The Interplay of Project Control and Interorganizational Learning: Mitigating Effects on Cultural Differences in Global, Multisource ISD Outsourcing Projects

The study examines how to mitigate the cultural differences inherent in global, multisource, information systems development outsourcing projects. Its main finding is that the influence of informal control and interorganizational learning on formal control does not remain constant. Rather, it changes over time, from providing operational information to reducing formal management efforts. In turn, transparency created through formal management mechanisms provides room for effective informal control mechanisms and interorganizational learning. This interplay supports the mitigation of cultural differences through the harmonization of work-related values and practices.

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1 Introduction

Worldwide, companies benefit from sophisticated sourcing strategies that rely on both near- and offshore destinations. Unlike offshore outsourcing, nearshore outsourcing aims to mitigate offshore-specific challenges, such as significant time zone differences or language barriers, as well as to exploit nearshore-specific advantages, such as closer interactions through geographic proximity (e.g., Meyer and Stobbe 2007). Internationally operating vendors thus increasingly take advantage of hybrid global delivery models and organize service delivery across off-, near-, and onshore locations (Willcocks et al. 2007). Yet organizing smooth global service delivery remains challenging, especially in constellations in which client companies deal with multiple, globally distributed vendors on a single project. For example, in global, multisource projects for information systems development (ISD), both national cultures and multiple organizational cultures must converge. The perceived cultural distance between client and vendor thus increases, which requires more integrated management approaches to address greater demand for communication and coordination (Carmel and Agarwal 2001; Hildenbrand et al. 2007).

Prior research in the global ISD and outsourcing domains spans multiple streams and thus focuses on various management aspects. Therefore, a large part of empirical research in global IS outsourcing analyzes cultural differences on the national, organizational, and individual level and how to deal with these differences from a project management point of view (e.g., David et al. 2008; Iacovou and Nakatsu 2008; Winkler et al. 2007). In this context, it has been shown that in particular control mechanisms as well as interorganizational learning contribute to the mitigation of cultural differences (Gregory 2010b).

Literature in the global ISD and outsourcing domains covers numerous studies considering control issues, such as the role of contracts (e.g., Gopal and Sivaramakrishnan 2008; Lacity and Willcocks 1998) or other formal control mechanisms (e.g., Tiwana 2008), as well as

the input of informal control mechanisms (Holmström Olsson et al. 2008). Also, there are several studies focusing on interorganizational learning, mainly in relation to cross-cultural (Nicholson and Sahay 2001; Vlaar et al. 2008; Walsham 2002) and knowledge (e.g., Kotlarsky et al. 2008; Leonardi and Bailey 2008; Nicholson and Sahay 2004) issues. However, while these studies cover control mechanisms and interorganizational learning separately, the existing literature to the best of our knowledge has not investigated in more detail on the relationship between control mechanisms and interorganizational learning against the background of cultural differences (Gregory 2010b), in particular in an analysis that features both the client's and multiple vendors' perspectives.

Seeking to address this gap, we adopt an exploratory research design and analyze the interplay of formal and informal control with interorganizational learning in global, multisource, ISD outsourcing projects. Accordingly, we seek to answer the following research question:

How do formal and informal control mechanisms and interorganizational learning interact and contribute to the mitigation of cultural differences in global, multisource, ISD outsourcing projects?

To answer this question, we apply an exploratory case study design with a global, multisource, ISD outsourcing project initiated by a large German financial institute as the research object. The objective of this project was to reengineer the financial institute's online banking systems, and the project team included approximately 100 people from five different organizations (client and four vendors), distributed across Germany, Spain, Brazil, and India.

We begin our account of this project and the findings based on it by presenting theoretical foundations for our understanding of formal and informal control, as well as interorganizational learning. After we describe the case study, the underlying research methodology, and the analysis results, we discuss the findings in the light of previous literature. The final section summarizes key findings and provides some implications for research and practice.

