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IT Identity and IS Relational Switching Cost in the Context of IS Implementations

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Abstract

Driven by a need to understand how Information Systems (IS) switching interacts with Information Technology (IT) identity to influence IS infusion behavior, this research-in-progress paper explores issues that may affect the success of IS implementations when information workers are required to switch from an incumbent IS to a new IS and incur IS switching costs. The study of the interplay between identity and IT systems is known as IT identity (ITID) and describes the extent to which an individual views the use of IT as integral to his/her view of self and provides an interesting theoretical lens with which to study this interplay between IS usage and identity. We present our two-phase research design that focuses on IS implementations within the software industry as a suitable empirical context. Phase 1 involves an exploratory survey of information workers within an IS industry practitioner community, while Phase 2 will adopt a case study approach to enable deeper understanding of ITID of information workers at varying stages of a new IS implementation. At the conference, we will present a preliminary analysis of our Phase 1 empirical data and will be seeking feedback on our contributions and implementation of Phase 2.

Keywords: IS Implementations, IT Identity, IS Switching Costs

1   Introduction

Organizations increased their investments in Enterprise Information Systems (EIS) year over year in 2022, as information workers increased their reliance on Information Systems (IS) to support their day-to-day interactions (Verhoef et al., 2021). Psychological factors, particularly those related to the culture and identity of the group and individuals, have been presented in the literature as factors influencing IS adoption and proliferation of IS implementations within organizations (Cooper and Zmud, 1990). Recent research on culture and identity as factors influencing IS adoption has uncovered an emergent phenomenon whereby individuals come to identify themselves and each other through their technological choices. This phenomenon is known as Information Technology identity (ITID).

Consequently, research exploring the impact of IS implementations on ITID in organizational settings has expressed ITID as being influenced by IS implementations, particularly when adopting a new IS and through the subsequent continued use of the IS in question (Hassandoust, 2017). Such studies have not factored in "IS relational switching costs", which is the cost incurred when transitioning between alternative technologies. This relates to the process in which information workers move from an existing IS to a new one (Mezghani, 2014). This is significant, as information workers typically are in some state of adoption of an incumbent IS prior to adopting a new one (Mortensen and Pissarides, 1998). Habitual use of an incumbent system and psychological commitment due to perceived sunk costs all encourage development of inertia, which is a source of resistance to adopting a new IS (Polites and Karahanna, 2012). Our goal in this paper is to explore how both activities of simultaneously switching off and adopting IS interact to impact an information worker's ITID, and

more broadly, how this interacts with the culture of their group and organization. Thus, the initial Research Question (RQ) that drove this study is:

How does an information worker's ITID, established through continued use of incumbent IS, influence the implementation of a new IS?

To achieve our aims, we have designed a two-phase qualitative study to understand how ITID of IS professionals influences the use of new IS. Phase 1, which is currently being designed, takes an exploratory approach that surveys information workers across a variety of organizations with a goal of collecting a widespread view of ITID. Phase 2 will then aim to achieve a deeper understanding of the issues that will emerge in Phase 1 through a more focused case study approach. This might involve exploring the effects of ITID at varying stages of an IS implementation. Our work is envisaged to support an exploration of the governance of IS implementations, relating to the management of risks relating to organizational culture (Fitz-Gerald and Carroll, 2005). This arises from changes to information worker identity during the adoption of new digital technologies and extends the emerging literature on ITID (Carter et al., 2022, 2020a), including research-in-progress work on Information Technology (IT) and role identities in IS infusion (Hassandoust et al., 2023), as well as technology acceptance behavior (Diel, 2022).

In the following section, we present emerging IS literature on ITID in the contemporary work environment, revealing a knowledge gap where IS switching interacts with ITID to influence IS infusion behavior, as information workers transition from a state of adoption of an incumbent IS to a new IS. In Section 3, we present our research design and methodology, and in Section 4, we outline our envisaged contributions and next steps.

