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CHALLENGES OF CLIENT-VENDOR RELATIONSHIPS IN INFORMATION TECHNOLOGY OUTSOURCING ENGAGEMENTS: AN INTERPRETIVE STRUCTURAL MODELLING APPROACH

Research paper

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Abstract

The client-vendor relationship is a key success factor for information technology outsourcing projects. Although many studies have been published about this concept, many of them have focused on a set of particular elements and have not investigated the relationship and dependencies between them. This research paper provides an overview about existing challenges for client-vendor relationships and discovers relationships between them by applying the ISM methodology. We conducted a literature research to gather and analyze relevant articles and identified 11 relevant challenges. Based on the literature research and 20 questionnaire responses we gathered from experts, we used interpretive structural modelling to discover the relevance and the contextual relationships among the identified challenges. The findings of this study reveal that three challenges, namely (1) lack of experience, (2) lack of good management practices and processes, and (3) lack of contractual objects can be treated as key elements for establishing a client-vendor relationship. We discuss further research directions and explain why all other identified challenges have high dependencies on each other.

Keywords: Client-Vendor Relationship, Information Technology Outsourcing, Challenges, Interpretive Structural Modelling.

1   Introduction

Information technology outsourcing (ITO) is a topic of great importance, affecting wide parts of the economy, with revenues of the global ITO market in 2017 topping $303 billion, with an additional growth rate of 5.9% for 2018 (Gartner 2016). ITO to external vendors has become a necessity for firms (Mani and Barua 2015) for staying competitive in the today's global market as well as for gaining economic, technological, and strategic advantages (Hu et al., 1997). Despite the importance of ITO and the extensive experiences with such projects, a large number of ITO projects still fail to reach their goals (Alami et al., 2008). For example, a study from 2014 revealed that 60% of client organizations did not achieve the predefined goals of their ITO engagements (Horvath 2014).

The *ITO client-vendor relationship* (CVR) is well acknowledged for being a key success factor for overall ITO success (Ang and Straub 1998; Levina and Ross 2003). Within the rich body of knowledge on client-vendor relationships (e.g., Kern 1997; Kern and Willcocks 2000; Lee and Kim 1999; Pannirselvam and Madupalli 2011), several elements that have a bearing on CVR have been investigated, for example, control and trust (Heiskanen et al., 2008), formal contracts, the concept of relational governance (Gopal and Koka 2012; Mani and Barua 2015), or cultural differences (King and Torkzadeh 2008).

These challenges not only affect the quality of the CVR and therefore the outcome of the ITO engagement, but also influence each other. However, past studies only focus on a set of particular elements, not investigating the relationships and dependencies between them. This paper therefore attempts to analyze those interdependencies between challenges for a successful CVR by asking the following two research questions: "*What are the current challenges for client-vendor relationships?*" and "*how are the challenges related to each other?*"

To answer our research questions, we conducted a structured literature review to give an overview of existing challenges in CVRs. In a second step, we identified the relationships between the challenges and prioritized them based on a set of questionnaire responses by 20 practitioners. We used interpretive structural modeling (ISM) as our methodology. Our research results in an ISM-based model for current CVR challenges. We interpret and discuss the results and derive paths for further research.

The remainder of this research paper is organized as follows. In the next section, we describe the related work and theoretical background on ITO as well as basics about the CVR. Afterwards, we detail our research design including data collection and data analysis followed by our results on the challenges in CVRs. Finally, we discuss our contributions to research and practice before we conclude.

2   Related Work and Theoretical Background

2.1   Information Technology Outsourcing and Client-Vendor Relationship

ITO "is the process of transferring part or all of the information systems function to an external vendor" (Ketler and Walstrom 1993) and is now considered as a deeply ingrained strategic decision "to address information systems efficiency and to manage fast-changing technological development" (Cata and Raghavan 2006). By executing an outsourcing engagement, client organizations relocate their IT assets, leases, licenses, and staff to vendors (Lacity and Willcocks 1998). Access to specific IT skills around the world allows companies to focus on their core businesses (Seddon et al., 2007).

