THE DUAL ROLE OF PENALTY: SERVICE LEVEL AGREEMENT DESIGN AND ITS EFFECTS ON INTRA-FIRM KNOWLEDGE SHARING AND COMMITMENT OF SERVICE PROVIDERS

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The Dual Role of Penalty:

Service Level Agreement Design and Its Effects on Intra-Firm Knowledge Sharing and Commitment of Service Providers

Research

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Abstract:

Outsourcing projects are reported to frequently fail. Part of the reasons for such failures is an insufficient understanding of service level agreements (SLAs). This analysis adds to the collective knowledge on SLA contract design via examining effects of contract framing on two important factors of outsourcing success: commitment and knowledge. Via a scenario-based experiment with novices and professionals, the results show that penalty framing (as opposed to bonus framing) decreases knowledge sharing willingness and attitude-related forms of commitment while increasing client-oriented forms of commitment. No differences in internally-motivated forms of commitment and in behaviour between novices and professionals are found. The study adds to the collective knowledge on SLA design, commitment and knowledge sharing.

Keywords: service level agreements; contract framing; knowledge sharing
1 Introduction

In outsourcing arrangements service-level agreements (SLAs) are typically used. However, despite the pervasiveness of such agreements they have not been entirely understood. In parts mistakes in contractual arrangements are blamed for failures of outsourcing projects. As such Goo et al. (2008 p. 469) contend: “Although service-level agreements (SLAs) are important for IT outsourcing management, appropriate mechanisms for constructing effective SLAs are still poorly understood, leading to inadequate or overcomplicated contracts that are ineffective.”

The importance of SLAs to manage outsourcing projects gets magnified in light of frequently reported failures of such projects: “In spite of the continuous increase in IT outsourcing activities globally, a significant percentage of outsourcing deals are considered either a failure or suffered from serious problems.” (Qi and Chau 2012 p. 859). Further, the mere scale of the global IT outsourcing market underlines the need to better understand factors influencing the success of SLAs to steer outsourcing projects. The market scale is estimated to total US$325 billion in 2013 (Gartner group 2009).

We seek to contribute to the collective knowledge on SLAs in investigating one aspect of SLAs: the framing of SLAs in terms of bonus or penalty. Bonuses and penalties are fundamental elements of SLAs and an integral part of service level clauses (Beaumont 2006; Alner 2006; Goo et al. 2009). While bonuses and penalties are widespread in the IT industry (Arora and Asundi 1999, Yeo and Buyya 2005), differential effects of bonuses versus penalties have received relatively little academic attention in information systems research.

Most would agree that contractual arrangements influence individual behaviour in particular when targets and consequences for meeting the targets are associated with them. Some managers believe that penalty clauses for failure to meet deadlines in outsourcing agreements make contracts more stringent and can enhance effectiveness of outsourcing agreements (Choudhury and Sabherwal 2003). We investigate employees’ reactions to SLAs being either framed in terms of penalty or in terms of bonus. In SLAs a service provider (SP) commits to provide products and services to a service recipient (SR). The effect of SLA contract framing on individual behaviour in the organization of the service provider (SP) is our point of focus. The quality of service delivery stems from at least two basic determinants: the knowledge and expertise the SP possesses and the commitment of the SP to the service delivery (Goo et al. 2009; Grover et al. 1996).

As such we investigate knowledge sharing and commitment. First, we expect that contractual elements of an SLA can influence how the SP deals with knowledge and expertise within the firm. Precisely, we investigate individual-level reaction to the framing in form of intra-firm knowledge sharing in the SP’s organization. Knowledge sharing is an important success factor for the IT industry (Davenport et al. 1998, De Long and Fahey 2000, Kalling and Styhre 2003). The effective transformation of individual knowledge into organisational innovations requires sharing of knowledge among the members of a firm (Argote and Ingram 2000). If set adequately incentives can support knowledge sharing (Taylor 2006). However, incentives have not been found to exert a general positive influence on knowledge sharing (Bock et al. 2005). We suggest that the structure of a contract in terms of bonus versus penalty makes a difference in knowledge sharing and further examine whether this difference is influenced by professional experience. In today’s information intensive professional environment cooperation is more important than ever and the personal realization of the importance of cooperation may also change knowledge sharing behaviour. Thus, we examine whether professional experience independently or interactively with contract framing exhibits an influence on knowledge sharing behaviour.
Second, we expect that contract framing also influences the commitment of the SP. Commitment to inter-organizational relationships includes the willingness to be involved in the relationship through the commitment of effort and the desire to continue a relationship because of a positive attitude and feelings associated with the partner (Scanzoni 1979, Kumar et al. 1995, Goo et al. 2009). Commitment to an outsourcing relationship is seen as one of the most important determinants of outsourcing success and is used as the ultimate dependent variable in the study of SLAs (Goo et al. 2009).

