Critical Success Factors in IT-Outsourcing: a Literature Analysis

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Abstract

The dramatic growth of IT-Outsourcing (ITO) is evident, as the scale and growth rate are significant (Dibbern et al., 2004; McLaughlin and Peppard, 2006; A.T. Kearney, 2007). In contrast, backsourcing of outsourced IT-functions is emerging (Hirschheim, 1998; Buxbaum, 2002; McLaughlin and Peppard, 2006; Veltri et al., 2008). Given these opposite actions, it has not proved easy for companies adopting ITO to reach the associated ITO objectives. Scientific studies about ITO-outcomes, especially on a long-term basis, are scarce (Matiaske and Mellewigt, 2002; Dibbern et al., 2004). Based on 55 scientific articles, this research paper aims to investigate the current scientific opinion about ITO outcomes, identifies critical success factors for ITO, develops an ITO success factor taxonomy, and relates the success factors to the relevant ITO process stages. As a result, a preliminary success factor framework for the client company of an ITO contract will be developed, which serves as an instrument to determine if the premises for ITO-success can be fulfilled within each phase of the ITO process (preparation – selection – contracting – transition – executing – post-deal).

Keywords

IT outsourcing, outcomes, success and failure factors, long term

1. Introduction

IT-Outsourcing (ITO) started in the 1960s (Lee et al., 2003) and has increased significantly since the KODAK-IBM outsourcing in 1989 (Clark Jr., 1995; Lee et al., 2003). Both the scale of the information systems (IS) outsourcing industry and its growth rate are significant (McLaughlin and Peppard, 2006). In 1990, IT executives budget about 12,6% of the resources to external providers (McMullen, 1990). Until 2011, Gartner Group expects that the expenditures for IT service providers compared to the overall IT costs will rise from on average 35% to 80% cross branches in Germany (A.T. Kearney, 2007). And it has to be considered, that the degree of outsourcing is seen as rather conservative in Germany compared to other countries. The American financial business for example has quotas under 50% (Breuer, 2003). Although there might be a grade of fuzziness in the statistic due to definitions used for information technologies and services, the dramatic growth of IT outsourcing is evident. In addition, Clark Jr. et al. (1995) described technological, management, industry and organisational forces which further support the decision to outsource

information services in the long term. Companies outsource for many reasons (Willcocks and Fitzgerald, 1994), but industry watchers credit the growth of the ITO market mainly to the new business strategy of focusing on core competencies and to the perception of IS as a cost burden needed to be minimized (Lacity and Willcocks, 2001).

But currently, the rapid growth of ITO must be seen alongside the emerging phenomenon of bringing previously outsourced activities back in-house. (Hirschheim, 1998; Buxbaum, 2002; McLaughlin and Peppard, 2006; Veltri et al., 2008). Dibbern (2004) estimated that backsourcing will become a key trend. Cullen et al. (2005) views outsourcing as a strategy with a life cycle rather than as a one-off transaction.

Looking at these opposite actions, one arrives at the conclusion that reaching the expected benefits from ITO has not proved easy. The chances of success are seen as at best 50:50 (Gartner Group, 2002; Boonlert, 2005), and one has to bear in mind, that wrong outsourcing decisions can even result in business failure (Venkatraman and Loh, 1992; Ngwenyama and Bryson, 1999).

To better understand the concept of ITO, the current scientific opinion about the probability and definition of ITO success and the influencing factors leading to success or failure, an extensive literature survey was conducted. The results are presented in this paper. Section 2 contains the various definitions and types of ITO and establishes the definitions used by the author for further research. Section 3 focuses on the illustration, assessment and categorisation of known ITO outcomes, outcome measurements and influencing factors. For this purpose, a total of 55 scientific articles were reviewed. 44 of these articles addressed (often individual) influencing factors. By applying qualitative content analysis, 64 success factors were identified and grouped into 10 categories of critical success factors forming an ITO success factor taxonomy. These success factors were further related to the relevant ITO process stages (preparation – selection – contracting – tansition – executing – post-deal). As a result, a preliminary success factor framework for client companies was developed by the author which can be utilised to determine if the premises for ITO success within each ITO process stage can be fulfilled (see figures 2 and 3). Section 4 deduces the current research gaps and outlines how the author is contributing to fill this gaps by validation of the preliminary success factor framework in future research work.

