Association for Information Systems
AIS Electronic Library (AISeL)

ECIS 2009 Proceedings

European Conference on Information Systems (ECIS)

1-1-2009

Antecedents of success in IS offshoring projects - Proposal for an empirical research study

Markus Westner
Dresden University of Technology, markus.westner@tu-dresden.de

ANTECEDENTS OF SUCCESS IN IS OFFSHORING PROJECTS – PROPOSAL FOR AN EMPIRICAL RESEARCH STUDY

Westner, Markus, Dresden University of Technology, 01062 Dresden, Germany,
markus.westner@tu-dresden.de

Abstract

The paper presents a research model and a measurement instrument for a research-in-progress study on the antecedents of success in IS offshoring projects. In this empirical-confirmatory study, we intend to analyse the impact of the constructs "offshoring expertise", "trust in offshore service provider", "project suitability", "knowledge transfer", and "liaison quality" on offshore project success. Constructs and indicators are derived from an extensive literature review. We plan to formulate a structural equation model and to test it using partial least squares (PLS) as an analysis technique. Our research model addresses the paucity of research that quantitatively examines offshoring success.

Keywords: offshoring, outsourcing, project success, partial least squares.

1 INTRODUCTION

Information systems (IS) offshoring describes the transfer of IS services to an offshoring service provider (OSP) in a near or far away country. This OSP can be an internal subsidiary (so-called "captive offshoring"), a partially-owned unit, or an external service provider (so-called "offshore outsourcing"). The services themselves are partially or totally transferred. (Carmel and Agarwal 2002, Hirschheim et al. 2005, Jahns, Hartmann and Bals 2006/7, Mirani 2006, Niederman, Kundu and Salas 2006, Rajkumar and Mani 2001, Srivastava, Teo and Mohapatra 2008)

High labour cost differentials in comparison to western countries and the resulting cost savings are the main reasons why companies engage in IS offshoring. Accordingly, the market volume for offshoring of IT services has been growing fast in the last years, with India being the most popular offshoring destination (Knapp, Sharma and King 2007, Metters and Verma 2008, Poornima 2008). Application development and maintenance activities, where labour constitutes a significant share of total costs, are especially likely to be performed offshore (Bitkom 2005, Boes, Schwemmle and Becker 2004, William, Mayadas and Vardi 2006). However, recent studies among companies worldwide indicate that a large number of companies that engaged in IS offshoring are not fully satisfied with their engagements' performances (Bright 2008, Computerwoche 2008).

The situation is especially noticeable in Germany. There, offshoring levels are rather low: only 6% of all companies source IS services from abroad in contrast to 64% that already use domestic IS outsourcing (Schaaf and Weber 2005, ZEW 2007). Additionally, German companies also experience difficulties in performing IS offshoring successfully (Prehl 2008). This seems to be due to language and cultural barriers (Dibbern, Winkler and Heinzl 2006, Mertens 2005, Wiener 2006).

IS offshoring is worth being researched as a domain of its own because it has specific characteristics that distinguish it from the well-researched field of IS outsourcing. In IS offshoring, service delivery occurs under the additional condition of "distance" between service provider and consumer in terms of physical distance, time zone differences, or cultural differences. Additionally, complexity increases due to the higher degree of geographical dispersion among team members. Finally, IS offshoring arrangements often create additional organisational challenges because offshore staff partially replaces domestic onshore staff. This increases the importance of knowledge transfer, knowledge absorption, project management, and HR management to ensure successful service delivery. (Chua and Pan 2008,

Holmström Olsson et al. 2008, Ranganathan and Balaji 2007, Rottman and Lacity 2008, Srivastava et al. 2008, Winkler, Dibbern and Heinzl 2008)

Research in IS offshoring has been growing in the last years and journals such as the "MIS Quarterly" (vol. 32, issue 2) or "Information Systems Frontier" (vol. 10, issue 2) have published issues addressing the phenomenon. IS offshoring research, in contrast to IS outsourcing research, is primarily case study based and qualitative, which shows that it is still in its initial, theory-building stage (Dibbern et al. 2004, King and Torkzadeh 2008). The research situation is furthermore characterised by studies that employ a project or organizational level of analysis, focus on India as an offshoring destination, and investigate "success/outcome factors" or "economic value" as research topics (King and Torkzadeh 2008).

Derived from the special characteristics of IS offshoring, we investigate how "project suitability", "knowledge transfer", and "liaison quality" as well as how the constructs "trust in OSP" and "offshoring expertise" impact offshoring project success at German companies. We employ a confirmatory-quantitative research approach to address this objective. In this sense we follow the current state in IS offshoring research to focus on "success/outcome factors" with "projects" being the level of analysis. However, we add original content through our research model that partially builds upon recent research results but also incorporates new aspects. We ensure methodological originality by gathering a broad empirical dataset and by analysing our research model with structural equation modelling as a tool for analysis. Finally, we address the paucity of research that quantitatively investigates offshoring in the context of German businesses.

We focus our research along four dimensions: (1) our regional focus is Germany, (2) we focus on the offshore consuming client's perspective, (3) our unit of analysis is offshoring projects, i.e., not the arrangement or relationship between service consumer and provider in total, and (4) we focus on application development or maintenance projects.