2 Theoretical Background: Control Dynamics and Interorganizational Learning

Prior studies on domestic IS outsourcing emphasize the general importance of social capabilities, which not only facilitate intra-organizational cooperation but also foster mutual trust and performance among client organizations and external IS vendors (Dibbern et al. 2003). However, a recent review of IS outsourcing practices reveals that global IS outsourcing projects actually cope with even more challenges (Lacity et al. 2009). In the global context of ISD outsourcing, the need for social competency is significant because individual participants must cope with the global sourcing-specific distance between the client and vendor. This so called client-vendor distance encompasses not only geographic, economic, and political distance but also and in particular cultural differences (Vogt et al. 2009; Winkler et al. 2007).

In this regard governance can be conducted by the joint reliance on different governance or control mechanisms such as informal and formal control mechanisms for the governance of economic transaction (Adler 2001; Bradach and Eccles 1989; Cannon et al. 2000). In the global IS outsourcing domain it has been shown that successful control balancing using combinations of different control modes is a promising way to manage cultural differences inherent in such projects (Gregory 2010a).

Literature on control suggests two basic modes: formal and social control. Formal control involves the establishment and application of codified rules, goals, and procedures to define, monitor, and evaluate performance (Das and Teng 2001). They usually involve explicit information transfers and include for example formal reporting guidelines and frequent meetings between key representatives (Inkpen and Currall 2004). Prior research in global IS outsourcing has employed a control perspective to show how the contract between the client and the vendor is enforced via formal behavior and outcome control; accordingly, the client controls the behavior and outcomes of his vendor (Choudhury and Sabherwal 2003). Social control involves trust-based mechanisms and operates via the development of shared values and norms (Das and Teng 2001). According to Das and Teng (1998), the key difference between formal and social control

is that "formal control is more of a strict evaluation of performance while social control is about dealing with people." (p. 501). Examples for social controls include socialization, training, and spontaneous interactions between representatives of the exchange partners (Das and Teng 1998). In the global IS outsourcing literature, social control has most often been conceptualized as informal control (Choudhury and Sabherwal 2003; Kirsch 1996).

An expanding body of research notes control dynamics and examines how and why control modes change across project phases. For example, Choudhury and Sabherwal (2003) analyze the evolution of control portfolios in information systems development (ISD) outsourcing projects and reveal several factors that influence the choice and evolution of the control mechanisms. To extend such research, Kirsch (2004) describes how control modes change during three project phases of internal global IS deployment projects. Changes in the control mode appear triggered by factors from three categories: project context, stakeholder context, and global context.

Besides control, also interorganizational learning has been shown to contribute to the mitigation of cultural differences in global IS outsourcing projects. On the one hand, interorganizational learning comprises the accumulation of relevant business, functional, and client-specific knowledge, as vendors must accumulate business knowledge about their client's application domain, functional knowledge about the client's IT infrastructure and systems, and specific recognition of its functional requirements and processes (Dibbern et al. 2008). On the other hand, interorganizational learning pertains the important topic of knowledge transfer in global IS outsourcing projects. The existing literature repeatedly demonstrates positive effects of successful knowledge transfer (e.g., Kotlarsky and Oshri 2005; Nicholson and Sahay 2004; Oshri et al. 2007; Rottman 2008), and many researchers cite a lack of knowledge transfer as a major drawback for global ISD outsourcing projects (e.g., David et al. 2008; Dibbern et al. 2008; Gupta and Raval 1999; Kliem 2004; Leonardi and Bailey 2008). And third, interorganizational learning in a global context also refers to cross-cultural issues and the development of cultural intelligence, defined as "a form of firm-level capability in functioning effectively

Table 1 Overview of the multisourcing portfolio

Organization	Area of responsibility	Locations involved
ARCHITECT	• Definition of architectural framework • Implementation controls	Two locations in Germany
IMPLEMENT	• Functional design • Technical design • Implementation	Four locations in Spain One location in Brazil
SCREEN	• End-user front-end design	One location in Germany
TEST	• Software test	One location in India

in culturally diverse situations" (Ang and Inkpen 2008, p. 338), as both the client and the vendor must negotiate differences in their values and work practices and learn how to adapt for the project to succeed (e.g., Carmel and Agarwal 2001; Krishna et al. 2004; Levina and Vaast 2008).

