Journal of the Association for Information Systems (2021) **22**(6), 1556-1589
doi: 10.17705/1jais.00707

RESEARCH ARTICLE

ISSN 1536-9323

A Representation Theory Perspective on the Repurposing of Personal Technologies for Work-Related Tasks

James Burleson[1], Varun Grover[2], Jason Bennett Thatcher[3], Heshan Sun[4]
[1]California Polytechnic State University, USA, jburleso@calpoly.edu
[2]University of Arkansas, USA, vgrover@uark.edu
[3]Temple University, USA, jason.thatcher@temple.edu
[4]University of Oklahoma, USA, sunh@ou.edu

Abstract

Individuals often blur the line between technologies used for personal means and those used to complete work-related tasks. The increasing level of capabilities offered by personal technologies presents opportunities to repurpose them for work. With guidance from representation theory, we describe how cross-context representational fidelity predicts repurposing intentions across domains of use (e.g., personal to work-related). An empirical study of 311 full-time employees demonstrates that congruence between prior technology use and potential work use increases an individual's belief that a technology can be useful for work purposes. Furthermore, we show that, in repurposing situations, usefulness is also influenced by an individual's confidence in using the technology on a work device(s). These findings, among others, shed new light on our understanding of the influence of experience on repurposing technologies for use in the professional domain.

Keywords: IS Continuance, Repurposing, Representation Theory, Representational Fidelity

Choon-Ling Sia was the accepting senior editor. This research article was submitted on September 7, 2017 and underwent six revisions.

1 Introduction

An interesting shift has surfaced in today's technological landscape, with individuals increasingly repurposing personal technologies to achieve work-related aims. While some researchers distinguish technologies according to purpose, assigning personal technologies to nonwork domains (e.g., "personal technology" vs. "office technology"—Eugenio, 2017), such assignment is not always accurate. Many employees have taken technologies such as social media (Farrell, 2013), virtual worlds (Ives & Junglas, 2008), and cloud storage options such as Google Apps and Dropbox (Junglas et al., 2019) that were originally intended for personal use and repurposed them, discovering ways they can be used for work.

As a result, two domains that have historically been treated as distinct—the personal domain and the work domain—are converging, aided by an evolving technology use landscape that has reduced their separation. This convergence is the result of a variety of factors. First, given that individuals' work lives and personal lives are increasingly overlapping (Groysberg & Abrahams, 2014), the contextual separation of technologies has diminished. The intertwining of work and personal technology use has afforded opportunities for employees to work from home (Barber & Jenkins, 2014) and play at work (Sørensen & Spoelstra, 2011). Additionally, the breadth of capabilities offered by personal technologies has grown, enhancing opportunities for work use (Baskerville, 2011). Finally, the ubiquity of access to data and applications offered by recent advances in cloud computing (August et al., 2014) and mobile devices (Goggin, 2012) offers individuals greater freedom to use personal applications wherever and however they see fit. Some users no longer view technologies as constrained by location, as they can be run on a variety of devices in different locations (Buyya et al., 2010).

Nonetheless, while these changing conditions may increase the opportunity for technology repurposing, the mere availability of useful features does not guarantee that individuals will take advantage of opportunities to repurpose. For many, there exist internal and external barriers to the utilization of personal technologies at work. Internally, employees may resist repurposing, possibly because of a desire to maintain a separation between their personal and work lives (Burkus et al., 2017), inertia for existing technologies and work practices (Polites & Karahanna, 2012), a recognition of the security issues presented by repurposing (Thomson, 2012), etc. Externally, employees may be pressured to resist repurposing because of constraints enacted by organizations. A 2014 Pew Research study found that 51% of employees surveyed acknowledged a workplace policy against using social media at work (Olmstead et al., 2016).

Given these barriers and more, many organizations fail to realize benefits from technology repurposing. In the same Pew Research survey, 56% of employees who used social media at work noted a positive influence on their job performance, with many more stating that social media helps them with networking and maintaining work-related social connections. Work-related benefits abound for personal technologies beyond social media. For example, Nevo et al. (2011) describe the many uses of virtual worlds for organizational gain, including training and collaboration. They describe how repurposing was the driver for realizing these benefits. Consider the following quote from one of their survey respondents—"[Our company's] early adopters were mostly from a community of people who were involved in virtual worlds for play, saw the potential for using them for work and encouraged [our company] to explore this space." (Nevo et al., 2011 p. 17).