As such this study contributes to IS practice and IS literature. First, the results are relevant for service providers in outsourcing agreements to understand the effect of the design of SLAs on important aspects of organizational behaviour such as knowledge sharing among employees and commitment to serving the client. As such SP negotiators should be informed whether the application of penalty clauses can inhibit a culture of openness and knowledge sharing. This is important because researchers and practitioners propose that a culture that values social interaction and sharing of ideas is important for knowledge management and business success (Davenport et al. 1998, De Long and Fahey 2000, Kalling and Styhre 2003). Second, much of the literature on SLA design has focused on the perspective of the SR (Lee 2001, Goo et al. 2009). We provide evidence on effects of contract design on the SP. This evidence is at least indirectly relevant for the SR. The SR is interested in receiving high quality services. Thus, insights into effects of SLA design on the SP’s commitment and on how the SP deals with knowledge are crucial for the SR to shape appropriate SLAs. Essentially knowledge and commitment are both important factors. Particularly, since IT outsourcing increasingly goes beyond a mere resource-acquisition perspective towards joint innovative activities (Willcocks and Kern 1998, Goo 2010), both partners should increasingly consider the effect of penalty clauses on knowledge behaviour which likely shapes innovation capability. After all, knowledge is seen as the primary key to a firm’s success (Spender 1996).

2 Background and Hypothesis Development

2.1 Service Level Agreements and Reward and Penalty

A service level agreement (SLA) is an inter-organisational contract between a service provider (SP) and a service recipient (SR, Williamson 1996, Goo 2010, see Figure 1). SLAs are often used in IT outsourcing agreements in which a SP commits to provide products and services to a SR. The SR aspires to receive high service and product quality to efficiently and effectively improve its IT functions and reap outsourcing benefits (Grover et al. 1996). The quality of service delivery stems from at least two basic determinants: the knowledge and expertise the SP possesses and the commitment the SP upholds into the service delivery (Goo et al. 2009; Grover et al. 1996, Figure 1). Bonuses and penalties are fundamental elements of SLAs and an integral part of service level clauses (Beaumont 2006; Alner 2006; Goo et al. 2009). Generally, SLAs have been described according to eleven contractual elements (Goo et al. 2008, Goo et al. 2009, Goo 2010). While contracts normally do not include all elements because of cost or complexity considerations (Goo 2010, Karten 2004, Anderson and Dekker 2005), we use the eleven-item framework by Goo et al. (2009) to analyse how and in what circumstances rewards and penalties are used in SLAs.

Goo et al. (2009) group the eleven contractual elements into three characteristics. Foundation characteristics of SLAs specify key principles, key process owners and target level of product and service performance. The idea is to implement mechanisms that help the SP and SR to perceive themselves as

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1 These eleven contractual elements of SLAs are: service level objectives, process ownership, service level contents, future demand management, anticipated change, planning of innovation, feedback process, communication, measurement charter, conflict arbitration and enforcement.
having a common objective and a common strategy to achieve this objective which supports the success of outsourcing projects (Singleton et al. 1988, Choudhury and Sabherwal 2003). Change characteristics include processes for resolving unforeseeable outcomes, for introducing new innovations, processes of feedback and adjustments. The intent of SLAs regularly evolves over time, which is why at the outset of the agreement the involved parties may agree on continuous contract evaluation and improvement (DiRomualdo and Gurbaxani 1998). Governance characteristics capture the definition and continuous evaluation of the value that an outsourcing project is generating for the stakeholders. These characteristics define ways to maintain the outsourcing relationship through the specification of desired outcomes and measures. Desired outcomes may be performance targets for a specific project goal or a particular activity. Further elements include exit options, responsibilities, documentation of communication and identification and resolving of disputes.