The *ITO client-vendor relationship* is defined as "an ongoing, long term linkage between an outsourcing vendor and client arising from a contractual agreement to provide one or more comprehensive IT activities, processes, or services with understanding that the benefits attained by each firm are at least in part dependent on the other" (Goles and Chin 2005). The evolving state between people or parties is considered as a relationship and involves mutual dealings (Mirani 2007). A business relationship is a

process where two companies establish strong and widespread social, economic, service, and technical connections over time with the purpose of reducing costs or increasing values (Anderson and Narus 1990; Bharadwaj et al., 2010). Further, ITO arrangements consist of two perspectives and are bound by a contract. The task of the vendor is to deliver the predetermined services and the obligation of the client is to pay for these services (Loh and Venkatraman 1992). Hence, a successful relationship is a long-term relationship, in which the client is poised to renew or extend the contract with the vendor and to enlarge the scope of the outsourcing engagement (Bharadwaj et al., 2010). One the other side, the termination of a contract by the client before its expiration date can be seen as a failed relationship as the scope of the contract decreases, and the contract volume for the vendor scales down (Bharadwaj et al., 2010).

In addition, various research contains more elements of ITO CVRs such as the impact of formal or informal governance (Balaji and Brown 2014), control or trust issues (Heiskanen et al., 2008), or structuring outsourcing contracts (Bryson 2000). Thus, a good management of the ITO CVR is essential for both the client and the vendor, and needs to be maintained continuously to raise its quality (Lee et al., 2003).

2.2 Challenges for Client-Vendor Relationships

A challenge is "a new or difficult task that tests somebody's ability and skill" (Hornby et al., 1974). In our study context, *challenges* in relationships between clients and vendors are different aspects that test the relationship as well as the abilities and skills of the parties. If both client and vendor ignore such challenges and their implications, it could lead to a negative project outcome (Pannirselvam and Madupalli 2011). These issues between the client and the vendor arise during the ITO engagement and hinder organizations to achieve the intended goals (Cata and Raghavan 2006). The sources of these barriers vary. For example, a barrier could be the lack of contractual objects (Mani and Barua 2015) or good management practices and processes (King and Torkzadeh 2008; Rottman and Lacity 2009). If these challenges cannot be resolved, each challenge will impair the relationship between the client and vendor (Pannirselvam and Madupalli 2011), which in turn impacts also the ITO outcome.

Previous research on the challenges of CVR already looked at different concepts, and their influence on the quality of the relationship. For example, determinants of the outsourcing success such as trust (Poppo and Zenger 2002), communication (Avison and Banks 2008), and commitment (Goo et al., 2009) have been identified. To the best of our knowledge, there is no study to date that coherently analysed the challenges for client-vendor relationships. Thus, possible and plausible interdependencies between individual challenges are neglected. However, we need such knowledge on relationships between concepts in complex, multi-causal phenomena such as ITO CVR.

3 Research Approach

We followed a two-step approach for answering our research questions: (1) identification of challenges for CVR via a structured literature review and (2) determination of the relationships between the identified CVR challenges and their prioritization using the ISM method (Sage 1977) and the MIC-MAC analysis (Duperrin and Godet 1973).

3.1 Data Collection

For the first step, we followed the approach for a structured literature review by Levy and Ellis (2006) to discover relevant articles that identified challenges for CVR. We used the following research string: *("Information Technology" or "Information System") and ("outsourcing" or "offshoring") and "client-vendor relationship" and ("challenge*" or "issue*" or "problem*" or "barrier*"*. We also used different terms such as client-provider relationship to ensure a comprehensive search result. To limit the number of results, we restricted the search to the *Senior Scholar's Basket of Journals*, which in-

cludes eight highly ranked journals for the Information Systems community. This approach resulted in a total count of 60 articles.

In a second step, we applied the ISM method for the identification of dependencies between the challenges as well as for prioritizing them based on their driving and dependence power. Our study is based on 20 questionnaire replies of experienced practice and research partners working in the ITO industry. 30% of the replies represent the client side, 15% the vendor side, and 50% are advisors/consultants, which act as an intermediary between the client and vendor. The remaining 5% belong to academics. In our questionnaire, we evaluate the identified challenges and the contextual relationships between them. We provided the definitions of each challenge for the experts followed by the assessment of the impact of each one. In the end, we asked for additional information on the background and experience of the experts.

