

*Analysis of Critical Success Factors for Offshore Software Development Projects –
A German Perspective*

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Abstract

Based on the critical success factors for offshore software development projects which could be identified within an already completed research project, the paper at hand describes a research-in-progress project that aims to analyze the relevance, the specificity, and the implications of these success factors. By focusing on the viewpoint of German clients, the project is expected to contribute with new insights into managing offshore development projects successfully.

Keywords: *IT, Offshoring, Nearshoring, Offshore, Nearshore, Software Development, Critical Success Factors, Relevance, Specificity, Implications, Statistical Analysis*

1 Motivation

At present, offshore software development (OSD) makes up the majority of the German IT offshoring market (Broß, 2005). However, despite the many benefits IT offshoring has to offer (cost reduction, access to high quality manpower, etc.), German companies' first experiences were not always positive. Media reports of various companies, whose offshore projects could not live up to their expectations, were abundant (BITKOM, 2005).

Given the mentioned problems, it has to be asked "How can German companies manage these projects more successfully?". In this context, we developed a list of 29 critical success factors (CSF), hereby addressing the viewpoint of German OSD clients (Amberg and Wiener, 2005). In an attempt to expand this research, the upcoming research project aims at providing deeper insights concerning the relevance of the identified CSF in different project contexts, the relevance of these CSF across the OSD project stages, the specificity of these CSF, as well as the management implications of these CSF.

The paper is organized as follows: Chapter 2 summarizes the state-of-the-art of CSF research in the IT outsourcing field (in a broad sense). Chapter 3 describes the already identified CSF for OSD projects. Chapter 4 presents the research questions addressed

within the research-in-progress project as well as the research method and the research approach.

2 State-of-the-Art of CSF Research in the Field of IT Outsourcing

As part of the state-of-the-art analysis, a comprehensive literature research was carried out. In an effort to find studies dealing with the (critical) success factors of relevant outsourcing projects, online databases, conference proceedings (e.g., ICIS, HICSS, ECIS), journals (e.g., MIS Quarterly, Harvard Business Review, Sloan Management Review) as well as books focussing on the subject of IT outsourcing (in a broad sense) were examined. For the identification of relevant studies, the mentioned data sources were searched for key words like “success”, “success factor”, “critical success factor”, “IT outsourcing”, “IT offshoring”, and “offshore software development”.

On the basis of the conducted literature research a total of 15 articles and literary contributions, which explicitly concentrate on (critical) success factors of projects in the IT outsourcing context, could be identified (listed alphabetically): Adelakun and Jennex (2003), Berger, Hodel, and Risi (2004), BITKOM (2005), Brown and Wilson (2005), Cullen and Willcocks (2004), Delmonte and McCarthy (2003), Laabs (2004), Gupta and Raval (1999), Kobayashi-Hillary (2004), Mani and Rajkumar (2001), Oecking and Westerhoff (2005), Rao (2004), Raval (1999), Sparrow (2003), and Stephan (2005).

Table 1: Classification of identified CSF studies

Study	Research Field	Persp.	Research Method	CSF
Adelakun and Jennex (2003)	OSD	Client/ Provider	Interviews and Literature Review	6
Berger et al. (2004)	IT Outsourcing	Client	Experience	12
BITKOM (2005)	IT Offshoring	Client	Experience	35
Brown and Wilson (2005)	IT Outsourcing	Client	Experience	9
Cullen and Willcocks (2004)	IT Outsourcing	Client/ Provider	Case Studies	11
Delmonte and McCarthy (2003)	OSD	Client	Literature Review	5
Gupta and Raval (1999)	IT Offshoring	Client	Experience and Case Studies	7
Kobayashi-Hillary (2004)	IT Offshoring	Client	Experience	4
Laabs (2004)	IT Offshoring	Client	Experience	5
Mani and Rajkumar (2001)	OSD	Provider	Experience	21

Oecking and Westerhoff (2005)	IT Outsourcing	Client	Experience	5
Rao (2004)	IT Offshoring	Client	Experience and Literature Review	5
Raval (1999)	OSD	Client	Experience	7
Sparrow (2003)	IT Outsourcing	Client	Experience	10
Stephan (2005)	IT Offshoring	Client/ Provider	Experience	6

The identified studies were classified into different areas of content (IT outsourcing, IT offshoring, and OSD), perspectives (provider, client), research method applied (literature research, interviews, case studies, experience), and number of CSF (compare Table 1).

In a next step, the individual studies were compared to one another in regard to their specific content. Here, it became apparent that, at present, only a few studies exist which focus on the CSF of OSD projects (four of the 15 identified studies). In addition, the majority of these studies only list CSF, but do not provide any information about the relevance, the specificity, and/or the management implications of the CSF mentioned.

