cases, they represented fragmentary content copied from PowerPoint presentations attached to the project entry. Within the PowerPoint file, the equivalent content usually could be found on the first slide titled "executive summary". Therefore, abstract texts were coded as the primary document only in case the project entry did not contain any attached documents at all. In some cases, neither PowerPoint documents nor a Word document but instead only Excel files were attached to a project entry. In these rare cases, the project files were excluded from the analyses because the coding scheme would not allow for the analysis of these documents with respect to the visibilization of decision contingency.[45]

To summarize the procedure, three selections were necessary to generate the dataset: a selection of databases, a selection of project entries, and a selection of primary documents. The dataset generated this way

44 For example, "lessons learned documents" usually provided more information on project processes and decisions faced than "final client presentations" which again provided more useful procedural information than "one-page citation" documents (cf. chapter 5.1.2).

45 Documents in pdf format, readable by means of the Adobe's Acrobat software, were not seen as a separate document type because they usually were grounded on a previous creation of either a Word or a PowerPoint file.

involves 565 documents and was subject to a combined quantitative and qualitative document analysis. The coding procedure itself is explained in more detail in chapter 4.3.3.

Qualitative Interviews

In the aim to triangulate the data gathered by the document analysis, 14 semi-structured interviews were conducted with company members from November 2004 to June 2005 either via telephone or face-to-face. The objective of the interviews has been to achieve a deeper contextual understanding of the project documentation process and the database usage within the case company. The interviewees were again selected by means of *theoretical sampling* (Glaser & Strauss, 1967: 45; cf. chapter 4.2.1) – following the aim to cover a maximum variance of given perspectives on project documentation processes in the company. In practice, this meant to start with an interviewee who worked closely with setting up the CPL databases, e.g., someone from the case company's knowledge management section. In a next step, the heuristic suggested to make an opposed selection, in this case someone using the databases, e.g., a consultant.

Finally, the sample involved interviewees working either as consultants (7 interviewees) or in the knowledge management support division (7) of the company. Interviewees were based in Germany (7), the United States (5), the United Kingdom (1), or Switzerland (1). Last but not least, the group of interviewees involved 9 male and 5 female members of the company.

During the interview, narrations by the interviewees were initiated by asking them to describe their personal involvement in cross-project documentation practices at the case company. Starting from here, the interviewees themselves pointed to subsequent topics related to the initial situation. During the interview, their narrations were only cautiously guided and re-initiated by the interviewer (following the principle of the problem-centered interview; cf. chapter 4.3.1). For this purpose, the inter-

viewer maintained an interviewing scheme which in itself developed from interview to interview. While the first interviews contributed to an expansion of variance in topics, the recurrent mentioning of topics in later interviews then allowed for a consolidation. Among the final and recurrent topics yielded by the interviews, the usage of CPL databases and project documents, the creation and submission of own project documents to the database, and last but not least the role of PowerPoint documents for the purpose of project presentation and documentation were the most prominent ones and will therefore be resumed in the presentation of results of the triangulated study in chapter 5.1.

4.3.3 Data Analysis

Document Analysis

In the quantifying part of the document analysis, the project documents were coded by help of a pre-defined set of categories. These categories represent a theoretical operationalization of the concept of DCV. With regards to the theoretical analysis, the visibilization of decision contingency can be assumed to occur on three distinct levels. These three levels build up on each other, or, to be more precise, the first level represents the precondition for the existence of the levels two and three:

On the *first level*, the visibilization of decision contingency is assumed to require at least some form of *reflection on the project process* (cf. Schoen, 1983; Raelin, 1997). This corresponds with Garrick and Clegg's assertion that "for many contemporary project-based learning theorists 'reflection' is a the heart of learning (...)" (Garrick & Clegg, 2001: 120). Learning by reflection, in turn, can be re-described with respect to Luhmann's distinction between *first order* and *second order observations* (Luhmann, 2000: 323). Second order observation are reflective in that they signify an observation which observes a previous observation. This can either mean that another observer is involved or that the same observer perceives own previous observations from retrospect (Kneer & Nassehi,

1997: 100f). In this study's context, while the communication to the client remains on a first order observation level (*observation of the client*), a reflection of the project in communication to colleagues requires 'to take a step aside' and to observe the project process as such in form of a second order observation (*observation of the observation*). In practice, this variable was coded by counting how many slides or pages of a project document also contained descriptions of the project process itself instead of referring exclusively to the client's situation.

The coding of this variable is demanding in that it requires some contextual understanding in order to be able to distinguish between the two levels of observation represented in the documents. This dilemma was solved by drawing on the hypothetical role of the "expertise-seeking novice" (Markus, 2001: 59). The researcher, working for the case company on a temporary contract, represented a somewhat typical example of a new employee (also in terms of his qualification level) trying to grasp what has happened in past projects by reading through of project documentation. Therefore, if the researcher was unable to grasp the difference between client analyses and project process descriptions, a new member of the company could be presumed to face similar difficulties.

On the *second level*, and with respect to the learning-from-mistakes principle (Edmondson, 1996; Zhao & Olivera, 2006), contingency can be visibilized by a *critical project reflection* which allows for a learning from past failure. This operationalization is based on the assumption that the visibilization of decision contingency can be accomplished not only by an explication of alternatives considered but also by mistakes made. By highlighting mistakes in a retrospective reconstruction of the project process, it is implied that the decision could have been made differently – and that this may have been for the better. Accordingly, the documents which contained at least some form of reflection on the process itself (first level of DCV) were coded with regards to the question if the project document included any negative or critical statements at all.

On the *third level*, textual elements were coded with regards to their contribution to an *explicit mentioning of alternatives to decisions*. This variable most closely corresponds with the concept of DCV (Luhmann, 2000:

64). The realization of this variable typically involves to highlight decisions as decisions by defining a range of alternatives the decision has been based on (Seidl, 2006a: 39). In the coding process, this variable turned out to be the one where the distinctions could be made most precisely. However, its distinctive value may have contributed to the fact that an explicit outline of alternatives to decisions was found only very seldom in the sample (cf. chapter 5.1.2).

Furthermore, the coding process involved variables on basic project data (e.g., project date, client, and database the document had been submitted to) and general document characteristics (e.g., medium type, file size, and word count) which allow for a comparison of the DCV levels with regards to these variables. Unfortunately, variables like the database type or client type did not yield any significant differences with respect to the visibilization of decision contingencies and, therefore, will not be referred to in the presentation of empirical results in chapter 5.1.

In the qualitative part of the document analysis, recurrent forms of project documents were identified and condensed into a typology based on the genre approach (Yates & Orlikowski, 1992). This process involved to identify recurrent genre criteria and to condense them to ideal types. According to Weber's definition,

> (...) an ideal-type is formed by the one-sided accentuation of one or more points of view and by the synthesis of a great many diffuse, discrete, more or less present and occasionally absent concrete individual phenomena, which are arranged (...) into a unified analytical construct. In its conceptual purity this mental construct can not be found empirically anywhere in reality. (Weber, 1969: 90)

The ideal-typical distinction then allowed for a cross-genres comparison with respect to the three levels of DCV. Single documents were selected to illustrate the genres identified in this analysis. Finally, a small range of documents where an explicit visibilization of decision contingency could be expected due to their genre characteristics were also subject to additional analyses on the level of textual elements. This again allowed for generating an ideal-typical comparison on a subordinate level by identi-

fying typical textual elements and by comparing them in their capacity to make decisions and their contingency visible.

Qualitative Interviews

The results of the document analysis are contextually enriched by employee statements gathered by help of qualitative interviews. For this purpose, narrations of the interviewees were generated by help of the technique of the problem-centered interview (Witzel, 1982; 2000). Because the contract for the research co-operation with the case company prohibited any electronic recordings and full-text transcripts, the qualitative coding of the interviews had instead to be based on notes taken by the researcher during the interview. The absence of full-text transcripts of the interviews, however, can be evaluated as less severe given that it does not focus on differences in interviewees' accounts on a linguistical level (cf. Lamneck, 1995: 163).

In the coding process, main categories were developed in an iterative process which goes back to the grounded theory approach (Glaser & Strauss, 1967). This involved to attribute codes to recurrent aspects mentioned in the interviews in the aim to identify emergent topics relevant to the interviewees. These aspects were then condensed to codes which, in turn, allowed for a systematization of the empirical data in tabulated form. It is important to keep in mind that, in congruence with the framework underlying this study, the interview results are not seen as representing a factual and objective organizational reality but much more a representation of how organizational members perceive and enact the communicative organizational reality in their personal observation (cf. Orlikowski, 2002).[46] In this respect, the interviews aim to reveal an emic description instead of an etic description of social reality (Pike, 1967).

46 With this, the study leans towards a social constructivist approach in the empirical investigation of organizational communication (cf. Berger & Luckmann, 1966).

5 Empirical Analysis: Exploring the (In-)Visibility of Decision Contingency in the Practice of Project Documentation

5.1 Empirical Results From an Archaeological Expedition

The search for visibility of decision contingency in the project documentation practices of the case company resembled an archaeological expedition trying to find the remains of a rare species. Accordingly, the presentation of empirical results is structured by following the successive steps of the archaeological expedition. In a first step, the CPL databases, right at the entry door of the expedition, are described regarding the question which media and genres of project documentation are applied here most frequently (cf. chapter 5.1.1). In a second step, the PowerPoint presentation genre, as the most frequent genre of project documentation in the sample, is differentiated into a sub-typology. This typology is related to the main research issue by asking to what extent decision processes and their contingency become visible in various sub-genres (cf. chapter 5.1.2). In a final step, the analysis arrives at the level of projects documents. It is examined here to what extent the selected documents contribute to a visibilization of decision contingency in the project organization (cf. chapter 5.1.3).

5.1.1 *The (In-)Visibility of Decision Contingency in Cross-Project Learning Databases*

Cross-Project Learning Databases in Use at the Case Company

The document analysis is grounded on documents extracted from two CPL databases in use at the case company (cf. chapter 4.2). It is the aim of this outline to provide initial context information about the databases' background which can serve as a reference for the interpretation of results in the further course of the analysis.

The two databases in use at the company, although differing in their historical origin, were both set up as electronic repositories for sharing experiences and work products generated in the course of consulting projects. Therefore, project documents were made digitally accessible to company members in order to leverage a learning from knowledge generated in past projects. Both databases could be accessed by the consultants and by the knowledge management staff via the database software Lotus Notes which was used as an IT infrastructure solution across the whole company. Each project was given an identifiable number ("primary key"), a template containing basic project data and an open text field for a project summary ("abstract") as well as the opportunity to attach further documents to provide more detailed information on the project (cf. chapter 4.2). It was the project leader's responsibility to submit project documentation. However, in frequent cases, a lower-ranked project team member was appointed to maintain these submissions.

The whole process was assisted by members of the company's knowledge management section. They were in charge of reminding project managers to submit project documents to the databases and to conduct quality reviews. On the users' side, a search functionality allowed for finding specific project entries by entering search terms which

matched the template's content.[47] However, the search functionality did not enable its users to search on the level of attached documents.

The two databases differed in their historical origin. While the older one, database A, had a long and consistent tradition within the company, database B consisted of an accumulation of project documents which had been integrated in successive steps after recent mergers and acquisitions of the company. Despite its heterogeneity, database B was the one chosen by the company for current and future CPL processes, database A instead was planned to be shut down in the near future. This can be explained by the fact that this database had its origins in one part of the company taken over in merger in 2002 which had established the technically most elaborate form of knowledge management procedures. Accordingly, the knowledge management section of the company mostly consisted of company members who originally worked for the consulting firm that had been taken over (cf. chapter 4.2).

In a PowerPoint presentation serving as a guide to the database, the older one of the two databases, database A, is described as focusing mainly on "capturable knowledge", such as "white papers", "presentations", "check lists", and "plans". In this respect, the database needs to be distinguished from other instruments in place at the case company which primarily aimed to promote direct contacts between employees. Among these instruments, the company made use of "yellow pages", "community maps" as well as "instant messaging" tools. The overall knowledge management approach was described as delivering "the right knowledge to the right hands of the right people at the right time".

In a similar way, database B is described in a PowerPoint presentation created by the company's knowledge management section. The documents stored in the database were supposed to represent "engagement experiences and work products". By means of this, it was aimed "to save consultants time and costly reinvention by capturing key project deliverables and work products". To achieve this goal, it was the project

47 Statistics provided by the knowedge management section showed a generally increasing usage of the CPL databases over the years. Unfortunately, these statistics turned out not be considerable for the analysis later on due to technical inconsistencies.

team's duty to accomplish a "harvesting of project summaries, deliverables, project work plans, and tools". Overall, the knowledge management approach was driven by the aim to "achieve consistency" across the firm and with this, finally, to "reduce costs".

Taken together, the terminology of both knowledge management approaches reflects a reified understanding of knowledge as a material entity (cf. Currie & Kerrin, 2004). Terms like "to harvest" or "to capture" indicate that knowledge is seen here as an entity that can be packaged, sent to colleagues, and be unpacked in basically the same form. In this respect, the type of databases in use at the case company can be interpreted as representing typical examples of the "knowledge as theory" approach (Werr & Stjernberg, 2003: 883; cf. chapter 3.1.3). According to this approach, knowledge is understood to be generally codifiable (cf. Zollo & Winter, 2002).

This interpretation was substantiated by the interviews. One of the interviewees, who was in charge of the conceptual development of the CPL databases, highlighted that the databases' aim is "to capture best practices and to integrate the delivery of excellence from projects". According to this view, project documents are seen as "assets" which contained valuable resources for future projects and, therefore, need to be "exploited" (Winter & Szulanski, 2001). Another interviewee, working on a middle management level in the maintenance of the CPL databases, emphasized that the merger-based growth of the company had significantly increased the demand for knowledge management in recent years. Since then, the focus of documents has changed to concentrate on "flashes", short summaries of "best practice projects" which can be used for both internal knowledge management and for external marketing and project acquisition.