3.2   Data Analysis

Our data analysis started with the identification of CVR challenges. We took our baseline of 60 articles from the literature review and analyzed them regarding our research questions. We were able remove 32 articles from our set of articles due to the following criteria:

Filter Criteria	Number of Articles removed
No proper reference to IT outsourcing	11
No reference to a client-vendor relationship challenge	14
Editorials // no full research paper	5
Teaching case	2
Sum of removed articles	**32**

Table 1.   Criteria for Removing Articles from our Data Set

Our final set contained 28 research articles and served as the baseline for the data analysis. We read all articles in detail to identify challenges for the CVR. We looked for key concepts of the CVR and marked a challenge, when major issues or gaps were identified. Two independent researchers coded the data independently. Afterwards, we compared and aligned the results (Miles and Huberman 1994). All open issues and differences in coding were jointly resolved. In the end, we ended up with a final set of 11 challenges.

For further analysis of the challenges, we applied the ISM method (Sage 1977) and the associated MICMAC analysis (Duperrin and Godet 1973). ISM is an interactive process that uses the knowledge and experiences of practice experts for structuring a basic set of factors (here: challenges) and identifying dependencies between them. The method outcome is a comprehensive overview about the challenges and their relationships. The ISM method is applied through the following steps:

1. A survey is constructed and conducted for processing the ISM method including the identification of the relationships between the challenges.

2. The data analysis starts with the development of a structural self-interaction matrix (SSIM) of challenges based on the results of the survey.

3. A reachability matrix (RM) is developed based on the SSIM and it is checked for transitivity. Transitivity of the contextual relationship is a basic premise in ISM, which reveals that if challenge A is associated with B and B is associated with C, then A is also associated with C.

4. Based on the RM, our challenges for CVR are partitioned into different levels using antecedences relations between them.

5. On the basis of the above discovered relationships in the RM, a directed graph is drawn and the transitive links are removed. The resulting digraph is converted into an ISM-based model by replacing element nodes with the statements.

6. The model is reviewed for conceptual inconsistency. If the model contains inconsistencies, the required modifications are made.

4 Results

4.1 Challenges for the Client-Vendor Relationship

During our literature review, we discovered 11 distinct challenges for the CVR, which can potentially occur during an ITO engagement. *Table 2* shows and describes all identified challenges.

#	Challenge	Description	Exemplary Sources
1	Lack of experience	Lack of past experiences with outsourcing projects is a crucial risk factor and can lead to poor management of the client-vendor relationship, increased costs and overall failure of the project.	(Aubert et al., 2005) (Kelly and Noonan 2008) (Mani and Barua 2015)
2	Lack of good management practices and processes	Lack of management practices and standardized processes between client and vendor restricts the coordination and collaboration of the parties in the relationship.	(Barua and Mani 2014) (Cao et al., 2013)
3	Lack of contractual objects	Lack of properly defined contractual objects leads to inadequate contract designs, which miss incentives for the vendor and precise specifications of tasks and objectives.	(Bapna et al., 2016) (Fitoussi and Gurbaxani 2012)
4	Lack of control and visibility	Lack of control over the vendor and visibility of the outcomes can result in the opportunistic behavior by the vendor.	(Kern and Willcocks 2000) (Heiskanen et al., 2008)
5	Lack of cultural adaption	Lack of cultural adaption leads to major challenges, especially in offshoring arrangements, due to cultural differences and geographical distance between client and vendor.	(Beck et al., 2008) (Rai et al., 2009) (Su 2015)
6	Lack of shared norms and values	Lack of shared norms and values, i.e. in organizational cultures, raises issues in the collaboration between client and vendor organizations.	(Hancox and Hackney 2000) (Kern and Blois 2002)
7	Lack of communication	Lack of communication between client and vendor hinders coordination and can lead to major issues due unknown problems during the execution of the project.	(Li 2014) (Webb and Laborde 2005)
8	Lack of coordination and collaboration	Lack of coordination and collaboration puts the engagement at risk, especially due to the general complexity of outsourcing relationships.	(Levina and Ross 2003) (Mani and Barua 2015)
9	Lack of trust	Lack of trust is fatal for a client-vendor relationship and leads to overhead in terms of monitoring and overall governance.	(Rai et al., 2009) (Tiwana and Bush 2007)
10	Lack of knowledge exchange	Lack of knowledge exchange hinders the achievement of the planned benefits of the outsourcing engagement and leads to decreased efficiency and productivity.	(Cha et al., 2009) (Young Bong and Gurbaxani 2012)

11	Lack of capability and value-adding contributions	Lack of capability on the vendor's side leads to unsatisfying results and decreases the overall value-adding contribution of the outsourcing project.	(Levina and Ross 2003) (Mani and Barua 2015)

Table 2.   Challenges for the Client-Vendor Relationship in IT Outsourcing Engagements

4.2   Interpretive Structural Modelling

By applying the ISM method, we identified relationships between the identified CVR challenges. In the next section, we follow several process steps to understand the interactions between the challenges and to discover challenges, which trigger or condition other challenges (*driving challenges*) and those challenges, which are most affected by other challenges (*dependent challenges*).