In summary, both control mechanisms as well as interorganizational learning have been shown to individually contribute to the mitigation of cultural differences. However, there remains little understanding of the interplay of formal and informal control mechanisms with interorganizational learning or how the interaction might contribute to mitigate cultural differences in global, multisource, ISD outsourcing projects. Furthermore, most of the preceding studies address dyadic client-vendor relationships, whereas the specific challenges of multisource projects remain unconsidered.

3 Research Methods

As outlined, we lack sufficient knowledge about the interplay of control and learning in global, multisource, IS outsourcing projects. Therefore, to increase this understanding, as well as to reveal the interactive effects on cultural differences, the present qualitative research features an in-depth, exploratory, single-case study (Stebbins 2001; Yin 2003). The subsequent sections describe the underlying case (3.1) as well as the procedures used for data collection (3.2) and analysis (3.3). A chronology of the overall research process is presented at the end of this chapter.

3.1 Case Description

The primary unit of analysis was a global ISD outsourcing project to reengineer a financial institution's online banking system. The project was initiated because the old system's technology required a high degree of costly expertise, and its maintenance was set to expire soon. Thus, the financial institution (BANK) decided to migrate its system to a new technology. To develop this new system, BANK applied a multisourcing strategy to reduce the risks of dependence. Therefore, it included four vendors in the project, as summarized in **Table 1**. The project started in October 2008 and finished in December 2009, successfully and on time.

ARCHITECT, a German boutique consulting firm, designed the architectural framework of the new online banking system. IMPLEMENT was a leading international IT vendor for the financial services sector and operated and maintained BANK's old online banking system. During the reengineering project, IMPLEMENT had the responsibility to create the functional and technical design documents and implement the new online banking system. To provide these services at the required quality and cost levels, IMPLEMENT chose a global delivery model that involved four locations in Spain and a captive center in Brazil. Another vendor, SCREEN, specialized in web development and was based in Germany. It was responsible for the front-end screen design. Finally, a large IT vendor with international operations, TEST was responsible for the software testing, conducted in a testing facility in India. Thus, the project featured both nearshore and offshore outsourcing.

Thus BANK's sourcing strategy for this project featured not only a global context but also the involvement of multiple vendors. In addition to national cultural differences resulting from the geographically distributed setting, the various organizational cultures played major roles in the project. These national and organizational cultural differences became

especially visible in work-related values and practices, as the following examples indicate.

In particular, BANK's project manager recognized the differences on the national level:

> *There are also cultural aspects influencing the cooperation. Due to the time pressure, we realized even more that our Spanish colleagues have another understanding of milestones and time planning. During the work day, they sometimes spend two hours for a coffee break; this is very different from Germany. With detailed progress tracking, we managed to at least communicate our expectations regarding timing and quality very clearly. This helped a lot.*

His colleague, a sub-project manager, also cited differences that arose when working simultaneously with project teams from Spain and India:

> *When it comes to communication, it is important to differentiate whether you are talking with a Spanish colleague or with somebody from India. When talking to an Indian colleague, you have to specify 100 % what you expect, then you also get 100 %. When talking to a Spanish colleague, you have to specify what you do not want to get what you want.*

Beyond national cultural differences, organizational cultural differences became visible in the newly established intervendor cooperation. All the vendors previously had been involved in projects with BANK, but they had not interacted with one another in a multivendor setting before. Against this background, different work practices came to the surface and challenged the cooperation. For example, ARCHITECT was represented by a team of five experienced experts who followed an onshore delivery model. IMPLEMENT's 50-person implementation team spread across five geographic locations and possessed various competences and practice levels. ARCHITECT thus initially had trouble understanding the challenges that faced IMPLEMENT's large, distributed project team, including the need to scale the work to a distributed team of developers in both Brazil and Spain. A project manager from ARCHITECT explained:

Table 2 Demographics of interview partners

Organization	Overall work experience (average)	Time spent working for the company (average)
BANK (9 informants)	15 years	7 years
ARCHITECT (2 informants)	6 years	6 years
IMPLEMENT (9 informants)	14 years	9 years
SCREEN (2 informants)	7 years	5 years

Table 3 Distribution of interviews across organizations

Organization	Organizational level/role in the project	Number of people interviewed	Number of interviews conducted
BANK (Client)	Top Management	2	2
	Project & Sub-Project Management	5	6
	Project Team	2	2
ARCHITECT (Vendor)	Top Management	1	1
	Project & Sub-Project Management	1	1
	Project Team	0	0
IMPLEMENT (Vendor)	Top Management	3	4
	Project & Sub-Project Management	5	6
	Project Team	1	1
SCREEN (Vendor)	Top Management	1	1
	Project & Sub-Project Management	1	1
	Project Team	0	0
Total		22	25

Software architecture has a quite comprehensive character; if you want to understand, you need to see the overall picture, whereas IMPLEMENT follows a "split the task and distribute the sub-tasks to the developers" mode. The developers never see the big picture.

IMPLEMENT's managers confirmed this discrepancy in work practices and explained that their global delivery model required them to look at the system at large first, and then split up the task into preferably self-contained sub-tasks. Next they could match the sub-tasks with the competence profiles of different developers to distribute the work effectively. Therefore, the distributed teams worked mostly independently – as was crucial for the geographically distributed setup.

3.2 Data Collection

The data collection phase comprised both interviews (primary data) and documents generated during the course of the project (secondary data). Thus, we supplemented and triangulated our interview data with project presentations, tracking sheets, status reports, and lessons-learned documents to create a rich data set. In the course of the primary data collection (taking place in July and August 2009 as well as in November and early December 2009), we conducted 25 interviews with 22 respondents at both client and vendor locations. We present the demographic information about these interview partners in **Table 2**.

Except for one conference call with a respondent located in Brazil, all the interviews took place in person: 15 in Germany and 9 in Spain. Each interview lasted between one and two hours, such that we obtained more than 38 hours of interviews. Because BANK's corporate policy did not permit recordings of any interviews (with either BANK's or the vendors' employees), we took extensive notes, ultimately producing more than 130 pages of write-up notes.

In terms of the distribution of interviews across organizations, differences resulted from different team sizes for the parties involved. For example, ARCHITECT's project team included five experienced experts who were located onshore, whereas IMPLEMENT's team at times consisted of more than 50 people with various competencies and practice levels who worked in geographically distributed areas, including both near- and offshore locations. **Table 3** clarifies the distribution of interviewees.

The interview partners represented different organizational levels in BANK and three of the four vendor companies, with various profiles and roles that implied different skill and knowledge levels. We unfortunately did not have an opportunity to interview any representatives from TEST, despite repeated inquiries. The diversity of respondents ensures that our study features various organizational perspectives, hierarchical perspectives, and professional perspectives. The interviews were conversational in nature, conducted

using an interview guideline with semi-structured questions. We transcribed our field notes after each interview session and used these notes to identify appropriate questions for subsequent interviews. Thus, we refined the interview questions multiple times during the course of the data collection and analysis, especially when we realized needs for additional information to confirm emerging themes or substantiate initial findings.

3.3 Data Analysis

The data analysis began with coding of the interview write-up notes. We identified, named, and categorized phenomena related to our research question, through comparisons of the interviews with one another and the available secondary data. The preliminary codes included concepts such as "project setup" or "initialization phase." After we identified main conceptual themes from the interview data, according to their high frequency, we again compared all the interview data with the conceptual themes to find additional quotes or parallel statements from other interviewees. Thus, we substantiated our findings and managed to identify the main management mechanisms and learning issues from the primary data. Near the end of the analysis process, we compared our findings with the available literature, to conceptualize the emerging themes in our data. During this comparison, we elaborated on the identified themes by developing the descriptive categories into more meaningful notions at a higher level of abstraction. Thus the research team engaged in intensive considerations throughout the process to ensure no existing theory was forced onto the data. For the coding and conceptualization process, we used AT-LAS.ti. **Table 4** illustrates the chronology of the overall research process.