The description of the databases' purpose stands in contrast to the way its is evaluated by its main target group, the consultants. Among the interviewees, the consultants primarily estimate the existing CPL databases and processes as insufficient in fulfilling the objectives they were set up for:

First of all, it was mentioned that the accessibility of the CPL databases is far from trivial in daily practice. In frequent cases, documents were not shared in the company-wide databases but only in project databases or "project hard drives" with limited access to participants of the project, their superiors, and (in some cases) other invited or permitted organizational members: According to one interviewee, this usually involved a group of 3 up to 50 users. In extreme cases, project documents were stored on a CD exclusively. In such cases, the former project database in use was shut down to any further access. Furthermore, consultants frequently worked at a client's site where they did not always have access to their corporate Intranet. The problems even multiplied if a client-owned hard drive or project database was used.[48]

Even if an access to the databases could be guaranteed, a second set of obstacles remains: the retrievability of useful information. This issue was complicated by the fact that consultants differ in what they primarily look for when accessing the CPL databases. As one consultant highlighted, he and his colleagues were mostly interested in finding information on a specific client. Another consultant instead put a stronger emphasis on the re-usability of past project experience – in the assumption that "about 90 percent of old projects can be utilized for new projects".

However, the interviewees mostly agreed in the estimation that the existing CPL databases suffered from the problem of "information overload" and a lack of appropriate search facilities in both cases. Moreover, even if a suitable document could be retrieved, it was reported to lack contextual information and to be far from self-explaining – what again diminished their usefulness of project documents in practice: "So far we only create a pile of documents in the databases, but it is not organized or put into context at all". The problem of de-contextualized information

48 The shared usage of project hard drives by consultants and the client favorably compares to Czarniawska and Mazza's (2003) notion of the „liminal space" established in consulting projects. According to this concept, consulting projects create a space on their own which suspends the clear distinction between the consulting firm and the client firm for a limited time frame

becomes particularly relevant due to a high grade of specialization among consultants, as one of the interviewees noted.

In order to overcome the obstacles of de-contextualization, consultants frequently tried to get directly in touch with the creators of project documents. In this respect, the databases indeed seemed to fulfill their function as a reference list by providing an overview of which consultants were involved in which projects. However, even if the document creators undeniably represent a valuable source of contextual information, they often were not approachable anymore, as some consultants remarked. This can be explained by a generally high fluctuation of employees in consulting firms (Olivera, 2000: 818) but even higher so in the particular case organization due to recent mergers and acquisitions. Furthermore, the company did not have established any systematic form of keeping in touch with former employees, sometimes referred to as "post-exit management" (Alvesson, 2000). It is no surprise, in consequence, that consultants had to rely mostly on existing personal and informal networks instead of contacts initiated by help of the CPL databases in case they attempted to gather information on past project processes.

In general, the interviews uncovered a mismatch in the way different sub-groups of interviewees evaluate the existing CPL practices at the company. In the interviews, organizational members involved in the conceptual development and maintenance of the databases predominantly referred to the objectives and the importance of the CPL databases. In contrast, the consultants, who used the databases in their daily activities, more strongly emphasized the constraints to document submission and database usage.

The differences in the way the CPL routine was described can be explained with reference to the distinction between the *ostensive* and *performative* aspects of an organizational routine (Latour, 1986; Feldman & Pentland, 2003). Feldman and Pentland note that the reference to either ostensive or performative aspects depends on how organizational members relate to the specific routine:

> (...) the distinction between ostensive and performative [helps] to explain why etic and emic descriptions of routines differed. In response to questions about how tasks are accomplished in organizations, people who are looking from the outside of the routine, such as hierarchical superiors or researchers, at times will be more likely to describe the ostensive aspect of the routine, while people who are actually engaged in the routine may be more likely to describe what they do, or the performative aspect. Knowing that there are two aspects to this behavior will help students of organizational routines sort out such contradictions when they occur. (Feldman & Pentland, 2003: 111; cf. Feldman, 2000)

In this chapter, the databases' purpose and structure has been described in order to establish a frame of reference for the interpretation of empirical results in the further course of the study. The distinction between the performative and ostensive side shows that both groups differ in making sense of project documentation routines. For the issue of DCV, this implies that these differing perspectives need to be taken into account when insights from the interviews are used for the triangulation of results from the document analysis.

The Dominance of PowerPoint Presentations in the CPL Databases

In a next step of the expedition, we leave the general description of the CPL databases and descend to the case company's project documentation practices. Guided by the distinction between media and genres of organizational communication (Yates & Orlikowski, 1992), the document analysis yields as a first result that the theoretically presumed predominance of PowerPoint presentations as a genre of project documentation is generally confirmed. In a majority of cases (87 percent; a total of number 492 documents), PowerPoint was the medium of choice for what has been defined earlier as "primary documents" (cf. chapter 4.3.2) – the ones which offered an expertise-seeking novice the comparably most detailed information about how a project was executed. In the remaining cases, the primary sources of information about the project were either a project report based in form of a Word document (3 percent; a total number of 17

documents) or a textual abstract directly entered into the databases' main template (10 percent; a total number of 56 documents).

A causal attribution of effects to PowerPoint as the medium of choice for project documentation would require to contrast its usage to other media of project documentation. This is based on the assumption that previous forms of project documentation rather relied on full-text documents instead of PowerPoint decks (cf. Bloomfield & Vurdubakis, 1994). However, the rarity of project documents other than the ones based on PowerPoint complicated a cross-media comparison in the further course of the analysis. In consequence, the ubiquity of PowerPoint presentations in the sample entailed the decision to concentrate exclusively on this document type.[49]

The predominance of PowerPoint as a medium of project documentation in the sample allowed for a first analysis whether the theoretical assumptions of a reduced textual content in PowerPoint-based documents (Tufte, 2003) can be validated. For this reason, the body of PowerPoint documents was analyzed with respect to descriptive quantitative variables such as *words per slide* and *file size per slide* (cf. chapter 4.3.3) in a longitudinal comparison. The inclusion of these variables was based on the assumption that they can serve as indicators for the tendency to reduce textual content (indicated by lowered words-per-slide quota) for the benefit of graphical elements (indicated by an elevated file size per slide quota) – a tendency critically estimated by Tufte (2003). Moreover, a reduced amount of textual content would correspond with guidelines in educational material on "slide-writing" in use at the case company. Here, it was recommended, for example, to use a maximum of "seven words per line, three lines per bullet point" – in order to enhance the applicability of slides in face-to-face presentations. In this study's context, a confirmation of a reduced words-per-slide quota was assumed to represent a first (though not yet sufficient) indication for a stronger emphasis on the presentation function in comparison to the documentation function of PowerPoint.

49 Hence, in the further course of analysis, the sample of PowerPoint-based documents (n=492) will usually represent the reference group for any statistical comparisons.

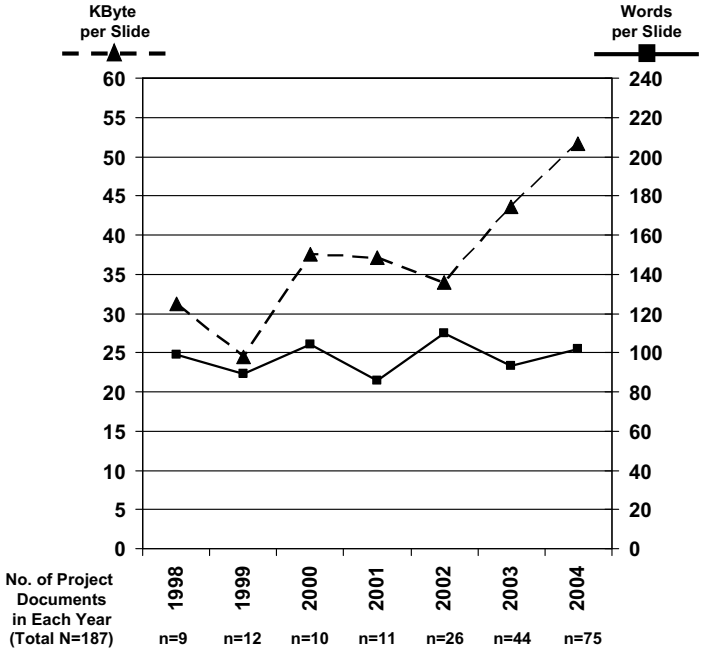

Figure 4: File Size per Slide and Words per Slide in PowerPoint-Based Project Documents

In examination of the file-size-per-slide quota's development over a period from 1998 to 2004, the results validated that the quota is gradually increasing in recent years (from an average of 30 kilobyte to more than 50 kilobyte per slide; see figure 4).[50] At the same time, the amount of words per slide remained constant in a range between 90 and 100 words per slide during the same period.[51] With this, the word quota of the analyzed

50 In figure 4, only project documents with a number of slides greater than one were included. Documents with only one single slide followed a certain standardized form (cf. chapter 5.1.2) which would have had a deviating influence on the comparison.

51 The year 1997 was exceptional with an average quota of 200 words per slide; the usage of the older presentation software Lotus Freelance may explain this deviation; however, the year was excluded from figure 4 due to a too small number of documents (n=7).

documents is more than twice as high as in the average of PowerPoint presentations reported by Tufte (40 words per slide; Tufte, 2003). Tufte, in turn, had generated his figures by help of a Google-based Web search.[52]

This study's results show that the assumed tendency of a diminishing textual content quota over the past years cannot be confirmed. Only in cross-media comparison it becomes evident that PowerPoint's word-per-slide quota is about one third of comparable project reports in Word format (with an average of 300 words per page). The only indication for a tendency to favor a graphical visualization over a textual documentation of project processes is the increasing file-size-per-slide quota over the years. These results indicate a stronger emphasis of the presentation function in comparison to the documentation function in the analyzed PowerPoint files.

The applicability of file size as an indicator, however, is limited by the usage of pre-defined vector graphics in PowerPoint presentations (which may decrease file size) as well as by an automatic storage of meta data in case of a collaborative creation (which may increase file size). Moreover, the figure does not take into account that different versions of PowerPoint were used in the sample which may cause additional variance in file size. Nevertheless, considering a comparably low degree of standardization of project documentation in the sample (cf. chapter 5.1.2), at least the effect of vector graphics and meta data storage can be assumed not to be systematic. The assumption that an increasing file size per slide may be caused by a general trend to include more graphical elements is cross-confirmed in the qualitative analyses of the documents. While in the first years (1995 to 1999), simplistic styles of visualization prevail, e.g., black text on white background, in later years (2000 to 2004) the usage of graphical elements become more and more sophisticated. This deviation in earlier years may be due to the fact that in singular cases an older presentation software (Lotus Freelance) had been applied.

52 However, the results indeed lie in the range of NASA's PowerPoint-based report on the Columbia tragedy (97 words per slide; Tufte, 2003: 12).

The general predominance of PowerPoint as a medium and genre of project documentation is cross-confirmed in the qualitative interviews. The consultants emphasized that due to increasingly tough project pressures it has become seldom to create documents specifically for submission to the CPL databases and in addition to the ones which were created in the course of the project process anyway. However, the consultants differed in their evaluation of PowerPoint's usefulness. While some consultants highlighted the general advantages of the presentation software, other interviewees took a critical stance regarding the vastness of PowerPoint's usage in project communication.

The advantageous side of PowerPoint presentations, according to one interviewee, is that they are most likely to gain consultants' attention in the continuous competition for their "mindshare". As another interviewee affirmed, the consultants' general affinity towards PowerPoint could be explained by the fact that the software has been widely established as the "all-in-one weapon" of consultants' work and "simply the best means" to present information in a highly condensed form – not only to clients but also to colleagues. On the side of disadvantages, one consultant pointed to clients' expectations as the main source of PowerPoint's increasing success in the case organization: „It's a shame - the problem is that because clients simply don't read documents, we only present our recommendations face-to-face". The pressure to present project results in a condensed form, she went on to explain, was causing the challenge to work with PowerPoint at all times, given the fact that elaborate and detailed project reports were usually not read by clients at all. She concluded: „There is almost no communication among consultants without PowerPoint".

Even if their evaluations differed, the interviewees consistently reported that PowerPoint was used that frequently because it was presumed to be demanded by both clients and colleagues. This dominant role was contrasted by the fact that, at the time of the empirical investigations, the company had not established a standardization of templates and layouts for the creation of PowerPoint presentations – as it is commonly the case in other consulting firms of a comparable size. This can be

partly explained by incomplete integration processes after mergers and acquisitions in the company's recent history (cf. chapter 4.2). Even though the company maintained a small "visual services" unit which employed specialized staff who supported the consultants in the creation and graphical optimization of PowerPoint presentations, the existence of this unit was unknown to some of the interviewees, especially the ones who had joined the company during recent mergers and acquisitions.

The combination of the document analysis with qualitative interviews confirmed the dominating role of PowerPoint presentations as a medium and genre of project documentation. However, the interviewees' estimation of PowerPoint as an "all-in-one tool" did not tell us anything about the application of this software for a visibilization of decision contingency thus far. To approach this issue, another distinction, namely between various sub-types of the PowerPoint genre, is introduced. The sub-typology allows for a more detailed analysis of PowerPoint's role in the visibilization of decision contingency and is developed based on the empirical material in the following sub-chapter.