4.2.1   Structural Self-Interaction Matrix (SSIM)

The relationships between the challenges were derived from the data of our survey. We used the results the group agreed upon to construct our SSIM (see *Table 3*). We used four letters V, A, X, or O in a cell (i and j) to signify the direction of the relationship between one challenge in a row (i) and another challenge in a column (j). The interpretation should be done as follows:

- V - Challenge i will have an impact on challenge j;
- A - Challenge j will have an impact on challenge i;
- X - Challenge i and j will have an impact on each other;
- O - Challenge i and j have no impact on each other.

Every combination of two challenges was considered and requested in the survey. The main task of the survey was to decide which of the above-mentioned directions apply for each combination.

No.	Challenge	11	10	9	8	7	6	5	4	3	2	1
1	Lack of experience	V	V	V	V	V	V	V	V	V	V	X
2	Lack of good management practices and processes	V	V	V	V	V	V	V	V	V	X	
3	Lack of contractual objects	V	V	V	V	V	O	O	V	X		
4	Lack of control and visibility	V	X	V	X	X	O	V	X			
5	Lack of cultural adaptation	V	V	X	X	X	X	X				
6	Lack of shared norms and values	V	X	X	V	X	X					
7	Lack of communication	V	V	X	X	X						
8	Lack of coordination and collaboration	V	X	V	X							
9	Lack of trust	V	V	X								
10	Lack of knowledge exchange	V	X									
11	Lack of capability and value-adding contributions	X										

Table 3.   Structural Self-Interaction Matrix (SSIM)

4.2.2   Building the Reachability Matrix

The next process step in the ISM method is the conversion into the reachability matrix (RM). The RM is a binary matrix and attained by substituting V, A, X and O by 1 and 0 for each entry. The rules for the substitution of the entries are as follows:

- The (i, j) entry in the reachability matrix is substituted with 1 and the (j, i) with 0, if the (i, j) entry in the SSIM is V;

- The (i, j) entry in the reachability matrix is substituted with 0 and the (j, i) with 1, if the (i, j) entry in the SSIM is A;
- The (i, j) entry in the reachability matrix is substituted with 1 and the (j, i) with 1, if the (i, j) entry in the SSIM is X; and
- The (i, j) entry in the reachability matrix is substituted with 0 and the (j, i) with 0, if the (i, j) entry in the SSIM is O;

Moreover, we took the transitivity rule into account. Some of the cells are filled with a 1 instead of a 0, when transitivity is given. We marked all adjusted cells with an asterisk *. The final RM is presented in *Table 4*.

The driving and dependence power for each challenge are also presented in the table. The driving power of the considered challenge represents the total number of elements, which it may impact. Further, the dependence power represents the total number of challenges, which may have an impact on the considered challenge. In both cases, each challenge includes itself by summation.

No.	Challenge	1	2	3	4	5	6	7	8	9	10	11	DP
1	Lack of experience	1	1	1	1	1	1	1	1	1	1	1	11
2	Lack of good management practices and processes	0	1	1	1	1	1	1	1	1	1	1	10
3	Lack of contractual objects	0	0	1	1	1*	1*	1	1	1	1	1	9
4	Lack of control and visibility	0	0	0	1	1	1	1	1	1	1	1	8
5	Lack of cultural adaptation	0	0	0	1*	1	1	1	1	1	1	1	8
6	Lack of shared norms and values	0	0	0	1*	1	1	1	1	1	1	1	8
7	Lack of communication	0	0	0	1	1	1	1	1	1	1	1	8
8	Lack of coordination and collaboration	0	0	0	1	1	1*	1	1	1	1	1	8
9	Lack of trust	0	0	0	1*	1	1	1	1*	1	1	1	8
10	Lack of knowledge exchange	0	0	0	1	1*	1	1*	1*	1*	1	1	8
11	Lack of capability and value-adding contributions	0	0	0	1*	1*	1*	1*	1	1*	1*	1	8
	Dependence power	1	2	3	11	11	11	11	11	11	11	11	94
Legend: DP = Driving Power													

