INTENTIONS BEHIND CONTROL MECHANISMS IN IS PROJECTS BEYOND AGENCY THEORY: A RESEARCH IN PROGRESS DESIGN

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INTENTIONS BEHIND CONTROL MECHANISMS IN IS PROJECTS BEYOND AGENCY THEORY: A RESEARCH IN PROGRESS DESIGN

Research in Progress

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Abstract

Why do IT project managers control their projects? As stated in the majority of existing literature on information systems, it is because project participants are self-interested parties with goal incongruence and information asymmetry between them. Accordingly, the relationship between controller and controlee has been generally described as similar to the one that exists between principal and agent under agency theory. Consequently, control activities have predominantly been seen as efforts to minimize related agency problems. The only exception so far is the study of Remus and his colleagues (2015), who found that control may also address coordination requirements. However, it remained unclear whether further control intentions exist. This paper introduces alternative theoretical viewpoints in addition to the agency and coordination aspects of control that may explain further control purposes in IS projects. The research thus contributes to literature by providing a broader view on control intentions in IS projects. Findings can benefit IS professionals by enabling them to consciously think about the purpose of control and hence to choose control mechanisms more effectively.

Keywords: Control, IS Project, Agency Theory, Control Purpose
1 Introduction

Carrying out information systems (IS) projects on time, on the right quality and within budget often causes difficulties due to their non-routine, complex, dynamic and temporary nature (Mahring and Keil, 2008). Managers use control mechanisms, such as regular status meetings and defined project milestones, because control can help ensure projects remain within the projected time and budget and delivered on the expected quality (Heumann et al., 2015). In IS project control literature control is defined as an attempt to align individual behaviours with organizational objective (Choudhury and Sabherwal, 2003; Kirsch, 1996, 1997; Tiwana and Keil, 2009). In line with this definition, an underlying assumption in the area of IS is that the purpose of control mechanisms is to diminish the agency problem (Remus et al., 2015). The agency problem is a core concept of agency theory and it refers to a conflict between the interests of principals and those of agents: the self-interest of agents can lead to the appropriation of value from the organization. Appropriation can take many forms including adverse selection, performance problems and moral hazard (Eisenhardt, 1989).

However, the assumption that the goal of control mechanisms is only to tackle agency problems seems to oversimplify the matter and outside the area of IS a broader view has already been employed (e.g. Dekker, 2004; Gulati and Singh, 1998). This was also the starting point of Remus and his colleagues (2015) who found that control mechanisms are in place because of the coordination needs of complex IS projects, in addition to dealing with agency concerns. The authors also created the concept of “control purpose” that is defined as the intentions underlying the controller’s choice and implementation of specific controls (Remus et al., 2015). Nevertheless this research has limitations: it only examined the presence of appropriation- and coordination oriented controls and that it did so by employing a secondary case study analysis approach, where the control purpose could not always be determined. For example the authors found that a specific stakeholder meeting was established but the reasons for this were not mentioned in their data sources.

The central thesis of this ongoing research is that multiple control purposes exist and that diversified theoretical lenses would provide improved accuracy of explaining them. Each theory has its own individual limitations (Langley, 1999) and Cram, Brohman and Gallupe (2016) also point out that, e.g., employee wellbeing (labour process theory) can contradict to the owner’s objective of profitability (agency theory). This paper introduces two candidate theories that may explain further control intentions, while maintaining that further fitting theories may exist. Accountability theory claims that if individuals need to justify their beliefs and actions to another individual or organization, they attach the sense of accountability to these. This yields a number of advantages, for instance increased prosocial behaviour (Vance et al., 2015) and so an intention behind control could be to increase the sense of accountability. Although this theory shares some assumptions with agency theory – e.g. both emphasize the importance of monitoring subordinates - one core difference between the two theories is that while agency theory depicts agents as self-interested utility maximizers without any signs of conscience or consideration about social norms, accountability theory highlights the importance of actors’ self-image and their need for social approval (Bovens, 2010). Psychological ownership theory suggests that individuals can feel a sense of ownership of a project, in respect of which they have control, self-investment and intimate knowledge, and can become a part of their sense of self (Pierce et al., 2001). Psychological ownership is often linked to positive outcomes, such as citizenship and stewardship behaviour (Davis et al., 1997; Hernandez, 2008; O’driscoll et al., 2006) and hence one purpose of control may be to maximize the development of psychological ownership among controlees. The use of this theory was also suggested by Remus et al (2015).