2 THEORETICAL FOUNDATION AND RESEARCH MODEL

2.1 Research model overview

Our proposed research model argues that offshoring expertise has a direct positive effect on offshore project success. Additionally, it is positively associated with project suitability, knowledge transfer, and liaison quality which act as mediators for offshore project success. Trust in the OSP is positively associated with knowledge transfer, liaison quality, and offshore project success. Figure 1 illustrates the model. The subsequent sections develop and describe its constructs and their relationships.

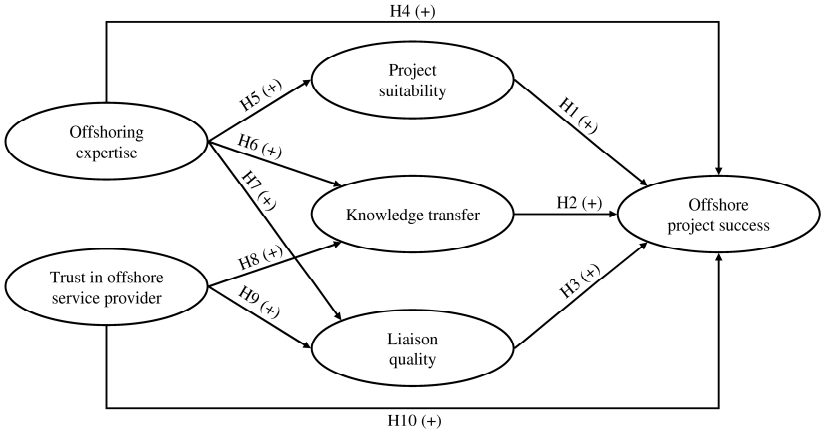

Figure 1. Research model on antecedents of offshore project success. A plus (+) symbol denotes a positive relation between constructs.

2.2 Measuring offshore project success

Offshore project success is the dependent variable in our research model. As Erickson and Ranganathan (2006) show, success can be understood and measured in multiple ways, including "the organization's satisfaction with the results of outsourcing (Grover, Cheon and Teng 1996), an expectations fulfilment view (Lacity and Willcocks 1998), a cost/benefit approach (Wang 2002), a psychological contract perspective on fulfilled obligations (Koh, Soon Ang and Straub 2004), and a strategic fit view of success (Lee, Miranda and Kim 2004)" (Erickson and Ranganathan 2006).

Several studies measure success as the satisfaction of outcomes, sometimes calibrated by initial expectations (Balaji and Ahuja 2005, Grover et al. 1996, Dahlberg and Nyrhinen 2006, Wüllenweber et al. 2008). In their extensive review of IS outsourcing success definitions and measures, Dahlberg and Nyrhinen (2006) find that satisfaction with outcomes can be evaluated along four categories which are "strategic factors", "economic factors", "technological factors", and "social factors". Additionally, overall satisfaction forms a part of their success definition.

Strategic, economic, technological and social outcome factors may also apply to projects but they are not applicable in all cases. For example one might think of projects that completely lack a specific strategic proposition. Since a project is by definition an effort bound by "schedule", "budget", "functionality", and "quality" (Erickson and Ranganathan 2006), it rather makes sense to use these dimensional factors together with overall satisfaction as an operationalization of offshore project success.

Therefore, our paper interprets the dependent variable offshore project success as the perceived satisfaction with the outcome of the offshore project in total, and with the dimensions of schedule, budget, functionality, and quality.

2.3 The role of project suitability for project success

We define project suitability for offshoring as the sense that a project's attributes and its task characteristics make it more amenable for delivery in a dispersed, inter-cultural environment, i.e., in an offshoring setting.

The identification of suitable project candidates for offshoring is one of the first activities before engaging in an IS offshoring arrangement. Once identified, these offshoring candidates then represent the core objects in the subsequent implementation of IS offshoring. Therefore, research and practice indicate that the identification of suitable project candidates is a main step in pursuing an IS offshoring endeavour. (Aron and Singh 2005, Chua and Pan 2006, Kumar and Palvia 2002)

Research in IT outsourcing has shown that there is a link between the function being outsourced and arrangement success (Fisher, Hirschheim and Jacobs 2008). They suggest focusing on routinely performed and non-core functions. Applying the lens of transaction cost theory and operations management models, Stratman (2008) finds that well understood, standardized service processes that are non-core are best candidates for successful offshoring. Stringfellow, Teagarden and Nie (2008) show that it is more challenging to offshore complex, loosely defined and non-standardized tasks that require complex judgments and implicit knowledge. If projects or tasks show these characteristics, offshore delivery incurs additional costs which might threaten project success. King (2008) suggests a framework for determining whether an IS activity should be considered for offshoring. He posits that activities should be kept in-house if they require proximity and the risk of offshoring is too great, or if the activity is too business-critical. Schaffer (2006) develops a similar framework that suggests refraining from offshoring projects which are very short, require a tremendous amount of personal interaction, are of high security and extreme criticality for the business. Mirani (2006) states that small applications or components of low complexity, for which specifications can be communicated completely, and whose development process is highly structured, are more likely to be successfully delivered in an offshore arrangement.