![Perspective of Analysis](image)

**Figure 1: Service level agreement, service recipient and service provider (adapted from Goo 2008, Goo et al. 2009, Goo 2010)**

Examining the association of the SLA characteristics (Goo et al. 2009, Goo 2010) with the use of rewards (e.g. monetary bonuses) and sanctions (e.g. monetary penalties) we find a difference in the use of rewards and sanctions with regards to the characteristics. Rewards are suggested to contribute to governance and change characteristics of SLAs, whereas penalties are only described to contribute to governance characteristics.

Recall that governance characteristics are set to define and continuously evaluate the value of the project and include conditional consequences. Both rewards and penalties are described to be part of a measurement charter and may come into effect when targets are met or missed (Goo 2010). For instance, in the context of IS development outsourcing a desired outcome maybe the implementation of a system under development on a target date. The service provider is rewarded or sanctioned for meeting or not meeting the target. As such rewards and penalties are set for the success or failure of meeting project outcomes. Further, rewards and penalties are described to be part of an enforcement plan which includes conditions under which termination of the agreement may occur. The clauses in practice may specify a detailed list of all penalty and reward assumptions occurring at different stages of the service provision such as implementation process, reporting process, due diligence process, HR process or knowledge transfer (Goo 2010).
Change characteristics involve processes for managing unforeseen circumstances and thus, to some extent these characteristics seek to capture and consider uncertainty and noncontrollable factors. Penalties are not discussed as an element of controlling change within an SLA (Goo 2010, Goo et al. 2009). A reason may be that change characteristics capture elements that tend to be outside a partner’s control. There is evidence that if negative outcomes are outside of a party’s control negative performance evaluation is less likely (Bol and Smith 2011). However, rewards are part of change characteristics and are suggested to enable and manage innovation and to foster joint efforts at continuous improvement and collaboration (innovation plan, Goo et al. 2009). Since innovation is difficult to specify and mandate it seems feasible that penalties play a secondary role to support innovation.

This shows the notion of a negative connotation of penalties when used in contractual settings. While bonuses and penalties may be used for enforcement, penalties seem not to be used when trying to inspire innovations which are expected to have largely positive effects beyond expectations. Innovations can hardly be mandated in SLAs and are likely beyond regular expectations. Given that innovating denotes exceeding expectations by a large extent and may not be a central purpose of SLAs, only bonuses for innovating but no penalties for not innovating seem to be arranged in SLAs. However, penalties generally may generally inhibit innovation capability through decreasing intra-firm knowledge sharing. We examine the association of penalty vs. bonus on knowledge sharing in the next section.

### 2.2 Knowledge Sharing

Our guiding research question is whether the contractual context of the SLA in terms of bonus vs. penalty influences the SP’s actions. A basic determinant of the quality of service provision is: knowledge of the SP.

We expect that contractual elements of an SLA can influence how the SP deals with knowledge and expertise within the firm. Precisely, we investigate individual-level reaction to differences in the contractual context (bonus vs. penalty) in form of intra-firm knowledge sharing. Such intra-firm knowledge sharing is an important success factor for the IT industry (Davenport et al. 1998, De Long and Fahey 2000, Kalling and Styhre 2003). Knowledge is seen as the primary key to a firm’s success and an effective knowledge base would help SPs to provide high quality services (Spender 1996).

Knowledge sharing is influenced by a variety of factors: the incentive structure of employees, the efficacy of cooperation, the group identity and personal responsibility (for a review see Cabrera and Cabrera 2002). We focus on the aspect of incentives. If set adequately incentives can support knowledge sharing (Taylor 2006). However, incentives have not been found to exert a general positive influence on knowledge sharing (Bock et al. 2005). Group incentives tend to have better effectiveness on knowledge sharing than individual extrinsic rewards (Taylor 2006).

Individuals’ knowledge sharing behaviour is likely to be influenced by cost/benefit considerations. As such individual belief that expected costs are less than expected benefits are likely to be an important determinant of knowledge sharing willingness. Personal costs can be as simple as additional time commitments when knowledge is shared or more complex like the worry to lose the status as a unique expert. Benefits can include more tangible employee rewards or more intangible aspects such as fostering of collegiality, expectation of reciprocity and satisfaction in establishing good work relationships.

Let us hold everything else constant and focus incentive framing as the focus of our inquiry. Prospect theory enables us to formulate a theory-consistent expectation. Prospect theory models choice in form of an S-shaped utility function (Kahneman and Tversky 1979, Tversky and Kahneman 1981). A critical feature of this curve is that it has a steeper slope in the loss domain than in the gain domain. As a result, changes in wealth in a loss domain affect individuals’ subjective utility to a greater extent than changes in wealth in a gain domain. As a result, identical situations framed in terms of losses or in terms of gains can lead to different decisions because of individuals’ loss aversion. Consequently,
individuals can be expected to go to greater length to avoid a penalty than to achieve a bonus of an equivalent monetary amount.