Table 4.   Final Reachability Matrix

4.2.3   Level Partitioning

Based on the final RM, we established the reachability set and the antecedent set for each challenge. The reachability set of a challenge includes itself and other challenges, which it may trigger or impact. Conversely, the antecedent set of a challenge includes itself and other challenges, which may have an effect on it. Following, the intersection of both the reachability and antecedent set for each barrier is deduced.

The top level in the ISM hierarchy (here level I) is occupied with the challenge for which the reachability set and the intersection are exactly the same. Next, we separated the other challenges and repeated the iterations until all challenges were classified in levels. *Table 5* presents the final results with the reachability set, antecedent set, intersections, and levels of each challenge.

No.	Reachability set	Antecedent set	Intersection	Level
1	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11	1	1	IV
2	2, 3, 4, 5, 6, 7, 8, 9, 10, 11	1, 2	2	III
3	3, 4, 5, 6, 7, 8, 9, 10, 11	1, 2, 3	3	II
4	4, 5, 6, 7, 8, 9, 10, 11	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11	4, 5, 6, 7, 8, 9, 10, 11	I
5	4, 5, 6, 7, 8, 9, 10, 11	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11	4, 5, 6, 7, 8, 9, 10, 11	I
6	4, 5, 6, 7, 8, 9, 10, 11	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11	4, 5, 6, 7, 8, 9, 10, 11	I
7	4, 5, 6, 7, 8, 9, 10, 11	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11	4, 5, 6, 7, 8, 9, 10, 11	I

8	4, 5, 6, 7, 8, 9, 10, 11	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11	4, 5, 6, 7, 8, 9, 10, 11	I
9	4, 5, 6, 7, 8, 9, 10, 11	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11	4, 5, 6, 7, 8, 9, 10, 11	I
10	4, 5, 6, 7, 8, 9, 10, 11	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11	4, 5, 6, 7, 8, 9, 10, 11	I
11	4, 5, 6, 7, 8, 9, 10, 11	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11	4, 5, 6, 7, 8, 9, 10, 11	I

Table 5.   Level Partitioning of Reachability Matrix – Final Result

Based on the results of the level partitioning we developed the structural model with all challenges for the CVR presented in Figure 1. Challenge 1 "lack of experience", challenge 2 "lack of good management practices and processes", and challenge 3 "lack of contractual objects" are classified into the lowest levels (here II, III, and IV). These three challenges have the highest influence on the other challenges and are just slightly influenced by others. All remaining challenges are classified into the same and highest-level I.
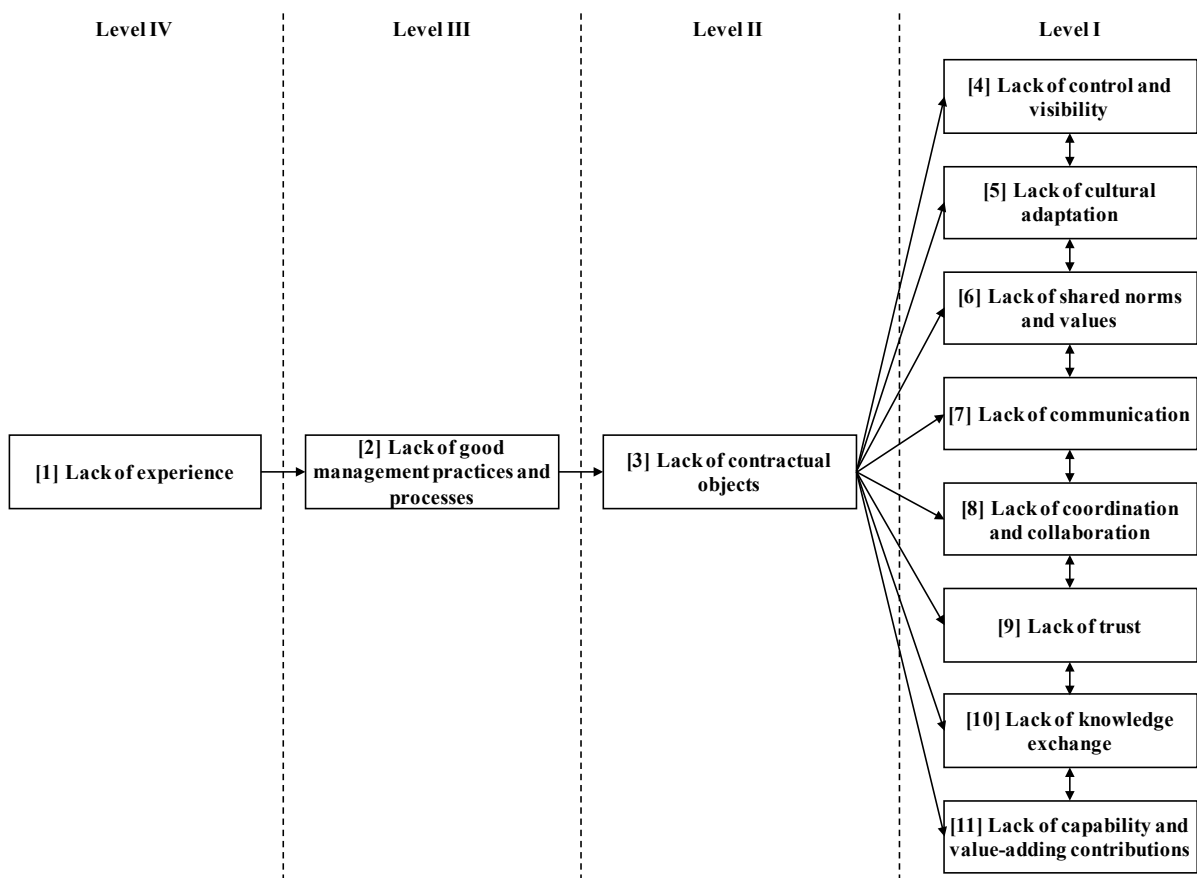

