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# PROJECT CONTROL IN IT OFFSHORE OUTSOURCING PROJECTS: FROM BEHAVIOUR CONTROL TO OUTPUT CONTROL TO GOOD CLIENT-VENDOR RELATIONSHIP

Michael Prifling, Robert Gregory, Roman Beck<sup>1</sup>

## **Abstract**

*This paper presents a process model of how an IT offshore outsourcing project in a German-Indian context evolved over time. It applies project control theory as the theoretical basis for analysis. The findings from the underlying case study contribute to the domain knowledge of IT project management and IT offshoring by providing insights into the effects of different types of control modes on project outcomes in distinct phases of a successful, long-lasting software reengineering project. The amount and type of control depends on the criticality of the product, as well as the level of mutual trust.*

## **1. Introduction**

IT projects receive an increasing attention in today's business world [20]. Research in the domain of IT project management has made significant progress. However, we still witness a high rate of IT project failures: according to the 2004 CHAOS report from the Standish Group, more than 30% of IT projects are prone to failure [36]. In addition, a large proportion of the remaining IT projects show deficiencies, regarding on-time delivery, meeting budget restrictions, and featuring all desired functionalities [15]. Although much research has been carried out in recent years focusing on the successful management of IT projects, rising user demands, technical complexities, tough financial requirements, as well as increasing market competition lead to an increasing complexity of managing successfully large IT projects [25]. Another essential impact factor emerged mainly within the last decade: realizing IT projects in outsourcing and even offshoring contexts. Such endeavours bring along new complexity drivers such as organizational and cultural barriers which are responsible for unique challenges in global collaborations [6; 7; 27].

While early IT outsourcing deals have focused on IT infrastructure outsourcing, with increasing globalization of services now even knowledge-intensive business services are outsourced [35], being generated and delivered from distinct locations around the globe, but with India as a competitive hub in its centre [11]. In Germany, the percentage of services being sourced from offshore locations is being estimated to rise in upcoming years [2]. The ongoing and increasing trend to outsource even to the remotest countries – at the cost of additional complexity to manage and control these projects – needs to be understood and analyzed rigorously. Central to this research context are the various facets of project control [26] as one of the most decisive management

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factors in global project teams [24]. To our best knowledge, we are not aware of any study on the use of different types of control modes in an IT offshoring context and their development and refinement over time. Therefore, our aim is to develop a process model describing different phases of a typical IT offshoring project with the causal effects of each phase, such as dynamically adapted control modes. Consequently, the purpose of this paper is to answer the following research question:

*How can different control modes influence the development of IT offshoring projects over time?*

To answer this question, we conducted a single-case study at the German office locations of an international financial services company (in the following called ‘the bank’). The bank decided to reengineer two central business software applications with the help of an outsourcing provider for reasons of reaping cost saving potentials and increasing organizational agility (i.e. to increase the ability to react rapidly to changing market conditions rather than being handicapped by inadequate, historically grown legacy systems). Mainly due to the cost saving potentials, the decision was made to contract an offshore vendor from India for this multi-million Euro project.

Following our interpretive, theory-building research approach, it turned out that different types and changing intensities of project controls played a significant role for the successful development of the client-vendor relationship that ultimately led to project success.

## **2. Theoretical Foundation**

Project control theory originates from organizational control theory, where it is distinguished between different forms or types of control modes. Most generally it can be distinguished between formal and informal controls. Accordingly, employed control mechanisms that are documented belong to the category of formal controls and include for example written project plans, testing procedures, and job descriptions [26]. Informal control mechanisms are those which are generally implicit and include issues such as peer pressure, influence, and social events [14; 26]. In addition to separating formal from informal controls, scholars have further distinguished between behaviour and outcome control, both being types of formal control. According to Ouchi, behaviour control is control exerted by personal surveillance, and outcome control entails measuring the output of employees [22]. Behaviour control is more appropriate when instruction is possible and when cause-and-effect chains are known. The managerial control mechanisms for behaviour control include instruction, monitoring, evaluation, and rewarding [4]. When imposing behaviour control, executives can evaluate and measure the behaviour of subordinates that leads to a certain outcome. Outcome control differs from behaviour control as performance results are measured and evaluated directly, rather than the behaviour that leads to the outcomes [13]. Applied to IT project management research, empirical results indicate that a high level of behaviour control by managers and a high level of outcome control by team members have positive outcomes to project performance [9].