Imagine an IT project manager who is faced with an urgent request by a colleague currently working in a different project to share her expertise in this project. She knows that if she agrees to help out it will require significant time. Thus, meeting some of the targets specified in an SLA in her project may be in danger. Not meeting the targets negatively affects her project's budget and her personal variable pay as specified as part of the governance characteristics in the SLA.

In line with prospect theory (Kahneman and Tversky 1979, Tversky and Kahneman 1981), we suggest that the framing of the consequences for not meeting the SLA targets in terms of a penalty vs. in terms of a bonus makes a difference to the cost/benefit considerations regarding knowledge sharing. The perceived costs of the IT project manager to share her knowledge with her colleague increases when faced with a penalty as compared to a bonus because of loss aversion. There is more disutility associated with the change in wealth in the loss domain than in the gain domain. Thus, the manager goes to greater length to avoid that penalty and is more likely to not share her knowledge and expertise with her colleague if she faces penalties as compared to bonuses as defined in the SLA as part of the governance characteristics. As such the attitude towards knowledge sharing requests are more negative and the willingness to share is lower in penalty situations. We do not expect differences between attitude and willingness, but test both because they are two distinct concepts.

We expect:

**H1a:** An SLA including penalty clauses (as compared to an SLA including bonus clauses) is negatively associated with attitude towards knowledge sharing requests and intra-firm willingness to share knowledge within the service provider.

As discussed above, there are a variety of other factors that can influence knowledge sharing behaviour. Knowledge sharing is a form of cooperation (Wasko and Faraj 2000; Wasko and Faraj 2005) and in today’s information intensive professional environment cooperation is more important than ever. Professional experience exposes the individual to the importance of cooperation and collaboration which is why we argue that professional experience is positively associated with knowledge sharing despite potential costs. Management studies evidence that age and tenure similarity within groups are associated with communication frequency and cooperative norms (Zenger et al. 1989; Chatman and Flynn 2001). Psychological literature supports that humans are not born to be cooperative and prosocial beings, but develop these characteristics during socialization (Eisenberg et al. 1983). Similarly, List (2004) finds that age and social preferences are positively related in adults. This evidence supports our argument. We thus formulate the expectation:

**H1b:** More professional work experience (as compared to less professional work experience) is positively associated with attitude towards knowledge sharing requests and intra-firm willingness to share knowledge within the service provider.

Given that professional experience heightens the view of the importance of collaboration; we further expect that professional experience decreases the effect of contractual framing, because more experienced individuals tend to exhibit higher preferences for cooperation that are less likely to be influenced by contractual framing.
H2: More professional work experience (as compared to less professional work experience) makes individuals less sensitive towards contractual framing with respect to attitude towards knowledge sharing requests and intra-firm willingness to share knowledge.

2.3 Commitment (Effort-related)

Why should a SR care about intra-firm knowledge sharing of a SP when setting governance characteristics of an SLA? One may argue that a SR primary interest in receiving high quality services and products. However, an important determinant of the capability to provide high quality services is the SP expertise and knowledge (see Figure 1). Knowledge sharing within a firm is an important factor to transform individual knowledge into organisational knowledge and can help a SP to deliver higher quality services to its customers.

Another basic determinant for service quality is the commitment of the SP. Commitment to inter-organizational relationships includes the willingness to be involved in the relationship through the commitment of effort and the desire to continue a relationship because of a positive attitude and feelings associated with the partner and (Scanzoni 1979, Kumar et al. 1995, Goo et al. 2009). Our next hypotheses are guided by the question whether contract framing as part of an SLA can influence the commitment of an SP.

We first turn to effort-related commitment. At least two types of effort-related commitment are conceivable. Effort expended for the sake of achieving the targets and reaping the good consequences (not receiving a penalty or receiving a bonus) or effort expended to serve the client in the best way. With bonuses and penalties associated with target achievements the client signals the importance of certain targets. We discussed above that consistent with prospect theory individuals can be expected to go to greater length to avoid a penalty than to achieve a bonus of an equivalent monetary amount. Thus, in the face of receiving a penalty (as compared to a bonus) by the SR, individuals in the organization of the SP are expected to expend higher effort because of the consequences and because of the client’s expectations signalled through contract framing.