Since most of these studies are conceptual in nature or rely on a small set of empirical data, we carried out a qualitative pre-study with 47 German offshoring experts from different companies to find out whether project suitability is actually important for project success and what the respective evaluation criteria could be (Westner and Strahringer 2008). In the interviews, these experts confirmed that a project's characteristics and its suitability for offshoring have a strong impact on later project success. Criteria such as project size, project duration, operating language, degree of codification, and business specificity were most frequently mentioned as determining a project's suitability for offshoring with regard to successful delivery. If projects have a certain size and duration, the project language is English, the degree of codification is high, and business specificity or required domain knowledge is low, it takes less time and effort to make OSP staff fully productive. Therefore we hypothesize:

H1: Project suitability is positively associated with offshore project success.

2.4 The role of knowledge transfer for project success

Following Davenport and Prusak (1998) and Lee, Huynh and Hirschheim (2008), we define knowledge as "a fluid mix of experience, values, contextual information and expert insight that provides a framework for evaluating and incorporating new experiences and information" (Davenport and Prusak 1998). Knowledge transfer as an outcome is the result of (1) the exchange of knowledge as a systematic activity between individuals and organizations (Chua and Pan 2008, Wang, Tong and Koh 2004) and (2) the ability to absorb the knowledge, to apply it and to use it in project delivery (Orlikowski 2002, Oshri, Kotlarsky and Willcocks 2007). Common terms to describe these two aspects are "knowledge transition" for (1) and "knowledge integration" for (2).

Application development and maintenance represent knowledge-intensive work. Knowledge pertinent to applications can either be explicit, such as software documentation, technical specification, or standardized development processes, but it can also be tacit, such as practices like norms of communication or non-specified processes and activities. (Chua and Pan 2006, Nicholson and Sahay 2004)

To profit from the economic benefits of offshoring, offshore staff must actually replace more expensive onshore staff (Chua and Pan 2008). Accordingly, all project-relevant explicit and implicit knowledge needs to be transferred to offshore staff. This knowledge transfer happens at the beginning of an offshoring project but is also a continuous activity during the whole project. Correspondingly, offshoring process models used in the industry and proposed by research recognize knowledge transfer as a specific activity (Bugajska 2007, Oshri et al. 2007, Voigt, Novak and Schwabe 2007).

Applying this perspective, the importance of knowledge transfer becomes obvious and has also been addressed in research. A case study by Chua and Pan (2008) examines how a financial institution transferred knowledge within a captive offshoring arrangement, and highlights knowledge transfer's importance for successful service delivery. Another case study, by Oshri et al. (2007) from the OSP perspective, investigates best practices for managing dispersed knowledge among on- and offshore sites and acknowledges that knowledge transfer is a key part of successful offshoring. Previously, Ganesh and Moitra (2004) identified knowledge transition and the absorptive capacity of the OSP as one of the critical success factors for successful service transition in the context of business process outsourcing and offshoring. Rottman and Lacity (2008) develop best practices to ensure success in IS offshoring. Most of these best practices are fundamentally linked to facilitate and ensure successful knowledge transfer. Finally, in one of the few recent empirical-confirmatory studies, Lee et al. (2008) examine IS outsourcing arrangements between Korean firms and find significant support for the hypothesis that knowledge sharing is positively related to the success of outsourcing.

Thus, we can conclude that if knowledge transfer is successful, (1) offshore staff is more productive because it has the required know-how to perform project tasks and (2) onshore staff can be replaced as initially planned because it does not hold exclusive knowledge anymore. Based on this understanding we hypothesize that:

H2: Knowledge transfer is positively associated with offshore project success.

2.5 The role of liaison quality for project success

We define liaison quality as the degree of connectedness between onshore and OSP staff in the aim to achieve specified goals, i.e. in our case, a project's objectives (Winkler et al. 2008). Liaison between staff should incorporate reciprocity and closeness (Xu and Yao 2006).

The environmental circumstances of IS offshoring delivery have negative impacts on liaison quality. Due to distance, communication frequency between team members decreases, collaboration is aggravated, and individuals tend to feel themselves not as equal parts of a team (Herbsleb and Mockus 2003, Xu and Yao 2006).

Therefore, research in IS offshoring emphasizes the importance of liaison quality on offshoring success. Erickson and Ranganathan (2006) highlight the need for clear roles, responsibilities, communication mechanisms, and conflict resolution in the management of global virtual teams. Rottman (2008) recognizes liaison quality's impact on success and suggests building personal connections between OSP staff and client staff, for example by regular site visits and face-to-face meetings. Furthermore, he proposes to integrate offshore staff into onshore staff and synchronize training of offshore employees with internal training efforts. Similarly, Heeks et al. (2001) find that a high degree of congruence between provider and client improves chances for project success regarding schedule and budget. They recommend building bridging relationships between involved team members and using "straddlers", i.e., dedicated individuals who are responsible for facilitating and moderating the interaction between on- and offshore staff. Levina and Vaast (2008) mention that liaison quality lessens negative effects of distance and thereby improves performance. They mention good onshore middle managers, frequent communication, constructive communication, and the efficient usage of technology as practices to improve liaison quality. Other research shows congruent findings and mentions the positive effect of liaison quality on performance achieved by liaison engineers and personal relationships (Kobitzsch, Rombach and Feldmann 2001), facilitation of informal communication (Herbsleb and Mockus 2003), the presence of expert intermediaries, and supplier presence on-site (Carmel and Nicholson 2005).