Besides formal control, scholars continuously emphasize the important role of informal control which consists of self-control and clan control. These types of control take social or people strategies into account for reducing conflicting objectives between controller and contreee [3; 4; 12; 13]. Clan control refers to mechanisms designed for minimizing the differences between the controller’s and the contreee’s objectives – whereas in offshore outsourcing IT projects, the client would be the controller and the vendor would be the contreee – by announcing shared values, attitudes, and ideals for the members of a clan [12]. In other words, the goal of pursuing clan control is to implement common values, beliefs, and philosophy (‘common ground’) within the clan, i.e. the project team or client-vendor relationship [23]. Besides clan control, another form of informal control is self control. Hereby, the controller relies heavily on the ability and motivation of

individual project members to control themselves by their own actions. These include setting their own goals, monitoring their work progress, as well as rewarding and sanctioning themselves accordingly [12]. This occurs independently from formal organizational control mechanisms or clan norms [12] and most likely works when individuals are highly motivated due to the nature of the assigned task. This type of control works especially well in environments, where tasks involve a great deal of autonomy, creativity, and intellectual activity [17]. A summary of the theoretical concepts discussed above is provided in table 1.

**Table 1: Control Modes**

<b>Project Control Modes</b>		
<b>Formal Control</b>	Behaviour Control	defined as personal surveillance of employees [22]
	Outcome Control	defined as the measurement of employees' output [22]
<b>Informal Control</b>	Self Control	defined as relying on individuals to monitor and control themselves [12]
	Clan Control	defined as relying on the group (i.e. clan) to monitor and control itself [12]

### 3. Methodology

For this paper, we adopted an interpretive research perspective [32]. Hence, our goal was to understand the process of how the client-vendor relationship developed over time from the perspective of our interview partners. We identified two important issues that influenced heavily the development of the client-vendor relationship, namely project control and client-vendor expectations. Studying this process makes an interpretive and exploratory research design appropriate, where our focus does not lie on abstract generalizations but in-depth understanding of the studied phenomena [21]. We do not claim that our qualitative case study findings are representative for IT offshoring projects in general, but instead, we provide rich insight and a thorough understanding of the specific processes and events of this particular case [29]. In line with this research approach our focus lies upon the development of new theory (process theory), rather than testing existing theory [28]. In a similar way to prior interpretive studies in IS, the theoretical background for this analysis developed over time through a constant comparative process, moving back and forth between the collected data and theory [34]. We ended up selecting project control theory as a theoretical lens for our conceptualization and analysis process.

Our data collection efforts include several months of expert interviews, resulting in 31 interview transcriptions, each approximately 10 pages in length. Data was collected at two sites of the German operations of a large international bank. The interviews were conducted in an open-ended fashion, each lasting between 1 and 2.5 hours, resulting in over 50 hours of interview time. We selected our interview partners by following a structured and well-defined procedure. Interview partners were involved from both the client and vendor company; business and IT departments; top-level, project-level, subproject-level, and team-member level; lastly, interview partners involved during a particular phase of the project and those involved during the whole course of the project. We conducted the interviews with at least two researchers and discussed the interview results in the team of all three researchers that participated in this study. After each interview session, we transcribed the notes we had taken at the site [5; 34]. In addition to the data obtained from our

interviews, we received presentation material, project status protocols and other secondary material that we included in our analysis for data triangulation purposes [37].

The goal of this research study is to develop a process model of how the client-vendor relationship developed over time as a sequence of critical events, activities, and choices [19]. Thereby, we aim at making a substantive theoretical contribution to the global IT outsourcing literature [18]. The result of this study – a model of client-vendor relationship development in IT offshore outsourcing – is a ‘mediator’ between theory and data [30] and serves for the purposes of further research to develop a formal process theory of relationship development in client-vendor relationships [8]. Our motivation for developing a process model rather than a variance model was to study the dynamics and changing nature of client-vendor relationships as they unfold and evolve over time. In contrast, variance models serve to explain statistically relevant relationships between some independent variables and some outcome or dependent variables [30]. The choice of a process model is also consistent with the qualitative and interpretive research design adopted for this research, where in-depth understanding including contextual factors is the goal [31; 33], an essential ingredient of any process model [30]. Critical steps for developing our process model were to identify the most important events (e.g., the first deliveries from the vendor which showed a discrepancy between expected and actual quality), activities (e.g., an increasing amount of control exerted by the client), and choices (e.g., contracting and offshore vendor from India because of signalling effects and positive references from peers), and then order them into a sequence or pattern that explained how the client-vendor relationship developed and ultimately contributed to project success.