H3: An SLA including penalty clauses (as compared to an SLA including bonus clauses) increases internal as well as client-related effort provision by the service provider.

2.4 Commitment (Attitude-related)

Inter-organisational relationships tend to be of longer duration the more complex the task is the organisations are collaborating on (Levinthal and Fichman 1988). Outsourcing agreements tend to be longer and of more complex nature. As such it is very important to manage the quality of the relationship between partners carefully. Thus, it is understandable that a great deal of literature on IT outsourcing have dealt with relationship quality of the parties involved (Goo et al. 2009; Qi and Chau 2012; Grover et al. 1996; Lee and Kim 1999).

Relationship quality has been suggested as a key determinant of outsourcing success, particularly when the role of the SP moves beyond a mere maintenance role towards a more strategic role (Lee and Kim 1999). The management of the relationship quality is seen as important as the management of the contract (SLA) as a governance mechanism for IT outsourcing success (Qi and Chau 2012). Relationship quality is crucially influenced by the way social exchange can be characterized between the partners in terms of trust and fairness, communication and culture (Grover et al. 1996; Lee and Kim 1999).

As such we examine how SLA framing (bonus vs. penalty) may influence elements of the social exchange. Thereby we focus on positive feelings like fairness perception, joy and success. Fairness per-
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Exception has been described to have a positive effect on performance (Libby et al. 2001), organizational citizenship behaviour (Skarlicki and Latham 1996) and organizational commitment (Levy and Williams 1998; Alexander and Ruderman 1987; for a review see Cohen-Charash and Spector 2001). Similarly, positive professional feelings like joy of feeling of success are known to enhance productivity. For these important influences, it is important to examine whether and how SLA framing may influence these feelings and attitudes towards the partner that express a form of commitment in an SLA relationship. Goo et al. (2009) call this form of commitment durability and consistency.

Consistent with prospect theory (Kahneman and Tversky 1979, Tversky and Kahneman 1981) and the concept of loss aversion, we expect that individuals perceive SLA procedures which involve sanctions and penalty as less fair than SLA procedures which involve bonuses, because individuals are averse to loss situations. Similarly, because of the negative framing feeling of success and joy are expected to be lower in the face of losses.

H4: An SLA including penalty clauses (as compared to an SLA including bonus clauses) decreases attitude-related commitment by the service-provider.

Our research model is presented in Figure 2.

![Figure 2: Research Model](image)

3 Research Method

We employed a 2 x 2 between-participant full factorial design. The two independent variables are contract frame (bonus vs. penalty) and professional experience (professional vs. novice). Contract frame was manipulated via two treatment conditions in the experimental instructions (bonus vs. penalty). Professional experience was varied via participant recruitment. Professionals were acquired via professional contacts and professional social networks. Students enrolled in information systems classes from a large University who took part in the study on a voluntary basis represented novices.

3.1 Participants

A total of 219 participants took part. At the end of the experiment 21 failed to respond to the manipulation check question correctly asking what form of variable pay the case described. This reduced the sample to 198. Out of the 198, 58 were professionals with an average work experience of 12.59 years and 160 were students with an average work experience of 0.68 years. The two groups are statistically different in work experience (F = 109.26, p < .001). A Chi-Square test suggested that the random as-
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assignment in terms of contract framing was successful and the proportion of males and females did not differ across contract framing groups (Chi-Square (1) = .505; p = .477). However, the proportion of males and females is significantly different across the professional experience groups (Chi-Square (1) = 8.648; p < .004) with a higher proportion of females in the novice group (78 female, 62 male) than in the professional group (19 female, 39 male). Thus, we performed control checks on gender to see whether there are any systematic biases on the dependent variables due to participant’s gender. Including gender as control in a multivariate analysis of variance (MANOVA) indicates a significant influence of gender. Comparisons of this model with our main analysis below do not indicate differences in significance levels for our variables of interest. Thus, while gender seems to be an additional influence factor it does not distort our inferences drawn below when controlling for it.