5.1.2 The (In-)Visibility of Decision Contingency in PowerPoint Sub-Genres

Sub-Typology of the PowerPoint Presentation Genre

The dominance of PowerPoint as a genre of project documentation in the case company allows us to enter the issue of DCV more deeply by identifying various sub-genres. This view links back to the distinction between media and genres of organizational communication (Yates & Orlikowski, 1992; forthcoming) by generating an ideal-typical comparison of communicative practices in use at the case company. With this, the study proceeds another important step on the way to explore where to find traces of DCV in the case company's project documentation practices.

The first and most frequent sub-genre (62 percent of the PowerPoint documents; n=304) is constituted by *one-page citation* documents. These

documents typically consist of only one single slide which provides some basic information of what a project was about, such as client type and industry, the problem the client was facing, the solution developed, as well as main improvements the project has generated. As the interviews confirmed, the "one-page citation" documents served the primary goal to be used as readymade "copy and paste" slides which could then be included in proposals for the acquisition of new clients. In their clear focus on outlining the positive aspects of a project, these documents apparently represent materializations of pure frontstage communication and generally did not involve any critical project reflection or visibility of decision contingency which would be counterproductive to their purpose.

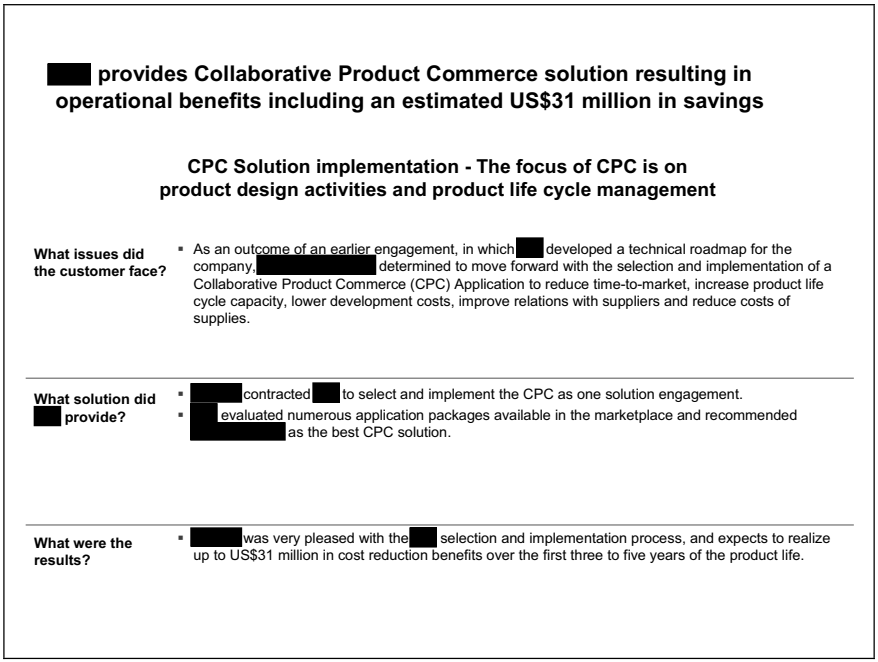

Figure 5: Example of the "One-Page Citation" Sub-Genre

Figure 5 shows a typical example of the "one-page citation" genre. The documents of this type were structured in a standardized format. The standard format involved a set of questions which were answered in form of bullet point lists, e.g., "what issues did the customer face", "what solution did [the case company] provide", or "what were the results". The set of questions used for this purpose, however, varied throughout the sample but generally shared a focus on results rather than processes. In this respect, the genre confirms Nass's assertion that "PowerPoint gives you the outcome, but it removes the process" (cited by Parker, 2001: 76; cf. chapter 3.2.3).

Its brevity and its clear focus on the positive side of the project's outcomes constitute the genre's re-usability in project proposals for the acquisitions of new projects, as confirmed by the interviewees. However, the large diffusion of the "one-page citation" genre is surprising given the fact that the CPL databases were primarily set up for the purpose of a sharing of project experiences (cf. chapter 5.1.1). Nevertheless, the genre's application shows that the database seemed to be interpreted by the consultants as a tool for primarily exchanging brief marketing-style descriptions of projects and their achievements. Furthermore, the genre reminds of the interviewees' assertion that it is common practice to concentrate on "flashes" or short summaries of "best practice projects" in order to use them for external marketing and project acquisition purposes (cf. chapter 5.1.1).

The second sub-genre is constituted by *final client presentations* (35 percent of the PowerPoint documents; n=172). The documents of this genre contain 38 slides on average but strongly vary in a range between 5 an 266 slides, with a standard deviation of 35 slides. As the interviews confirm, final client presentations are created as one of the main products of the consulting project. Accordingly, they were designed for communication to the client in the first place. Only in rare cases, a critical project reflection is included in these documents on additional slides. This finding was underlined by interviewees stating that, because of given time pressures, it has been a common practice to submit the final client presentation to the project database in order to ostensibly commit to formal

demands of the CPL procedures. As the interviewees remark, only in project-internal databases you would find interim documents, while the company-wide databases usually only contained final documents.

It is typical for this sub-genre that the documents were initially generated to support a face-to-face presentation (or parts of it) in client meetings. This is indicated, for example, by an explicit reference to the presentation's date and location on the first slide, the inclusion of animation effects which only become visible in the software's presentation mode, or the existence of lecture notes for verbal presentations. A further frequent feature of this document type is an agenda slide which gives an outlook on the presentation's structure, as well as the use of so-called "action titles" on each slide. Most typically, these titles were phrased in form of imperatives with explicit recommendations for future actions.

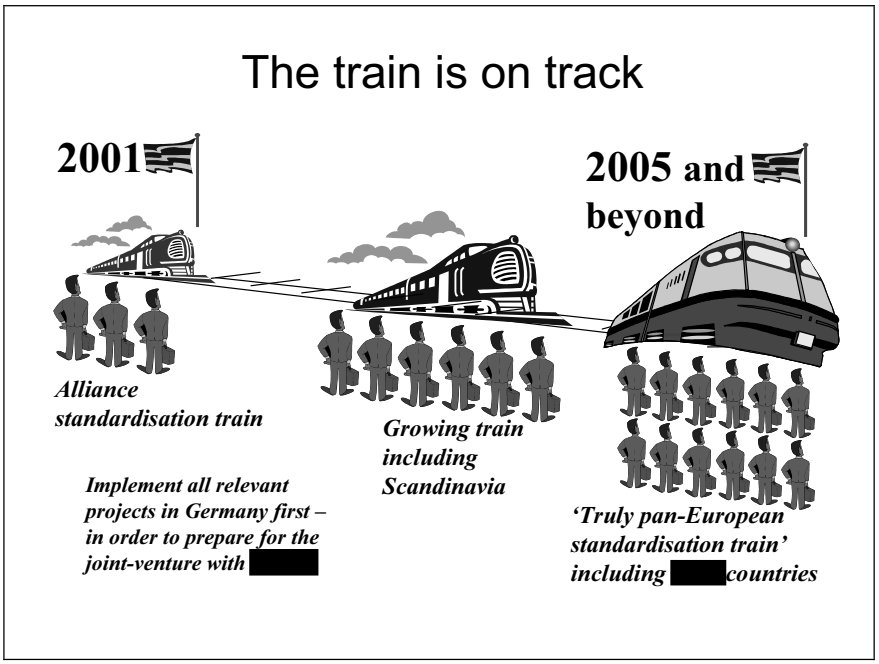

Figure 6: Example of the "Final Client Presentation" Sub-Genre

Figure 6 exemplifies a document of the "final client presentation" sub-genre. The slide shown here represents the project document's "executive summary" slide which means that it aims to condense the project's outcomes in brief form, easy to digest for executives which suffer from a lack of time. In its focus on a visualization rather than a textualization of the project's outcomes, it represents a somewhat extreme example of executive summary slides in the final client presentation sub-genre. However, its layout exposes the dilemma of PowerPoint presentations if applied for the purpose of project documentation. The visualization of the project's results by help of catchy graphical elements (trains, customers, and timeline) allow for supporting face-to-face presentation to the client in a concise way. However, and similarly to the "one-page citation" genre, the slide comes short on any information on the project processes that have led to the final project outcome. Final client presentations largely consist of analyses of the client's operations as well as recommendations to the client how to improve them. In other words, their content remains on a first order observation level (observation of the client) instead on a second order observation level (observation of this observation; cf. chapter 4.3.2). As the example shows, it will become important for the further analysis what is missing rather than what is actually visibilized in project documents of this kind.

In rare cases, content was added to the final client presentations which significantly deviated from document's main narrative. One example for such a deviation are so-called "lessons learned" slides which include a reflection on how the project was conducted and what has been learned from this process. In these cases, such information was usually added to the final client presentation in the "appendix" or "backup" section. In other cases, lessons learned slides were stored in a separate presentation which can be described as a separate sub-genre.

Accordingly, the third sub-genre is constituted by stand-alone *lessons learned documents*. They represent the smallest group of documents (3 percent of the PowerPoint documents; n=16). This sub-genre differs from the "final client presentations" in that these documents were primarily created for the communication to colleagues instead of clients. The

documents of this sub-genre typically consist of two to three slides with bullet point lists which mention aspects to consider in future projects.

[redacted] **Lessons Learned - Summary & Recommendations**

Team "Project Organization" (1/5)

	Hot Spots / Areas of Improvement (and: ☺ = Strengths)	Learnings / Recommendations
Team Structure / Language	■ English as project language caused sometimes misunderstandings **☺: No complaint about cultural mix; international team perceived as one of the main benefits**	1. Establish culture where people ask when they do not understand 2. Write down content of meetings, important decisions (documentation, meeting minutes) 3. Translate important things
Team Structure / Heterogenuous Backgrounds	■ Lack of "common language" (technical terms; business context) due to varying professional and organizational backgrounds	1. Common project glossary explaining technical terms and acronyms 2. Establish team "info sharing meetings"
Team Structure / Staff Turnover	■ High staff rotation on project team	■ Make project more attractive for (internal and external) team members (personal targets, career scheme …)
Team Structure / Staff Involvement	■ Low or no assignment / involvement of "relevant" client staff / process partners [redacted] by HQ	■ Create pull-effect at the partners side by demonstrating them their personal benefit

Figure 7: Example of the "Lessons Learned" Sub-Genre

Figure 7 represents a comparably elaborate example of the "lessons learned" sub-genre. The documents of this sub-genre were usually based on a retrospective project reflection and evaluation. In their reflective focus on past projects, lessons learned documents commonly contain information on a second-order observation level (cf. chapter 4.3.3). As the interviewees pointed out, their content is either commonly generated in a post-project review workshop or based on a single initiative by the document creator(s). However, it is important to note that, even if created for colleagues as the target audience, most of the documents lack an

explicitly critical or negative form or project reflection. This is also indicated by a general tendency to package critical issues by framing them as positively phrased learning effects. A more detailed analysis of selected lessons-learned documents in the sample showed that there are mostly redundant and tautological insights summarized in these documents (cf. chapter 5.1.3).

Figure 8 provides an overview of the three sub-genres of PowerPoint presentations as identified in the analysis:

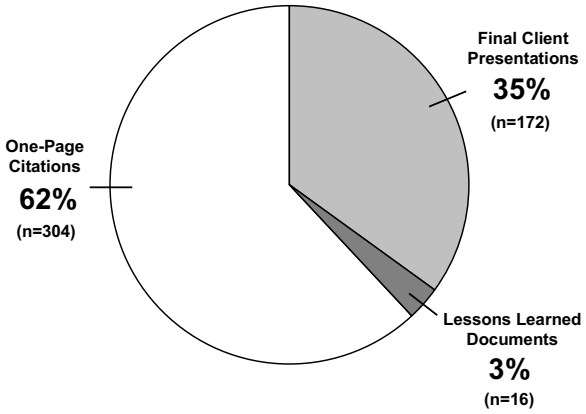

Figure 8: Sub-Typology of PowerPoint Presentations in Project Documentation

While the one-page citations constitute the most frequent sub-type (62 percent; n=304), final client presentations and lessons learned documents together account for only 38 percent (n=188) of the overall PowerPoint sample (n=492), as shown in figure 8.[53]

53 In rare cases, PowerPoint documents could not be sorted to one of the three sub-genres; however, these examples did not represent primary documents, as defined in chapter 4.3.2, and, therefore, were not included in the PowerPoint sample (n=492).

To conclude, the analysis of PowerPoint presentations based on the genre approach (Yates & Orlikowski, 1992; forthcoming) has shown that there are recurrent patterns for the usage of PowerPoint presentations if applied in the unfamiliar domain of project documentation. These patterns can be condensed to three sub-genres which differ in the way they relate to the visibilization of a project's decision processes. The first sub-genre, the "one-page citations", is driven by the selection of aspects which are functional to the persuasion of clients. Accordingly, these documents are focused primarily on positive achievements of a project deployment. The second sub-genre, the "final client presentations", represents the main work product of a consulting project. Being mainly designed for the verbal presentation of project results to the client, the increasing usage of graphical elements and the lack of contextual information, however, causes a problem for their re-usability by colleagues of the same firm in similar projects on a stand-alone basis. The third sub-genre, the "lessons learned" documents, is the only one of the three which appears to focus explicitly on colleagues instead of clients as the target audience. The contextual disembeddedness, in turn, diminishes their value to leverage CPL on a stand-alone basis.

Differences Between Sub-Genres in the Visibilization of Decision Contingency

The analytical distinction between the three sub-genres of PowerPoint presentations in project documentation allows for a closer look on the extent to which decisions and their alternatives become visible in these documents and can contribute to the autopoietic reproduction of the project organization as a communicative system. For this analytic purpose, the investigation needs to leave the level of formal genre characteristics and instead enter the content level of the documents under investigation. This expedition is guided by the question whether the specific document contains any information allowing to draw inferences on how a project

process was conducted, what decision dilemmas the project team was facing, and what alternatives were considered in the decision process.