2. Definitions and types of ITO

ITO is defined variously in literature, thus the results are often not directly comparable. “Outsourcing” in general can be seen as “using external resources” (Nagengast, 1997), or more precisely, as a process undertaken by an organisation to contract-out or to sell the organisation’s (IT) assets, staff and/or activities to a third party supplier who in exchange provides and manages (IT) assets and services for monetary return over an agreed period of time (Kern et al., 2002). This definition requires, that the organisation considering outsourcing has the capability to perform the activities in-house (Gilley and Rasheed, 2000). New forms of the external supply

of IT goods and services (e.g. SaaS - Software as a Service) qualifies this definition as the good or service can be bought straight from the market without a foregoing execution of the task in-house (Jouanne-Diedrich, 2009). In this study, ITO will be defined as "…the replacement of in-house production of a certain activity by the use of third party suppliers…from outside the company" (Franze, 1998). This does not include the use of external resources working under the client's direct control (contract programmers, analysts, consultants etc.) nor the purchasing of "off-the-shelf" software.

The subject of ITO is often not clearly defined. Different subcategories are used (e.g. (Loh and Venkatraman, 1992; Lacity and Willcocks, 2000; Mahnke et al., 2005) and the terms information technology (IT) and information systems (IS) are often used for the same scopes. In this study, IT will be defined very broadly based to cover all the IS/IT activities. Thus, the definition of information services by Clark et al. (1995) will be utilised: The subject of ITO "…includes virtually all types of computer and communications technologies and all types of activities associated with the acquisition, development, implementation and management of theses technologies."

Different types of ITO can be distinguished. Dibbern (2004) for example describes four fundamental parameters characterising the kind of an outsourcing arrangement: degree, mode, ownership, time frame. Jouanne-Diedrich (2009) distinguishes in an IT-Sourcing-Map between seven components of an IT-sourcing arrangement: degree of external sourcing, number of vendors' involved, financial dependency, time aspect, strategic aspect, degree of business relevance, location of service provider. Nicklisch et al. (2008) added the components: time frame of collaboration, subject of ITO and delivery model for the context of IT near- and offshoring. Each of these authors tries to systemise the various variants of ITO. Figure 1 summarises the described variants, which need to be considered in the decision of how to organise ITO.

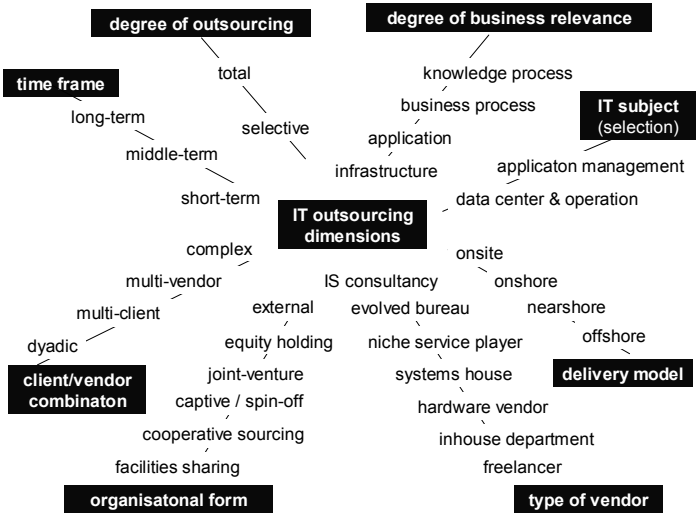

Figure 1: ITO dimensions according to Jouanne-Diedrich (2009), Nicklisch et al. (2008), Dibbern (2004), Cullen and Willcocks (2003)