3.2 Experimental Scenario

We use a scenario-based experiment to test the hypothesis. The use of experiments allow for isolating hypothesised driving forces and for examining cause – effect relationships (Friedman and Sunder 1994). The scenario was adapted from Constant et al. (1994). All participants were asked to imagine a scenario in which they are a project manager in a high-tech company called '2020 Company' that operates in the Information Technology (IT) industry. They were told that they manage a project for an important client, that the project has a duration of two more years and that the arrangements with the client have been made in a service level agreement (SLA). Explanations of the SLA were given subsequently. The explanations of the SLA contained the contract framing treatment. Based on monthly targets specified in the SLA, it was either stated that “If a target is not met, a penalty payment needs to be paid to the client. This directly affects the project's budget and your personal variable pay.” Or it was outlined: “If a target is met, a bonus payment is paid by the client. This directly affects the project's budget and your personal variable pay.” To check whether the participants had understood the scenario and the characteristics of the SLA understanding check questions were asked. Only if the participant answered all of them correctly they could proceed.

Next, the current situation was described that Dominique, a colleague who works on a different Project with a different client, is approaching the participant (project manager) and is asking the participant whether he/she can share his/her knowledge and expertise. It was further outlined that over the last years the participant has built up substantial knowledge and expertise about key processes and functions in your company. Further, although Dominique comes from a different department and is not in direct competition with the participant, the time spent sharing the expertise and knowledge would lead to a delay in the participant’s project. Thus, the participant may not meet some targets of his/her Service Level Agreement which would affect the bonus (or penalty) payments. Therefore, our scenario suggests potential costs to knowledge sharing.

3.3 Dependent Variables

Both questions that relate to knowledge sharing follow Constant et al. (1994). Knowledge Sharing Willingness was captured via asking the participants on a scale from 1 = Low Willingness to 7 = High Willingness: “How willing are you to share your knowledge and expertise with your colleague?” This rating followed the direct question by Dominique, the colleague: “I have encountered some challenges in my project. Could you help me to meet these challenges?”. Further, participants were asked about their attitude towards the knowledge sharing request via a rating from 1 = Not at all appropriate to 7 = Very appropriate “How appropriate is it of Dominique to ask you to share your knowledge and expertise?”.
Goo et al. (2009) define commitment in outsourcing relationships via input, durability and consistency. Input involves the effort a party is willing to expend in an outsourcing relationship. Durability and consistency capture factors like positive affect and confidence in the stability of the relationship. We call these commitment factors attitude-related commitment.

We measure effort-related commitment from an internal and external client-oriented perspective. The internal perspective is captured via the questions (1) “The penalty[bonus]-based variable component would make me work harder to achieve the targets and not get the penalty [get the bonus].” (1 = Strongly Agree and 7 = Strongly Disagree) and (2) “The penalty[bonus]-based variable component would make me more committed to achieve the targets and not get the penalty[get the bonus].” (1 = Strongly Agree and 7 = Strongly Disagree). Effort targeting the client perspective is measured via (1) “The penalty[bonus]-based variable component would make me work harder to serve the client.” (1 = Strongly Agree and 7 = Strongly Disagree) and (2) “The penalty[bonus]-based variable component would increase my commitment to deliver better service quality to the client.” (1 = Strongly Agree and 7 = Strongly Disagree).

Attitude-related commitment is measured via three questions (1) “How fair do you perceive your penalty[bonus]-based variable component of the Service Level Agreement?” (1 = Unfair and 7 = Fair), (2) “If you meet all targets of your project, how strong would be your feeling of enjoyment when you do not receive a penalty[bonus]?” (1 = Very Low to 7 = Very High), and (3) “If you meet all targets of your project, how strong would be your feeling of success when you do not receive a penalty[bonus]?” (1 = Very Low to 7 = Very High). All our commitment variables are composite variables. Reliability tests show adequate consistency (Cronbach’s Alpha commitment/internal = .919; commitment/client = .924; commitment/attitude = .753)

4 Results

The means and standard deviations of the dependent variables are presented in Table 1. Levene’s tests for all dependent variables were insignificant (p > .05). A MANOVA test showed a significant main effect of contract framing (Pillai’s trace = .124, Wilks’ Lambda = .876, Hotelling’s trace = .142, Roy’s Largest Root = .142; F(5, 190) = 5.394; p < .001). The main effect of professional experience is insignificant (Pillai’s trace = .039, Wilks’ Lambda = .961, Hotelling’s trace = .041, Roy’s Largest Root = .041; F(5, 190) = 1.557; p > .17). The interaction effect of both independent variables is also insignificant (Pillai’s trace = .021, Wilks’ Lambda = .979, Hotelling’s trace = .021, Roy’s Largest Root = .021; F(5, 190) = 0.810; p > .54).