4 Findings

From this exploratory case study, two key findings emerged. The first finding pertains the interplay of formal and informal controls and interorganizational learning in global, multisource, ISD outsourcing projects (Sect. 4.1), while the second finding relates to the mitigating effect of these mechanisms on cultural differences in such projects (Sect. 4.2). In the following, we explain how these findings arose,

describe them, and support the findings with illustrative empirical quotes from the case study interviews.

4.1 Finding 1: Interplay of Formal and Informal Controls and Interorganizational Learning

We start the description of this finding with the influence of formal controls on informal control and interorganizational learning: our data suggest that implementing formal control mechanisms encourages the emergence of both informal control mechanisms and interorganizational learning processes because the formal controls create transparency about the essential project parameters.

In the focal project for example, the reengineering had tight deadlines because the software support for the old system's underlying technology was set to expire. Therefore, tight project management was of particular importance, and BANK used an in-depth work breakdown structure, or traceability matrix, as a formal control mechanism. The traceability matrix originally came from the project plan, which was compiled by all involved parties. To cope with emerging differences in quality perceptions and accuracy, the parties enhanced the work breakdown structure to reflect work tasks with a very high level of detail. According to project manager,

> Our clear focus was on tight control of the project's overall progress to ensure that all involved parties were on track, working toward a successful overall service delivery. Therefore, we used a very detailed progress sheet that showed for each single component when it had to be created, by whom, and according to which quality measures. Moreover, the sheet enabled the project team to identify and handle a series of delays resulting from significant task dependencies due to the involvement of multiple vendors. As a consequence, we had to track more than 1000 milestones and interfaces.

This traceability matrix fulfilled its function as a formal control mechanism because it helped keep track of the overall project progress and quickly identified plan variances and the need for countermeasures. Moreover, it influenced the emergence of informal control mechanisms and interorganizational learning. Specifically, by using the in-depth

traceability matrix, the involved parties gained detailed insights into their different areas of responsibility, the associated work portfolios, and the resulting tasks for their sub-teams; they also recognized cross-organizational interdependencies. The interviewees indicated that such transparency significantly contributed to the lack of conflict or even bargaining about responsibilities and task assignments. Rather, the project team could direct its primary focus toward establishing a multisource cooperation, in terms of both growing as a team and establishing an integrated service delivery process. A project manager from one of the vendor companies explained the absence of bargaining as follows:

> It is essential to fully understand the project's objectives and its planning and to always give them top priority. This may also mean that we as a vendor have to concede at a certain point. But because we are concentrated on the benefit of the overall project goals, we accept this without discussion.

Although BANK and the vendor companies had never interacted in a multisourcing setting before, they developed a joint mindset with shared norms and values, including a cross-organizational team spirit and absolute goal orientation. Thus, the formal control created room for informal controls to emerge.

The emergence of the joint mindset (i.e., an informal control mechanism) is perhaps clearest in IMPLEMENT's altered attitude. When the project started, IMPLEMENT expressed a different self-concept than the other vendors because of its long and intense prior cooperation with BANK. This vendor was accustomed to a great deal of autonomy in its implementation activities, as well as limited control by BANK, the client.

In this focal project though, the multisourcing constellation moved certain tasks that IMPLEMENT had previously performed, such as the architectural framework and software testing, to other vendors. Furthermore, IMPLEMENT's design and implementation activities no longer were controlled by BANK but instead by another, partly competing vendor (ARCHITECT). Thus, IMPLEMENT's project team needed to undergo a change in mindset about not only