2 The Literature on ITID and IS Switching Costs

The theory of ITID (Carter and Grover, 2015) revolves around the notion that as humans increasingly rely on IT to interact and perform activities in our daily lives, our identities become embedded in our various IT systems and tools. ITID examines the extent to which an individual views the use of IT as integral to their view of self. ITID is applicable to specific forms of IT that are more amenable to identity formation (such as multi-use, portable, and networked IT). Researchers can develop tools to compare and differentiate various IT tools and systems based on their identity salience, an attribute relating to the likelihood of an identity being evoked (Stryker and Serpe, 1994). Multiple types of IT can take on shared identities, such as facilitating collaboration (email and video conferencing tools). This contributes to the formation of a master identity that influences an individual's behavior in relation to individual specific tools (Burke, 2004). In practice, this master identity is continually changing in relation to the varying states of adoption of the multiple IS used to perform job tasks. Mishra et al. (2012) established that an employee's identity can evolve due to the introduction of a new technology, which then in turn affects IS adoption and IS use behavior.

Another concept applied towards the study of IS implementations is "switching cost", defined by Chen and Hitt (2006, p. 1) as "the disutility an individual experiences in switching products or product providers". Where a worker is already using an existing or incumbent IS, the analysis of IS implementations needs to consider the impact of users moving or switching away from their existing systems. Switching costs can include the explicit cost to terminate an existing relationship, start a new relationship and any other costs, either explicit (system implementation costs) or implicit (e.g., risk aversion and uncertainty about new products) that makes deviating from past product choice more costly than staying with a previous choice. More specifically, the concept of "relational switching costs" relates to psychological or emotional discomfort due to the loss of identity and the breaking of bonds (Burnham et al., 2003) and has been applied towards the study of IS adoption (Bhattacherjee et al., 2012; Chulkov, 2017; Matzler et al., 2015; Roy, 2017; Zhou et al., 2015). Consequently, switching

costs play a central role in increasing user resistance in the context of implementing a new IS and further mediate the relationship between other antecedents for IS implementations (Kim and Kankanhalli, 2009). Studying switching costs in relation to ITID is important. An analysis of the source system that employees are moving from in relation to the new system they are adopting supports the exploration of whether the employee established an existing ITID with the original IS. This can improve the understanding of how the act of moving to a new IS could potentially disrupt their current ITID.

Understanding user behavior beyond the initial stages of an IS implementation is also important. Prior research on user behavior has largely focused on the factors that impact an individual user's cognitive intention to use the IS continually (Chiu and Wang, 2008; Vatanasombut et al., 2008), since continued use is a fundamental condition to judge the success of IS adoption. Hence, studies on post-adoption behavior have focused on the interaction between individual users and systems as IS characteristics, which may influence the user's continued use. However, post-adoption behavior is also influenced by users' accumulated experience. Some researchers have attributed changes of users' post- adoption behavior to their accumulated experience (Chang and Chou, 2012; Saeed and Abdinnour, 2013). Moreover, as IS become more ingrained in operational work processes, job tasks, as a means of collaboration, they can take on a broader role as a cultural artifact that has helped to establish a sense of individual or group identity. This can be reflected in choices or preferences of one technology over another (i.e., we use Slack vs Teams, or we use Android vs Apple mobile devices).