3. Literature survey ITO outcomes and influencing factors

In order to capture the current body of scientific knowledge concerning ITO outcomes and influencing factors, an extensive literature survey was conducted by the author. The starting point for this survey were articles summarising the scientific knowledge about ITO in general (Matiaske and Mellewigt, 2002; Dibbern et al., 2004; Mahnke et al., 2005; Reyes et al., 2006). All articles therein cited as reference for scientific papers focusing on the assessment of ITO outcomes and influencing factors were reviewed. In addition, the survey was broadened by incorporating further articles based on reference works and looking at the manual indexes of the articles. A total of 55 scientific articles published in the top IS and management journals since 1992 were incorporated in the literature survey. The underlying ITO contracts cover various industries (public and private sectors), cultures (US, Europe and Asia, predominantly from US and UK), IT functions, research methodologies and a time period of almost two decades.

3.1. ITO outcomes

In terms of ITO outcomes the previous research is drawing an inconsistent and often an even contrary picture. In some cases the desired benefits were reached, in other cases benefits could not, or not in the expected degree, be realised (for examples see (Heinzl, 1993; McLellan, 1993; Willcocks and Fitzgerald, 1994; Collins and Millen, 1995; Lacity and Willcocks, 1995; Lacity et al., 1996; Saunders et al., 1997; Lacity and Willcocks, 1998; Lacity and Willcocks, 2000; Lacity and Willcocks, 2001; Cullen and Willcocks, 2003; Diamond Cluster, 2005). Lacity and Willcocks (2009) witnessed in practice that organisations outsource the same IT function (e.g. data center, applications development, systems maintenance), but experience very different results, which could be explained by equifinality as several legitimate routes to success (or failure) may be observed by ITO researchers.

Beside, evidence of growing dissatisfaction with ITO is observable. A Global IT outsourcing study (2005) found that the number of clients that have abnormally terminated an outsourcing contract has more than doubled to 51% in 2004 versus 21% in 2003. A study on current outsourcing strategies (Landis et al., 2005) identified that 74% of a sample of fifty problem contracts failed and 64% of firms in the study backsourced services. Mc Laughlin and Peppard (2006) and Veltri et al. (2008) identified recent backsourcing decisions and the rationale behind those decisions. Mc Laughlin and Peppard (2006) concluded that evidence of growing dissatisfaction with ITO is observable but based on current data it is impossible to say whether backsourcing is more prevalent today, than it was ten years ago. Even if an outsourcing contract is not terminated, reports about dissatisfaction and problems with ITO can be found in literature (Kern and Willcocks, 2001).

Previous literature about ITO shows a lack of empirical research concerning the outcomes of ITO in general (Matiaske and Mellewigt, 2002; Mahnke et al., 2005), especially regarding the longer-term outcomes and implications (Dibbern et al., 2004). Very few ITO studies focused explicitly on long-term results until now (Lacity and Hirschheim, 1993; Reponen, 1993; Lacity et al., 1996; Gerigk, 1997;

Lacity and Willcocks, 2000). Experienced data about the outcome of ITO are missing especially in Germany (Fraunhofer IAO, 2005). The investigation of short and long term ITO impacts in general is seen as difficult, because most outsourcing contracts are cloaked in secrecy (Kass, 1990).

And although success (Wang, 2002; Dibbern et al., 2004; Mahnke et al., 2005) and factors impacting success (Poppo and Zenger, 1998) are seen as dependent from the kind of activities outsourced, previous research reports in general do not analyse the ITO results in connection with the whole spectrum of underlying outsourcing options (see figure 1). If at all, selected aspects of ITO options were related to the ITO outcome (e.g. degree of ITO by Lacity et al. (1996); ITO contract duration by Lacity and Willcocks (1998); IT-subject by Lacity and Hirschheim (1993) or Grover et al. (1996)).