In terms of methodology, the analysis required to presume the hypothetical role of an expertise-seeking novice on the researcher's side in order to evaluate if the speech acts contained in a document represent some form of decision contingency visibilization or not. The coding process was guided by the three levels of DCV, as summarized in chapter 4.3.3: (1) a second order observation of the project process, (2) a critical reflection on the project process, and (3) the explicit mentioning of alternatives to decisions.

The *first* level of DCV requires a second order observation of the decision processes underlying the project. This level was only reached by the "lessons learned documents" and by some of the "final client presentations" in case they included any slides with reflective accounts on the project process. The "one-page citation" documents, in contrast, constantly remained on a first order observation level by being consistently held in a client-oriented narrative. In other words, these documents did not contain any information based on taking a step back from the project process in describing how this process has actually been rolled out. Instead, only the project's results were presented here, most typically framed as an impressive achievement. The distinction between the first and second order observation level heavily reduced the number of documents where a visibilization of decision contingency of more elaborate levels can be reasonably expected (cf. figure 10; column 1).

On the *second* level of DCV, the documents were analyzed with respect to the question to what degree an explicitly critical reflection of the project process could be found. The analysis shows that even in the limited set of documents (only the ones which could potentially contain second order observations, i.e., the final client presentation and the lessons learned genres), the quota of critical project reflection remains rather low (cf. figure 9).

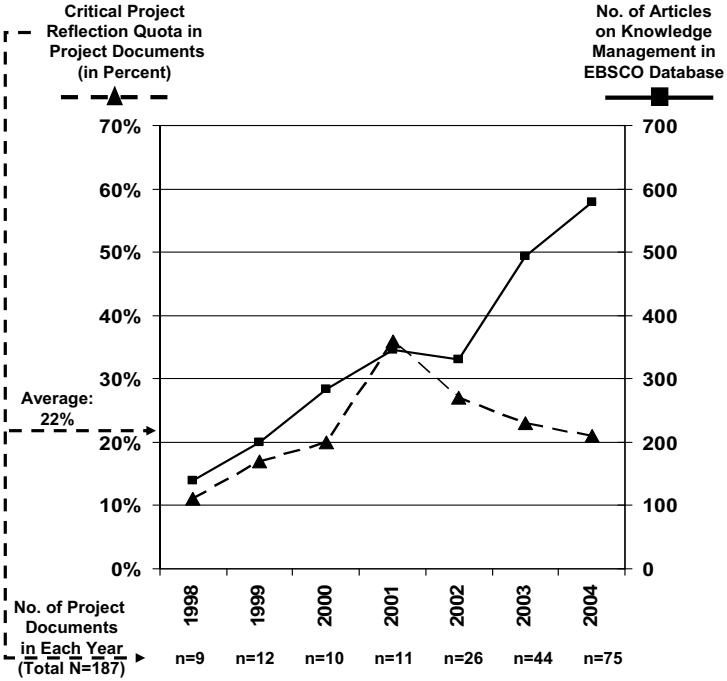

Figure 9: Development of the Critical Reflection Quota in Project Documents

As shown in figure 9, an average of 22 percent of the reduced number of documents included at least some form of explication of challenges faced and mistakes made. The quota rises to a peak in 2001 and declines again in the following years. Given the fact that only the second degree observation level project documents were finally included in this analysis, i.e., on documents of the "final client presentation" and the "lessons learned" genre, the quota of documents with an explicit consideration of alternatives represents only 8 percent if set in relation to the whole sample of 492 PowerPoint documents (cf. figure 10; column 2).

These results can be compared to the development of knowledge management as a topic in academia and practice. In figure 9, the upper line represents the number of academic articles which contained the term

"knowledge management" in their title, abstract, or keywords. In a methodology which resembles an earlier study by Ponzi and Koenig (2002), the articles were counted by a search routine in the EBSCO Business Source Premier database, one of the most common academic databases in the fields of economics and business.[54] Within the database, only peer-reviewed sources were taken into account. The analysis was based on the assumption that a rise and decline of critical project evaluations potentially correlates with a rise and decline of knowledge management as a management fashion or fad (cf. Abrahamson & Fairchild, 1999; Scarborough & Swan, 2001).[55] However, the results showed that knowledge management as an academic field was still growing, while critical project evaluations were on a decline in the case organization. The decline of critical project reflection may be due to increased market pressures since the fall of the New Economy in 2000 or due to changes in the firms since a comparably big merger in 2002 when previous project documentation practices from a company which had been taken over came to an end.

The low quota of documents which contained critical reflections on projects can be partly explained by drawing on statements gathered from the qualitative interviews. As it has been pointed out here, even if a general willingness to invest time in a critical project reflection for the sake of future projects exists, the lack (or loss) of a standardized project documentation procedure within the company created a general uncertainty what was allowed to be included in documents and what not. When it comes to the question how critical or procedural project information is shared across the company, the consultants emphasized that they avoided to submit interim documents to the CPL databases because they were usually seen as being qualitatively inferior to final documents. According to the interviewees, confidentiality issues also became relevant in this

54 This is based on the assumption that a general increase in the number of articles in the EBSCO database did not systematically affect a general tendency of the topic's growth; however, time lags for academic publications of two to three years between the creation and the publication of an article need to be taken into account, as well.

55 Ponzi and Koenig, however, arrive at the conclusion that knowledge management as a topic – unlike other management "fads" – would have the potential to become a "permanent significant part of management's toolbox" (Ponzi & Koenig, 2002: no page).

context. The necessity to take confidentiality issues into account implied to modify existing documents by means of an anonymization or pseudonymization of any name which would allow for an identification of clients.

Critical project reflection of course can find other, e.g., non-medial ways, to be shared across the organization. In this respect, "verbal communication is communication channel number one", as one consultant highlighted. Other consultants pointed out that a critical reflection on mistakes made would indeed take place in the case company but elsewhere than in the CPL databases, e.g., in formal evaluation procedures led by senior leaders or "risk managers". However, they also emphasized that such critical project communication is not shared "horizontally" across projects and was not led by the knowledge management section in charge of running and maintaining the CPL databases.

The analysis of the *third* level of DCV concentrates on the explicit consideration of alternatives in the project documents. An explicit outline of decision processes and their contingency could only be found in a total number of 7 documents – representing slightly more than 1 percent of the whole sample (cf. figure 10; column 3). The explicit consideration of alternatives was marked in these documents, for instance, with headlines like "options considered and not pursued" or "what aspects of the process could/should we do differently". These documents have in common that they were consistently generated for colleagues as the target audience. Furthermore, they were created by company members who originally belonged to a part of the case company which had been taken over in the course of an earlier merger. This correlated with the problem that most of the creators of these documents had already left the company what, in turn, made it difficult to get hold of interview partners and to find out more about the contextual circumstances of document creation.

The quantitative description of PowerPoint-based project documents applied in the CPL practices of the case company can now be related to the sub-typology of the PowerPoint genre in its application for project documentation purposes (cf. figure 10).

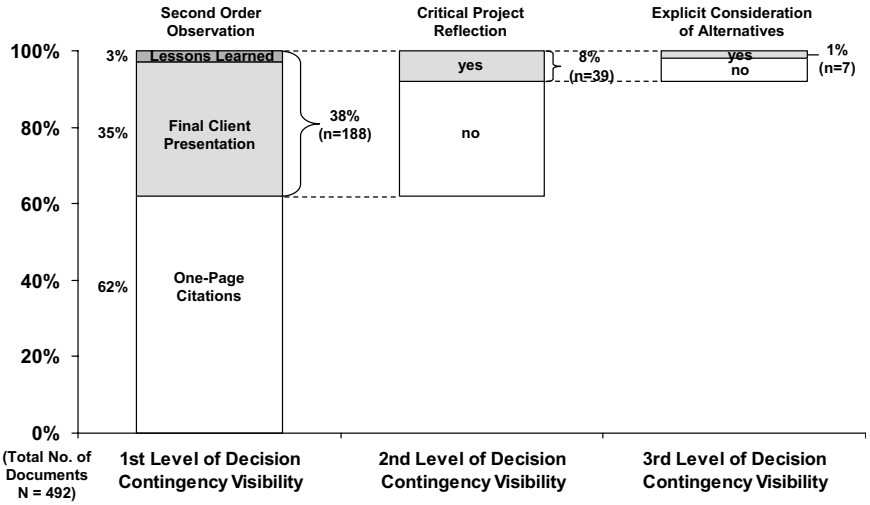

Figure 10: PowerPoint Sub-Genres and the Three Levels of DCV

The overview in figure 10 shows that a large number of documents, particularly the ones of the "one-page citation" sub-genre, do not include any explicit visibilization of decision contingencies. The overall picture becomes more differentiated by looking at the two other sub-genres, the "final client presentations" and "lessons learned documents". Although a large number of documents contained information on a second order observation level, only a minority of these documents (8 percent of the whole sample; n=39) provided any critical estimation of the project process. Finally, a diminishing number of documents (1 percent of the whole sample; n=7) explicitly outlined the contingencies faced in project decision processes.

The analysis of the three levels of DCV has shown that the contingency of decisions faced in projects is rather hidden than made visible in the PowerPoint-based project documents. The sub-genre predetermined for a retrospective reflection on the project process, the lessons learned genre, contains a critical evaluation of project decisions in a minority of

cases. Only in a handful of documents an explicit mentioning of alternatives to decisions was actually attempted. The following two chapters aim to deepen these findings. Chapter 5.1.3 investigates the role of lessons learned documents in the visibilization of decision contingency. This is done by taking a closer look on the rare examples where the explicit visibilization of decision contingency indeed has been attempted. Their rarity suggests to focus in noticeable characteristics and the creation context of these particular documents.

5.1.3 The (In-)Visibility of Decision Contingency in Selected PowerPoint Presentations

Lessons to Learn From the Lessons Learned Sub-Genre

From a theoretical stance, the lessons learned genre can be assumed to be the most likely one to contribute to a visibilization of decision contingencies among the three sub-genres of project documentation identified in the sample. As discussed in the theory chapter (cf. chapter 3.1.2), the lessons learned idea stands in the tradition of knowledge management and CPL (cf. Davenport, DeLong & Beers, 1998). It follows the aim to leverage a sharing of experiences among company members in a documented form. As outlined in chapter 5.1.2, the lessons learned documents in the sample are typically held in form of a bullet point list which summarize key aspects to learn from in brief form.

The analysis of the lessons learned genre's contribution to the visibilization of decision contingency requires to enter the level of project documents and their textual content. In a process of coding recurrent textual elements in the lessons learned documents based on the grounded theory framework (cf. chapter 4.3.3), three ideal types have been identified which exemplify the way lessons learned are typically phrased. The first ideal type of textual elements are phrased as *tautologies and truisms*. The second group of textual elements are phrased as *recommendations for action*; the third and final group are phrased as *success*

factors. In the following, examples are given for each of these types and their contribution to the visibilization of decision contingency is discussed.

The first group of frequent statements involved *tautologies and truisms*. A tautology is a redundant, self-evident statement. A truism is similarly defined as an assertion which is so obvious that it does not add any information. In the lessons learned documents, the summary of insights in form of bullet point lists were frequently phrased as truisms. To give some examples: "ownership can be unclear", "integration takes time", or "flexibility needs discipline". Sentences of this kind attempted to summarize important insights gathered in a specific project, however, lacking any additional context information on the project's circumstances, these sentences remain hollow. By definition, a tautological way of phrasing experiences eliminates any information on possible contingencies. If a statement is self-evident, there is no alternativity inherent to it. In this sense, tautologies and truisms contribute to an invisibilization rather than a visibilization of decision contingencies in project documentation.

A second group of frequent textual elements involves *recommendations for action*. These sentences are typically phrased as imperatives how (presumably) to act best in future projects. This way, the ideal type resembles cookbook-style recipe lists. They create the impression that a specific combination of actions can guarantee a project's success. To give some examples for textual elements of this ideal type: "keep key project members within the project", "retain commitment when it gets difficult", "be realistic and practical", or "communicate developments early and frequently to ensure involvement". Imperatives of this kind are based on the specific project experiences but tell an expertise-seeking novice little about the transferability of insights to other projects. This feature, combined with being self-evident to large degree, diminishes their learning value for an expertise-seeking novice.

The third group of frequent textual elements resembles the *success factor* approach (cf. Nicolai & Kieser, 2002). The success factor perspective implies that the complexity of successful project work can be reduced to a small set of key reference insights which can then be transferred to future

projects largely independent from situational circumstances. Accordingly, in this group of textual elements, success factors are phrased as headwords which try to summarize key aspects assumed to be causal for a project's achievements. To give some examples for textual elements of this type: "strict management of scope", "championship from the top", "true acceptance of new ways of working", "involvement of multiple parties", "positive working culture", "easy internal communication", or "good atmosphere". From the perspective of the expertise-seeking novice, and following the idea of DCV, headwords of this type need to be evaluated as deficitary. They hardly contain information about the specific project, they often represent targets rather than measurements to achieve these targets, and, once again, they suffer from being self-evident to a large degree.

The analysis of typical textual elements and recurrent patterns in the lessons learned genre is accompanied by statements from the qualitative interviews. The lessons learned sub-genre is critically estimated by most of the interviewees based on their own experiences in making use of such documents. The learning value from textual elements presented here suffer from either being self-evident or from their de-contextualization which diminishes the transferability of insights to similar project situations in the future. This reduction of contextual information, however, is defended by the interviewees as being understandable to some degree. Given time pressures and additional obstacles would hinder them from undertaking more extensive reviews as a project team after the completion of a project.