Achieving satisfactory levels of liaison in an offshore project setting seems to be challenging due to the negative effects of cultural and physical distance. However, liaison between on- and offshore staff is vital for collaboration, working efficiency, and productivity. Thus liaison quality directly impacts offshore project success and we hypothesize:

H9: Liaison quality is positively associated with offshore project success.

2.6 The impact of offshoring expertise on project suitability, knowledge transfer, liaison quality, and offshore project success

We define expertise as a certain degree of individual or organizational experience in managing or conducting offshoring in a more efficient and thus successful manner. In organizational research this is commonly referred to as "learning curve effects" or "experience curve effects" (Day and Montgomery 1983, Ghemawat 1985).

As mentioned in the introduction, delivery in an offshoring context raises multiple challenges for all involved parties. Individuals as well as organizations can benefit from best practices and experiences they have had in past engagements. Thus they can cope better with offshore-specific challenges.

The positive impact of expertise on diverse activities of the offshore process and directly on offshore project success has already been addressed in research. Carmel and Agarwal (2002) develop a maturity model for companies engaging in offshoring and give recommendations how to move along this maturity curve. In a study of an eight-year offshore outsourcing alliance, Kaiser and Hawk (2004)

describe how the alliance evolved towards a more beneficial co-sourcing model, for both the consumer and the supplier. Similarly, Mirani (2006) shows how increasing expertise leads to a change in the offshoring relationship from rather simple to more sophisticated arrangements. Rottman and Lacity (2006), in their study of offshoring practices at 21 U.S. companies, also find positive effects of expertise on offshoring success.

Higher levels of organizational and individual expertise help to cope with the potential challenges of offshoring and thus increase the probability of project success. Thus, expertise has a positive impact on all three mediating constructs because based on past experiences it is rather likely a company selects projects which are most suitable for offshoring. Additionally, the organization and the individuals know how to manage knowledge transfer and improve liaison quality based on their expertise. Thus, we hypothesize:

H4: IS offshoring expertise is positively and directly associated with offshore project success.

H5: IS offshoring expertise is positively associated with project suitability.

H6: IS offshoring expertise is positively associated with knowledge transfer.

H7: IS offshoring expertise is positively associated with liaison quality.

2.7 The impact of trust in the OSP staff on knowledge transfer, liaison quality, and offshore project success

We define trust as the "expectation that an actor (1) can be relied on to fulfil obligations […], (2) will behave in a predictable manner, and (3) will act and negotiate fairly when the possibility for opportunism is present" (Zaheer, McEvily and Perrone 1998). Trust can thereby take the form of inter-personal or inter-organizational trust. Inter-personal trust is trust placed by the individuals in their individual opposite member. Inter-organizational trust is trust placed in the partner organization by the members of a focal organization (Lee et al. 2008, Zaheer et al. 1998).

Trust is important within an IS offshoring context because it is a facilitator and precondition for activities such as knowledge transfer, but also for collaboration among team members in general. Trust thereby increases the room to manoeuvre within an arrangement beyond the specifications of a contract. If individuals or organizations trust their counterparts, they are more willing to cooperate and to put in extra effort if needed. (Lee et al. 2008)

In IS outsourcing research, the role of trust as an important arrangement attribute has been widely recognized. Higher levels of trust seem to positively influence the relationship between client and vendor (Grover et al. 1996, Lee and Kim 1999, Winkler et al. 2008). Recent empirical-confirmatory studies show that trust is positively related to the extent of knowledge sharing (Lee et al. 2008) and that trust, mediated by cooperative learning, has a significant positive influence on knowledge transfer (Park and Im 2007). With respect to IS offshoring research, trust is mentioned as a critical success factor regarding the interface between offshore consumer and supplier (Jennex and Adelakun 2003). Kaiser and Hawk (2004) confirm this in a case study and perceive the creation of trust as a best practice for successful offshoring because it facilitates collaboration between on- and offshore staff. Thus, offshore staff becomes productive in a short time and projects progress faster. Winkler et al. (2008) show that trust positively influences the degree of connectedness between an offshore consumer and a service provider in their aim to achieve specified goals. Rottman (2008) illustrates how trust facilitates the knowledge transfer within an offshoring arrangement because it increases the willingness to share knowledge and collaborate.

Apparently, trust seems to influence knowledge transfer because individuals are more likely to share knowledge if they trust each other. This is especially important when it comes to implicit and thus sticky knowledge. Additionally, trust fosters and facilitates collaboration, communication, and – more generally – increases liaison quality among team members. Thus we hypothesize:

H8: Trust in OSP is positively associated with liaison quality.

H9: Trust in OSP is positively associated with knowledge transfer.

Similar to our hypotheses concerning the construct "offshoring expertise", we could hypothesize a direct effect of trust on offshore project success. However, the studies mentioned above and other non-IS research (c.f. literature overview by Lee et al. 2008) do not support such an association. They do not link levels of trust directly to success or outcome but rather examine the impact of trust on constructs such as relationship or partnership quality, thus assuming a fully mediated effect. We nevertheless include a potential direct impact of trust on offshore project success in our model. However, because the theoretical backing is weak, we treat it with the necessary prudence regarding its direct impact in the model on success and later interpretation of results:

H10: Trust in OSP is positively and directly associated with offshore project success.