3.2. Measurement of ITO outcomes

Dibbern (2004) extracted three measures for ITO outcomes in his analysis of ITO literature: satisfaction, realisation of expectations and performance. Mahnke (2005) found that the measure "performance" is often used for ITO outcome; he distinguished technology performance, financial and non-financial performance. For the reliability of success evaluations, the objectiveness or neutrality of success measures is important. Gerpott (1993) e.g. analogically distinguishes between the (subjective) quantified perception of success and quantitative-objective success measures.

The literature survey within this study found the same prevailing success categories. In addition, a fourth category, impact of ITO, was added:

- **Satisfaction (qualitative):**
  Perception of success with e.g. ITO arrangement, economic, technological, strategic and overall satisfaction, benefits, relationship, user satisfaction (e.g. (Grover et al., 1996; Saunders et al., 1997))

- **Expectations and their realization (qualitative):**
  Degree to which various anticipated benefits/risks of ITO occurred (e.g. (Lacity et al., 1996; Lacity and Willcocks, 2000))

- **Performance (qualitative):**
  Qualitative performance were used in terms of non-financial (e.g. process/product innovations), exchange (e.g. quality of output or service, responsiveness), functional (e.g. functionality of disaster backup center, key outputs) and overall performance and effectiveness (e.g. timeliness of information etc.).

- **Performance (quantitative)**
  Quantitative performance was measured by stock market quotation/price reaction/returns, operating figures (e.g. asset base, cost-income-ratio, return on assets, return on sales, profitability, entering new markets, introducing new

products) and efficiency (financial impact on IT expenditures as percentage change from previous internal operations)
(e.g. (McLellan, 1993; Gilley and Rasheed, 2000))

- **Impact (qualitative)**
  Assessment of general effects of ITO on industry, organization, employees, costs, service, technology, IT controllability, co-work processes, culture etc.
  (e.g. (Lacity and Hirschheim, 1993; Gerigk, 1997))

The empirical studies reviewed in this literature survey operationalised ITO success as dependent variable to examine different research questions dependent from the actual ITO outcome. On the other hand, the studies of Dahlberg and Nyrhinen (2006) and Fuß and Jäger (2005), had the primary goal to develop an instrument to measure the success of ITO. The instrument of Dahlberg and Nyrhinen (2006) qualitatively measures organisation specific strategic, economic, technical and social success factors and the overall satisfaction as well as the difference between realized benefits and objectives set for each measured item. The instrument of Fuß and Jäger (2005) combines qualitative and quantitative measures to evaluate the economic and strategic ITO success based on the combination of empirically validated measurement models.

In summary, the measurement of success varied in previous studies and is predominantly based on perceptions (Matiaske and Mellewigt, 2002; Dibbern et al., 2004; Mahnke et al., 2005). Objective, quantitative success measures are missing in the outsourcing research (Matiaske and Mellewigt, 2002), except general performance measures on the firm level, stock market reactions and measuring the relative change of IT expenditure in sparse studies. But one has to bear in mind, that the measurement of the business value of IT in general is difficult to demonstrate (Willcocks et al., 1995), as is the value of IT outsourcing. The measurement of the value of the IS outsourcing versus its cost has not proved easy (Hirschheim and Smithson, 1988) as conventional methods for evaluating asset profitability cannot be applied (Willcocks et al., 1996). In spite of several proposed instruments, there seems to be no consensus on how to measure the success of ITO (Kim and Chung, 2003).