Among these obstacles, a first set of problems relates to the finalization of the project process itself. Although it used to be common in the company to proceed "lessons learned workshops" at the end of a project (at least in case of bigger projects), this tradition has stopped in recent years due to increased market pressures and tighter project budgets, according to the interviewees. In general, some interviewees hypothesized that the firm which was taken over in a big merger in 2002 had a stronger emphasis on knowledge sharing – a culture estimated by one interviewee to be on a decline since then. The interviewees consistently reported of a

certain "restlessness" in their daily work in recent years. Shorter gaps between projects appeared to inhibit opportunities for a critical reflection after a project's completion.

Other obstacles were assumed to originate in the "career model" prevailing in the organization. A recurring estimation was summarized by one consultant: "The only incentive that drives a consultant is project utilization". A critical retrospective reflection of a project instead is not rewarded by the company: "to sum up some 'lessons learned' is not billable for us as consultants". Consequently, activities like an extensive project documentation at the end of a project is seen as "wasted time" in comparison to an investment in the acquisition of new projects and given that "in an ideal case, we are supposed to be at the client's site five days a week".

The rarity of critically phrased content in these documents is defended by one consultant who asserted that lessons learned summaries are commonly phrased in a positive way. For the experienced reader, this would allow to get to know a critical view on a project by "reading between the lines". For the expertise-seeking novice, however, this information may not always be sufficient because exactly this contextual information is missing. The tautological way lessons learned are commonly phrased instead is not problematized by the interviewees. Far from it, one interviewee assured, "banalities often contain the deepest wisdom".

In conclusion, the lessons learned sub-genre, initially presumed to represent a culmination point for the visibilization of contingencies to decisions, instead appears to constitute a *language game* in which the way learned aspects are phrased contributes to the invisibilization of decision contingency rather than to its visibilization. Once more, the study shows that a process set in place to make procedural learning visible is undermined by established communicative practices. This aspect is deepened in a next analytical step when the small set of examples is explored which indeed attempt an explicit visibilization of alternatives to decisions.

Explicit Examples of Decision Contingency Visibilization

In the archaeological search for the rare species of contingency-visibilizing project documents, only a handful of such documents have been found (cf. chapter 5.1.2). In a final analytical step, these rare examples of PowerPoint-based documents which actually attempt some form of DCV are analyzed in more detail. This analysis can serve as a basis to discuss to what extent a visibilization of decision processes and their contingencies can possibly be accomplished in textual forms of project documentation.

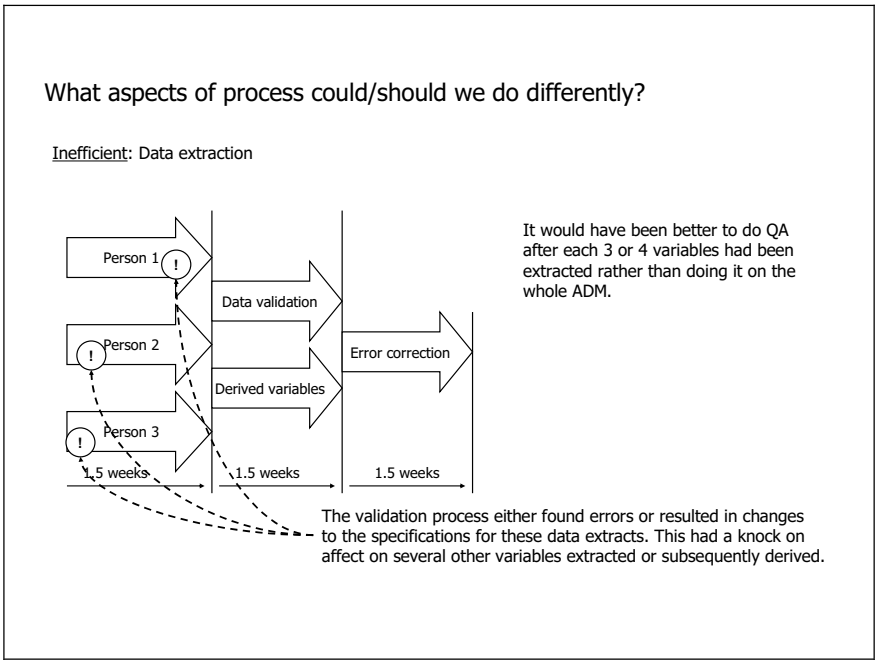

Figure 11: First Example of Explicit Decision Contingency Visibilization

The example shown above (figure 11) represents one of the rare documents in which detailed information is given about the basic set of approaches considered in the project and the approach finally selected. Moreover, the document includes a critical reflection in retrospect with regards to the question „what aspects of the process could/should we do differently“. These considerations are supported by a visualization of flow-charts which provide an overview of the reconstructed decision processes of this project. Apart from this variation in its content in comparison to the other project documents in the sample, the document does not significantly differ from them in sharing main layout features of the “final client presentation” or “lessons learned” sub-genre. The document had been created in a standardized layout in use by the company at that time.

The question remains why and how this exceptional document was created. Additional information about the document’s background was gathered in an interview with one of the project managers based in the United Kingdom. According to the interviewee, the document had its origins in a pioneer project in the field of customer segmentation, conducted by a mixed project team of consultants from the United Kingdom and Germany. The interviewee assured that the document has been used frequently (“about 30 times”) to send it other consultants of that practice whenever a new customer segmentation project was set up. The document basically summarized the results of a workshop conducted at the end of the pioneer project and was documented by a junior consultant. The interviewee characterized this early stage of a project type’s life cycle as being „definitely a good time for knowledge sharing“. However, the document needs to be seen as exceptional in that it was intentionally created to leverage learning effects in a new field where the company assumed to expand in future years. In this respect, it heavily deviated from the usual content in documents of the lessons learned genre, particularly with regards to go the “extra mile” and transcend the usual summary of tautologies, imperatives or success factors in bullet point lists (see above).

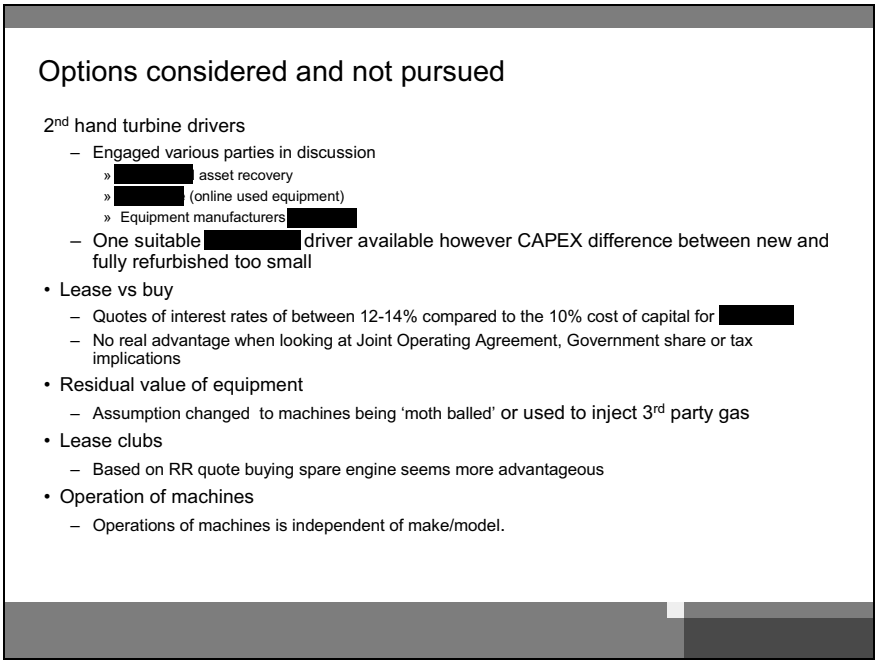

Figure 12: Second Example of Explicit Decision Contingency Visibilization

Another example for the attempt to make alternatives to decisions visible in project documentation is shown in figure 12. Again, the slide was extracted from a PowerPoint presentation stored in the case company's CPL databases. This PowerPoint presentation can be subsumed to the lessons learned sub-genre (cf. chapter 5.1.1). The document referred to a project in the oil industry, conducted by a project team from the Netherlands. There are no significant genre-specific differences to other documents in the sample – except from the fact that the document has been created in the client's master layout. The exceptionality of the document lies in a focus on the decision process and an explicit outline of "options considered and not pursued". In its explicity of making the project process's contingency visible, the document turned out to be a unique example. In contrast to the remaining documents, this document highlights

that the process chosen in the project is not pre-given but was subject to consideration of several alternatives. Some of these alternatives, independent from if they were factually considered in the process itself or reconstructed in retrospect, were summarized in form of a bullet point list.

From a CPL perspective, which is interested not only in success stories and best practices but also in a learning from mistakes made and alternatives considered, it is remarkable that this document attempts to exhibit decision processes instead of a mere presentation of results. This contingency-oriented mode of project documentation exactly shows what has been masked in most of the other documents. Unfortunately, it was impossible to get hold of the project team members in order to gather additional context information about this specific project. The project team members belonged to a branch of the company which was integrated in the course of merger activities. These individuals had already left the company. But even without getting in direct touch with the members of the project, the document provided an expertise-seeking novice at least some understanding of which alternative ideas have been generated in the project process and which could be considered as being valuable for a further investigation in a follow-up project of a similar type.

This final step of the archaeological expedition has shown that there are in fact remains of a rare species, project documents which attempt a visibilization of project-inherent decision processes and their contingency. Nevertheless, it remains unclear if this visibilization actually contributes to the project organization's autopoiesis in the sense of Luhmann (2000). This question will be investigated by linking the results of the empirical analysis back to earlier theoretical considerations. This synthesis is outlined in chapter 5.2.

5.2 Discussion: Functions and Consequences of the (In-)Visibility of Decision Contingency in the Practice of Project Documentation

In a next step of the analysis, the results of the empirical study are discussed with respect to the theoretical framework of this study (cf. chapter 3). This discussion is separated into two parts which match both sides of the organization-communication duality: one of which links the results to the theoretical considerations of the communicational side of the coin (cf. chapter 5.2.1), and another one which links the results to the organizational side of the coin (cf. chapter 5.2.2). This sequence is switched in the discussion section by moving backwards in linking the empirical results to the theoretical considerations which were introduced in chapter 3. The discussion is synthesized by integrating insights gained from the empirical study in a systems-theoretical re-description of CPL processes with respect to the issue of DCV (cf. chapter 5.2.3).

5.2.1 The Communicational Side of the Duality: The (In-)Visibility of Decision Contingency in PowerPoint-Based Project Documentation

The case study's results have shown that in the analyzed CPL databases hardly any visibilization of decision contingency can be found. The explication of decision processes and alternatives considered seems to play only a peripheral role in the project documentation practices of the case company. The theoretically presumed dilemma between the organizational necessities to visibilize decision contingency and to invisibilize the fundamental paradox of the undecidability of decisions was evidently resolved by a one-sided accentuation on the *invisibilization of decision contingency*. These empirical findings can be linked back to the theoretical considerations on the communicational side of the coin by asking to what extent the PowerPoint presentation genre promotes or inhibits a visibilization of decision contingency in the project documentation practices of the case company.

First of all, the cross-genre usage of PowerPoint presentations in project documentation as described by Yates and Orlikowski (forthcoming) has been confirmed. The predominance of PowerPoint as a medium and genre of project documentation is constituted by the circumstances of project documentation – time pressures, client expectations, and a general tendency by consultants to rely on PowerPoint as their main working tool. In this evolutionary process, recurrent patterns of project documentation have emerged which can be summarized by the sub-typology of the PowerPoint presentation genre generated in this empirical part of the study (cf. chapter 5.1.1). The interviewees highlighted that most of all pragmatic reasons led to the submission of PowerPoint-based project documents to the CPL databases – documents that were generated for communication to the client as one of the central products in the project process anyway. A modification of these documents with respect to colleagues as a target audience appeared to be costly not only in terms of time and effort but also in terms of showing vulnerability across the organization.

Originally designed for frontstage communication settings such as face-to-face presentations, the PowerPoint genre's core characteristics remained stable even if applied for a differing purpose such as the documentation of project results. Evidently, a "goal translation" (Harris, 2005: 166) *from* the PowerPoint genre *to* practices of project documentation seems to prevail – but not the other way around. The PowerPoint documents analyzed in the sample included only very limited information about the project process itself, decisions faced and decisions made – except from strongly condensed and de-contextualized lessons learned bullet points which were added to some of the documents' appendices. Without any profound contextual knowledge about a project's background – as problematized with reference to the role of the "expertise-seeking novice" (Markus, 2001) – the PowerPoint document did not allow for an identification of project decisions as decisions. As the analysis revealed, the PowerPoint documents found in the databases hardly give any orientation for an expertise-seeking novice how decision processes

were executed and how a project team communicatively arrived at making a decision. The project process itself remains *opaque*.

Much more than the predominance of PowerPoint presentations as a medium and genre of project documentation in the case company, it is surprising that the majority of these documents consists of only one slide primarily created for the acquisition of new projects. The preference for storing documents of this kind has emerged in the practical usage of the database which partly contradicts its purpose being set up for the sharing of project experiences. The "one-page citation" sub-genre of PowerPoint rather appeared to fulfill the demands of a marketing tool instead. These documents represented ready-made content which can be easily recombined for the creation of project proposals in order to acquire new clients. Surprisingly, the same documents in most cases had to be coded as primary documents which provided the comparably most detailed information about the project (in the lack of alternative information sources).