3 ANALYSIS

We follow an empirical-confirmatory research approach. Our units of analysis are offshore application development or maintenance projects at German corporations. Section 3.1 explains our measurement instrument. Section 3.2 outlines the intended analysis method using Partial Least Squares (PLS) as a measurement technique.

3.1 Measurement instrument

We measure each construct by an indicator set, with each indicator being assessed on a 7-point Likert scale from "1 – strongly disagree" to "7 – strongly agree". As far as possible we used indicators that were developed and applied in previous research and adapted them if necessary. Only for project suitability we had to define indicators ourselves since there is no known existing instrument from previous studies. We constructed these indicators on the basis of a previous qualitative study that examined factors determining a project's suitability for offshoring (Westner and Strahringer 2008).

All constructs are measured reflectively, with the exception of project suitability which is operationalized by means of a formative multi-item scale. The reason for using a formative measurement model is that the indicators to measure project suitability are causing the construct instead of being caused by or reflecting it. Thus, the construct needs to be measured by a formative approach. (Diamantopoulos and Winklhofer 2001)

At this stage, we are still in the progress of conducting pre-tests of the instrument with academic staff at different universities and with industry experts and practitioners. The pre-test intends to ensure validity, quality, and comprehensibility of the questions and its presentation. Table 1 illustrates our preliminary measurement instrument. Column 1 contains the research model's constructs, Column 2 the respective label, Column 3 the corresponding indicators, and Column 4 respective references to literature, if applicable.

Construct	**Label**	**Indicator ("1 - fully disagree" – "7 fully agree")**	**References**
Offshoring expertise		At the time the project was started…	Carmel and Agarwal 2002, own
	EXP1	…most project team members had already gathered work experience in offshore arrangements.	
	EXP2	…our company had already performed other projects in an offshore arrangement.	
	EXP3	…our company had dedicated processes and organizational structures in place to plan, manage and execute offshore arrangements.	
	EXP4	Overall, at this time, we considered our level of offshoring expertise as being high.	

Construct	Label	Indicator ("1 - fully disagree" – "7 fully agree")	References
Trust in offshore service provider		After starting to work with the offshore service provider we realized that its staff…	Lee et al. 2008
	TRU1	…makes beneficial decisions to us under any circumstances.	
	TRU2	…is willing to provide assistance to us without exception.	
	TRU3	…reliably provides pre-specified support.	
	TRU4	…is honest.	
	TRU5	…cares about us.	
	TRU6	Overall, we had the impression that we could trust the offshore service provider staff.	
Project suitability	SEL1	The offshored project's volume in terms of workload was rather large.	Own
	SEL2	The offshored project's duration was rather short (*reversely coded*).	
	SEL3	Most of the project communication between staff was done and documentation was available in English.	
	SEL4	Most of the information and knowledge concerning the project was well codified and documented.	
	SEL5	The project required business-specific know-how of all staff members (*reversely coded*).	
	SEL6	Today, we would say the project was suitable for offshore delivery.	
Knowledge transfer		During the project, with the offshore service provider staff we shared…	Lee et al. 2008, Simonin 1999
	KNO1	…business proposals and reports.	
	KNO2	…manuals, models, and methodologies.	
	KNO3	…know-how from work experience.	
	KNO4	…each other's know-where and know-whom.	
	KNO5	…expertise obtained from education and training.	
	KNO6	The offshore service provider staff had learned a great deal about the project-related technology/process know-how.	
	KNO7	The offshore service provider staff had greatly reduced its know-how related reliance or dependence upon us since the beginning of the project.	
	KNO8	Overall, we were satisfied with the knowledge transition from us to offshore service provider staff within the project.	
Liaison quality		During the project our staff and offshore service provider staff…	Erickson and Ranganathan 2006, Xu and Yao 2006
	LIA1	…communicated frequently and openly.	
	LIA2	…developed a mutual understanding of the respective ethnic and corporate cultures.	
	LIA3	…members each perceived themselves as equal and recognized members of the project team.	
	LIA4	…formed close individual working connections with each other.	
	LIA5	Overall, we were satisfied with the working liaison between our staff and offshore service provider staff.	
Offshore project success	SUC1	We were satisfied with the project performance regarding time schedule.	Erickson and Ranganathan 2006, Grover et al. 1996, Wüllenweber et al. 2008
	SUC2	We were satisfied with the project performance regarding budget.	
	SUC3	We were satisfied with the project performance regarding expected functionality.	
	SUC4	We were satisfied with the project regarding expected quality.	
	SUC5	We were satisfied with the overall outcomes from our offshoring arrangement.	

Table 1. Measurement instrument for research model.

Together with these indicators we will also gather data regarding whether it was a recent or old project, the offshoring country, the language in which the project was carried out, whether it was a captive or outsourcing offshoring project, project duration in months, project volume in man months and currency, respondents' personal years of offshoring expertise, career position now, role on the project at the time it was conducted, whether the respondent resided on- or offshore, and to what industry the company belongs. This additional data will be used for better understanding and will serve as control variables.