Table 4 Chronology of research process

No	Process step	Main features	Additional description	Result
1	Literature analysis	• Identification of relevant literature streams • In-depth analysis of literature within these streams	• Literature streams covered: – Global IS sourcing – IS project management	• Motivation • Research gap • Specific research question • Theoretical background
2	Identification of research case	• Definition of central requirements for the phenomenon • Selection of suitable case, in cooperation with industry partner		• Requirements list • Specific unit of analysis for study
3	Data collection	• Identification of interviewees • Interviews • Collection of secondary data	• Initial interviewees suggested by senior management; further interviewees identified by the initial interviewees • 25 in-depth interviews in Germany and Spain Intensive note taking • Access to documents generated during the course of the project	• In total: 22 interviewees • In total: Approximately 38 hours of interviews • Project tracking sheets, project presentations, status reports, lessons learned
4	Creation of interview notes	• Creation of clean copies • Complement interview notes with recalled details • Addition of comments	• Descriptions of the atmosphere during the interview and emotions of interview partners	• In total: Approximately 130 pages of interview notes
5	Data analysis	• Open coding • Grouping codes into categories and identifying major conceptual themes • Refinement of concepts	• Reading of transcripts and documents and highlighting of descriptions associated with the research question • Central criterion: frequency of mentions • Repeated comparisons of concepts with interview data • In the late analysis process, comparison of concepts with relevant literature	• Initial code list • Initial concepts • Final concepts
6	Validation of findings	• Discussion of researchers' interpretations with selected interview partners	• Presentation of major findings and assessments of robustness, according to interviewees	

the content (i.e., learning the new software architecture) but also their company's role and responsibilities in the multiparty cooperation. IMPLEMENT's project manager described the change, and the team's goal orientation, as follows:

> For sure, we would prefer to have the responsibility for the framework, as it is part of our portfolio, but the client has decided differently…, so now we are jointly responsible for this project. As a consequence, we have to prioritize the project goals more than our goals as a service delivery company to create a win-win situation. This regularly also involves overlooking the respective organizational affiliation and thinking of an integrated project team with a joint goal.

This adoption of a corporate project-oriented mindset appeared among the other vendors too, as the following quote from ARCHITECT's senior manager confirmed:

> In my opinion, the core team did a very good job concerning the multiparty cooperation. I sensed a broad willingness to act informally instead of insisting upon contractually agreed details and defined responsibility areas. In my experience, this is the fundamental ingredient that in the end makes projects successful.

With regard to the effect of formal controls on interorganizational learning, we turn to an example from the ramp-up phase, when the vendors practiced and harmonized their cooperation and seized on opportunities to adjust their mutual

expectations and needs. By practicing and reinforcing the allocation of tasks and required interactions during a fixed period at the beginning of the project, BANK ensured that the involved parties understood and accepted their own roles and responsibilities, as well as those of the other parties. All the involved parties perceived this effort as valuable. For example, IMPLEMENT's project lead explained:

> We were very interested in getting this project up and running fast in order to prove our capabilities and establish a trust-based relationship with the other vendors. […] Our objective was to first understand their organizational cultures and then partly adapt ourselves to them in order to foster a smooth integrated service delivery.

In global, multisource, ISD outsourcing projects, the responsibility for service delivery is distributed, so cooperation between vendors must be established to ensure that individual service deliveries from the different areas of responsibility intertwine and lead to a successful overall service delivery. A member of BANK's project team summarized this essential phase:

> *In the course of this phase, we practiced and evaluated, based on selected business transactions, how the overall service delivery had been set up and how the performance was in terms of process and outcome quality.*

The initialization of the multiparty cooperation also revealed performance deficits that could be attributed to national and organizational cultural differences. Such differences became manifest as divergent working modes, including values (e.g., sense of quality) and practices (e.g., knowledge transfer approaches). The project team actively addressed any conflicts or errors and used them as learning tools to improve subsequent interactions.

We now describe the influence of informal controls and interorganizational learning on formal controls. It emerged from our data that in fact this influence is two-part. In the short-term, both informal control and learning mechanisms generated valuable operational information that enabled the parties to adjust their formal control mechanisms on a granular level. Then in the mid- to long-term, the informal control mechanisms and interorganizational learning processes contributed to lessen the need for formal controls. That is, our data indicated that the impact changes over time. In the following, we provide two examples to describe this effect.