Beyond broadening the theoretical lens on control intentions a study in this area is important because Cram (2011) has found that the exaggeration of appropriation oriented controls can result in negative socio-emotional side effects of controlees and that they ignore the crucial goal of company value creation (Rai and Tang, 2014). Furthermore, appropriation-oriented controls can become counterproductive as they can diminish feelings of autonomy and responsibility and can negatively affect the satisfaction and performance of controlees (Donaldson, 2008).
The proposed main research questions of this ongoing research therefore are: (i) What are the intentions behind control in IS projects from the perspective of project managers/controllers? (ii) Which of these intentions cannot be explained with agency theory? (iii) How do controlees perceive these intentions? On the basis of a grounded theory study focusing on IS development projects, this work contributes to IS project management research and practice by (1) providing broad insights on motivational and situational factors of control mechanisms through control intentions, and by (2) drawing IS project managers attention to ensure that the chosen control mechanisms are appropriate for their specific control purposes and that controlees have the same understanding on them.

2 Theoretical background

2.1 Organizational control and IS project control

Organizational control is an important managerial function that has been the target of a broad range of research in the field of management and organization studies. One reason for this is that organizations often face the problem of self-interested employees who may not consider collective goals (Cardinal et al., 2017). Fayol (1949) named control as one of the four key managerial functions, next to organizing, planning and coordinating. "Control corresponds to mechanisms that managers use to direct attention, motivate, and encourage individuals to act in ways that support the organization's objectives" (Long et al., 2002). This definition highlights three main features of control that differentiate it from other managerial activities. First, it is manager-centric, peer- and bottom-up oriented control are somewhat neglected among management scholars (Long et al., 2011). Second, control is goal oriented, it is created to reach a well-defined aim. Third, it is multi-faceted: it consists of a broad collection of practices that can be categorized for example as clan, bureaucratic and market control (Ouchi, 1979), belief, boundary, diagnostic and interactive control (Simons, 1995) but other categorizations also exist (Sitkin et al., 2010).

In the area of IS projects, control is seen mainly from a behavioural perspective: it is an attempt to align individual behaviours with organizational objectives (Heumann et al., 2015). The majority of IS projects consists of hierarchical layers (Wiener et al., 2017) and so control is regarded a dyadic relationship between a controller and a controlee; controllers are typically managers and controlees are members of their teams. Controllers are individuals who choose and implement control in order to regulate the behaviour of controlees. They can select specific actions called control mechanisms that help to achieve organizational goals by defining what will do what and when and how. A control portfolio consists of a variety of control mechanisms (Wiener et al., 2016). These can be categorized into different control modes that represent a unique collection of actors and techniques to achieve control. Control modes can be formal or informal. Formal controls are input, behavioural and outcome controls, and they are used to enforce previously defined plans and emphasize accountability and measurability. Informal controls are clan and self-control and they are used to create shared values and norms (Cram et al., 2016).

2.2 Agency, stewardship and coordination theories

As per the original agency concept, one party – the principal – employs another party – the agent – because the principal believes this relationship will result in higher value creation than working alone. The theory assumes that both the agent and the principal are self-interested utility maximizers (Wright et al., 2001). The agency problem has two facets: (1) the principal and the agent have different interests and (2) there is an information asymmetry between parties. Self-interests differ in two main ways: (1) principals want agents to work hard, but agents would like to minimize their efforts; and (2) principals want agents to assume some of the risks for the outcome of their work but agents do not want to assume any risks (Bosse and Phillips, 2016).