Technology repurposing reduces the psychological transition that occurs when switching between work and nonwork (Chen & Karahanna, 2018). [1] If individuals are able to discover opportunities to use the same technologies across domains, then greater efficiencies can be found. Thus, in addition to potential stand-alone work-related benefits of personal technologies, their increasing capabilities also present the potential for a second category of benefits, those discovered through the alignment of technology across personal and work domains.

Recognizing these potential benefits, researchers in IS (e.g. Baskerville, 2011; Niehaves et al., 2012) have acknowledged the confluence of personal and work technology domains and called for a deeper understanding regarding how technology use is influenced by cross-context circumstances. Scheepers and Middleton extended such an appeal in 2013:

> *Personal ICTs are commonly used in multiple contexts (e.g., work, home) and for multiple purposes. As a result, complexities arise relative to cross-context behaviors and related technology configurations. For example, individuals…may be able to employ tools initially designed for social interaction in the workplace (e.g., microblogging). These emerging phenomena suggest research questions that would pertain to explaining unprompted decisions, predicting future interactions, and guiding designs to capitalize on synergies* (Scheepers & Middleton, 2013, p. 383*).*

The purpose of this study is to investigate the conditions under which technology repurposing occurs. Specifically, we examine the following research question:

RQ: What factors influence an individual's intention to repurpose a personal technology for work-related tasks?

We approach this question from a continuance perspective, integrating insights from representation theory (Wand & Weber, 1995). We first conceptualize an adapted form of representational fidelity, *cross-context representational fidelity* (CCRF), noting its appropriateness for this study and its distinctiveness in repurposing. Then, we develop a research model to depict how CCRF, together with other related constructs such as domain congruence and self-efficacy, influences repurposing. We tested the model using a sample of working professionals, with Facebook Messenger as the focal technology of interest. The findings support many of the relationships hypothesized in our research model and offer interesting implications for both research and practice.

This paper contributes to IS research in three ways. We develop a new construct, CCRF, as an important antecedent to the repurposing of a personal technology for work-related tasks. Additionally, we offer a new survey instrument for measuring the construct. Finally, we demonstrate how CCRF, along with other factors such as domain congruence and self-efficacy, influences technology repurposing and related constructs.

[1] We thank one of our reviewers for this helpful suggestion.

In the following section, we position technology repurposing within the broader scope of technological adaptations and discuss the research lens through which we begin our investigation into the antecedents of the repurposing of personal technologies.

2 Theoretical Background

2.1 Technology Repurposing

Technology repurposing, for our purposes, refers to the migration of a technology *across domains*. A domain is "a sphere of knowledge, influence, or activity." (Merriam-Webster, n.d.). Therefore, the migration of a technology across domains involves using the same technology for a different knowledge, influence, or activity space. Specifically, we center our investigation on personal technology repurposing, or the use of a personal technology for work-related tasks. While other forms of repurposing abound (e.g., migrating a technology from one employer to another), our motivation and framing pertain to personal technology repurposing.

Technology repurposing is restricted to the migration of software applications rather than hardware. Many studies have investigated the use of "bring-your-own-device" (BYOD) policies (e.g., Giddens & Tripp, 2014). However, as devices are central to the concept, repurposing is distinguished from BYOD in its software focus.

Repurposing is a form of adaptation, one where the purpose (or spirit) of use is altered to be consistent with the demands of a different domain. This does not mean that users discontinue their use in the original domain; instead, they change the domain of use to meet new needs. Repurposing is similar, yet distinct from broader concepts found in the technology diffusion literature (see Table 1). The primary distinctions come in two forms. First, repurposing differs in focus from other forms of technology adaptations that direct attention to changes made in how the technology is used rather than changing the domain in which it is used. Consider the difference between extended use and repurposing. Hsieh and Wong (2007) operationalize "extended use" of a technology as the addition of features to one's repertoire of use. Similarly, Bagayoyo et al. (2014) describe numerous types of "enhanced use," which generally involve changing or adding features to the technology user's repertoire. In contrast, while some alterations in the features used may result from repurposing (Schmitz et. al, 2016), such alterations are not required to repurpose a technology. Rather than adding features, the user transplants or migrates the technology from one domain to another.

