Incentive and Control Mechanisms for Mitigating Relational Risk in IT Outsourcing Relationships

Florian Spiegel  
*University of Mannheim, fspiegel@mail.uni-mannheim.de*

Miroslav Lazic  
*University of Mannheim, lazic@uni-mannheim.de*

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ABSTRACT
Relational risk emerges if relationship partners have differing interests and cannot trust in their partner’s benevolence. As IT outsourcing (ITO) relationships incur a high level of relational risk, researchers have tried to find appropriate mitigation mechanisms. However, there has been little research on the preference of either incentivizing or controlling the provider to mitigate relational risk. Our contribution is to analyze the application of incentive and control mechanisms in ITO relationships by (1) taking up previously defined relational risk scenarios, (2) composing mitigation mechanisms based on different types of incentives and control and (3) associating an appropriate mechanism to each risk scenario. We use multiple case studies with ITO clients in Germany to reveal a pattern of control and incentive mechanisms and reasons for it. Formal control turned out to be a suitable mechanism for mitigating service debasement and lock-in whereas social control contributed to reducing the risk of disputes.

Keywords
IT Outsourcing relationship, IT Outsourcing risk, relational risk mitigation, principal-agent theory, incentives, control mechanisms

MOTIVATION AND RESEARCH QUESTION
Managing the client-provider relationship has been an important theme for IT outsourcing (ITO) research, because if it fails, the whole ITO venture is bound for failure (Barthélemy, 2003; Poppo and Zenger, 2002). Since both partners are assumed to be opportunistic and self-interest seeking there is an uncertainty about the partner’s willingness to co-operate. This is referred to as relational risk (Aubert, Patry and Rivard, 2003; Das and Teng, 2001). In recent years research on ITO risk management has investigated factors influencing ITO risk and appropriate risk mitigation mechanisms (Aubert, Patry and Rivard, 2005). Control mechanisms for ITO relationships have already received the attention of researchers (Choudhury and Sabherwal, 2003; Gellings and Wüllenweber, 2006; Kirsch, 1997) as well as the relationship between formal control and relational governance (Poppo and Zenger, 2002). But there has been little research analyzing incentives for the provider which become relevant with the growing complexity of controlling (Casadesus-Masanell and Spulber, 2005; Poppo and Zenger, 2002). Consequently there is a lack of integration between the separately investigated concepts of control and incentives on the one side and ITO risk management on the other. For this reason, we try to establish a link between these research areas in order to open up a broader view on potential risk mitigation mechanisms. We use multiple case studies to analyze the pattern of choice between control and incentive mechanisms for mitigating the illustrated risk scenarios. From this we try to infer reasons for the pattern of control or incentive mechanisms identified in the case studies. The following question guides the subsequent elaborations:

Which incentive and control mechanisms are chosen in order to mitigate relational risk in IT outsourcing relationships and why?

RELATIONAL RISK IN IT OUTSOURCING
Relational risk factors are a result of both partners in an alliance having diverging interests in the relationship (Das and Teng, 2001). Risk in ITO is defined as a combination of risk factors aggregated to risk scenarios and the resulting undesirable outcomes in a framework set up by Aubert et al. (2005) and Bahli and Rivard (2003). We partly draw on this framework, but restrict our analysis to risk scenarios that are related to the agency problem. ITO relationships qualify as principal-agent relationships since they are characterized by asymmetric distribution of information between principal and agent.

Consequently principal-agent theory (PAT) (Jensen and Meckling, 1976), supplemented by transaction cost theory (TCT) (Williamson, 1985), constitutes the theoretical foundation for the analyzed risk scenarios.

The PAT risk factors moral hazard and imperfect commitment emerge ex-post which renders them relevant to our analysis (Aubert et al., 2003). We deem Aubert et al. (2005)’s risk scenarios service debasement, lock-in and disputes and litigation to be most closely related to these risk factors. Service debasement refers to a slowdown of services resulting from cheating, shirking, negligence of tasks and decline in the skills of provider employees assigned to the client (Aubert et al., 2003). According to PAT its cause is moral hazard. PAT suggests penalties and monitoring are suggested for mitigation (Aubert et al., 2003).