3 CSF for OSD Projects

Based on the analysis of the state-of-the-art of CSF research in the IT outsourcing field, the evaluation of 22 personal interviews, the subsequent verification of the preliminary evaluation results, and the comparison of the developed CSF list with similar lists in the IT and OSD context, we could derive a list of 29 CSF for OSD projects.

Even though, the most frequently used CSF classification dimensions are tactical vs. strategical and organizational vs. technical factors (compare with, e. g., Esteves, 2004; Remus, 2006), we decided to classify our developed CSF list along the dimensions internal vs. external and static vs. dynamic factors. The reason for doing this was that using these dimensions enabled the classification of the identified CSF into four subject areas:

1. **Internal suitability factors:** Success factors related to the offshore-readiness on the part of the client.
2. **Internal management factors:** Success factors referring to the planning of an OSD project.
3. **External suitability factors:** Success factors in regard to the selection of an offshore development partner.
4. **External management factors:** Success factors in reference to the joint implementation of an OSD project.

The resulting CSF model is displayed in Table 2. Within each of the four individual quadrants, the success factors are listed in descending order, in line with the number of times they were mentioned by the interview partners (in brackets).

Table 2: CSF Model

		static	dynamic
internal	Internal suitability factors		Internal management factors
	Efficient internal organizational structure (6)		Preparation of a detailed project specification (16)
	Comprehensive experience with IT outsourcing projects (3)		Creation of a cultural sensibility among employees (15)
	International corporate culture (3)		Development of a comprehensive business case (9)
	Standardized and documented processes (3)		Selection of a suitable software component (9)
	Appropriate internal technical knowledge (1)		Definition of clear project goals (8)
	Sustained management support (1)		Definition of project standards (7)
			Early internal change management (1)
external	External suitability factors		External management factors
	Good language abilities of the offshore employees in German and English (12)		Creation of a partnership-like relationship (40)
	Geographical closeness of the offshore provider (9)		Ensuring of a continuous communication flow (21)
	High quality of offshore employees (6)		Face-to-face meetings with the offshore provider on a regular base (16)
	Standardized and documented processes at provider site (4)		Continuous controlling of project results (9)
	Comprehensive industry knowledge of the offshore provider (3)		Definition of an accurate contract (9)
	Legal and political stability in the offshore country (3)		Ensuring of a bilateral know-how transfer (5)
	Financial stability of the offshore provider (2)		Establishment of an efficient IT infrastructure (2)
	Suitable company size of the offshore provider (2)		Composition of an appropriate project team (0)

4 Analysis of CSF for OSD Projects

The aim of the outlined research project is to analyze the identified CSF in more detail. For this, the following aspects will be carefully examined:

1. **Relevance:** Which CSF are particularly relevant in which OSD project contexts and stages?

2. **Specificity:** Which CSF are specific for OSD projects and which CSF apply to all IT projects?
3. **Implications:** Which CSF can be influenced by which measures in the short-, the medium-, or the long-term?

The closer examination of the relevance of the identified CSF in different OSD project contexts and stages is expected to help managers to focus their activities during the course of such a project on a limited number of areas. Based on the examination of the specificity of the CSF, conclusions about the transferability of these CSF shall be drawn. On the basis of the examination of the management implications of the identified CSF, recommendations for managing these factors shall be derived.

To answer the research questions presented above, we will follow a quantitative research approach. The reason for choosing this approach is that, for analyzing the collected data, statistical procedures will be employed (Creswell, 2003).

In general, our research approach will consist of the following two phases:

1. **Data collection phase:** Conduction of a web survey with different stakeholders of OSD projects (German OSD clients, consultants, and providers).
2. **Data analysis phase:** Implementation of statistical procedures (particularly of variance and cluster analyses).

The reason for using the web survey technique for data collection is the fact that it is the easiest way to get access to numerous experts in the OSD field in a relatively short period of time (Esteves, 2004).

5 Summary and Outlook

The paper at hand has outlined a research-in-progress project for analyzing the relevance, the specificity, and the management implications of the CSF identified in an already completed research project.

At the moment, we are testing the web survey, and, simultaneously, making contact with potential participants. In addition, we are already trying to identify interesting project clusters for the upcoming statistical analysis of the relevance of the identified CSF (e. g., small- and medium-sized vs. large-scale clients, Eastern European vs. Asian providers, cost reduction vs. strategic focus, etc.).

The deeper analysis of CSF may help German OSD clients on constructing more promising offshoring projects, thereby raising their chances of efficiently making use of the vast potentials international outsourcing has to offer. Especially companies, which have not yet engaged in OSD projects, can in this manner benefit from other companies' experiences in this field.

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