3.3. Success and failure factors

ITO is seen as a very complex phenomenon (Matiaske and Mellewigt, 2002), whose outcome is dependent from different and yet not clearly identified variables. Using qualitative content analysis, the author could derive a total of 64 influencing factors for ITO success and failure from 44 scientific publications (empirical studies) (Cheon Myun Jong, 1992; Heinzl, 1993; Huber, 1993; Lacity and Hirschheim, 1993; Willcocks and Fitzgerald, 1993; Willcocks and Fitzgerald, 1994; Collins and Millen, 1995; De Looff, 1995; Loh and Venkatraman, 1995; Willcocks et al., 1995; Willcocks et al., 1995; Grover et al., 1996; Lacity et al., 1996; Gerigk, 1997; Nagengast, 1997; Saunders et al., 1997; Feeny and Willcocks, 1998; Lacity and Willcocks, 1998; Marcolin and McLellan, 1998; Poppo and Zenger, 1998; Aubert et al., 1999; Lee and Kim, 1999; Gilley and Rasheed, 2000; Hirschheim and Lacity,

2000; Lacity and Willcocks, 2001; Lee, 2001; Kern et al., 2002; Wang, 2002; Cullen and Willcocks, 2003; Kim and Chung, 2003; Koh et al., 2004; Lee et al., 2004; Cullen et al., 2005; Diamond Cluster, 2005; Gottschalk and Solli-Saether, 2005; Landis et al., 2005; Agrawal et al., 2006; Bertschek et al., 2006; McLaughlin and Peppard, 2006; Pei et al., 2007; Van Lier and Dohmen, 2007; Fritsch et al., 2008; Veltri et al., 2008; Lacity and Willcocks, 2009). The analysis of the articles yielded for the most part to the same success and failure factors, thus it can be emanated to have extracted the core influencing factors from literature. Some success factors are described by different expressions although the underlying semantics of theses expressions is the same. For the benefit of a clear and consistent representation, the influencing factors are described as success factors in this report. This required the inversion of failure factors or risks to success factors e.g. the failure factor "changes in business environment" were reversed to the success factor "stable business environment".

No comprehensive picture of success factors exist in literature, the scientific reports often discuss only individual or a few factors. Furthermore, it is not known "when" to consider "which" success factor within the ITO process. And due to a lack of empirical knowledge concerning long-term ITO outcomes, it is not researched until now if the success factors differ between short, middle and long term ITO contracts. Thus the extracted success factors were summarised and categorised by the author in three distinctive ways (see figure 2 and figure 3):

- First, an ITO success factor taxonomy was developed by assigning the 64 extracted success factors to 10 categories and further subcategories. A taxonomy is a classification system, which may be defined "as a set of specified rules for describing the structure and relationships among a set of objects drawn from some domain that permits similar units to be assigned to a smaller number of categories or classes" (Fleishman and Mumford, 1991).

- Second, the success factors were assigned to the following typical ITO process stages used by ITO theorists (Lacity et al., 1996; Lacity and Willcocks, 1998; Lacity and Willcocks, 2001; Lin and Pervan, 2003): preparation, selection, contracting, transition, executing, post-deal, based on their description. This highlights the relevance of the extracted success factors within the ITO process.

- Third, the elapsed years of the underlying ITO contracts (time horizon) were investigated to determine probably existing differences for varying time frames (short, middle or long-term) of underlying ITO contracts. It has to be noted, that in most of the cases, the contract duration was not stated or short-term (for exceptions see: McLaughlin and Peppard (2006), Gerigk (1997), Saunders et al. (1997), Collins and Millen (1995), Lacity and Hirschheim (1993), Kim and Chung (2003), Nagengast (1997)). Thus, the underlying time frame of the ITO contract is not included in figure 2 and figure 3. This further shows a lack of empirical studies explicitly focusing on longer-term outcomes and their influencing factors.

Figure 2 and figure 3 show in summary the most important factors necessary for successfully outsourcing IT and their relevance in the ITO process based on a

literature analysis. This model forms the preliminary success factor framework for client companies to determine if the qualifying factors for ITO success can be fulfilled.