Figure 1.   Hierarchical Structural Model of Influential Challenges for CVR based on ISM

4.2.4   Classification of Challenges

Based on the driving and dependence power and following ISM, we classified all CVR challenges into the following four categories: (1) autonomous challenges, (2) dependent challenges, (3) linkage challenges, and (4) independent challenges. The driving and dependence power of the challenges are illustrated via cluster diagram are illustrated in Figure 2.
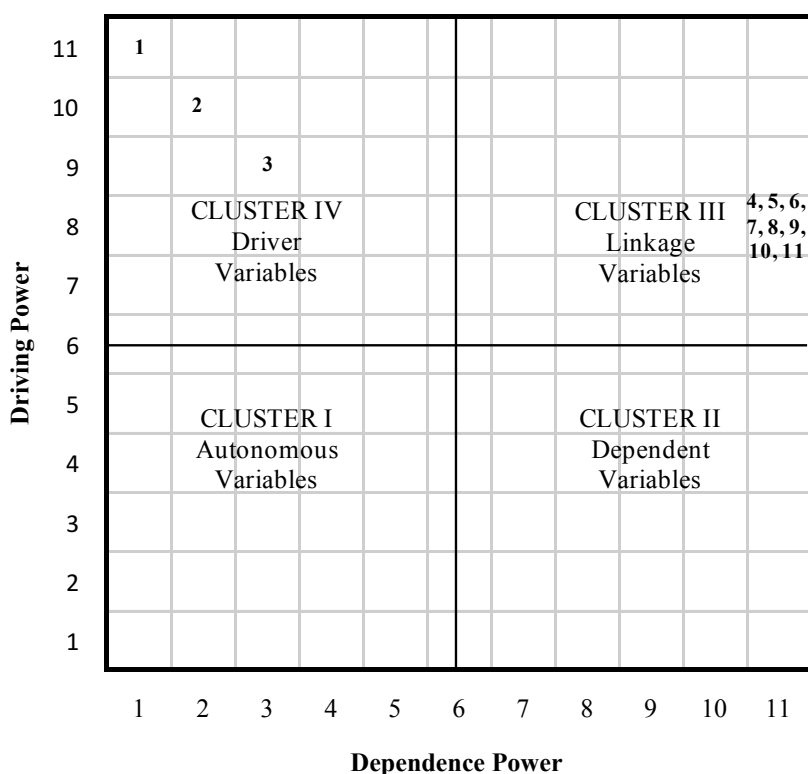
Figure 2.   Cluster of Client-vendor Relationship Challenges