This estimation can be linked to Goffman's distinction between frontstage and backstage settings of communication (Goffman, 1959). Following the aim of promoting the sharing of experiences across projects, the company-wide databases applied for this purpose created a public platform within the organization, a frontstage setting. In consequence, the cross-project communication taking place on frontstage becomes a matter of *self-presentation* rather than *self-revelation*.

In the case company's project documentation practices, impression management techniques are applied also in internal communication by grasping the backstage setting of the company-wide knowledge management database as a frontstage setting (cf. chapter 3.1.3). This resembles the *façade-creation strategies* as described by Starbuck (1982: 9f.) as well as Cunha (2006: 213ff.). In the attempt to control impressions externally in communication to the client and internally in communication with colleagues, however, it is hard to establish a sharing of experiences based on mistakes made and alternatives considered. In consequence, the visibility of decision contingency can be presumed to rely instead on project members' memories and their ability to bring in their experiences from earlier project situations into subsequent projects – but not to rely

on the "staying capacity" of textual documents (Cooren & Fairhurst, forthcoming).

The company's institutionalized forms of cross-project learning apparently did not balance out a domination of impression management necessities over knowledge management. Instead, it appeared that communication to the client was *copied* or *mirrored* to the inside of the organization in communication to colleagues. To some degree, organizational strategies to invisibilize the contingency inherent to decisions in documented forms of communication resemble magicians' tricks to let objects or persons disappear. Steinmeyer (2003) explains that one of the most common tricks by magicians for the creation of invisibility illusions is to make use of a fundamental principle of physics: *the angle of incidence equals the angle of reflection*. By means of *mirroring techniques*, a magician can easily create the illusion that an object has disappeared, e.g., to let even huge objects like an elephant disappear. Instead of the elephant, the audience perceives a mirrored image which substitutes the factual object.

Imagine a large-scale project involving multi-layered decision processes, crossroads, and turnarounds. As the empirical study has shown, the CPL databases in most cases only contained a highly condensed and context-disembedded PowerPoint document which was free of any critical assessments or reflection on contingencies inherent to the project process (most typically, a document of the "one-page citation" genre). The document's narrative was focused on a consistent rather than a contingent presentation of the project process and its results. By mirroring the communication to external audiences (e.g., the client) also to the backstage setting of internal organizational communication, the *éléphantesque* contingencies inherent to decision processes were invisibilized.

Finally, this estimation can be related to the discussion in organizational communication studies on the constitutive conditions for the emergence of organizations out of communication (2000; McPhee & Zaug, 2000; Taylor, 2000a; Cooren & Fairhurst, forthcoming). Strategies of invisibilization (Ortmann, 2004), practices of deparadoxification (Andersen, 2003), and attempts to cloak the basic problem of self-reference (Nassehi, 2005), as described by recent accounts of theorists working with social

systems theory, and as partly confirmed in the empirical study, may exactly represent the reference points to grasp empirically what decision communication enforces to become organizational. The continuous need to decide *somehow*, even on questions where the decision is undecidable due to its contingency, is what keeps the organization proceeding from one decision to the next, similar to a *perpetuum mobile*. Consequently, it appears to be appropriate to define the deparadoxification of decision contingency as the driving force of organizations (cf. Andersen, 2003; Nassehi, 2005).

5.2.2 *The Organizational Side of the Duality: The (In-)Visibility of Decision Contingency and the Project Organization's Autopoiesis*

The empirical case study has yielded that the visibilization of alternatives to decisions and mistakes made played only a diminishing role in project documentation practices of the case organization. The reflection on projects and its articulation in documented form was constrained by various aspects of an organizational or technical nature. The lack of reflection on project processes links back to theoretical arguments which emphasize organizational members' generally limited attention to decisions made (Simon & March, 1958; Cohen, March & Olsen, 1972). Accordingly, decisions can be either incorporated implicitly in working procedures or work processes are retrospectively rationalized as having been a decision (Luhmann, 2000: 447). Moreover, project members directly involved in the decision making process within a project may be unaware of the contingencies inherent to decisions (cf. Walsh, 1995). Even if an awareness for the contingency of a decision is given, an individual trade-off by the project members between efforts and expected rewards can constrain the visibilization of decision contingency. As Zollo and Winter (2002: 342) point out, the codification process necessary for the visibilization of decision contingency is costly in terms of time and efforts. In consequence, employees will only be willing to invest these efforts if the benefits are expected to exceed their costs.

The group of consultants who are supposed to submit project experiences to the database indeed seemed to keep their effort to a minimum, in most cases by submitting either one-page document or the final client presentation, which allowed them to *save face* on the surface level (cf. Ortmann, 2004). The ostensible commitment to formal organizational demands and its contradiction with informal practices appears to have been solved here by a decoupling of talk and action (cf. Brunsson, 1989). In the case company, the evolution of communicative practices in the usage of the CPL databases have evidently put forth the tendency to present projects as "success stories" and "best practices" which support the impression of a company having proven to be capable for generating significant value for its clients. The formal demand of reflecting on decision processes instead was avoided to a large extent. Efficiency then was preserved by sticking to established informal communicative practices. In this context, a visibilization of decision contingency apparently was seen as being counter-productive by the consultants. To mention alternatives considered, paths taken, and potential mistakes of a project's decision processes would allow for looking into the *abyss* of the consulting business's inherent ambiguity.

If the visibility of work and decision processes is seen as something positive and efficiency-enhancing, internal communication to colleagues is estimated as opening up opportunities to unfold the ambiguity and contingency of project decision processes in order to leverage CPL as emphasized by the learning from failure idea (Argyris, 1992; Edmondson, 1996; Baumard & Starbuck, 2005; Zhao & Olivera, 2006). The non-existence of a backstage setting in project documentation where there would in principle be the chance for a trustful and contingency-centered communication then can have significant implications for organizational capabilities in practice. Accordingly, the organization can be assumed not to use its full potential of learning from its own history (cf. March, Sproull & Tamuz, 1991).

In this context, the company's focus on "best practices" and "success stories", as manifested in the "one-page citation" sub-genre, rather seem to indicate a *blind spot* of the organization for mistakes made in projects,

at least in documented forms of cross-project communication. In line with the learning-from-failure principle, this can be assumed to cause inefficiencies in the long run, because current project cannot profit from experiences made by earlier projects which had faced similar contingencies. Consequently, efforts to introduce procedures of CPL based on mistakes made and alternatives considered can hardly sustain.

Given that the realization of DCV in the practice of organizational communication appears to be problematic, the findings also suggest to reconsider existing theories and practice models in the field of knowledge management and CPL. Although the knowledge management movement since the mid 1990s has given rise to some form of critical project reflection and its articulation, the empirical data expose that in practice such documents were not created and shared – even in an organization which professed to do so, with a database established for this purpose at an early stage of the knowledge management movement. While the organization was following the illusion of a "cutting-edge" knowledge management solution which relies on documented forms of cross-project communication, the analysis has shown that PowerPoint documents were used both for communication to clients and as a reference for what has happened in a project. The performative aspect of decision processes instead remained invisible to non-members of the project.

Having outlined organizational constraints to DCV, this study's empirical results require to be linked back to the fundamental assumption that organizations are constituted by communication (Taylor & van Every, 2000; Luhmann, 2000). According to the TSS framework, organizations rely on the visibility of decisions and their contingency in order to sustain their autopoiesis. However, this study's findings confirm that this visibility is hardly achieved in the project documentation practices of the case organization. How can these findings be integrated with Luhmann's claim that the observability of decisions and their contingency is constitutive for the emergence of the organization as a communicative entity? Or, in other words, how does the organization assure its autopoiesis if not through the visibilization of decision contingency in project documentation?

The answer to this question can be differentiated into two streams of explanations: (1) The visibility of decision contingency necessary for the organization's autopoiesis is achieved not in project documentation but elsewhere, for example in verbal forms of communication along organizational hierarchies. (2) While decision contingency remains opaque in documented forms of cross-project communication, it will nevertheless become visible *within* projects. In consequence, it appears to be useful to distinguish between organizational communication as a whole and the specific decision communication within a project.

(1) In case Luhmann's assumption is appropriate that the communication about decisions (and their contingency) is right at the core of the organization (Luhmann, 2000), at least the project databases analyzed in this study do not seem to come even close to this core. The analysis of project documentation practices at the case company suggests that existing communication practices across projects, on a *horizontal level*, do not contribute to the visibilization of decisions and their contingency. However, and with respect to the qualitative interviews, it can be assumed that decisions and their contingency become instead visible on a *vertical level*, e.g., in reviews and evaluations of projects by superiors. While there is hardly any coupling between the decision processes occurring in projects, the project organization at least needs to accomplish some form of coupling on an hierarchical level. The databases set up for a sharing of experiences across projects instead essentially cloak decisions and how they came into existence nearly completely (cf. Nassehi, 2005: 186).

In this respect, the findings of the study imply that existing efforts to leverage a sharing of expertise across projects by means of PowerPoint-based project documentation need to be estimated as illusionary to a large degree. This is also cross-confirmed by earlier empirical studies on social and communicative obstacles to the implementation of knowledge management processes in organizational practice (Ruggles, 1998; McDermott, 1999; McDermott & O'Dell, 2001; Huber, 2001; Zorn & Taylor, 2003; Currie & Kerrin, 2004). Furthermore, the problems related to any attempts to promote an IT-based exchange of experiences among colleagues may be due to a misleading view on knowledge as a reified

commodity (Heusinkveld & Benders, 2005: 285). In consequence, expectations in what can be accomplished by IT-based processes of knowledge management, as exemplified by the CPL databases in use at the case organization, should be lowered accordingly.

(2) Given that the visibility of decision contingency is achieved within projects but not across projects, projects can be theorized as representing temporary sets of communicative decisions (cf. Lundin & Söderholm, 1995) which are only loosely linked to the organization as a whole (cf. Orton & Weick, 1990). Similarly to organizations, projects themselves reproduce decisions out of decisions. By means of this, projects are evidently able to establish a systemic border which distinguishes them from the organization as a whole. This border can be imagined as being constituted by repetitive acts of decision communication which define, by being executed, an inside and an outside of the project.

While the communication of decisions marks the system-inherent side of the operation, the overarching organization the project formally belongs to, becomes environmental to the project. In the terminology of the TSS perspective (Luhmann, 1984; 2000), projects can be theorized as an *internal environment* within the organization, established for a limited time frame (cf. Czarniawska & Mazza, 2003). Due to the autopoietic nature of social systems, the project organization can neither determine *from outside* what is been decided within the project nor can it see how project decision processes have occurred. In consequence, the project itself becomes a *black box* to the overarching organization.

What do all these considerations imply for the organization's necessity to visibilize its decision contingency in order to interconnect decisions and, with this, to sustain its autopoietic existence? The necessity of DCV seems to apply only within each social system: within each project as a ephemeral social system and within the formal organization which only loosely connects projects by means of organizational membership. In the light of these considerations, the project organization needs to be evaluated as a successful form of coping with the organizational paradox of the undecidability of decisions and can be predicted to sustain this evolutionary advantage in the future. By externalizing decisions and

their contingency to projects of limited temporality, the organization is evidently able to impute that in the project decisions have been made *somehow* and can take their contingency for granted. In effect, the organization does not need to achieve consistency of its decisions because a project can always be negatively marked as an exception or an extreme situation in retrospect.

5.2.3 *Synthesis: The (In-)Visibility of Decision Contingency and Cross-Project Forgetfulness*

This new theorization of project organizations from a TSS perspective also has implications for existing theories on organizational memory (cf. Walsh & Ungson, 1991; Olivera, 2000; Seidl, 2006b). The empirical study has yielded evidence that on an project-overarching level, the organizational memory is established only in a very limited form. With respect to the organization's most basic operation, the communication of decisions and their contingency, the attempt to establish an organizational memory in form of manifested project documentation instead needs to be evaluated as *amnesiac*. The project documents simply lack an elaboration of how project decisions have been made and for what reasons. In the terms of Luhmann, "the organization quasi tends to forget itself" (Luhmann, 2000: 147).

With regards to the question, to what extent the case organization can establish an organizational memory which survives its own projects (Luhmann, 2000: 273), the study points to the project organization's forgetfulness for its own decision processes. With this, the case company can be presumed to suffer from what Schoeneborn and Blaschke (2006) have termed as *organizational insomnia*. The concept of insomnia roots in a long reaching tradition of metaphorical accounts in the studies of organizations (Morgan, 1980; 1986; Weick, 1989; Tsoukas, 1991; 1993; Spender, 1996; Cornelissen, 2005). As the interviewees report, facing tough market pressures, the case organization is rushing from one project to another and does not find the time for a systematic and shared reflection on past

projects and decision processes. Similarly to the human mind, the effects of organizational insomnia can be assumed to primarily affect processes of learning and memory. If there are no temporal phases of sleep or retreat, the organization as a social system lacks the consolidation and reconsolidation of experiences, manifested in experience-based changes of structures, routines, and processes.

In systems theoretical terms, however, the organization is successful as long as it is able to maintain its systemic existence in a complex environment. This basically requires that the organization is able to connect one decision to another over time and that it does not get absorbed by its environment (Luhmann, 2000: 417). In turn, this study supports the assumption that a *forgetfulness of decision processes and their contingency* is essential for the long-lasting sustainment of the project organization (Luhmann, 2000: 147). With this, the project organization avoids to become paralyzed by the awareness of its own paradoxical and contingent nature (Luhmann, 2000: 151).

Keeping this in mind, the attempts put forth by streams of organizational communication studies and the knowledge management movement to achieve an enhanced visibility of work and decision processes can be estimated as being partly *counter-natural* to project organizations. Project organizations instead seem to be constituted by distinctive borders between projects as temporal organizational systems and the overarching organizations. The realization of an enhanced visibilization can therefore be estimated as not very likely and instead can even endanger the organization's ability to cope with inconsistencies created by contradicting decisions in various projects.