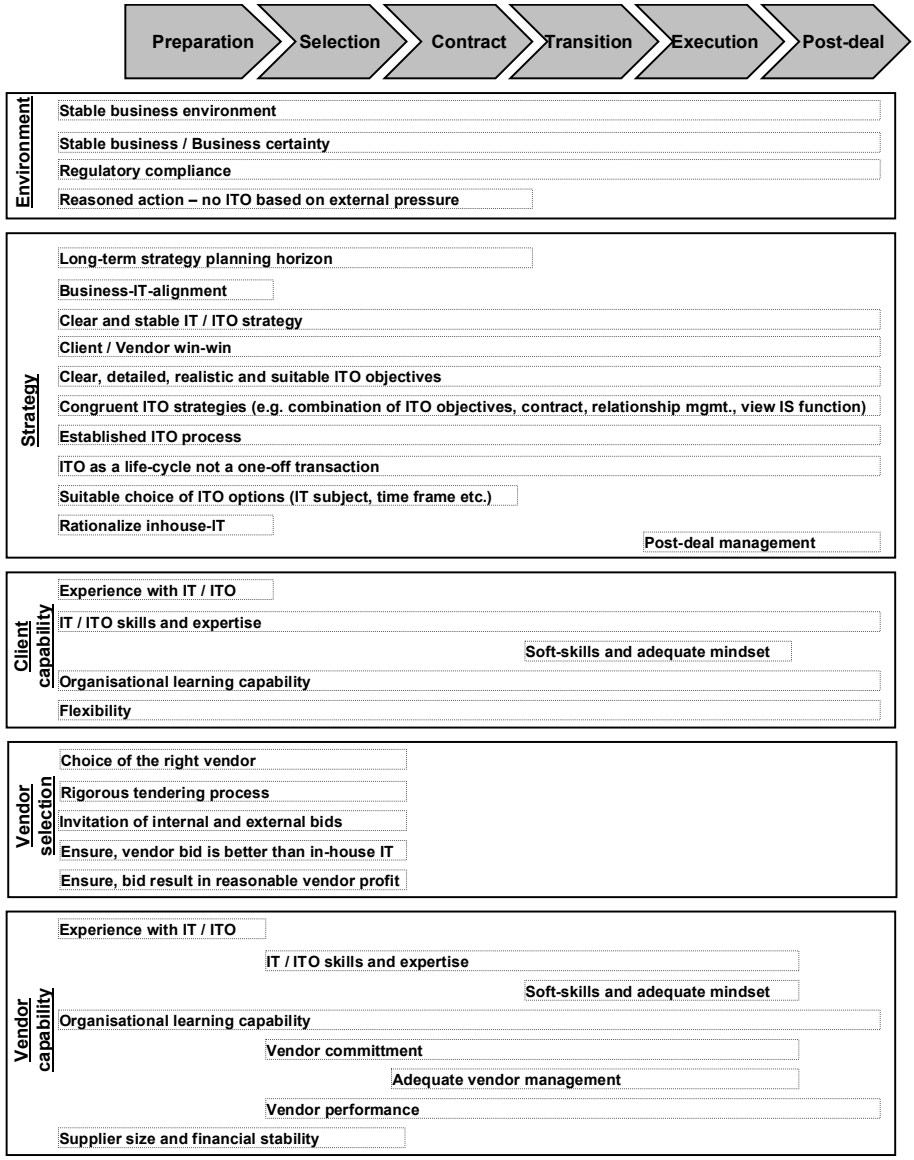

Figure 2: Preliminary success factor framework for client companies: Success factors for ITO within the ITO process stages – (environment, strategy, client capability, vendor selection, vendor capability)