Due to these problems there is a likelihood that the agent doesn’t act in the best interests of principals and thus the principals cannot create as much value as they had expected to. The challenge is to create...
maximum value while minimizing the costs related to the collaboration, called agency costs. Agency costs range from the costs of undiminished agency problem to the costs of minimizing agency problems (Bosse and Phillips, 2016). A prominent scholar who criticized the theory is Michael Granovetter (1992) who states that the theory is under socialized, meaning it does not reflect the social and psychological complexities of human actors. On this line of thought Davis and his colleagues suggest replacing agency theory with one called stewardship theory that has more generous assumptions about human motivations (Davis et al., 1997).

Stewardship theory challenges most of the core assumptions of agency theory. Most strikingly it moves away from the individualistic self-interested economic actors of agency theory to a collective serving, trustworthy, self-actualizing human being, whose interests are aligned with those of the principal and who thus coordinates with the principal (Davis et al., 1997). Accordingly there is no need to align interests and to monitor agents, even though information asymmetry exists between parties, due to the nature of work. Therefore, agents work hard without any extrinsic incentives and in the best interests of the organization. Stewardship theory can be complemented with coordination theory. This is useful because the former explains the need for coordination from a motivational-situational perspective, while the latter describes coordination from a processual perspective (Crowston, 1997). According to coordination theory, employees face different coordination problems due to the complexity of tasks and the dependencies that constrain how these tasks can be performed. Coordination is defined as managing dependencies between activities. To address these coordination problems, employees must perform additional activities called coordination mechanisms (Remus et al., 2015).

### 2.3 Accountability

Another concept that can be considered as a response to agency theory is accountability that is defined as “the implicit or explicit pressure to justify one’s beliefs and actions to others” (Tadmor and Tetlock, 2009). It has recently reached popularity in IS literature because it has the potential usefulness to deter antisocial behaviour of internal employees. An example of such behaviour is access policy violation, when insiders access information contrary to the policies about how access rights can be used in the organization (Vance et al., 2015). Accountability theory describes how the need to justify a person’s behaviours to another party causes that person to feel accountable for the process by which decisions and judgments were reached. According to the theory, the need to account for a decision process or outcome makes it more probable that a person will think deeply and systematically about his or her procedural behaviours. In turn, people who think deeply and systematically about a process are more likely to consider the consequences of their behaviour and thus will perceive higher accountability for their actions. Such decision making that involves a sense of accountability for processes and outcomes has a number of advantages: it increases prosocial behaviour, conformity to expected behaviours and decreases risk taking (Tadmor and Tetlock, 2009; Vance et al., 2015).

The theory proposes four key mechanisms that increase the sense of accountability. First, identifiability, that is a belief that one’s work outputs could be linked to the same person. Second, expectation of evaluation that is the belief that one’s performance will be assessed by another party according to some normative ground rules and with some implied consequences. Third, awareness of monitoring, that is a user’s state of active cognition that his/her system-related work is monitored. Fourth, social presence, that is the awareness of other users in the system also increases the development of the sense of accountability (Tadmor and Tetlock, 2009; Vance et al., 2015). Accountability theory can be compared and contrasted to agency theory, because certain assumptions of the two theories overlap. Similarities and dissimilarities are summarized in Table 1 (based on Bovens, 2010, Vance et al, 2015, Bosse and Philips, 2016).