Second, while some adaptation concepts denote changes made to the task in which the technology is utilized, repurposing highlights the change in domain made by the user. Schmitz et al.'s (2016) "exploratory task adaptation" and Sun's (2012) "adaptive system use" both incorporate a change in technology purpose but are focused primarily within the same domain. Nevo et al.'s (2012) "cross-context continuance" notes the change in context, though they operationalized the construct using a hedonic-utilitarian motivation distinction rather than a different domain of use. Nonetheless, cross-context continuance exhibits similarity to repurposing. By positioning repurposing within representation theory, we address Nevo et al.'s recommendation that we "[scrutinize] the notion of context" (2012, p. 82). Utilizing domains specifically, rather than a broader conceptualization of contexts, enhances and clarifies the concept of repurposing.

The central question addressed in this paper pertains to the antecedent conditions in which repurposing occurs. Extant literature on technology has begun to address this question in different ways. Sun (2012) identified three motivating triggers (novel situations, discrepancies, and deliberate initiatives). Schmitz et al. (2016) described individual differences that may influence intentions (personal innovativeness with IT, tech-specific computer self-efficacy, and experience). Ahuja and Thatcher (2005) identified working conditions under which adaptations can occur (autonomy and overload). Junglas et al. (2019) recognized that relative advantage, among other individual and organizational factors, impacts repurposing. Missing from these studies is the understanding as to why an individual may find a technology to be better suited for repurposing than others. Research on technology affordances notes that two individuals may perceive the same functionality in a technology to be useful for different purposes (Treem & Leonardi, 2013). Our investigation focuses on why individuals might perceive a personal technology to be useful for work purposes.

To study technology repurposing, it is critical that we determine the best approach for investigating the phenomenon. While Schmitz et al. (2016) provide a generalized framework for investigating adaptations that offers relevance for our study, they "made the decision to focus on the central constructs of structuration episodes and leave a more complete accounting of peripheral constructs for future studies" (p. 683). This study, examining the antecedents of repurposing, should fill in one of the gaps they identified. Nonetheless, since this was not a part of their examination, we must look to other information systems (IS) lenses to form the foundation of our research model predicting technology repurposing.

Table 1. Comparing Technology Repurposing to Similar Technology Adaptation Behavior Concepts

Technology use concept	**Definition**	**Theoretical base for model**	**Example studies**	**Scope of adaptation**	**Within-domain or cross-domain?**
Adaptive system use	"a user's revisions regarding what and how features are used" (Sun, 2012, p. 455)	Human cognition theory (Louis & Sutton, 1991)	Wang & Nandhakumar (2016) Gaskin et al. (2018) Sun et al. (2019)	Software features or tasks	Within-domain
Cross-context continuance	"the continued use of a technology in different contexts" (Nevo et al., 2012, p. 76)	Cognitive absorption (Wild et al., 1995)		Tasks	Cross-domain*
Enhanced use	"novel ways of employing IT features" (Bagayoyo et al., 2014, p. 362)	New grounded theory	Carter & Grover (2015) Bhattacherjee et al. (2018) Esmaeilzadeh (2021)	Software features or tasks	Within-domain
Exploratory task adaptation	"occurs when a user attempts to transform current task processes while generating new target objectives for the work processes" (Schmitz et al., 2016, p. 671)	Adaptive structuration theory (DeSanctis & Poole, 1994)		Tasks	Within-domain
Extended use	"using more of the technology's features to support an individual's task performance" (Hsieh & Wang, 2007, p. 217)	Technology acceptance model (Davis et al., 1989) IS continuance (Bhattacherjee, 2001)	Ma et al. (2014) Peng et al. (2014) Hsu et al. (2015)	Software features	Within-domain
Technology repurposing	"the migration of a technology *across domains*" (this paper)	Representation theory (Wand & Weber, 1995) IS continuance (Bhattacherjee & Lin, 2014)	N/A	Tasks	Cross-domain

*As stated earlier, cross-context continuance offers similarity to repurposing, but uses a broader generalization of contexts that includes motivations. Repurposing centers on domains, which offer a more specific instantiation of contexts.

Some IS researchers (e.g. Loose et al., 2013; Ortbach et al., 2013) have used traditional adoption theories to explain technology repurposing. For example, Ortbach et al. (2013) used the theory of planned behavior as the underlying theory of their research model. An adoption lens is compelling but often underestimates the important role of an individual's prior experience. In post-adoptive scenarios such as repurposing prior experience provides feedback that influences future beliefs (Bajaj & Nidumolu, 1998). Therefore, though there are insights that can be drawn from viewing repurposing as a form of adoption, this lens does not provide a complete understanding of the behavior.