Challenges located in the first cluster "autonomous variables" have a slight driving and dependence power. These challenges are relatively disconnected from the rest of the system. There are no autonomous challenges in this study. The second cluster consists of "dependent variables" that have a weak driving power and strong dependence power. In this study, we classified none of the challenges into this cluster. There are no dependent variables, because there are no single challenges without any impact on other challenges and no autonomous variables because each challenge has a connection to another one. The third cluster named "linkage variables" consists of challenges that have a strong driving and dependence power. Any action performed on these challenges will influence the other challenges and also have an effect on the targeted challenges themselves. The following eight challenges are located in this cluster: (4) lack of control and visibility, (5) lack of cultural adaptation, (6) lack of shared norms and values, (7) lack of communication, (8) lack of coordination and collaboration, (9) lack of trust, (10) lack of knowledge exchange, and (11) lack of capability and value-adding contributions. The fourth cluster named "independent variables" includes challenges that have a strong driving power and slight dependence power. In the present case, (1) lack of experience, (2) lack of good management practices and processes, and (3) lack of contractual objects are in the category of independent variables.

Concluding, the higher the dependence value for a specific challenge, the more challenges need to be addressed before its removal, and the higher the driving value for a specific challenge, the more challenges exist that could be removed by its own removal.

5   Discussion

5.1   Contribution to Research and Practice

We identified eleven challenges for CVRs within our study. These challenges are categorized into four different levels with 8 challenges on the same level 4. In the following, we discuss the three most important challenges in detail and give a tentative explanation why all other challenges remain on the same level IV.

(1) Lack of experience. This challenge has been discovered as the most important challenge due to its high driving power and low dependence power among all CVR challenges. The importance of experience for CVRs has also been shown in the existing literature (Aubert et al., 2005; Kelly and Noonan 2008; Mani and Barua 2015). This result confirms previous studies, which have identified the CVR as a key success factors for managing ITO projects (Ravindran et al., 2015). The client mainly wants to achieve either cost reduction (Oshri et al., 2015) or to generate innovations (Aubert et al., 2015; Oshri et al., 2015) with an outsourcing project. To achieve both goals, the clients lack the required experience with such projects due to the projects' uniqueness. From a vendor's perspective, outsourcing is their main business and the vendor has rich experiences and knowledge derived from a large pool of projects with other clients. Those experiences are a key asset for the client and for the success of the ITO project. Another way to gain such experiences is to assign a third-party advisor to the project, who already has experiences with ITO and can support the client in all phases of the ITO project (Bapna et al., 2016; Oshri et al., 2018). Our study confirms the importance of experience of the client and the need of experienced vendors or advisors. It would be interesting to investigate the impact of 'lack of experience' on other challenges as well as the influence of third-party advisors in future research studies.

(2) Lack of good management practices and processes. The lack of good management practices and processes has an impact on all other challenges except of the lack of experiences. Although there are plenty of studies about project governance, many ITO projects still fail (Horvath 2014). Previous studies (Barua and Mani 2014; Cao et al., 2013) have already identified this challenge and described the restriction of the coordination and collaboration of the relationship between client and vendor, and try to mitigate the issues by providing frameworks, models and guidelines. Our results show that good management practices and processes are still a major challenge, especially for our surveyed industry partners. Due to the heterogeneity of ITO projects, it is difficult to develop an overarching model for the governance of those complex and unique projects. Future research should be more specific and develop solutions for dedicated problems between clients and vendors. As before, third-party advisors could support the client and vendor by establishing good management practices and processes in their projects. Bapna et al., (2016) described value-adding activities of advisors such as the vendor capability assessment or using information about a vendor for multiple clients. But there are more activities for providing good management practices and processes. Other researchers could enhance the activities of Bapna et al., (2016) and participate in closing the lack of good management practices and processes.