<table>
<thead>
<tr>
<th></th>
<th>Agency theory</th>
<th>Accountability theory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main objective</td>
<td>Explains how principals can work efficiently together with agents, despite the agency problem.</td>
<td>Explains how to reduce antisocial behaviours or increase prosocial behaviours.</td>
</tr>
<tr>
<td>Approach</td>
<td>Agency theory</td>
<td>Accountability theory</td>
</tr>
<tr>
<td>-------------------------</td>
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<td>----------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>Methodological individualism</td>
<td>Methodological collectivism</td>
</tr>
<tr>
<td>Actors</td>
<td>• Principal (individual or organization)</td>
<td>• Actor (individual or organization)</td>
</tr>
<tr>
<td></td>
<td>• Agent (individual or organization)</td>
<td>• Accountability forum (individual, or organization).</td>
</tr>
<tr>
<td>Source of account giving</td>
<td>• Principal-agent relationship</td>
<td>• Principal-agent relationship</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Professional accountability (e.g. chambers)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Legal accountability (e.g. court)</td>
</tr>
<tr>
<td>Assumptions of account giving</td>
<td>• Agent is obliged to inform the principal about his or her conduct</td>
<td>• Actor is obliged to inform the accountability forum about his or her conduct</td>
</tr>
<tr>
<td></td>
<td>• Principle can interrogate the agent and can question the adequacy of the information</td>
<td>• Accountability forum can interrogate the actor and can question the adequacy of the information</td>
</tr>
<tr>
<td></td>
<td>• Principal may pass judgement on the conduct of the agent</td>
<td>• Accountability forum may pass judgement on the conduct of the actor</td>
</tr>
<tr>
<td></td>
<td>• Agent may face sanctions</td>
<td>• Actor may face sanctions</td>
</tr>
<tr>
<td>Components</td>
<td>• External: Controlling, monitoring by principal</td>
<td>• External: social approval, embodied by the accountability forum</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Internal: Self-image preservation</td>
</tr>
<tr>
<td>Operationalization</td>
<td>Controlling, monitoring with the purpose of aligning the agent’s interest to that of the organization</td>
<td>Controlling, monitoring with the purpose of evaluation. Can also be used to encourage and award employee performance (Hall et al., 2003).</td>
</tr>
</tbody>
</table>

Table 1 Comparison of agency theory and accountability theory

2.4 Psychological ownership

Psychological Ownership (PO) can be defined as a state in which individuals feel that the target of ownership is theirs; it is the feeling of possessiveness and being tied to the target of the possession. This results in the feeling that “what is mine, becomes a part of me” and the target becomes part of the psychological owner’s identity (Pierce et al., 2001). Extant literature posits three main reasons as to why psychological ownership exists. The first motive underlying possession is to be in control. The second root of ownership is self-identity: people can use ownership to define themselves and express their identity to others (Dittmar, 1992). Finally, ownership comes from the need to possess a space or territory, because “When we inhabit something, it is no longer an object for us, but becomes part of us”. Ownership creates an opportunity to satisfy this need (Pierce et al., 2001).

There are three major mechanisms through which PO develops. First, control exercised over a physical or non-physical target gives rise to feelings of ownership over that object (Csikszentmihalyi, M., Rochberg-Halton, 1981). Second, association with the target of possession also helps forming ownership. The more intimately a person knows an organizational factor, the more likely that ownership will develop in respect of that factor. Third, work in and of itself can lead to psychological ownership. Through labour workers invest energy into products and services they create. These become representations of the self, just like words, thoughts and emotions (Pierce et al., 2001).

Psychological ownership produces different effects on the attitudes and behaviours of individuals (Dawkins et al., 2017). PO leads to higher organizational commitment (Han et al., 2010), higher job satisfaction, organization-based self-esteem (Liu et al., 2012), work engagement and intention to stay (Zhu et al., 2013). It is positively linked to citizenship behaviour, that is a person’s voluntary commitment within an organization that is not part of his or her contractual tasks (VandeWalle et al., 1995).
Henssen et al. (2014) found that PO is also positively related to the stewardship behaviour of organizational leaders, that is the sense of personal responsibility in followers for the long-term wellbeing of the organization and society. Negative consequences of PO include territorial behaviour to protect and maintain the targets of PO. People exhibiting such behaviour tend to have anger and act defensively when, for example, a meeting room that was booked by them is taken by someone else (Brown et al., 2014). Moreover PO can lead to an unwillingness to accept advice, resistance to change and feelings of personal loss (Liu et al., 2012).