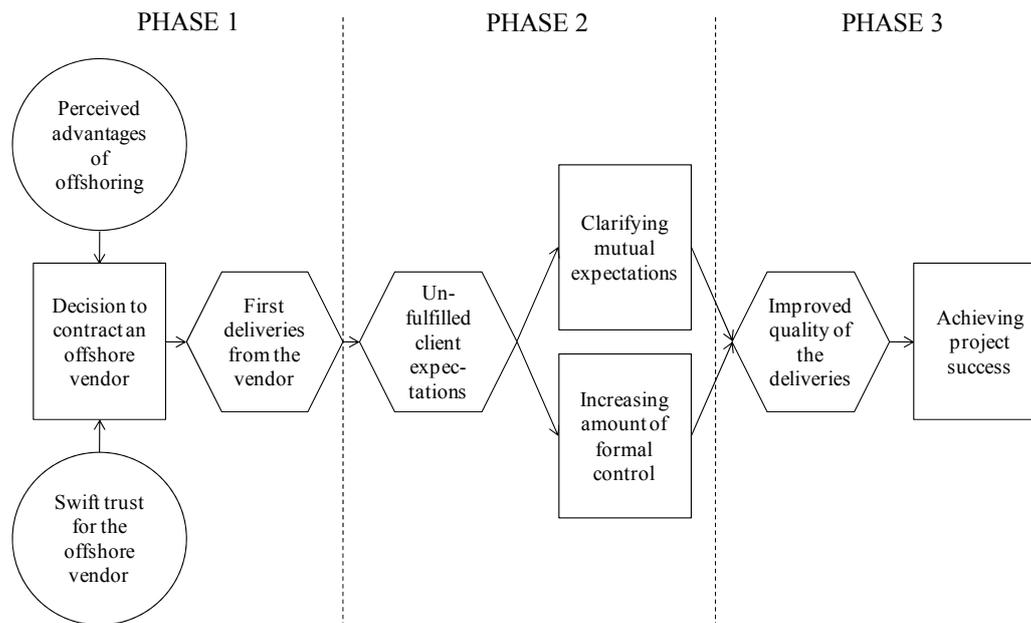
#### **4. Case Description**

An international bank with considerable operations in Germany decided to conduct a major IT reengineering project which was scheduled to start in 2003. Mainly due to the cost saving potentials, the bank decided to contract an external vendor from India to carry out this large project. The endeavour comprised the technical rework of two core banking systems, both of them handling millions of financial transactions of the bank every day. The idea was to integrate the older one of the two systems, a complex legacy software program from the 1970ies, into the newer system, which was more flexible, modular, and able to cope with future business changes of the bank. The reasons to start this multi-million Euro project, which span approximately four years and employed up to 150 people, were high complexities and non-flexibilities with two systems that were dependent on each other, an expert workforce with the knowledge to maintain the older system that was about to retire, and higher costs for running two separate systems with data redundancies. Because of the large and complex character of the project, the IT management decided to split it into a number of smaller sub-projects that were led by project leaders, while the overall venture was led by an experienced program manager.

The integration effort was exposed to high technical risk, since the two core-banking systems were reengineered while in operation. In case one of the functionalities of the newly designed software would fail during the ‘go live’ phase, a halt of all of the bank’s financial transactions – even if only for a few hours – would cause tremendous losses for the bank. Besides the reputation damage, such an event would mean a severe incident of international financial markets because of the bank’s excellent worldwide economic integration. Therefore, and because of the company’s corporate culture, risk avoidance and a very high software quality were hard requests.

#### **5. Case Analysis**

The project we investigated went through three distinct phases, as shown in figure 1. The rectangles represent choices and activities, respectively, while the hexagons stand for events, and the circles mean influencing factors for choices and activities.



**Figure 1: Three phases of the IT offshore outsourcing project**

The *first phase* began with the decision to contract an offshore vendor to execute the reengineering intention. This choice was influenced by perceived advantages of offshoring over domestic outsourcing, e.g., cost savings due to lower labour costs. The client negotiated a fixed price contract with the provider, so that the cost savings objectives were likely to be fulfilled.