(3) Lack of contractual objects. As our results show, lack of contractual objects is influenced by lack of good management practices and processes. Since outsourcing projects are complex arrangements, contracts are often incomplete (Susarla 2012) and thus cannot account for all possible contingencies that might occur during the project. Therefore, good management practices and processes need to be in place to deal with unforeseen events and issues. This is in line with past studies, which emphasise the importance of the combination of contractual and relational governance mechanisms (e.g., Rai et al., 2012) In addition, when designing the contract between the client and vendor, both parties try to maximize their benefits (Gopal and Koka 2012). Hence, the contract needs to benefit both parties equally and provide safeguarding against opportunistic behaviour by the opposing party. This is especially challenging due to information asymmetries between the two parties (Dey et al., 2010). Here, the support of third-party advisors can help to mitigate these information asymmetries and thereby enable the

design of a proper contract. Such a contract design should consider specific client, vendor, and market characteristics, as well as monitoring mechanisms, that lead to a higher likelihood of contract success (Bapna et al., 2016). The contract design is also influenced by the management practices and processes of the exchange parties. Therefore, it should be kept in mind that there is no contract template that fits every outsourcing relationship due their organizational differences.

(4) Challenges on the same level. All other identified challenges remain on the same level and have no direct impact on other challenges. The reasons for this result are the high dependencies between those challenges. The responses of our study participants show a multi-directional impact between the challenges. For example, the lack of communication has an impact on the lack of trust, which again has an impact on the lack of knowledge communication. Due to the high dependencies of these challenges, future research should investigate the correlation between them in an organizational context. It would be interesting to gain a big picture about the interactions of the challenges and to identify the individual degree of impact for each challenge. Our results show that the CVR is a highly complex engagement with several and different aspects. Further research is needed for developing a holistic framework for the CVR based on existing studies (Alborz et al., 2003; Kern and Willcocks 2002; Lee and Kim 1999; Marchewka and Oruganti 2013).

The current challenges of CVRs in ITO engagements are highly interesting for practitioners as well. Our prioritization of the challenges is mainly based on ITO expert, so further insights from other practitioners involved in ITO would be beneficial for further generalization of our findings. Our findings are of use for practitioners to review and evaluate their current or future ITO projects. The lack of experience is a well-known challenge in ITO and most clients are aware of the fact that large outsourcing deals are rare and it is difficult to gain additional experiences. We already provide measures to mitigate this challenge by using third-party advisors to support such ITO clients. Other solutions are to hire experienced employees for such projects, which should be able to strengthen the CVR. In terms of good management practices and processes, practitioners could use external trainings to gain knowledge about supporting methodologies such as ITIL, PMI or Prince2 to mitigate the challenge. The lack of contractual objects is a very individual challenge between clients and vendors. Although some clients and vendors are able to collaborate without a tight contractual structure, others need such a structure for the management and monitoring of the vendor. Practitioners should re-analyze their outsourcing contracts and keep the importance of well-defined contractual objects in mind when renewing or developing a new contract.

5.2   Limitations

Despite our results and contribution from this study, it contains some obvious limitations, which have to be kept in mind for future research. First, we used a restrictive amount of challenges for CVRs as we used only articles from the *Senior Scholar's Basket* in our literature review. There might be other challenges as well, which have not been published in the Basket so far. Nevertheless, we are sure that we identified the most relevant ones.

Second, the research method ISM is a based on a subjective interpretation of the several challenges and the relationship between them. We tried to reduce this issue by given a short and clear definition for each challenge. But the understanding of the challenges differs, for example, between participants with a rich experience and participants with only few experience.

Third, our participants are working mostly in a service industry such as IT consulting. The results of our study could differ when most of the participants work in other industries without having such a focus on the services. Future researchers could evaluate this issue by replicating our study with another set of data in a different industry.

6   Conclusion

With this study, we provide an overview about existing challenges for CVRs and discover relationships between them by applying the ISM methodology. We conducted a literature research to gather and analyze relevant articles for the identification of mentioned client-vendor relationship challenges. In this regard, eleven challenges have been discovered and described in detail. A survey has been conducted to receive input from practice experts. We used the ISM method to discover contextual relationships among the challenges. The structural model with all challenges is the final output of our study.

The ISM based model provides an overview with a direction on the discovered challenges while each challenge is prioritized as the barriers are modelled with their driving and dependence power. Hence, a hierarchical structure on the challenges is given by four levels. The findings of this study reveal that three challenges, namely (1) lack of experience, (2) lack of good management practices and processes, and (3) lack of contractual objects can be treated as key elements for establishing a CVR. These challenges should be considered with great attention as they have high driving power and less dependence power. We described the most important challenges, explain why most challenges are highly dependent from each other, and derive potential topics for future research.

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