ITO relationships often involve the development of specific assets which cannot “be redeployed to alternative uses […] without sacrificing productive value” (Nam, Rajagopalan, Rao and Chaudhury, 1996, p. 38). The cost of switching providers is increased with the specificity of the underlying assets which causes the number of potential suppliers to decrease (Dyer and Singh, 1998). The combination of specific assets and switching cost results in lower bargaining power for the client. The client has to fear being locked-in by the provider who could impose unfavorable conditions on the client by renegotiation (Klein, 1996). Such behavior by the provider is referred to as hold-up and according to PAT can be mitigated by dual sourcing and hostageing (Aubert et al., 2003).

ITO relationships are characterized by a high level of uncertainty which leads to incomplete contracts (Poppo and Zenger, 1998). If accurate performance measures are lacking due to incompleteness, clients need to resort to proxy measurements. These may give leeway to perceptions of unjust performance measurement and thus lead to disputes and litigation as each party tries to maximize profit by interpreting the contract according to its own interest (Bahli and Rivard, 2003). All of these three risk scenarios result in increased costs and lower service quality (Aubert et al., 2005).

RESEARCH MODEL

We propose different types of control and incentives as means of risk mitigation for each of the relational risk scenarios. Individual mechanisms drawn from literature are used as a basis for the aggregate control and incentive constructs. Most mechanisms are derived from PAT. However, Bahli and Rivard (2003) have suggested that mitigation mechanisms not directly proposed by PAT may also play a significant role. We thus decided to include social control mechanisms such as the trust construct derived from relational contract literature which has gained substantial interest in recent work (Goo, 2009).

Figure 1. Research model
Formal Control

Formal control states explicit policies and processes to monitor and enforce desirable behavior (Das and Teng, 2001). Thus, it restricts the provider’s range of actions. Eisenhardt (1985) further differentiates between outcome control, where the control objective is the outcome of a process and behavior control where the process of delivering the service itself is monitored. Service level agreements (SLAs) represent the most widespread means of formal control for ITO relationships (Gellings and Wüllenweber, 2006). They are defined as formalized agreements between provider and client specifying “a product or service to be provided at a certain level so as to meet business objectives” (Goo, 2009, p. 29). SLAs specify deliverables such as system and helpdesk response times, system availability or processing errors, but may also contain prescriptions about the relationship’s governance structure (Goo, 2009). In order to track SLA fulfillment, monitoring is required. SLAs also include regulations for the governance structure of the relationship. This includes information about formal dispute resolution structure, committee meetings and other devices of relationship management (Goo, 2009). In order to reduce the attractiveness of shirking outcome based penalty systems are suggested (Aubert et al., 2003; Gellings and Wüllenweber, 2006).

Proposition P1a: Formal control is employed to reduce the risk of service debasement

Dual sourcing signifies that services are procured from at least two providers. A provider’s potential hold-up behavior is thus contained by the threat of losing business to a competitor. Although dual sourcing is argued to require low asset specificity its applicability for ITO relationships involving high asset specificity has been acknowledged (Aubert et al., 2003; Bahli and Rivard, 2003). Sequential contracting indicates that a contract is only awarded with a limited duration after which it is revised and renewal is decided upon (Bahli and Rivard, 2003). Benchmarking the provider prior to contract renewal prevents the provider from raising prices while actually decreasing service quality (Aubert et al., 2003). Engaging in hold-up behavior will consequently only pay off in the short-run, as the provider will forego the possibility of contract renewal. Hostaging - the reciprocal exposure to specific assets of the other party (Dyer and Singh, 1998) - is a control mechanism in which the principal would inflict damage on himself by engaging in hold-up. For example the ITO relationship could be set up as a joint venture in which both client and provider hold a stake (Aubert et al., 2003).