The bank had established swift trust to the provider. This kind of trust can be built up before the relationship starts due to recommendations from peers, professional advice, and perceived competence [10]. The vendor supported building swift trust by offering to contact a former client company in a similar offshoring context and also from the financial services industry. The bank had open discussions with this vendor’s former customer, which gave a fine recommendation. Another swift trust supporting factor was the provider’s CMMI level 5 certification. It served as a signalling instrument for process mastery and high quality services to the bank. Its representatives travelled to India and interviewed several possible IT service providers which had applied for this project. A client project manager explained:

*“We sent a team to India which evaluated possible contract partners...and of course they did not all meet our expectations concerning functional and business knowledge. It was important to get a personal perspective on their real abilities.”*

The bank’s final decision to select this company was due to the decent fixed price agreement, its reputation, certification, and references. All these factors cumulated to establish swift trust from the beginning. This became apparent on the individual level, when the first project workers from India arrived at one of the bank’s locations in Germany. They were given a cordial welcome and the bank’s counterparts immediately took care of them, including taking them out for dinner and offering any support they needed to feel at home, besides handling all administrative duties. A client project manager involved in these activities said:

*“It was important that people from [name of vendor] came here personally. The face-to-face contact was crucial for building trust...we developed an understanding that for them everything was new and that they were not familiar with our culture. There you don’t want to say: ‘you are the*

*provider and even if you sit until 10 p.m. at your desk, I don't care.' Rather, we helped each other to cope with the mutual challenges."*

A good working relationship emerged during this initial phase between client and vendor personnel. This was encouraged by positive experiences during kick-off meetings and initial workshops to elaborate the so called "operational process documents", a management tool to describe responsibilities and roles of the involved parties in detail.

Part of this first phase of the project, which lasted several months, were also the deliveries of the first software pieces. The program management decided to split the overall reengineering effort into handy, manageable "chunks", i.e., partial deliveries that could be tested and presented to the sponsors of the project, the business departments of the bank. It was important to the program manager to continuously deliver working software components, so that the business side stayed committed to the project over the long lasting four year period of the project, and for proving that this project could indeed be successful in the end. However, the deliveries from the Indian provider at the first milestones could not fully meet the expectations of the project managers from the IT department of the bank.

At phase one, the degree of managerial control executed by the client was rather low. The operational process documents can be seen as an instrument of behaviour control, since they regulated in a very detailed way how processes would be performed and by whom. The program manager from the bank stated the following:

*"When the project started, I clearly communicated to all project members that I would assign clear responsibilities to each project leader and set milestones as well as deliverables in order to control for project performance. A detailed matrix list was developed to document and track the project workers to fulfil their responsibilities."*

Later in the course of the project, the main focus of control switched from behaviour to outcome control, as the delivered work packages did not fulfil the initial expectations. Then, outcome control was exerted to test the software program, and the amount of control increased significantly. This is in line with the findings of Rustagi et al. [26]. We do not argue that the control modes changed from behaviour to outcome control because of the unfulfilled expectations, but we do claim that the amount of control in general rose out of this reason. Although the software was tested by the vendor, it became apparent that the test procedures were not rigid enough and that there had been some misunderstandings within sub-project teams. The bank persisted that the software was tested under real world conditions and performed additional test procedures by itself. This can be seen as a form of tough outcome control, because the client did not only believe what has been tested by the supplier – this would have been outcome control as well – but it went through an extra mile of an additional test round, i.e., a second instance of outcome control.

This event of unfulfilled client expectations introduced the *second phase* of the project. This was a period of change in the relationship between the client and vendor personnel. Initially, there had been good personal relationships between the two parties, and they remained and further developed over the course of the project, but the shortfalls of quality due to misunderstandings and different perceptions of quality led to frustrations on both sides. The German team members and managers were disappointed by the average performance of the contractor (from their point of view), while the Indians were disappointed because their work was not respected the way they had expected. The people from the vendor company did not understand why their counterparts from the client were so assiduous about every detail of the software and of the formal documentation for every work step. They had worked until late at night, and on weekends in some occasions, to meet milestone deadlines and fix problems, but nevertheless, their colleagues from the customer were not content with their work. This led to mutual frustrations that had to be overcome. The original signalling

effect of a CMMI level 5 certification of the vendor company did not completely turn into satisfaction of the customer with the process execution and product quality prospects. Also, the swift trust that was put into each other at the beginning of the relationship suffered a bit, but never to the extent that the overall program would be in danger. The project manager from the vendor company commented on this:

*“There were some situations where many internal discussions were going on. They were irritant, things that had to be sorted out, but not to the extent where one would say: oh God, the project could fail...as an example, in early 2006, concerning the testing approach of one sub-project, in [name of sub-project, handling a central transaction system], there were discussions on the methodology of the testing approach. It was a very complex system that raised questions if things had to be changed.”*