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2 Note, Goo et al. (2009) ask SRs (not SPs) on their views related to the SP in terms of willingness to expend effort or enjoyment of the relationship. For this different perspective we cannot use their questions directly.
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### Table 1: Descriptive Statistics

<table>
<thead>
<tr>
<th>Dependent variables</th>
<th>Professional Experience</th>
<th>Contract Frame</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Bonus (0)</td>
<td>Penalty (1)</td>
</tr>
<tr>
<td>Willingness to Share</td>
<td>Professional (0)</td>
<td>4.50 (1.57)</td>
</tr>
<tr>
<td></td>
<td>Student (1)</td>
<td>4.28 (1.31)</td>
</tr>
<tr>
<td>Attitude towards Request</td>
<td>Professional (0)</td>
<td>5.25 (1.53)</td>
</tr>
<tr>
<td></td>
<td>Student (1)</td>
<td>4.41 (1.55)</td>
</tr>
<tr>
<td>Commitment (effort-related internal)</td>
<td>Professional (0)</td>
<td>2.37 (1.66)</td>
</tr>
<tr>
<td></td>
<td>Student (1)</td>
<td>2.68 (1.76)</td>
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<tr>
<td>Commitment (effort-related client)</td>
<td>Professional (0)</td>
<td>2.36 (1.86)</td>
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<tr>
<td></td>
<td>Student (1)</td>
<td>2.87 (1.74)</td>
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<tr>
<td>Commitment (attitude-related)</td>
<td>Professional (0)</td>
<td>6.02 (.95)</td>
</tr>
<tr>
<td></td>
<td>Student (1)</td>
<td>5.88 (.94)</td>
</tr>
</tbody>
</table>

Table 2 summarizes the hypotheses testing results. Knowledge sharing willingness is significantly associated with contract framing (F(1,194) = 4.316, p < .04, Table 2), supporting H1a. Figure 3 displays the mean levels of knowledge sharing willingness in the four experimental conditions. In the penalty condition willingness to share knowledge is lower for both professionals and novices also supporting the direction of H1a. To further explore the influence of contract framing we also captured the attitude towards the request. However, contract framing is not significantly associated with attitude towards the knowledge sharing request. In this respect, we do not find support for H1a.

Professional experience is insignificant for knowledge sharing willingness, not supporting (H1b). With respect to attitudes, professionals rate the appropriateness of a colleague asking for help and sharing expertise and knowledge significantly higher than novices (F (1,194) = 4.756, p < .031). While this attitude does not seem to translate in significant differences in the willingness to share knowledge it still indicates differences in professionals and novices.

Furthermore, we do not find evidence for a significant interaction between contract framing and knowledge sharing as hypothesised in H2.

H3 predicted that penalty-framed contracts increase the commitment of effort to a project. We separated the analysis into commitment of effort for internal purposes such as achieving the target and benefiting from the favourable outcome and client-related purposes such as committing effort to serve the client well and achieve high service quality. The analysis of client-related commitment supports our prediction (F (1,194) = 4.773, p < .031), while we do not find significant evidence for differences in internal commitment depending on contract framing. Figure 4 plots the mean levels of effort related commitment across all experimental groups. It shows that penalty-framed contracts can indeed induce higher effort to serving the client (3.21 & 3.3 vs. 2.36 & 2.87).

On the contrary H4 predicts that penalty-framed SLAs can reduce attitude-related commitment in terms of fairness, enjoyment and feeling of success. The analysis supports a significant difference (F (1,194) = 22.350, p < .001) and the mean levels shown in Figure 5 support the expected direction.
### Table 2: Hypotheses Testing Results

<table>
<thead>
<tr>
<th></th>
<th>Willingness to Share</th>
<th>Attitude towards Request</th>
<th>Commitment (effort-related internal)</th>
<th>Commitment (effort-related client)</th>
<th>Commitment (attitude-related)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional Experience</td>
<td>F = 1.185, p &lt; .279</td>
<td>F = 4.756, p &lt; .031**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contract Frame x Professional Experience</td>
<td>F = .007, p &lt; .934</td>
<td>F = 1.858, p &lt; .175</td>
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<td>Hypothesis supported</td>
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<td>H1a – no</td>
<td>H3 – no</td>
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<td>H2 – no</td>
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Notes: * p < .05, ** p < 0.01, *** p < .001
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Figure 3: Mean levels of Willingness to Share Knowledge and Attitude towards Request

Figure 4: Mean levels of Commitment (effort-related)

Figure 5: Mean level of Commitment (attitude-related)
5 Discussion, Limitations and Conclusion

Our research contributes to literature on SLA design and outsourcing (Grover et al. 1996; Beaumont 2006; Alner 2006; Goo et al. 2009; Qi and Chau 2012) and to the literature on factors associated with knowledge sharing (Bock et al. 2005; Constant et al. 1994). It focuses on the analysis of effects of contract framing on SP behaviour.