3.2 Analysis method

We will transform our research model into a structural equation model and test it using PLS analysis. PLS is especially suitable in research areas where theory-building is still in its early stage. Additionally, it works with non-normal distributed data as well as with small sample sizes and it allows for incorporating formative and reflective construct measurement. (Gefen, Straub and Boudreau 2000, Herrmann, Huber and Kressmann 2006)

4 NEXT STEPS

After data collection, we will analyse the returned data and test our research model. In doing so, we will follow the generally accepted analysis principles when using PLS. The quality of our reflective indicators will be evaluated regarding content validity, convergent validity, and discriminant validity (e.g., Gefen et al. 2000, Huber et al. 2007). The specification quality, which is important for formative indicators, is ensured by a pre-study where we conducted interviews with 47 German offshore experts at different companies. Further tests for quality of the formative indicators will focus on its predictive quality, reliability, discriminant validity, and occurrence of multi-collinearity (e.g., Diamantopoulos and Winklhofer 2001, Huber et al. 2007). We will test for non-response bias by comparing the data of early returned questionnaires with later returned ones. Finally, we will actually test our structural model and its hypotheses and analyse for the effect of control variables. The final result's interpretation will also reflect on the generalizability of findings to other countries.

References

Aron, R., & Singh, J. V. (2005). Getting offshoring right. Harvard Business Review, 83 (12), 135–143.

Balaji, S., & Ahuja, M. K. (2005). Critical team-level success factors of offshore outsourced projects: A knowledge integration perspective. In R. Sprague Jr. (Ed.), Proceedings of the 38th Annual Hawaii International Conference on System Sciences, pp. 52–59, Los Alamitos, CA: IEEE CS Press.

Bitkom (2005). Leitfaden Offshoring. Retrieved March 07, 2007, from http://www.bitkom.org/files/documents/BITKOM_Leitfaden_Offshoring_31.01.2005.pdf.

Boes, A., Schwemmle, M., & Becker, E. (2004). Herausforderung Offshoring: Internationalisierung und Auslagerung von IT-Dienstleistungen. Düsseldorf: Hans-Böckler-Stiftung.

Bright, B. (2008). Outsourcing looks closer to home. Retrieved August 29, 2008, from The Wall Street Journal: http://online.wsj.com/article/SB118159871575631717.html.

Bugajska, M. (2007). Piloting knowledge transfer in IT/IS outsourcing relationship towards sustainable knowledge transfer process: Learnings from swiss financial institution. In Proceedings of the 13th Americas Conference on Information Systems.

Carmel, E., & Agarwal, R. (2002). The maturation of offshore sourcing of information technology work. MIS Quarterly Executive, 1 (2), 65–78.

Carmel, E., & Nicholson, B. (2005). Small firms and offshore software outsourcing: High transaction costs and their mitigation. Journal of Global Information Management, 13 (3), 33–54.

Chua, A. L., & Pan, S. L. (2008). Knowledge transfer and organizational learning in IS offshore sourcing. Omega, 36 (2), 267–281.

Chua, A.-L., & Pan, S. (2006). Knowledge transfer in offshore insourcing. In W. Haseman, D. W. Straub, & S. Klein (Eds.), Proceedings of the 27th International Conference on Information Systems, pp. 1039–1054, Milwaukee, WI.

Computerwoche (2008). Offshoring: Die großen Konzerne tun es. Retrieved September 26, 2008, from http://www.computerwoche.de/heftarchiv/2008/39/1224623/.

Dahlberg, T., & Nyrhinen, M. (2006). A new instrument to measure the success of IT outsourcing. In Proceedings of the 39th Annual Hawaii International Conference on System Sciences, pp. 1–10, Hawaii.

Davenport, T. S., & Prusak, L. (1998). Working knowledge: How organizations manage what they know. Boston, MA: Harvard Business School Press.

Day, G. S., & Montgomery, D. B. (1983). Diagnosing the experience curve. Journal of Marketing, 47 (2), 44.

Diamantopoulos, A., & Winklhofer, H. M. (2001). Index construction with formative indicators: An alternative to scale development. Journal of Marketing Research (JMR), 38 (2), 269–277.

Dibbern, J., Goles, T., Hirschheim, R., & Jayatilaka, B. (2004). Information systems outsourcing: A survey and analysis of the literature. The Data Base for Advances in Information Systems, 35 (4), 6–102.

Dibbern, J., Winkler, J., & Heinzl, A. (2006). Offshoring of application services in the banking industry: A transaction cost analysis, from Universität Mannheim: http://wifo1.bwl.uni-mannheim.de/fileadmin/files/publications/Working_Paper_16-2006.pdf.

Erickson, J. M., & Ranganathan, C. (2006). Project management capabilities: Key to application development offshore outsourcing. In Proceedings of the 39th Annual Hawaii International Conference on System Sciences, pp. 199–208, Hawaii.

Fisher, J., Hirschheim, R., & Jacobs, R. (2008). Understanding the outsourcing learning curve: A longitudinal analysis of a large Australian company. Information Systems Frontiers, 10 (2), 165–178.