### 3 Conceptual framework

The basic theoretical concept of the research is that in addition to appropriation concerns, other problems and needs can be addressed through control in IS projects. With the help of the theories described above, the research is going to expand the “control purpose” concept the following way.

First, traces of appropriation oriented control will be searched, that is defined as controls targeted at the controllers’ anticipated concern about their organization’s ability to capture adequate value from the IS project (Remus et al., 2015). The underlying agency theory has three main assumptions: (1) agent and principal are self-interested utility maximizers, (2) there is goal incongruence between parties and (3) there is information asymmetry between parties (Eisenhardt, 1989). This kind of control addresses appropriation concerns and the controller’s goal is to minimize agency problems. Second, the presence of coordination oriented control will be examined, that is defined as controls targeted at the anticipated complexity of the IS project and the difficulties associated with managing resource and task interdependencies (Remus et al., 2015). The underlying stewardship and coordination theories assume that (1) individuals are collective serving and trustworthy and (2) that coordination is required due to information asymmetry. This type of control addresses coordination requirements with the goal to maximize value creation.

Third, the existence of accountability oriented control will be investigated, that is defined as controls targeted at creating the sense of accountability. The underlying accountability theory presumes that people seek to preserve self-image and social approval and that the sense of accountability increases compliant behaviour. This type of control addresses the need to have compliant individuals in the organization and the goal of this control is to ensure this compliant behaviour. Fourth, the research will look for the signs of psychological ownership oriented control that is defined as controls targeted at facilitating the formation of psychological ownership. This type of control is based on psychological ownership theory according to which there is a psychological connection between the individual and the target of ownership. Here the addressed problem is organizational commitment, job satisfaction, work engagement and the controller’s goal is to maximize psychological ownership.

The conceptual framework will be used first by exploring whether controllers encounter the problems these theories address. If yes, the research will investigate how controllers seek to address these issues and the ideal outcomes of these efforts are. The study will also consider whether controlees agree if these problems exist and if they have the same understandings of the employed control mechanism.

<table>
<thead>
<tr>
<th>Appropriation - oriented control</th>
<th>Coordination - oriented control</th>
<th>Accountability - oriented control</th>
<th>Psychological ownership - oriented control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Controls targeted at the controller’s anticipated concern about her organization’s ability to capture adequate value from the IS project (Remus et al, 2015)</td>
<td>Controls targeted at the anticipated complexity of the IS project and the difficulties associated with managing resource and task interdependencies (Remus et al, 2015)</td>
<td>Controls targeted at creating the sense of accountability</td>
<td>Controls targeted at facilitating the formation of psychological ownership</td>
</tr>
</tbody>
</table>
Table 2  Conceptual framework

<table>
<thead>
<tr>
<th>Underlying theory</th>
<th>Appropriation - oriented control</th>
<th>Coordination - oriented control</th>
<th>Accountability - oriented control</th>
<th>Psychological ownership - oriented control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agency theory</td>
<td>Stewardship and coordination theory</td>
<td>Accountability theory</td>
<td>Psychological ownership theory</td>
<td></td>
</tr>
<tr>
<td>Main assumptions</td>
<td>• Agent and principal are self-interested utility maximizers</td>
<td>• Collective serving, trustworthy individuals</td>
<td>• People seek to preserve self-image and social approval</td>
<td>• Psychological connection between the individual and the target of ownership</td>
</tr>
<tr>
<td>Goal</td>
<td>• Goal incongruence</td>
<td>• Coordination required due to information asymmetry</td>
<td>• The sense of accountability increases compliant behaviour</td>
<td></td>
</tr>
<tr>
<td>Appropriation concerns</td>
<td>Coordination requirements</td>
<td>Compliance needs</td>
<td>Organizational commitment, job satisfaction, work engagement</td>
<td></td>
</tr>
<tr>
<td>Problem addressed</td>
<td>Appropriation concerns</td>
<td>Coordination requirements</td>
<td>Compliance needs</td>
<td>Organizational commitment, job satisfaction, work engagement</td>
</tr>
<tr>
<td>Controller’s Goal</td>
<td>Minimize agency problems</td>
<td>Maximize value creation through collaboration</td>
<td>Ensure compliant behaviour of actors</td>
<td>Maximize psychological ownership</td>
</tr>
</tbody>
</table>