ITID has shown its applicability and usefulness across several contexts, including: in healthcare (Califf et al., 2020); social networking platforms (Boroon et al., 2019; Gong et al., 2020; Netto and Maçada, 2019); green IT (Nash and Wakefield, 2019); software application development (Schmalz et al., 2019); mobile applications and fitness device usage (Esmaeilzadeh, 2020); and in online consumer behavior (Huang, 2019; Oyedele and Simpson, 2018). Nonetheless, the study of ITID within the organization is still limited. These diverse applications reinforce the concept's versatility and underscore the potential for it to be used as a meaningful tool in organizational contexts. Current studies focus on understanding of how employees identify with their organization through IS usage (Alahmad and Robert, 2020); perceived technological support in organizational usage (Eidhof, 2018); and the impact of various forms of training (Boroon et al., 2019; Shi et al., 2017). Furthermore, current in-progress research on ITID relating to IS implementations focuses on single IS implementations (Hassandoust and Techatassanasoontorn, 2021) and the subjective well-being of employees based on their day-to-day IT interactions (Welt and Basellier, 2022).
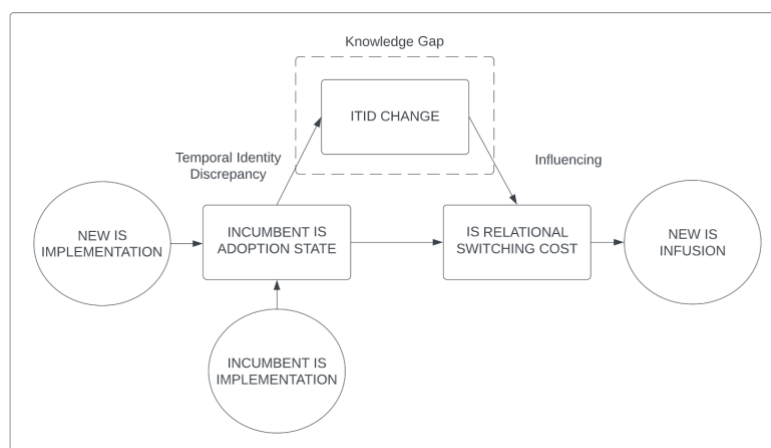

Figure 1.   Temporal Identity Discrepancy during IS Switching.

Our study aims to add to these studies by exploring the interplay of ITID and IS switching costs in influencing IS adoption behavior in organizations. We contend that the thorough understanding of this dynamic could shed light on how to better manage IS implementations and enhance their success rates. Figure 1 above depicts the knowledge gap that exists during IS switching as information workers transition from a state of adoption of an incumbent IS to a new IS, causing a temporal identity discrepancy, leading to an ITID change of end-users. This ITID change acts to influence the IS relational switching cost, which is an antecedent for new IS adoption, depicted as new IS infusion. In summary, our research study investigates the underexplored area of IS switching interacting with ITID with the aim of contributing to the understanding of IS adoption and infusion behavior. In the next section, we outline our research design and methodology.

3 Research Design

The research design for this study is structured into two distinct phases, each with a specific purpose and focus. The rationale for this two-phase approach is to first develop a broad understanding of issues around ITID in a selected practitioner community of information workers (Phase 1), and then take a focused approach to gain in-depth understanding of specific issues that will emerge in Phase 1 within a single case organization (Phase 2). This approach allows us to examine both the commonalities across organizations and the specific organizational context that influences ITID. The ITID construct supports an inductive theory development approach where "in studies where theory is nascent […] rich, detailed, and evocative data are needed to shed light on the phenomenon" (Edmondson and Mcmanus, 2007, p. 1162). Additionally, existing ITID research has established a qualitative inductive approach as a fruitful methodology to gain a deeper understanding of how individuals define themselves in relation with IT (Weng et al., 2022). In what follows, we provide an overview of the two phases of data collection in Table 1 and more details about the rationale and data collection process of each phase in Sections 3.1 and 3.2.

Phase	Purpose	Data Type	Dataset
Phase 1 (Completing by July 2023)	Exploratory study across a broad group of workers in different organizations	Exploratory, structured interviews	30 interviews with IS workers across different organizations
Phase 2a (Completing by December 2023)	Empirical data collection of case organization during IS implementation.	Semi-structured interviews Documentation and other data from the organization	20 interviews with IS workers in various job roles and functions in the same organization
Phase 2b (Completing by March 2024)	Empirical data collection in latter phase of IS implementation	Semi-structured interviews	20 interviews with IS workers in various job roles and functions in the same organization

Table 1. Two phases of data collection.