We find evidence that penalty clauses in SLAs (as opposed to bonus clauses) decrease knowledge sharing willingness, while increasing certain types of commitment. The findings are potentially most valid for enforcement plans of SLAs as we contrast simple wording differences in a contract within the same SLA context and goal. For both, bonuses and penalties an SLA agreement must specify how respective bonuses and penalties are calculated including goals and formulae associated with performance measures (Beaumont 2006). We hold everything else equal besides the framing of the contract.

Interestingly, we do not find an effect on effort-related commitment to influence internal consequences of target achievement, but find that penalty clauses can lead to higher commitment to serve the client well. It has been suggested that the wording of a contract in terms of bonus versus penalty could be a ‘way of conveying information about the expectations of the firm’ (Lazear 1991, p. 102). Thus, penalty clauses may signal the importance of particular targets in SLAs. Thus, the importance of targets may not be only signalled via increasing the variable pay when meeting the targets, but also via framing the contract in terms of penalty instead of bonus.

However, penalty clauses reduce attitude-related commitment. Penalty clauses are perceived as less fair and achieving targets is associated with less enjoyment and feeling of success. As such, penalty clauses seem to play dual roles in association with commitment. While they may be beneficial for effort, they may not be beneficial for the relationship quality of SP and SR because of decreased fairness and enjoyment and knowledge transfer within the SR. This implies that before the instalment of penalty clauses a careful evaluation of the present and targeted relationship between SP and SR is necessary to balance potential impacts of penalty clauses. A SR ideally wants to maintain high commitment by the SP. As underlined in the literature, all types of commitment are important in achieving the best possible service quality (Goo et al. 2009). Consequently, in the negotiation of SLAs SR should be well aware of the seemingly opposing effects of penalty clauses.

With respect to knowledge sharing and the attitude towards knowledge sharing requests we find differences between professionals and novices. Professionals rate the appropriateness of a colleague asking for help and sharing expertise and knowledge significantly higher than novices. This supports the idea that professionals being exposed to working environments appreciate more how important cooperation is. However, this attitude does not seem to translate in significant differences in the willingness to share knowledge.

Our study is limited to the extent that it does not examine the behaviour of the SR. While the focus on one side in the SR-SP dyad is a common limitation (see e.g. Goo et al. 2009, Lee 2001 who focus on the SR’s perspective), this provides opportunities for future research in examining effects of similar contract manipulations on the service provider. Furthermore, our study is at the individual-level, while SLAs typically specify arrangements between a vendor and a client both being organizations (Beaumont 2006). Again, asking individuals to eventually infer firm behaviour is a common limitation (cf. Goo et al. 2009, Lee 2001). Further, since firm-level bonuses and penalties trickle down to individual-level bonuses and penalties, it seems warranted to investigate the effects of bonuses vs. penalties on individual-level behaviour. Prior research on influence factors on knowledge sharing and effort is also conducted at the individual level to infer implications for organizational design (Constant et al. 1994, Lazear 1991). Eventually “the people make the place” (Schneider 1987, p. 437).

In addition, future research may investigate SLA factors on knowledge sharing between the partners in an outsourcing relationship. Such decisions are beyond the scope of this study and add additional stra-
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Strategic complexities which are likely made at top management level (Willcocks and Kern 1998). However, as knowledge sharing can increase the success of inter-firm outsourcing relationships (Lee 2001, Bandyopadhyay and Pathak 2007), it is also important to understand factors influencing the level of knowledge sharing across organizational boundaries.

In conclusion, contract design is an important step towards successful outsourcing relationships. In order to receive high quality services SRs seek to cooperate with SP with high commitment and expertise. We find evidence that SLA contract design influences SPs’ levels of commitment and manners of dealing with knowledge across two different levels of experience (professionals and novices).

References


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