4 Methods

Given the scarcity of theories in prior research on IS control purposes, the main goal of this research is theory development. For inductive theory building there are a number of methods available, such as interpretive case study, ethnography and grounded theory. The latter has been chosen that gained popularity not only in the broader IS research (Matavire and Brown, 2013), but also in the area of IS project control (Gregory et al., 2013). While this choice may be surprising first due to the consideration of a priori theories and a literature review, grounded theory fits the purposes of this research because of the following reasons.

First, this research implements a less strict version of grounded theory from Sarker, Lau and Sahay (2001), that has already been used in IS context by e.g. Mueller, Mendling and Bernroider (2018). This adapted grounded theory approach introduces an alternative to the paradigm model of the Straussian grounded theory (Strauss and Corbin, 1998) and argues for the usage of meta-theoretical frameworks in the selective coding phase to provide a guiding lens for researchers. This is in line with McGhee et al (2007) who argue that a priori literature review (1) provides a context and justification for the study, (2) provides a basis for demonstrating the appropriateness of a grounded theory approach, and (3) satisfies institutional or other such requirements for a literature review to precede data collection and analysis. Other sources also claim that launching into data collection without first looking at the literature is a misconception of grounded theory (Urquhart and Fernández, 2013); Boudreau and Robey (2005) assert that prior knowledge of theory, literature, personal and professional experiences guide researchers’ data analysis. Using an adapted version of grounded theory is in accordance with Matavire and Brown (2013) who argue that grounded theory can be flexibly be implemented and that its approaches have been employed in a broad variety of ways in IS literature.

Second, grounded theory combines the strengths of both the interpretivist and the positivist world (Charmaz, 2006). Orlikowski (1993) characterises grounded theory as interpretive because (1) it uses qualitative and unstructured data that represent the subjective understanding of actual members of the study and (2) it involves subjective sampling and analysis techniques. Nevertheless grounded theory also benefits from the strengths of the positivist world, because (1) it provides a systematic coding procedure (Strauss and Corbin, 1990) and because (2) especially at the selective coding phase, it re-
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quires a deductive verification of inductive findings that is compatible with the logic of positivism (Ackroyd and Hughes, 1992).

Data collection will start with interviewing IS project managers and participants using the intensive interviewing concept (Charmaz, 2006). The interview protocol will contain questions related to project description, employed control mechanisms and possible reasons of their presence. The data collection will take place in the IT departments of multinational companies including both internal and outsourced contexts and agile and traditional development approaches. Data analysis will rely on the adapted version of grounded theory, consisting of open, axial and selective coding followed by theoretical integration (Sarker et al., 2001; Strauss and Corbin, 1990, 1998).

5Next steps, expected results, contributions

The research will continue with an exploratory case study focusing on a single organization. This will be followed by an examination that compares multiple organizations and seeks to find factors that influence control intentions. With reference to the research questions, the study is expected to show that (1) there are different intentions behind control in IS projects and that (2) some of these intentions cannot be explained with agency theory. Furthermore, it is also anticipated that different controller intentions are perceived differently by controlees. Therefore, this research may explain the work of Remus et al (2015) in terms of the presence of coordination-oriented control. This study seeks to contribute to the area of IS, first by expanding and validating the “control purpose” concept (Remus et al., 2015) through the application of new theoretical lenses. Second, the research investigates the possible theoretical links between the concepts of accountability, psychological ownership and IS project control by examining whether seeking for compliant behaviour of subordinates and the formation of PO are intentions behind control. These contributions may help IS project managers to adjust their control portfolio and guide them to use the right control mechanisms under different circumstances.

References


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