To get the project back on a fruitful track and to achieve the goals, informal and formal management activities, employing informal and formal managerial control modes, were carried out. Numerous meetings with open and frank communication took place, aiming at clarifying mutual expectations of the client and vendor personnel. They were identified as a central premise to get better results of the collaboration. The bank explained in detail the reasons for their very accurate approach of how they wanted the software to be tested. Also, the motives why they wanted such a precise documentation of all actions were revealed. To this point in time, it was not clear enough to most of the Indian project workers that a business-critical failure of the core-banking system would have severe consequences not only for the bank, but also for the economy as a whole. This clarification helped the people from the vendor company to better understand the ‘nitpicking’ attitude of the Germans. On the other hand, as the Indians expected to receive more guidance and approval for their work, this was clarified and accepted by the Germans, as well. We argue that this clarification of mutual expectations helps building clan control, since the setting of clear goals can motivate people [1; 16] and therefore, can strengthen intra-group clan control. At this stage of the project, the decision was made to exert more formal control, and in particular strengthening the outcome control mode. This was implemented by additional test runs of the software packages by the bank’s employees from the IT department. One client project manager explained the following:

*“We defined manageable smaller work packages that were clearly defined and where the results could easily be measured. Additionally, deadlines for these smaller work packages were set at an early point in time in order to have more continuous control over the work progress and depict any problems at an early stage. Basically, instead of waiting for questions, our new approach was designed to ask questions actively ourselves.”*

Supplemental to the vendor’s testing procedures and to the above described narrower milestones and quality gates, the customer sent the software program through secondary, real world test environments. This is clearly an increase in formal outcome control performed by the customer. Since the leadership of the sub-projects has been with the bank since the beginning, these additional activities, along with more communication and knowledge transfer, ended up in more resources and work invested into this project by the client. While the originally planned work share was 60:40 between the IT service provider and the bank, the new labour division was ‘60:60’ – additional investments were necessary to get the project back on track. A senior project manager from the client company commented:

*“The actual budget split was more like 60:60 percent, which means that we became more expensive.”*

In the final *third phase* of the project, the quality of the delivered software packages improved significantly. Pieces of software were installed after having gone through now successfully implemented testing procedures. The software was rolled out iteratively and met all the quality criteria to the full satisfaction of the customer. According to the program manager, this was an important factor for keeping the motivation of the project members high over the whole course of the endeavour. Besides, with this stepwise approach, the team could continuously show the sponsors of the project that it actually can deliver this complex system and that it would work adequately in the end. The software provided all originally desired functionalities and proved to work smoothly. The on-time displacement of the two predecessor systems can be seen as the completion of the project. Although more resources had to be invested from both parties, the project is seen as a great success by both companies. In this third phase of the project, lasting for roughly the last year of the overall program, the amount of formal and informal control was reduced significantly. The reason for this is that following the initially disappointing software deliveries, mutual expectations were clarified, the amount of control rose, and this set of activities eventually led to better results and the establishment of ‘real’ trust (in contrast to the primary ‘swift trust’). The project manager from the vendor company put it into these words:

*“Let me give you an example for the importance of trust. Here: trust means take a step back and look at the important points, what means quality for the client – letting go a little bit of control from the client side.”*

Thus, once partial deliveries came in successfully and showed the client that the vendor is now aware of the important points concerning the quality of the software and the rigid testing procedures, then more trust ultimately led to less control. This is in line with the findings of Rustagi et al. [26], suggesting that the higher the level of trust in a client-vendor relationship, the lower the amount of formal project management, i.e., formal control, is used or perceived as necessary.

## **6. Conclusion**

In this paper, we investigated an IT offshore outsourcing project spanning over roughly four years and employing more than 100 people from two companies. In the end, the multi-million Euro project was seen as a success by all involved parties. The program went through three main phases which were described and analyzed in detail above. These different periods are characterized by the use of distinct control modes and changing amounts of control, depending on the complexities of the tasks, the security demands of the product, and the level of trust between the two parties, which in turn is influenced by the quality and reliability of former deliveries.

We showed that during the process, the project went from the employment of mainly formal behaviour control, through the phase of highlighting formal outcome control, to informal control modes in the last stage of the relationship. The amount of control started rather low, rising after the first not satisfying deliveries, to eventually end up being lowered and partly replaced by mutual trust.

We are not aware of any study examining the change of control modes and amount of control employed by the customer upon the vendor in an international software reengineering context, involving a large customer from the financial services industry located in a Western country and a large, ambitious IT service provider from India. Our research contributes to the field of IT offshoring and IT project management, helping to explain favourable project outcomes in a certain context. Future research can embrace different aspects of the process model, further exploring the impact of different types of managerial control on team performance and project success.

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