Proposition P1b: Formal control is employed to reduce the risk of lock-in

Explicit Financial Incentives

Explicit incentives, such as performance dependent payments or revenue sharing, are part of the formal contract. They distribute risk from principal to agent in order to provide him with motivation, but they also allocate his attention only to the specific outcomes being measured and rewarded (Holmstrom and Milgrom, 1991). Especially in situations where multiple goals have to be achieved concurrently, this property of explicit incentives signifies a disadvantage. Distorted performance measures make it difficult to implement performance based contracts as clients may take strategic advantage of given difficulties to measure outcomes (Bernheim and Whinston, 1998). A relational incentive contract involves financial incentives, based on a verifiable performance measure and on a subjective performance measure. A good subjective measure for the provider’s performance may be voluntary contributions to improve processes. The agent has an incentive to perform beyond verifiable performance, since he is rewarded for the extra-performance (Budde, 2008). A relational incentive contract thus provides explicit incentives and tries to avoid the problem of providing misleading incentives since also non-formally measurable aspects are taken into account.

Proposition P2: Explicit financial incentives are employed to reduce the risk of service debasement

Social Control / Implicit Incentives

Social control mechanisms are not codified, but established by the relationship’s social environment. Social control emerges if practiced and accepted behavior is turned into a norm (Kirsch, 1997) and enforced through non-legal means such as terminating the relationship or damaging reputation (Klein Woolthuis, Hillebrand and Nooteboom, 2005). Social control has also been classified as implicit incentives based on social norms (Casadesus-Masanell and Spulber, 2005). Social norms involve common values on quality, meeting deadlines, etc. within the client’s organization and have to be adapted to by the provider (Kirsch, 1997). Client’s subjective perception of performance for instance can extend beyond formal measures in the SLA and thus only be enforced through social norms. Goo (2009) found evidence that contractual elements of the SLA such as governance meetings contribute to the development of social norms. If the client actively engages in knowledge transfer to the provider and thus confers the client’s social norms, this can also be regarded to be a form of social control (Kirsch, 1997). Social control can thus increase incentives for the provider to deliver expected performance.

Proposition P3a: Social control is employed to reduce the risk of service debasement
Trust is defined as “confident expectations about another’s motives […] in situations entailing risk” (Boon and Holmes, 1991, p. 194). Trust makes the provider focus on long-term decisions rather than short-term gains and furthermore leads to the inclusion of the partner’s interests in the statement of individual interest (McAllister, 1995). This leads to increased commitment of the provider (Goo, 2009). Frequent encounter and social contact between provider and client employees is a prerequisite for developing trust (Kern and Willcocks, 2002). Close bonds between the relationship partners turn out to be especially useful whenever problems or conflicts occur that need to be solved jointly (Kern and Willcocks, 2002). According to Poppo and Zenger (2002) long-term relationships also favor the development of trust. If one party breaks trust, the other may retaliate by breaking trust as well which creates an incentive to adhere to trust standards (Casadesus-Masaneil and Spulber, 2005). Moreover trust supports the agreement on fairness standards. Trust consequently increases the belief in the partner’s benevolence and thus leads to decreased risk of disputes.

**Proposition P3b:** Social control is employed to reduce the risk of disputes and litigation

**DATA COLLECTION AND ANALYSIS**

Data for our positivist research model was gathered using a multiple case study approach. Each case was evaluated as a separate instance, which is structured and analyzed using our research model. This procedure is referred to as analytic generalization (Yin, 2003). Following Dubé and Paré (2003) we have established a clear research question (see introduction) and a unit of analysis: outsourcing relationships involving IT functions. Constructs for our theoretical framework have been taken from the relevant literature (Yin, 2003).

According to recommendations for case study research by Yin (2003) basic requirements regarding homogeneity and comparability of the case study sample have been developed:

- Only German companies are considered in order to reduce the influence of different corporate cultures
- Only projects involving outsourcing of IT functions (including helpdesk, infrastructure and software development)
- The projects have already been implemented and are in a mature stage (duration of the project >2 years)

The following table details the characteristics of the underlying cases:

<table>
<thead>
<tr>
<th>Outsourced IT functions</th>
<th>FIN1</th>
<th>FIN2</th>
<th>FIN3</th>
<th>FIN4</th>
<th>MECH1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application development, operation and maintenance of IT, processing</td>
<td></td>
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<tr>
<td>WAN, LAN, data centre, client PCs, application hosting</td>
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<tr>
<td>Data centre, desktop management, infrastructure of branch network</td>
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<tr>
<td>Application development and maintenance</td>
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<tr>
<td>Operation and maintenance of SAP systems</td>
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<tr>
<td>Industry</td>
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<td>Insurance, financial services</td>
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<td>Insurance, financial services</td>
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<td>Financial services</td>
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<td>Insurance</td>
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<td>Mechanical engineering</td>
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<tr>
<td>Number of providers</td>
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<tr>
<td>One (partly owned)</td>
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<td>&gt;5</td>
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<tr>
<td>One main provider</td>
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<tr>
<td>One global provider, two alternative providers</td>
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<tr>
<td>One</td>
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<tr>
<td>Contract duration</td>
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<td>8 years</td>
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<tr>
<td>Varying</td>
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<td>6 years</td>
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<td>7 years</td>
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<td>5 years</td>
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</table>

**Table 1. Characteristics of analyzed case studies**

In total six interviews have been conducted. One interview with a manager at a consulting company has been conducted upfront in order to validate constructs and general viability of propositions. Then five interviews with case companies have been conducted in person, lasting between 40 and 70 min. All interviews were tape recorded and transcribed into 63 pages of transcripts containing 241 passages before being verified by the interview partners. The two authors then analyzed and coded the transcripts using the software NVIVO8 resulting in 160 coded passages. The coded interview passages were first grouped by the indicators outlined in table 2. This initial grouping was further refined by aggregating indicators for the mitigation mechanism constructs with a related indicator for the associated risk scenario. Thus, passages providing evidence for the existence of a mitigation mechanism are related to passages pointing out the effect of this indicator on the underlying risk scenario. Then, each aggregation of passages was assigned a plausibility value which indicating whether the underlying
proposition is supported by this aggregation. The plausibility value takes into account whether the interviewee statements suggest that the implemented mechanism was successful in reducing the level of risk in the associated risk scenario. A value of -2 signifies that the passages contained in the aggregation suggest that this mechanism does not at all mitigate the underlying risk indicator whereas 2 denotes the extreme opposite. If both authors could not arrive at a clear assessment 0 is assigned and values of -1 or 1 apply to an ambivalent or weak relationship. To arrive at the plausibility value per proposition the average of all plausibility values across aggregations of indicators for the constructs related by this proposition was taken and weighted with the number of codings represented in each aggregation.

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Interview guideline items</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Formal control</strong></td>
<td>• Qualitative/Quantitative SLAs</td>
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<tr>
<td></td>
<td>• Penalties</td>
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<tr>
<td></td>
<td>• Monitoring procedures</td>
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<tr>
<td></td>
<td>• Structural liaison devices</td>
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<tr>
<td><strong>Explicit financial incentives</strong></td>
<td>• Revenue sharing</td>
</tr>
<tr>
<td><strong>Social control / implicit incentives</strong></td>
<td>• Knowledge transfer</td>
</tr>
<tr>
<td></td>
<td>• Reputation and trust</td>
</tr>
<tr>
<td></td>
<td>• Subjective perceptions of performance</td>
</tr>
<tr>
<td><strong>Lock-in</strong></td>
<td>• Perception of dependence</td>
</tr>
<tr>
<td><strong>Service debasement</strong></td>
<td>• Skill of provider employees assigned to client</td>
</tr>
<tr>
<td></td>
<td>• Service breakdowns due to negligence</td>
</tr>
<tr>
<td><strong>Disputes and litigation</strong></td>
<td>• Misrepresentation of information</td>
</tr>
<tr>
<td></td>
<td>• Occurrence of disputes</td>
</tr>
</tbody>
</table>

Table 2. “Indicators” used to measure constructs

RESULTS

**Explicit Financial Incentives**

FIN3 is the only case to explicitly pay a financial reward for process improvements. However, the client did not state any immediate effects on service quality. All other cases only involve piece rates or fixed price payments. MECH1 illustrated an incentive for the provider to seek cost savings, by procuring newer hardware for instance, if the contract does not require him to pass on these savings to the client. Even though this incentive is not explicitly stated or measured by the client, it is still an incentive to seek improvements that go beyond contractually agreed goals.