With this, the organization may benefit from forgetting because otherwise it can be blocked in its capacities – in a similar way the human mind's primary function is forgetting rather than memorizing, as Luhmann (1996) points out. The retrospective *sense-making* (Weick, 1995) of what has been done in a project implies to strive for consistent narrative patterns. Contingent alternatives then need to be masked in order to remain capable for action. Consequently, forgetfulness (Luhmann, 2000: 147) apparently represents a constitutive condition for the existence of

the organization as a communicative system. In the evolution of organizations as social systems, only the ones survived which were able to free their memorizing capacities from the burden of their past decision processes in order to remain open enough to achieve a connectivity to follow-up decisions (cf. Nassehi, 2005; Knudsen, 2006). A full-blown awareness of its past instead would continuously challenge the organization's strive for a coherent identity. Instead, the organization appears to avoid the risk not to be caught in the paradox of decision contingency and not to be able to decide at all – which would mean to stop existing.

As the analysis of documented forms of organizational communication has shown, the connection of projects to the overarching organization is not achieved in communication but only by organizational membership. Psychic systems can be members of the overarching organization and temporarily also of a project. The involvement of psychic systems allows for an *externalization of memory* from the project as a social system to the human mind as a psychic system. Organizational members can remember decision processes and their contingency and, therefore, can stimulate and irritate future project communication processes with reference to their own memories (e.g., "As far as I can remember, in the last project I participated in, we used to handle this differently"). With respect to Seidl (2006b), such processes of memory externalization can be assumed to be mediated by organizational interactions. While decision processes and their contingency become invisibilized on the organizational level, they become particularly relevant in personal encounters of organizational members and, this way, become accessible again in future situations of a similar kind.

Evidently, project organizations are successful in achieving autopoiesis from one project to another by help of established decision structures and the organizational members. The question remains how loose forms of organizations (cf. Orton & Weick, 1990) such as the project organization are able to establish an organizational identity and a shared communicative memory, if at all. Given a high fluctuation of employees in consulting firms, it is remarkable that the project organization's autopoiesis is strong enough to sustain an organizational identity as a whole

and does not fragment in its very pieces, in projects as temporary organizations.

To conclude, the empirical study puts forth an understanding of project organizations as ephemeral streams of decision communication or, to phrase it with Weick, as streams of "organizing" (Weick, 1979), which manage to sustain an autopoietic closure of their decision processes in distinction to the environment for a limited time. Similarly to the autopoietic closure of psychic systems and the invisibility of their most basic operations, the reproduction of thoughts, the project's decision processes remain opaque to outside observers, be they non-members of the project or the overarching organization. PowerPoint-based forms of project documentation, in this sense, appear to constitute an artifactual representation of the *Chinese walls* in place at the case company to prevent a visibilization of decision contingency across projects.

Overall, the discussion had to rely on theoretical inferences to interpret the case study's results. Accordingly, the theoretical framework's consistency needed to serve as an instance for controlling the appropriateness of interpretations. By linking the empirical results to earlier theoretical considerations, a new understanding of project organizations as autopoietic social systems has been generated. With this, the study aims to contribute to a further differentiation of organization studies based on the TSS and the CCO frameworks. Furthermore, the combined theoretical and empirical analysis has yielded new insights on the issue of DCV but it has also illuminated some of the limitations inherent to studies on organizations which are grounded on the abstract notion of organizations as communications. If the assumption is appropriate that organizations rely on a visibility of their decisions, at least these decisions were not revealed in PowerPoint-based forms of project documentation, as the case study has shown. In this respect, the study was constrained in realizing its aim to empirically validate phenomena which, in turn, became relevant particularly due to their non-existence.

5.3 A Re-Reading of the Study from a Practitioner's Stance

It is this study's primary target to contribute to the fields of organizational communication and cross-project learning on a theoretical level by developing the concept of DCV as a new issue relevant to both fields. In its theoretical focus, the study corresponds with Nicolai's estimation that, the social sciences do not make full use of their analytic potential by following a misleading *applied science fiction* (Nicolai, 2004). Scientific insights, instead, require exactly the demarcation between theory and practice in order to allow for observations which avoid a fall-back into familiar terminologies and cognitive schemes. Accordingly, a clear distinction on a terminological level between theory and practice becomes a fundamental precondition for being able to observe blind spots hidden to practitioners themselves.

The claim for a theory-driven social science, however, does not deny that it is of course possible to re-read the findings of this research study from a practitioner's stance and to interpret them in the context of practical experiences. Therefore, this chapter attempts to transcend the mere academic description and to reflect on the results from a practical point of view. As a source of reference for this interpretation, I draw on informal talks with practitioners in monthly tables of the German Society of Knowledge Management (*Gesellschaft für Wissensmanagement*; *GfWM*) as well as on own practical work experience in consulting firms. It is important to keep in mind that this description is one of several and, therefore, contingent ways of how this study's findings can be interpreted by a practitioner in the field of knowledge management and CPL.

The rare examples identified in the study where the PowerPoint presentations' typical narrative is modified and decision contingency is made visible allows to derive some practical suggestions: In these documents, the listing of alternatives inherent to past decisions was guided by questions like "options considered and not pursued", for instance. Assuming that the visibilization of decision contingency is useful from a CPL perspective (cf. Ayas & Zeniuk, 2001; Newell, 2004) and that it can contribute to enhance the efficiency of organizational communication

processes, these documents point to the idea that can be valuable to incorporate *backstage modes of communication* into PowerPoint.

Technically, these possibilities already exist, e.g., the PowerPoint-inherent function to create a commented presentation by usage of "post-it notes" or by adding audio comments to the presentation document, e.g., by help of the software Adobe Acrobat Connect.[56] Drawing on own practical experience, it is known to me that other consulting firms of a comparable size already work with a second content layer of this kind in the creation of PowerPoint-based project documents. For this purpose, macro functions are added to the software which allows to easily create digital 'post-it stickers'. These stickers usually contain remarks by the document creators which are directed either towards their colleagues within the project or to the design staff who supports them in the creation of presentations – and are held in two different colors, accordingly. A second content layer like this can be interpreted as representing what Robichaud, Giroux and Taylor call the *metanarrative* (Robichaud, Giroux & Taylor, 2004) in organizational communication. In this case, the second content layer incorporates a reflection on the project documentation itself which is only visible to colleagues but not to the client. However, a genre of this kind has not been established in the project documentation practices of the case company thus far.

An additional practical idea can be derived from this study's findings by making use of single project databases instead of company-wide CPL databases. This idea involves to reject any additional efforts of project documentation but to make a project's communication processes electronically accessible across the company after the project has been finalized. A realization of this idea requires to establish an electronic platform suitable for this purpose, for example, by drawing on the Wiki technology. Wikis are an increasingly popular Web application, as exemplified by the Wikipedia Web Encyclopedia. Among its main features, the software enables its users to edit each entry to the database. The history of changes is saved in a separate history file which furthermore allows

56 The software was formerly known as Macromedia Breeze. Adobe Acrobat Connect® is a registered trademark of Adobe Systems, Inc., San Jose/CA.

for a visibility of an entry's development process over time (cf. Cunningham & Leuf, 2001; Neus, 2001) and, hence, create special conditions for the emergence of organizations out of communication. In the aftermath of projects, a platform like this allows for full text searches so that decision processes and their contingency become at least partly observable in retrospect.

However, if related to the existing case study, a Wiki-based CPL solution would imply more efforts than the cost-saving practice to re-use PowerPoint presentations which had been created in the project process anyway. Furthermore, a solution of this kind would create higher demands for an open and trustful organizational culture which could be hard to establish in a frontstage world like the consulting business. An increased likelihood to achieve this form of communicative culture can be grounded on the practical experience that frontstage features can be diminished in a communicative setting which starts from scratch with open and transparent exchange practices and where new organizational members can adapt to these existing practices (Schoeneborn, 2004: 152). In consequence, efforts are presumed to be outweighed by efficiency gains from an enhanced awareness of past project processes.

In a rather pessimistic interpretation, the findings that decision contingency remains largely invisible in the project documentation practices of the case company put into question whether the efforts spent for establishing and maintaining the CPL databases can be outweighed by its outcomes at all. If only project documents are submitted to the databases which invisibilize decision processes and the knowledgeable aspects inherent to them, it can be doubted that IT solutions designed as document repositories are the appropriate means to leverage learning effects across projects. Instead, it appears to be more fruitful to strengthen verbal modes of knowledge-oriented communication within the company by promoting communities of practices which transcend existing personal networks. The communities-of-practice concept (Brown & Duguid, 1991; Wenger & Lave, 1991) suggests to foster that organizational members get in direct touch with regards to topics they are interested in but independent from divisional affiliations or existing personal networks. This way,

the communities-of-practice approach aims to facilitate knowledge-oriented interactions, either electronically (e.g., by establishing forums or mailing lists in the corporate Intranet) or face-to-face (e.g., by organizing regular gatherings in person). However, communicative restrictions to organizational members' engagement in knowledge exchange again need to be considered and additional costs created by these solutions (especially the non-electronic ones) need to be taken into account.

In conclusion, the study can be interpreted by practitioners as a suggestion to emphasize the communicative aspects (cf. Borgatti & Foster, 2003) of knowledge management and CPL in organizations. This favorably compares to existing studies which postulate an integrated *knowledge communication management* (e.g., Reinhardt & Eppler, 2004; Schoeneborn, 2006). Their shared objective is to overcome barriers to knowledge-oriented communication processes in organizations. In this context, the invisibility of decision contingency can be interpreted as one of the most fundamental obstacles to CPL processes based on the learning-from-failure idea. In consequence, expectations regarding the potential achievements by implementing processes of knowledge management and CPL in organizations are suggested to be lowered accordingly.

6 Conclusion and Outlook

6.1 Concluding Remarks

This study has investigated the visibility of decision contingency in the project documentation practices of a multi-national consulting firm. The theoretical focus on the visibility of decisions and their contingency has been newly developed in this study. The issue's relevance is twofold: In theoretical terms, recent advancements in both organizational communication studies (Taylor & van Every, 2000; McPhee & Zaug, 2000; Cooren & Fairhurst, forthcoming) and social systems theory (Luhmann, 2000; Nassehi, 2005; Seidl, 2006b) grasp organizations first and foremost as communicative phenomena. According to this view, organizations reproduce themselves by a continuous reproduction of decision communication. Consequently, the organization's awareness of its own decision processes and their contingency becomes a basic precondition for accomplishing connectivity between communicative episodes over time. In practical terms, recent advancements in the field of CPL have put forth the learning value from failure rather than success (Edmondson, 1996; Starbuck & Baumard, 2005; Zhao & Olivera, 2006). According to this view, project organizations can avoid a repetitive re-invention of the wheel in new projects by becoming aware of mistakes made and alternatives considered in the past. Consequently, it is the contingency of past decision processes, defined as alternatives inherent to decisions, which is presumed to embed the highest learning value. Therefore, its visibilization becomes a particular challenge for CPL processes in project organizations.

In the theoretical part of the analysis, the issue of DCV has been approached in a twofold procedure which leaned towards the idea to grasp

organizations as communications. By examining both the organizational and the communicational side of DCV, the analysis proceeded from a general to a more concrete level. On the organizational side of the organization-communication duality, the research issue was examined by relating it to organizations in general as well as to project organizations and to consulting firms, in particular. On the communicational side of the duality, the research issue was examined by relating it to communication in general as well as to textual forms of project documentation and to PowerPoint presentations, in particular. By means of this, it has been shown that there are *two opposing powers* in project organizations: one power which enforces a *visibilization of decision contingency* in order to allow for a connectivity of decisions to past decisions, and another one which enforces an *invisibilization of decision contingency* in order to assure the organization's capability for action.

This theoretical distinction has been used in the empirical analysis of project documentation practices at the case organization, a multi-national business consulting firm. The case study approach was realized in form of a triangulated research design which combined a document analysis with qualitative interviews. The empirical study yielded that decision contingency – except from a small range of documents – tends to remain invisible in the textual documents in use at the case company for the purpose of CPL. Even in document databases established for the purpose of sharing experiences across projects, and even in so-called "lessons learned" documents, a critical reflection on projects and decision processes inherent to them is hardly ever realized.

The application of PowerPoint presentations appeared to play a symptomatic role in this context. Originally designed for the creation of presentations to be held in face-to-face situations, its main genre characteristics remain stable even if used for the differing purpose of project documentation. The empirical analysis has shown that most PowerPoint presentations contain information on the project's main results and achievements but they usually do not commit to a reflection on the project process, mistakes made, or alternatives considered.

Seen from the communicational side of the coin, the study contributes to recent discussions on the genre conflict of PowerPoint presentations in project documentation (cf. Yates and Orlikowski, forthcoming). The study sheds new light on this discussion in grounding its considerations on the constitutive role of communication for organizations and by relating the application of PowerPoint in project documentation to the organizational consequences to become aware of its own decision processes. Given that in most cases, the same PowerPoint presentations which were used in client meetings, were also submitted to the CPL databases, it appears that external forms of communication have been mirrored also to the inside of the organization. This, in turn, is problematized from a CPL perspective which appreciates the learning value from failure and emphasizes the perils of a mutual (and potentially misleading) assurance of excellence among company members.