3.1 Phase 1: Exploratory survey

In this phase, we aim to gather a collective view of ITID by conducting structured interviews with participants from a variety of organizations. Although survey studies typically use questionnaires, we will be conducting interviews (Saunders et al., 2009). Structured interviews mean that our interviews will be short and focused, enabling us to gain a helicopter view of relevant themes, rather than

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4

achieving depth at this stage. Thus, our goal is to identify themes that apply to the same area rather than focusing on individual organizations. To achieve this, we plan to interview 30 participants in the software industry. We seek to explore the perceptions of the 30 participants with the aim of identifying themes that might expand existing understandings of ITID, including the ITID scale (Carter et al., 2020b), which are limited to measures ITID derived from incumbent IS usage along three dimensions of emotional energy, relatedness, and dependence; along the spectrums from weak to strong and from positive to negative. We have set specific recruitment criteria for this phase: Participants will have to be IS professionals who have experienced an IS implementation in the past 12 months or are still experiencing an IS implementation involving the transfer of job tasks from one IT system to another one. In order to identify relevant themes, we plan to adopt Braun and Clarke's (2006) reflexive thematic analysis approach.

3.2   Phase 2: Case study

Based on the findings from Phase 1, Phase 2 will involve a more focused approach in the form of a case study of an individual organization through our contacts from Phase 1. Therefore, it is likely that our Phase 2 case organization will be one of those that took part in Phase 1. We will examine an IS implementation within this organization, conducting two rounds of interviews with participants during varying stages of an IS implementation. This approach will enable us to gain deeper insights into the ITID of information workers in the context of an IS implementation.

We will conduct two rounds of semi-structured, one-on-one interviews with a target of 20 interviews per round. We will select candidates across a variety of functions and roles within our case organization and plan to use the snowball method for recruiting. The first round of interviews should last approximately 60 minutes and serve to collect impressions of job activities, IS usage to perform work tasks, life in the organization (morale and well-being, and sense of identity) and note any changes during the process of the IS implementation. The second round of interviews should last around 60 minutes too and it will contain questions that are progressively more structured as themes emerge in the data during analysis of the first round of interviews, while being open to participants' perceptions following IS switching. Additional data, such as documentation, identity artifacts, image artifacts and contextual material (including social media like Glassdoor reviews) will be collected during this phase. Data collection for Phase 2 will begin once we have collected and analyzed our Phase 1 data. We plan to analyze our Phase 2 data in parallel with data collection, following a thematic analysis approach like in Phase 1.

4   Envisaged Contributions

With our research-in-progress paper, we hope to contribute to the emerging ITID literature by extending studies such as those by Hassandoust and Techatassanasoontorn (2021) and Welt and Bassellier (2022). We plan to expand this line of work by investigating IS switching during the post-adoption phase of IS implementations, i.e., how information workers perform their activities differently in a new IS, and how this inconsistency with their former perceptions of identity may influence their well-being. This would extend the above authors' research by considering IS relational switching cost as an additional factor influencing IS infusion behaviors. The value of this research lies in its emphasis on prior IT usage while examining ITID, suggesting that we explore whether IS usage can be observed on a continuum, not only through the IS implementation model, but across overlapping IS implementations. Further, our work will have practical implications for the IT governance of organizations, by providing leaders with an understanding of issues affecting IS switching.

In conclusion, studies of identity and technology in the context of the workplace have been viewed as largely separate areas of research with some overlapping effects. Identity and technology are distinct and separate causal factors that contribute to overall IS infusion behavior. While existing ITID literature investigates the interrelated effects of identity and technology on IS implementations, it largely neglects the impact of incumbent systems as constituting part of their ITID. For practical reasons, most organizations have adopted an IS already, so an implementation of a new IS cannot be purely viewed from the point of view of the new system and needs to consider IS relational switching costs from the incumbent IS to the new IS.

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