**Formal Control**

In all cases SLAs include quantitative measures such as service availability, service response times or helpdesk issue resolution times. Cases FIN2, FIN3 and FIN4 also employed a balanced scorecard including qualitative measures. MECH1, FIN2 and FIN4 have negotiated penalties for non-performance. However, at MECH1 there is no intention to enforce them. Instead the interviewee pleaded that it is in the best interest of the provider to perform in order to preserve his reputation. FIN2 and FIN3 accentuated that penalties usually do not compensate for the client’s loss or are already included in the price tag. The threat to terminate the relationship is considered much more effective than financial penalties. All cases implement service quality monitoring through information systems on the provider side and have set up key performance indicators (KPIs) with respective reporting structures. Relationship managers and review meetings have been implemented to resolve
performance issues. In all cases there is dependence on provider monitoring with only little local monitoring carried out. SLAs have been perceived vital to uphold service quality although different degrees of adaptations had to take place in order to increase effectiveness.

Contract duration was limited in all analyzed cases. MECH1 and FIN2 considered limitation of contract duration to be crucial and explicitly mentioned discouragement of lock-in as a reason for sequential contracting. To increase bargaining power prior to contract renewal, MECH1 demonstrated its ability to switch providers by in-sourcing and thus vertically re-integrating an application. Benchmarking prior to contract renewal is implemented in cases FIN3 and FIN4. FIN3 is convinced of benchmarking being useful not only for negotiating prices in the ITO relationship, but also to gain acceptance by internal divisions. FIN2 meanwhile tried out benchmarking but rejected it due to difficulties in finding

In addition to sequential contracts, FIN2 explicitly relies on dual sourcing to increase service quality and decrease the risk of lock-in. FIN2 was not satisfied with performance of its single provider approach and thus switched to a “best in class” approach incorporating multiple suppliers. According to FIN2 employee rotation at the provider results in a decrease employee skills assigned to the client over time and switching the provider may thus also increase service quality. For FIN2 switching providers is also necessary to keep the credibility of sequential contracting. FIN4 has set up relations with alternative providers to discourage lock-in and encourages projects to be spread across all three providers. FIN1 has negotiated a long-term contract, but does not consider the resulting lock-in to be a disadvantage as it implemented a form of hostage by owning the provider.

Social Control / Implicit Incentives

In cases FIN2, FIN3 and FIN4 subjective performance measures or perceptions on top of the contractually agreed on metrics – e.g. internal customer satisfaction – are also communicated to the client in order to create social pressure. FIN4 argued that discussion of such issues on top-level meetings puts significant pressure on the provider even though it is not associated with formal consequences. The interview partner argued that the increased social pressure deters service debasement even if not necessarily connected to a penalty. According to MECH1 and FIN3 regular meetings also contribute to more communication transparency and thus facilitate early prevention of misunderstandings with respect to each other’s expectations. FIN2, FIN3 and FIN4 also acknowledged the importance of facilitating knowledge transfer to the provider in order to increase capability and commitment of provider employees.

FIN1 has reported cases of inconsistencies in monitoring. Disputes could, however, be avoided through positive expectations in each other’s behavior. MECH1 reported a case where SLAs were unclearly specified and could be abused by the provider. However, the ambiguous SLAs were nevertheless adhered to in the client’s intent which deepened trust into the provider. In cases where the outsourcing deal was accompanied by a transition of employees from the client to the provider close personal relations have been reported to ease communication and stimulate trust. MECH1, however, disapproves of the coordinating function of personal relations and insists on enforcement of its formally defined processes. But MECH1 also states that problems in the relationship should be resolved cooperatively on the basis of mutual trust instead of referring to the contract.

Three cases have implemented long-term contracts lasting six years or more. According to FIN3 long-term relationships result in more open communication and better co-operation. This may be due to the prospect of a long-term partnership inducing the provider to hold back its opportunistic interests. FIN2, however, articulated that it is impossible to predict prices and conditions for a longer timeframe and thus strongly disapproves of long-term contracts.