In contrast to the adoption lens, IS continuance does explicitly account for prior experience (Bhattacherjee, 2001). The continuance literature examines why users persist in using technologies. Continuance results, in part, from a user making an evaluation of prior use against prior expectations (Bhattacherjee & Lin, 2015). Positive confirmation of those prior expectations leads to satisfaction and a belief that the technology will be useful for future tasks. The user is able to predict that since the technology met or exceeded expectations concerning a prior behavior, the technology will remain useful as the behavior is repeated in the future. This prediction, however, assumes that the user has no intention to change the behavior.

When considering repurposing a personal technology, the congruence of prior use and future work-related use is far from guaranteed (Nevo et al., 2012). For example, in the domain of personal communications, an individual's prior communications sent to an audience of friends may differ greatly from the communications they need to send to work colleagues. In this example, the degree to which the individual's prior use met (or exceeded) expectations is less relevant, since successful personal communications may be unlikely to persuade the individual to use that technology for work. Clearly, the impact of prior experience in such repurposing scenarios can fail to correspond perfectly to continuance theory. Consequently, continuance antecedents such as confirmation of expectations (Bhattacherjee, 2001) may be less predictive when the individual considers altering the domain of use.

Repurposing, then, differs from continuance, because it requires an individual to do something new—migrate from one domain of use to another. Where continuance involves maintaining the same form and domain of use, repurposing involves a fundamental change in behavior, i.e., using a technology in a different domain. When individuals repurpose a technology, they look across domains and identify opportunities to use a known technology to create value in a different context or part of their life. Because traditional adoption and continuance antecedents are primarily focused on single domains of technology use, we articulate a novel, representation theory-based explanation for why users repurpose technology to migrate from one domain to another.

2.2 Representation Theory

Representation theory presupposes that the aim of technology use is to create and utilize the faithful representation of a real-world system (Wand & Weber, 1995). These systems, or "domains," can be internal to the individual (e.g., communications an individual wants to convey) or external (e.g., driving directions to a specified location). Technology use is most effective when the faithfulness—or representational fidelity—of technology use is increased (Burton-Jones & Grange, 2013).

Representational fidelity has been discussed in IS literature as a means of evaluating the effectiveness of *prior* technology use (Burton-Jones & Grange, 2013). In this paper, we seek to understand why individuals perceive a personal technology to be useful for *future* work use. Thus, we offer an adapted form of the construct, *cross-context representational fidelity*, [2] defined as the degree to which an individual perceives that their prior technology use represents a potential domain. This new construct maintains the core tenants of evaluating prior technology use against a domain but changes the domain under evaluation. Whereas representational fidelity evaluates how well an individual's prior technology use represents its focal domain, cross-context representational fidelity evaluates that use against a new domain (i.e., work domain). In this way, we utilize an evaluation of prior experience while breaking ground through the introduction of a new means of employing representational fidelity. In the next section, we present a research model derived from elements of representation theory to provide a more complete understanding of repurposing.

3 Research Model & Hypotheses Development

Our investigation into the drivers of technology repurposing draws on the central tenants of continuance literature and expands them to account for the unique facets of repurposing. Our research model (Figure 1) provides a nuanced understanding appropriate to investigating repurposing. We now explicate the reasoning behind the selection of these antecedents and how they influence the research model.

3.1 Cross-Context Representational Fidelity

The decision to use a technology for a specific purpose, be it adoption, continuation, or adaptation, necessitates predicting whether the technology can be used to achieve some end state. Representation theory identifies this end state as the representation of a domain. Prior experience reduces the ambiguity of such a prediction if that prior experience is relevant to the domain of interest. In continuance scenarios, this is guaranteed, as the domain of use remains the same. For example, an individual already using a task management app to represent their grocery needs can easily use prior experience to determine future usefulness. If the task management app effectively represented the individual's grocery needs in the past, then it can be reasonably expected to do so again in the future. According to representation theory, the variable that influences the technology's prior effectiveness is its representational fidelity.

Representational fidelity evaluates the degree to which prior technology use faithfully represented its intended domain (Burton-Jones & Grange, 2013). In the above example, this would evaluate how well the list created in the task management app represented the individual's actual grocery needs. The more faithful the list created in the app is to the individual's grocery needs, the more effective the app will be for its intended purpose. Disconnects in this comparison (e.g., if the list included bananas, which the individual did not need) decrease the faithfulness of the representation. Representational fidelity provides an indicator regarding the effectiveness of the app for grocery needs but lacks utility in predicting future use beyond the focal domain. The prior faithfulness of the app would help determine future usefulness so long as the individual intends to use the app for the same purpose each time.