During the ramp-up phase, as we noted previously, the vendors practiced and adjusted their cooperation to ensure a smoothly integrated service delivery. The parties therefore identified functional, process, and technological issues and noted performance deficits, which enabled them to deduce important operational information and then sharpen their project tracking (i.e., short-term effect on formal control). A project team member explained:

> *From my point of view, the ramp-up phase at the beginning of the*

> *project was very important and reasonable. As we had to deliver very early, we had to deal with problems very early as well. As a consequence, the impact of these problems could be minimized through rescheduling, and further mitigation measures could be initiated.*

At the beginning of the project, BANK strongly encouraged cooperation among the vendors to reinforce their roles and responsibilities and foster a stable working mode. However, this coordination and control effort gradually decreased, replaced by self-organizing mechanisms within the increasingly well-established multivendor cooperation (i.e., mid-to-long term effect on formal control). Thus the reduction of formal management effort resulted from interorganizational learning processes, as described by a project manager from IMPLEMENT:

> *At the beginning, [BANK] arranged formal meetings managed by BANK, but later, there was more and more direct interaction between the vendor companies. BANK was not the driver but was always informed to sustain transparency.*

4.2 Finding 2: Mitigating Effects on Cultural Differences

We now describe the mitigating effect of the interplay between control mechanisms and interorganizational learning on cultural differences in global, multisource, ISD outsourcing projects. It emerged from our data that these mechanisms can help partners overcome national and organizational cultural differences by harmonizing their varied work-related values and practices. That is, our data indicated that the integrated use of formal and informal control and interorganizational learning dominate or overrule patterns of behavior which are rooted in national or organizational cultural differences; thus, differences in national and organizational cultures become less salient and the occurrence of culture-induced conflict declines. In the following, we describe this finding in more detail.

In the focal project, the interplay of formal and informal controls, together with interorganizational learning, helped mitigate the risks associated with national and organizational cultural differences. By creating transparency about each individual deliverable (i.e., through the use

of the formal control mechanism "traceability matrix"), the parties assimilated their divergent assessments of quality and accuracy, at least to some extent. One project manager for the vendor stated:

> *The traceability matrix helped to mitigate the risks caused by cultural differences by defining clear roles and responsibilities, supporting the identification of interdependencies, and specifying our joint deliverables.*

In the following illustrative quote, another Spanish project team member explained the above-mentioned cultural differences between Germany and Spain from a Spanish perspective:

> *When problems occur, we would expect the customer to be near you, helping you, offering his support to jointly solve the problem regardless of the timeline.*

However, in the course of the cooperation, it turned out that

> *When you deliver to Germans, you have to deliver absolutely on time and bug-free. The quality expectations are high. They [German colleagues from BANK and other vendors] mainly insist on on-time delivery with defined quality; they stick more to their plan. Thus, it was very helpful that there was this detailed tracking tool, as we could see the status and our forthcoming tasks at any time.*

In parallel, divergent norms and values were being renegotiated and consolidated through the use of informal control and interorganizational learning processes. For example, while the development of a corporate, project-oriented mindset (i.e., informal management mechanism) helped mitigate organizational cultural differences by establishing a project culture, driven by team spirit and goal orientation, instances of interorganizational learning enabled the project team to cope with emerging differences in work-related practices. As one of our senior-level interview partners commented:

> *From my perspective, the main reason for the success of this project is the fact that the project members from our organization and the involved vendor organizations were always willing to pursue the goals of the project in a very collaborative way.*

Table 5 Elements of conceptual framework

Underlying reasons	Methods used		Main results achieved
	Categories	Concepts	
• Multi-party cooperation (from both, a national and organizational perspective) • Differences in work practices	• Formal control	• Traceability matrix (used as example in text) • Joint, template-based status reporting (not described in text) CMMI review process (not described in text)	• Transparency regarding roles and responsibilities of each party • Absence of negotiations and bargaining
• Multi-party cooperation (from both, a national and organizational perspective) • Differences in work-related values	• Informal control	• Development of joint, goal-oriented mindset (used as example in text) • Socialization activities, e.g., joint dinner (not described in text) • Stimulation of teammate interaction (not described in text)	• Growing as a team • Development of joint project culture
• Multi-party cooperation (from both, a national and organizational perspective) • Differences in work practices and values	• Interorganizational learning	• Initialization phase (used as example in text) • Use of joint structurization tools such as issue log, wiki, etc. (not described in text)	• Establishing an integrated service delivery process

A project manager from the client organization explained in greater detail how this worked:

> We talked about different perceptions, divergent understandings, issues resulting from cultural differences and different communication styles, and reflected jointly on the positive and negative episodes of the cooperation between the vendors within our project, constantly aiming at further improving this cooperation.