Seen from the organizational side of the coin, the study contributes to recent discussions on the constitutive conditions for the emergence of organizations out of communication (McPhee & Zaug, 2000; Taylor, 2000a; Cooren & Fairhurst, forthcoming). In grounding the study in the TSS framework (Luhmann, 1984; 2000), it is suggested to grasp the communication of decisions as the constitutive condition for the emergence of organizations. The study yields that the communication of decisions brings forth a conflict between the need to visibilize decision contingencies in order to flag out decisions as decisions and the need to invisibilize decision contingencies in order to avoid a paralysis of the organization by its own past. Hence, a forgetfulness of past decision processes lowers the likelihood that the organization becomes blocked by an awareness of its own inconsistencies.

The consequences of these findings are twofold: *On the one hand*, one could argue that an opaqueness of decision contingency in project documentation is no surprise given the reluctance of employees to reveal the ambiguity of their work and to show any vulnerability in textual forms of project documentation. In consequence, expectations in textual forms of documentation as a means to provide valuable information on past projects processes and their contingency need to be lowered. Moreover, it

can be derived that existing efforts of promoting textual forms of CPL should be reduced and verbal forms of communication among organizational members should be fostered instead. *On the other hand*, one could argue that a visibilization of decision contingencies in project documentation is possible in principle but is constrained by established communicative practices, as exemplified by the PowerPoint presentation genre's usage for the purpose of project documentation. In consequence, practices of project documentation would have to be modified with a special emphasis on efforts to make the contingency inherent to project processes and their contingency visible. In a re-reading of this study results from a practitioner's stance, some ideas have been generated how such ideas could be realized in practice, for example, by introducing a second content layer to PowerPoint (e.g., by usage of the software's post-it function) in which decision contingencies are made visible for the sake of CPL.

Taken together, the study allows to shed new light on the problem situation described in the introduction (cf. chapter 1.1). As the study has shown, the most typical textual document for an expertise-seeking novice to make sense of past projects is a PowerPoint presentation. In the case company, these project documents, stored in CPL databases, represented in frequent cases the only communicative means to get an idea of past project processes and their contingency. This is also because it was impossible to get hold of colleagues anymore who had conducted a similar project in the past as they had left the company already. Thus, the PowerPoint presentations hardly contained any visibilization of decision contingencies. Instead, the most common type of documents were "one-page citation" documents which exclusively concentrated on presenting the project's achievements and masked all potential ambiguities, doubts, or side paths inherent to the project process instead. Alternatives that were considered in the project process were not disclosed in order to maintain the impression of a consistent and rational project process. Seen from the perspective of the expertise-seeking novice, these documents need to be estimated as deficitary for someone who is interested to learn not only from previous success stories but also from mistakes made and alternatives considered in the past.

6.2 Outlook to Future Research

The study's findings can serve as a starting point for future research based on the notion of organizations as communications. This presentation of suggestions for follow-up research is structured by highlighting potential points of variation – such aspects of the study which allow for comparative or contrasting research studies. The outline of variation points leads over to a second type of research suggestions on how the study's results can shed new light on existing discussions in organizational communication studies.

The study of DCV in project organizations can be expanded, for instance, by incorporating additional case organizations in form of a comparative analysis. An expansion like this would allow for a reconsideration of the particular case's singularity investigated in this study and for deriving conclusions on the interrelations between organizational contexts and the visibilization of decision contingency in practice. Moreover, extreme cases of organizations could be chosen for an analysis where DCV is particularly at stake, for example, in organizations of high risk industries (i.e., where an invisibilization of mistakes made can have fatal consequences), or in organizations with an especially high fluctuation of employees (i.e., where the organization can hardly rely on the externalization of its memory to individuals).

Another potentially fruitful point of variation for further research could be to switch the focus from a visibilization of decision contingency to strategies of invisibilization in place at project organizations. A focus like this would mean to strive for uncovering "façade creation strategies" (Starbuck, 1982: 9f.; Cunha, 2006: 213ff.) as well as strategies of "avoidance, discretion and overlooking" (Meyer & Rowan, 1977: 358). The micropolitical side of such strategies (Ortmann & Salzman, 2002), however, would demand to apply participant observations in a case organization for a longer time, e.g., in form of a quasi-ethnographic field study. Further research projects starting from this point could focus on an in-depth description of the trade-off between visibilization and invisibilization of decision contingency in the practice of organizational communication.

The empirical findings that the PowerPoint genre's main characteristics remain mostly stable in its focus on a context-reduced and consistent storyline, even if applied for the differing purpose of project documentation, point to the question whether genres only emerge spontaneously in the evolution of communicative practices, or if they can be created intentionally. A further investigation of this question would require to examine situations where new genres of project documentation are tried to be newly established in an organization. In terms of methodology, further research on this issue could draw on the *action research* approach (Baskerville & Wood-Harper, 1996).

On a practice level, the study has yielded evidence that organizational and communicational constraints can inhibit attempts to intentionally visibilize decision processes, alternatives considered, and mistakes made. A contingency-centered CPL would have to take these existing tendencies to establish *Chinese walls* of opaqueness across the organization into account. This can be realized, for example, by diminishing the frontstage character of company-wide databases where the sharing of project experiences also becomes a matter of self-revelation and vulnerability. In a re-reading of the results from a practitioner's stance, further suggestions have been developed on how a second content layer added to the main narrative of PowerPoint presentation's could indeed facilitate the visibilization of decision contingency.

In general, the study points to the superiority of verbal modes over textual modes of communication especially when it comes to the forgetting of past decisions, to open up free capacities for future decisions, to avoid a lock-in of sub-optimal practices, and, finally, to consider these insights in future studies on knowledge management and CPL. In this respect, the study points to the necessity of an integrated *knowledge communication management* (Reinhardt & Eppler, 2004; Schoeneborn, 2006) to transcend existing knowledge management approaches which concentrate on IT database solutions and textual documents in the aim to "capture" and "harvest" knowledge from projects and which fail to take the tacit and system-bound character knowledge into account.

6.3 A Self-Reflection on the Limitations and Contingencies of This Study

The claim for a visibilization of decision contingency in project documentation would be inconsequent if not applied to this study in a self-referential way. In its universalistic claim, the theory of social systems (Luhmann, 1984) represents a self-referential theoretical framework. Therefore, theorizing about social systems achieved in communication can itself become subject to investigation on the basis of social systems theory. Similarly to the project documents under investigation in the case study, this dissertation document has the function to provide information about how the PhD project was proceeded and what were its main results. However, as Star and Strauss assert, "many performers – athletes, musicians, actors, and arguably, scientists – keep the arduous process of preparation for public display well behind the scenes. Thus, the process of trial-and-error in science is less visible than the final published results" (Star & Strauss, 1999: 21). From the perspective of an expertise-seeking novice (in this case, current or future PhD candidates), exactly such processes of trial-and-error and the contingencies faced in the course of the PhD project can be presumed to be particularly valuable. It needs to be kept in mind that this visibilization, like in the project documents of the case study, again represents a reconstruction of contingency and alternatives in retrospect.

However, this dissertation document significantly differs from the project documents analyzed in the case study – in two aspects: First, with the software Microsoft Word, a different medium than PowerPoint is chosen for the creation of the research project's presentation. Second, the document stands in the tradition of the dissertation genre. The evolution of communicative practices in the academic sphere has put forth own genres which are distinct to the ones established in project documentation in business organizations. In striving for inter-subjectivity and comprehensibility, it is an inherent feature of the academic dissertation genre to make the research process visible and understandable in its main decisions and their contingencies.

This chapter summarizes the contingencies faced during the research process and sorts them according to main steps of this process, the choice of the research focus, the choice of theories, the choice of the case organization, and the choice of methodology. The rare examples identified in the case study which indeed do visibilize the contingency of decisions inspire the way such contingencies are presented in this chapter. The guiding question at each point is which *options were considered but not pursued*. With this, it is aimed to make visible which side paths were opened up during the research process but which could not be pursued even if they may represent valuable connection points for future research.

The choice of this research project's thematic focus followed a contingent though path dependent process. Based on previous personal experiences in research and practice, I have been (and I still am) fascinated by the idea to grasp organizations as communicative phenomena. This view on organizations puts into question how organizations as communicative entities develop in phases of growth. Or, to put it differently, to what extent organizations are limited in their capacities to grow because of communicative constraints. The challenge of organizational growth led me to the idea to investigate organizations which recently were facing a significant phase of growth. However, the limited time frame for this research project restricted the empirical investigation of growth developments in organizations. Therefore, the research focus was switched to investigate project organizations where the question of size and distributedness of decision processes is inherent to the particular type of organization. By means of this, the research focus could be maintained in principle but had to be adapted to the special case of project organizations by asking: How do project organizations achieve the visibility of decisions and their contingency across the organization as a whole?

The identification of parallels between the CCO perspective (Taylor & van Every, 2000) and the TSS framework (Luhmann, 2000) has guided the selection of taking only such theories into consideration which are compatible with the concept of organizations as communications. At one point of the theoretical research process, the idea came up to include a

stronger emphasis on organizational routines and the ways they are grasped in *structuration theory* by authors like Feldman, Pentland, and others (Pentland & Rueter, 1994; Pentland, 1995; Feldman, 2000; Feldman & Pentland, 2003; Pentland, 2003). However, this option was not fully pursued because of the ambiguity to what extent project processes in consulting can be estimated as being routinesque. Another option, closely related to the concept of routines, involved to investigate the issue of DCV by drawing on insights from *path dependence theory* (Liebowitz & Margolis, 1995; Garud & Karnoe, 2001; Schreyögg & Sydow, 2003). The investigation of paths of decision processes would have required a thorough reconstruction of specific projects over time and to reject the perspective of the organization as a whole. Both choices would have had significant implications for methodological decisions in the research process. At a comparably late point in the research process, I realized the potential usefulness of *actor-network theory* (Latour, 1996; Law & Hassard, 1999; Harris, 2005; Noe & Alroe, 2006) for this study's research issue. Particularly, the potential value of combining actor-network theory with the TSS perspective lies in a shared notion of the term contingency (Noe & Alroe, 2006: 40). However, actor-network theory turned out to be incommensurable with the TSS framework's basic assumptions that organizations require to establish a border which distinguishes them from their environment. Therefore, the framework was only very selectively included at some points of the analysis.

In parallel to the theoretical analysis, I had to initiate the research collaboration with an actual project organization for the empirical case study. During this process, I contacted a number of consulting firms – most of which did not agree on a co-operation for the research study. Some of them gave as a reason that they would not feel comfortable to let an external researcher accessing their knowledge databases. From today's perspective, it can hardly be estimated to what extent the choice of a different case organization would have yielded results that were either more or less representative for the general population of project organizations.

At one point in the research process, while collecting empirical data, the idea came up to include a second organization in the study and to transform it into a comparative case analysis. Through one of my colleagues at the case company I got in touch with a student-owned consulting firm which was one of the biggest of its kind in Germany at that time. To include this organization in the study would have had the advantage to compare the case company to a completely different type of organization in terms of size, age, and professionalism. Given an extremely high fluctuation of its employees, the organization was facing tough challenges to establish textual forms of project documentation in order to assure a learning across generations of employees. In this case, practical reasons led to a termination of this idea because it would have been impossible to include it in the tight time frame of the research project. Nevertheless, the investigation of how student-based consulting firms manage a sustainable knowledge communication across generations can be subject to a fruitful follow-up study.

Moreover, the methodology of the research project was contingent, of course. After having chosen to focus on only one organization in form of a case study, the combination of specific methods was subject to subsequent choices. As outlined in the methodology section (cf. chapter 4.1), the choice of methods was guided by the research questions derived from the theoretical analysis. However, at one point, I experimented with quantitative (though explorative) techniques to identify structural semantic patterns in the project documents I had included in the analysis. For this purpose, I had to transform the PowerPoint documents into plain text files. This transformation allowed for an analysis by help of textual analysis software applications (e.g., WordStat) – following the aim to uncover contextual patterns underlying the communication in project documents. This, unfortunately, turned out not to be feasible due to different semantic levels in the sample. As argued in the operationalization of the DCV variable (cf. chapter 4.3.3), some information included in the documents remained on a first order observation level, others on a second order observation level. Depending on the context, a term like "critical" sometimes referred to issues on the clients' side, sometimes on the

consulting project's side. The automatized tools, however, could not differentiate between these levels. This, finally, impeded the application of these tools and suggested to concentrate only on the context-based coding by the researcher.

The contingent choice of a case organization constrained the generalizability of this study's results. The singularity of the case organization's CPL practices became tangible when the author worked as a visiting associate for another consulting firm during the final stage of the PhD project. The other consulting firm also had an elaborate database system for the storage of project documents. In a similar manner, almost all of these documents were held in PowerPoint. However, the database's content differed in three important aspects from the databases under investigation in this study: First, the documents submitted to the database were subject to a restrictive quality assurance procedure which led to a much more selective availability of documents than in this study's case organization. Second, different levels of confidentiality were applied to the documents so that some of them were only accessible on special request. For this purpose, the expertise-seeking user would need to contact the manager in charge of the project. Third, because the other consulting firm had an elaborate research unit which supported the consultants, the database included more documents intentionally created for the purpose of CPL. In sum, the comparison shows that some aspects of the case organization are generalizable only to some extent and, therefore, the invisibilization of decision contingency does not equally apply to the consulting industry as a whole.

Finally, the outline of contingencies of the research project also shows that at various occasions during the research process, decisions either heavily depended on past decisions and, furthermore, not in all cases the full range of contingency was illuminated also because of a limited awareness on the researcher's side. Nevertheless, the visibilization of contingencies turns the main narrative of this dissertation, primarily striving for a consistent presentation of the research process and its results, into a more vulnerable one. From the perspective of the expertise-seeking novice, disclosing alternatives that were considered in the research pro-

cess may entail a high learning value as it contains information on the performative reality of the research process in its vulnerability, ambiguity, and, last but not least, contingency.

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