[2] We selected the term cross-*context* representational fidelity, rather than cross-*domain* representational fidelity, in order to generalize the construct beyond the purview of representation theory. In this study, *context* and *domain* are interchangeable. We recognize that *context* is the term used more often in IS literature, therefore it is used in naming the construct. However, since representation theory informs much of our study, we use the term *domain* throughout.

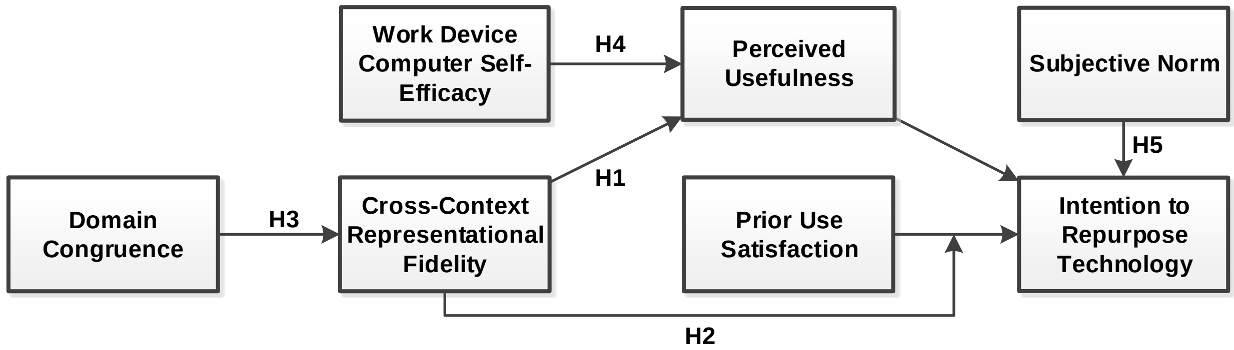


Figure 1. Research Model

In repurposing scenarios, the relevance of prior experience is not always guaranteed. If the same individual considers the use of the task management app to represent a project's work plan, then prior experience may or may not help in predicting such usefulness. However, the closer the grocery list approximates the project work plan, the easier it is for the individual to determine whether the task management app can be used for that work purpose. For example, if the project work plan involves a simple listing of tasks, then the approximation will be high. If the project work plan involves a complex interweaving of tasks assigned to individuals within teams, then the approximation with the existing grocery list will be low. The extent to which an individual's prior use (e.g., the created grocery list) corresponds to their work domain (e.g., the project work plan) influences the degree to which that prior experience can be used to predict the usefulness of the technology when migrating across domains. We refer to this form of correspondence across domains as cross-context representational fidelity, an adapted form of representational fidelity.

Our adapted construct, cross-context representational fidelity (CCRF), maintains the central tenants of the construct while accounting for the change in domains. CCRF evaluates the degree to which an individual's prior use corresponds to a future domain—in our case, the work domain. If, in the earlier example, the individual perceives that the grocery list created in the task management app is similar to the tasks involved in the work plan, then there exists a high degree of CCRF. If, however, the grocery list in no way represents the work tasks, then CCRF is low. The greater the correspondence of the digital grocery list to the actual project work plan, the more likely it will be that the individual will believe that the task management app that was used to create the grocery list could also be used to create a list of tasks representing the project work plan.

CCRF is appropriate for investigating repurposing. Although there are other similar constructs that may predict work-related usefulness in other situations, the uniqueness of CCRF offers numerous advantages when considering domain migration. First, compared to constructs such as task-technology fit (Goodhue & Thompson, 1995) and compatibility (Rogers, 2003), CCRF is an evaluation of prior use, rather than a belief regarding future use. Jasperson et al. (2005) note that "[in] studies that have considered the direct impact of prior use on post-adoptive behaviors, as might be expected, researchers found prior use to be a significant antecedent of post-adoptive behavior" (Jasperson et. al, 2005, p. 527). Whereas adoption scenarios rely on predictive beliefs regarding the capabilities of a technology, post-adoptive scenarios rely on evaluations of prior use to determine the applicability of a technology going forward. Since repurposing is firmly situated within the classification of post-adoptive behaviors, it is most appropriate to utilize an evaluation of prior use to predict work-related usefulness (which, for our purposes, is the future belief influencing repurposing intention).