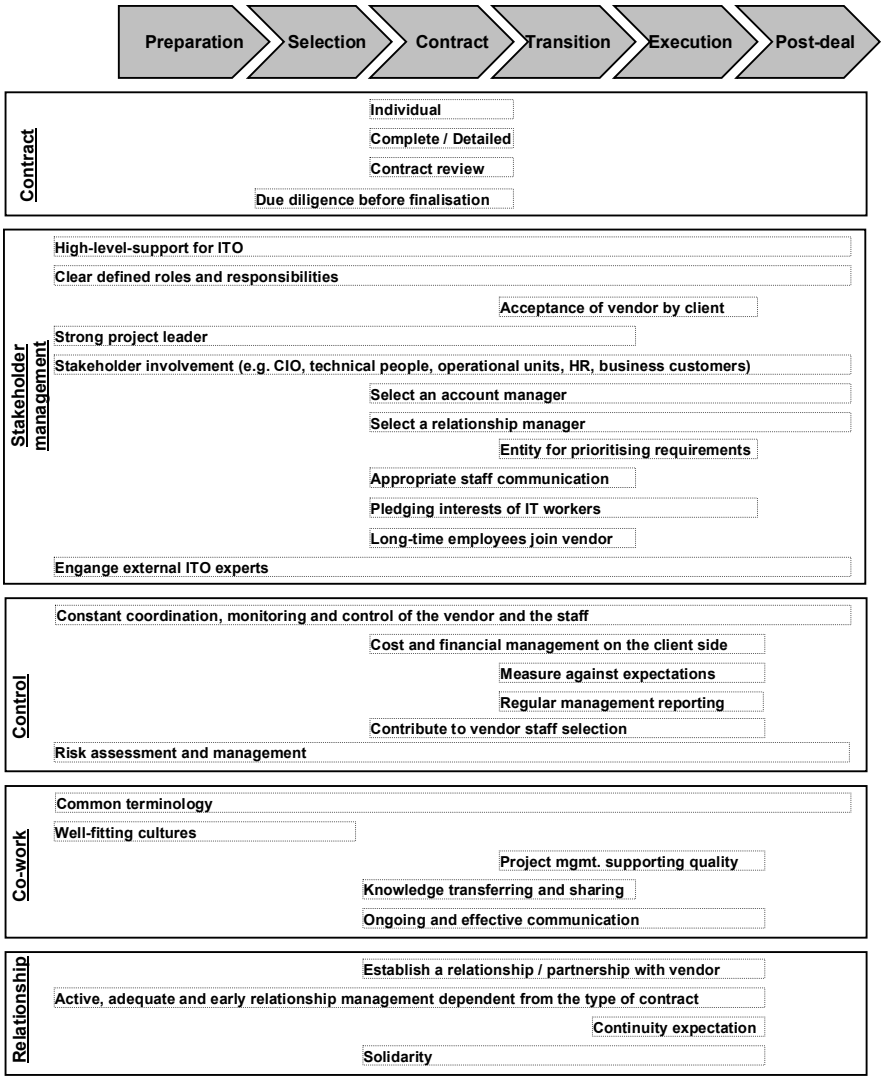

Figure 3: Preliminary success factor framework for client companies: Success factors for ITO within the ITO process stages - (contract, stakeholder management, control, co-work, relationship)

4. Conclusions and future work

To sum up, the ITO trend is unbroken; contrary, reports about dissatisfaction and backsourcing are accumulating. The empirical knowledge about ITO outcomes in general is small, especially regarding longer-term outcomes. The evaluation of known ITO outcomes brought controversial results. No comprehensive picture of the influencing factors for success and failure exist, their relevance within the ITO process is not known and it is not researched until now if different success factors are

responsible for the success of different ITO contract durations. Furthermore, success in general is not commonly defined. Based on the current body of knowledge, it is impossible to testify objectively if and under what circumstances ITO generates sustainable benefits. Further study is required on the longer-term outcomes and influencing factors.

This literature survey and in particular the preliminary success factor framework developed in this study forms the basis for investigating long-term ITO outcomes within an empirical study aiming to investigate:

1. if and which types of ITO contracts already running for a long period are existing. Long-term in this context is defined according to Lee and Kim (1999) with > 5 years
2. if long-running ITO contracts are evaluated as success or failure
3. the influencing factors behind the outcome of long-running ITO contracts (success and failure factors) based on the preliminary success factor framework

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