In summary, the interplay of formal and informal control and interorganizational learning enabled the project team to harmonize their divergent work-related values, norms, practices, and expectations, which resulted from national and organizational cultural differences.

The findings described above are summarized in **Table 5**.

5 Conclusion and Research Implications

With the goal of increasing our understanding of ways to mitigate cultural differences in global, multisource, ISD outsourcing projects, we apply an exploratory single-case study design. In turn, we can detail how formal and informal control mechanisms and interorganizational learning interact; furthermore, our data show that these interactions help mitigating cultural differences

in such projects. To achieve this benefit though, the implementation of formal controls appears essential because it prepares the project for the emergence of informal controls and interorganizational learning. Project partners also should anticipate changes in the effects of informal control and interorganizational learning over time, shifting from feedback and information that support the design of formal controls (short term) to an actually reduced need for and use of formal controls (mid- to long term). Together, these mechanisms can help partners overcome national and organizational cultural differences by harmonizing their varied work-related values and practices.

With these findings, this study contributes to global IS outsourcing literature and provides a clearer understanding of ways to deal with cultural differences in global, multisource, ISD outsourcing projects. Furthermore, we contribute to research into control dynamics in global IS projects: this study illustrates that changes in control modes across project phases can be triggered by external factors (e.g., project context, stakeholder context, and global context as revealed by Kirsch 2004), but also through the interplay of control modes within a single project's control portfolio. Finally, the detailed case analysis offers implications for global sourcing practices. The potential to reduce formal controls offers an important benefit for project managers of global, multisource, ISD out-

sourcing projects, as well as a likely reduction of the high management overhead costs normally associated with such projects.

However, we also note several limitations. First, we did not have the opportunity to interview any representatives from one of the vendors, TEST, which was responsible for the software testing in a new factory in India. Second, the ramp-up phase for the test factory did not work out as planned, causing major problems for the project and its multiple vendors during the testing phase. In this case, the parties seemingly should have suffered great conflict, resulting from cultural differences. Surprisingly though, the cooperation was characterized by harmony, perhaps because each of the vendors had a prior business relationship with BANK. Further research should examine multisource, ISD outsourcing relationships in the context of newly composed vendor portfolios to examine this proposed explanation. Third, our results are specific to large, technology reengineering projects in the German financial services industry. Accordingly, we encourage researchers to continue to study the posed research question in other contexts and settings. Fourth, our analysis of the interplay of formal and informal management mechanisms and learning in global, multisource, ISD outsourcing projects could be extended to identify further aspects and reveal an increasingly differentiated picture of the interaction.

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Abstract

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The Interplay of Project Control and Interorganizational Learning: Mitigating Effects on Cultural Differences in Global, Multisource ISD Outsourcing Projects

Research into global, multisource, information systems development outsourcing projects has uncovered management challenges, including cultural differences on multiple levels. While control mechanisms and interorganizational learning have been shown to contribute to the mitigation of cultural differences in such projects, a gap persists regarding the effect of the interplay between these mechanisms. This study employs an exploratory single-case study design to analyze how formal and informal control mechanisms and interorganizational learning interact and thus contribute to the mitigation of cultural differences in global, multisource, information systems development outsourcing projects. With the key finding that the influence of informal controls and interorganizational learning on formal controls changes over time, this research helps expand the domain of control dynamics in global IS projects. This study also contributes to literature on ways to handle cultural differences in global, multisource, IS outsourcing projects.

Keywords: Cultural differences, Formal control, Informal control, Interorganizational learning, IS outsourcing, Multisourcing, Global information systems development

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