Ganesh, J., & Moitra, D. (2004). An empirical examination of the determinants of successful transition management in offshore business process outsourcing. In Proceedings of the 10th Americas Conference on Information Systems, pp. 3493–3500, New York.

Gefen, D., Straub, D. W., & Boudreau, M.-C. (2000). Structural equation modeling and regression: Guidelines for research practice. Communications of the AIS, 4 (7), 1–77.

Ghemawat, P. (1985). Building strategy on the experience curve. Harvard Business Review, 63 (2), 143–149.

Grover, V., Cheon, M., & Teng, J. (1996). The effect of service quality and partnership on the outsourcing of information systems functions. Journal of Management Information Systems, 12 (4), 89–117.

Heeks, R., Krishna, S., Nicholsen, B., & Sahay, S. (2001). Synching or sinking: Global software outsourcing relationships. IEEE Software, 18 (2), 54–60.

Herbsleb, J. D., & Mockus, A. (2003). An empirical study of speed and communication in globally distributed software development. IEEE Transactions on Software Engineering, 29 (6), 481–494.

Herrmann, A., Huber, F., & Kressmann, F. (2006). Varianz- und kovarianzbasierte Strukturgleichungsmodelle: Ein Leitfaden zu deren Spezifikation, Schätzung und Beurteilung. zfbf, 58, 34–66.

Hirschheim, R., Loebbecke, C., Newman, M., & Valor, J. (2005). Offshoring and its implications for the information systems discipline. In D. Avison, D. Galletta, & J. I. DeGross (Eds.), Proceedings of the 26th International Conference on Information Systems, pp. 1003–1018, Las Vegas, Nevada.

Holmström Olsson, H., Conchúir, E. Ó., Ågerfalk, P. J., & Fitzgerald, B. (2008). Two-stage offshoring: An investigation of the irish bridge. MIS Quarterly, 32 (2), 257–279.

Huber, F., Herrmann, A., Meyer, F., Vogel, J., & Vollhardt (2007). Kausalmodellierung mit Partial Least Squares: Eine anwendungsorientierte Einführung. Wiesbaden: Gabler.

Jahns, C., Hartmann, E., & Bals, L. (2006/7). Offshoring: Dimensions and diffusion of a new business concept. Journal of Purchasing and Supply Management, 12 (4), 218–231.

Jennex, M. E., & Adelakun, O. (2003). Success factors for offshore system development. Journal of Information Technology Cases and Applications, 5 (3), 12–31.
Kaiser, K. M., & Hawk, S. (2004). Evolution of offshore software development: From outsourcing to cosourcing. MIS Quarterly Executive, 3 (2), 69–81.
King, W. R. (2008). The post-offshoring IS organization. Information Resources Management Journal, 21 (1), 77–88.
King, W. R., & Torkzadeh, G. (2008). Information systems offshoring: Research status and issues. MIS Quarterly, 32 (2), 205–225.
Knapp, K., Sharma, S., & King, K. (2007). Macro-economic and social impacts of offshore outsourcing of information technology: Practitioner and academic perspectives. International Journal of E-Business Research, 3 (4), 112–132.
Kobitzsch, W., Rombach, D., & Feldmann, R. L. (2001). Outsourcing in India. IEEE Software, 18 (2), 78–86.
Koh, C., Soon Ang, & Straub, D. W. (2004). IT outsourcing success: A psychological contract perspective. Information Systems Research, 15 (4), 356–373.
Kumar, N., & Palvia, P. (2002). A framework for global IT outsourcing management: Key influence factors and strategies. Journal of Information Technology Cases and Applications, 4 (1), 56–75.
Lacity, M. C., & Willcocks, L. (1998). An empirical investigation of information technology sourcing practices: Lessons from experience. MIS Quarterly, 22 (3), 363–408.
Lee, J.-N., Huynh, M. Q., & Hirschheim, R. (2008). An integrative model of trust on IT outsourcing: Examining a bilateral perspective. Information Systems Frontiers, 10 (2), 145–163.
Lee, J.-N., & Kim, Y.-G. (1999). Effect of partnership quality on IS outsourcing success: Conceptual framework and empiricial validation. Journal of Management Information Systems, 15 (4), 29–61.
Lee, J.-N., Miranda, S. M., & Kim, Y.-M. (2004). IT outsourcing strategies: Universalistic, contingency, and configurational explanations of success. Information Systems Research, 15 (2), 110–131.
Levina, N., & Vaast, E. (2008). Innovating or doing as told?: Status differences and overlapping boundaries in offshore collaboration. MIS Quarterly, 32 (2), 307–332.
Mertens, P. (2005). Die (Aus-)Wanderung der Softwareproduktion: Eine Zwischenbilanz. Erlangen: Univ. Erlangen-Nürnberg Inst. für Informatik.
Metters, R., & Verma, R. (2008). History of offshoring knowledge services. Journal of Operations Management, 26 (2), 141–147.
Mirani, R. (2006). Client-vendor relationships in offshore applications development: An evolutionary framework. Information Resources Management Journal, 19 (4), 72–86.
Nicholson, B., & Sahay, S. (2004). Embedded knowledge and offshore software development. Information & Organization, 14 (4), 329–365.
Niederman, F., Kundu, S. K., & Salas, S. (2006). IT software development offshoring: A multi-level theoretical framework and research agenda. Journal of Global Information Management, 14 (2), 52–74.
Orlikowski, W. J. (2002). Knowing in practice: Enacting a collective capability in distributed organizing. Organziation Science, 13 (3), 249–273.
Oshri, I., Kotlarsky, J., & Willcocks, L. (2007). Managing dispersed expertise in IT offshore outsourcing: Lessons from Tata Consultancy Services. MIS Quarterly Executive, 6 (2), 53–65.
Park, J.-Y., & Im, K. (2007). The role of IT human capability in knowledge transfer process under IT outsourcing situations. In Proceedings of the 13th Americas Conference on Information Systems.
Poornima, S. C. (2008). Preferences as a strategic approach to tackle attrition: IT and ITES industry perspective. ICFAI Journal of Management Research, 7 (3), 25–34.
Prehl, S. (2008). Deutschen Managern fehlt die Erfahrung. Retrieved September 26, 2008, from Computerwoche: http://www.computerwoche.de/heftarchiv/2008/39/1224626/.
Rajkumar, T., & Mani, R. (2001). Offshore software development: The view from Indian suppliers. Information Systems Management, 18 (2), 63–73.
Ranganathan, C., & Balaji, S. (2007). Critical capabilities for offshore outsourcing of information systems. MIS Quarterly Executive, 6 (3), 147–164.