Summary

The following table provides a summary in which support for each of the propositions is indicated by the aforementioned plausibility value. The table also indicates the proportion of passages relevant for the proposition as well as the cases with the highest plausibility value for that proposition.
DISCUSSION

Four results of the case study analysis are worth noting. First, penalties were considered ineffective for controlling provider behavior and sometimes even as damaging to the relationship. This is contrary to P1a and thus resulted in a lower plausibility value than otherwise expected. All clients expected providers to contribute process improvements and except FIN2 all clients have reported such contributions. FIN2’s reliance on penalties, short-term sequential contracts and dual sourcing to apply pressure on the provider may have lead to decreased commitment caused by short-term orientation and the presence of penalties. Such detrimental effects of penalties have already been mentioned in literature (Poppo and Zenger, 2002), but have not yet found widespread recognition in ITO research and practice. Second, only one of the cases employed explicit financial incentives. A potential explanation for this may be difficulties in establishing a performance measure on which to base incentive payments. One interviewee also suggested that the negotiation power of the large provider may have prevented this shift of risk towards the provider. The applicability of explicit incentives for ITO thus certainly deserves further research. We especially suggest relational incentive contracts to implement explicit incentives in ITO contracts. These arrangements have recently received attention by researchers in economics (Budde, 2008; Levin, 2003), but – as our results suggest – have not yet found applications in the analyzed case studies. It would be interesting to further investigate whether explicit financial incentives such as revenue sharing agreements are able to reduce the need for costly monitoring and formal control. Third, mechanisms such as dual sourcing or sequential contracting were considered suitable means to decrease the risk of lock-in. Interestingly, switching providers is not only perceived as mitigating the risk of lock-in, but also considered to be a means to increase service quality. Fourth, clients perceived trust to ease communication and coordination, but still preferred to rely on enforceable control for ensuring service quality. Trust was observable in long-term relationships or when close ties to provider employees were present. This may be taken as evidence that social control is complementing and not replacing formal control. Our results are thus in line with previous research pointing out the coordinating function of trust (Barthélemy, 2003; Goo, 2009; Poppo and Zenger, 2002). Our results complement existing research on relational risk in ITO by taking into consideration results from studies on formal and social control in ITO relationships (Barthélemy, 2003; Kirsch, 1997; Poppo and Zenger, 2002) and general theories on incentive and control mechanisms in principal-agent relationships (Budde, 2008; Casadesus-Masanell and Spulber, 2005; Levin, 2003). PAT as a theoretical base proved to be a powerful framework for explaining relational risk, but did not serve as much to explain the observed pattern of risk mitigation mechanisms. Explicit financial incentives for instance turned out to be of comparably low importance in the analyzed cases.

LIMITATIONS

Most importantly, our empirical base of only five cases is very limited. Our study is also limited to relational risk scenarios derived from PAT while other risk scenarios that may be of importance are neglected. Three out of our four case studies are taken from the financial services sector whose tight network of regulation may have contributed to the strong presence of formal control. We also did not differentiate between the special conditions of different IT functions such as operations and applications development.

CONCLUSION

In this paper we investigated which incentive and control mechanisms are chosen in order to mitigate relational risk in ITO relationships. We revealed formal control to be strongly preferred over incentivizing providers. However, all cases employed a mixture including at least formal control and social control or implicit incentives. We suspect not only risk, but also industry specific regulation as well organization and country specific cultural aspects to play a significant role in the selection of incentive and control mechanisms. Further empirical investigation of these influences could help to shape a clearer picture of the identified pattern of risk mitigation mechanisms. Our study takes into consideration results from incentive and control theory that have not been considered by past research on ITO risk mitigation. Thus, we hope to provide ITO researchers with...
suggestions to establish additional risk mitigation mechanisms and with new insights to evaluate current risk mitigation practices. For practitioners in ITO this paper provides an overview of the relevant mechanisms to contain provider opportunism and their effectiveness as can be judged from the experiences made by the case companies.

REFERENCES