Rottman, J. W. (2008). Successful knowledge transfer within offshore supplier networks: A case study exploring social capital in strategic alliances. Journal of Information Technology, 23 (1), 31–43.
Rottman, J. W., & Lacity, M. C. (2008). A US Client's learning from outsourcing IT work offshore. Information Systems Frontiers, 10 (2), 259–275.
Rottman, J. W., & Lacity, M. C. (2006). Proven practices for effectively offshoring IT work. Sloan Management Review, 47 (3), 56–63.
Schaaf, J., & Weber, J. (2005). Offshoring report 2005: Ready for take-off. Retrieved November 06, 2006, from http://www.dbresearch.de/PROD/DBR_INTERNET_DE-PROD/PROD0000000000188986.pdf.
Schaffer, E. M. (2006). A decision table: offshore or not? Interactions, 13 (2), 32–33.
Simonin, B. L. (1999). Ambiguity and the process of knowledge transfer in strategic alliances. Strategic Management Journal, 20 (7), 595–623.
Srivastava, S. C., Teo, T. S. H., & Mohapatra, P. S. (2008). Business-related determinants of offshoring intensity. Information Resources Management Journal, 21 (1), 44–58.
Stratman, J. K. (2008). Facilitating offshoring with enterprise technologies: Reducing operational friction in the governance and production of services. Journal of Operations Management, 26 (2), 275–287.
Stringfellow, A., Teagarden, M. B., & Nie, W. (2008). Invisible costs in offshoring services work. Journal of Operations Management, 26 (2), 164–179.
Voigt, B., Novak, J., & Schwabe, G. (2007). How to manage knowledge transfer in IT - Outsourcing relationships: Towards a reference model. In Proceedings of the 13th Americas Conference on Information Systems, pp. 1–10.
Wang, E. T. G. (2002). Transaction attributes and software outsourcing success: An empirical investigation of transaction cost theory. Information Systems Journal, 12 (2), 153–181.
Wang, P., Tong, T. W., & Koh, C. P. (2004). An integrated model of knowledge transfer: From MNC parent to China subsidiary. Journal of World Business, 39 (2), 168–182.
Westner, M., & Strahringer, S. (2008). Evaluation criteria for selecting offshoring candidates: An analysis of practices in German businesses. Journal of Information Technology Management, 19 (4), 16–34.
Wiener, M. (2006). Critical success factors of offshore software development projects: The perspective of German-speaking companies. Wiesbaden: Dt. Univ.-Verl.
William, A., Mayadas, F., & Vardi, M. Y. (2006). Globalization and offshoring of software: A report of the ACM job migration task force. Retrieved December 12, 2006, from Association for Computing Machinery: http://www.acm.org/globalizationreport.
Winkler, J. K., Dibbern, J., & Heinzl, A. (2008). The impact of cultural differences in offshore outsourcing: Case study results from German–Indian application development projects. Information Systems Frontiers, 10 (2), 243–258.
Wüllenweber, K., Beimborn, D., Weitzel, T., & König, W. (2008). The impact of process standardization on business process outsourcing success. Information Systems Frontiers, 10 (2), 211–224.
Xu, P., & Yao, Y. (2006). Knowledge transfer in system development offshore outsourcing projects. In I. Garcia & R. Trejo (Eds.), Proceedings of the 12th Americas Conference on Information Systems, pp. 3125–3130.
Zaheer, A., McEvily, B., & Perrone, V. (1998). Does trust matter?: Exploring the effects of interorganizational and interpersonal trust on performance. Organization Science, 9 (2), 141–159.
ZEW (2007). IKT-Umfrage 2007: Internetwirtschaft weiter auf dem Vormarsch, from Zentrum für Europäische Wirtschaftsforschung GmbH: ftp://ftp.zew.de/pub/zew-docs/div/IKTRep/IKT_Report_2007.pdf.