Second, while repurposing relies upon an evaluation of prior use, CCRF is sensitive to the difference in domains from prior to future use. Evaluations such as satisfaction and confirmation of expectations (Bhattacherjee, 2001) lack utility, as they assume consistency in the focal domain of use. CCRF allows for an evaluation of prior use that compares across differing domains, avoiding any assumption of domain consistency. Table 2 illustrates the comparison between CCRF and other constructs that may predict work-related usefulness.

Existing constructs typically either offer an evaluation within a single domain or a belief that can extend across domains. Cross-context representational fidelity uniquely evaluates prior use against a future domain. Through this cross-context evaluation, individuals can form their future beliefs regarding the work-related usefulness of the technology.

Table 2. Comparing Cross-Context Representational Fidelity (CCRF) to Other Constructs

Construct	Definition	Evaluation or belief?	Comparison across domains?
Cross-context representational fidelity	The degree to which an individual perceives that their prior technology use represents a potential domain. (this research)	Evaluation	✓
Representational fidelity	"the extent to which a user is obtaining representations from the system that faithfully reflect the domain being represented" (Burton-Jones & Grange, 2013 p. 642)	Evaluation	✗
Compatibility	"the degree to which an innovation is perceived as being consistent with the existing values, past experiences, and needs of potential adopters." (Rogers, 2003, p. 15)	Belief	✓
Confirmation	"Users' perception of the congruence between expectation of … use and its actual performance." (Bhattacherjee, 2001 p. 359)	Evaluation	✗
Satisfaction	"users' affect with (feelings about) prior … use" (Bhattacherjee, 2001 p. 359)	Evaluation	✗
Task-technology fit	"when a technology provides features and support that 'fit' the requirements of a task" (Goodhue & Thompson, 1995, p. 214)	Belief	✓

In repurposing situations, if the individual's prior use accurately represents their work needs, then that prior experience can be used to model a successful future work outcome. As the correspondence with the individual's work domain increases, the ambiguity in predicting whether the technology could be used for work tasks is reduced. The degree of representation impacts the belief that the technology could be useful in the work domain.

H1: Cross-context representational fidelity is positively related to perceived work-related usefulness.

Cognitively, then, CCRF directly affects usefulness beliefs through easing the prediction of future behavior. Indirectly, it may also influence the effect of satisfaction—the affective antecedent of post-adoptive use (Bhattacherjee, 2001)—on intention to repurpose. The correspondence principle states that attitudes are more predictive of behavioral intentions when the attitude corresponds to the intended behavior (Ajzen & Fishbein, 1977). For example, an individual's attitude toward baseball is a better predictor of baseball game attendance than concert attendance.

In repurposing, an individual's satisfaction is in relation to prior use. The salience of that satisfaction is not always guaranteed. However, according to the correspondence principle (Ajzen & Fishbein, 1977), the salience of prior satisfaction on repurposing could be present if there is correspondence between prior and future behaviors. Since CCRF accounts for this correspondence, we hypothesize that it influences the impact of prior satisfaction on repurposing intentions. Specifically, we argue that CCRF moderates the influence of prior satisfaction on repurposing intentions: as CCRF increases, so will the impact of prior satisfaction on repurposing intentions. A high degree of CCRF indicates that prior satisfaction is of greater relevance in predicting repurposing since the correspondence between the prior satisfaction and future behavior is high. When CCRF is low, the correspondence decreases and the impact of prior satisfaction should be reduced.

H2: Cross-context representational fidelity positively moderates the relationship between satisfaction from prior use and intentions to repurpose a technology.

3.2 Domain Congruence

After hypothesizing its consequences, we now turn to the antecedents of CCRF. If CCRF involves the recognition of opportunities for the adoption of a technology across potentially discordant domains, then it follows that fidelity will be improved as the two domains (the domain of prior use and the domain of future use) converge. Consider the example of communications. If an individual communicates with the same audience in their personal technology use as at work, then they would be more apt to observe fidelity. If the two audiences are sufficiently dissimilar, then the dissimilarity involved in the comparison will increase the difficulty in recognizing any work-related fidelity from prior communications.

Domain congruence—defined in this research as the degree to which two domains overlap (e.g., personal vs. work domains)—looks beyond technology use to compare the real-world systems which motivate the use of technology. In representation theory, a domain is a real-world system that can be represented through technology (Burton-Jones & Grange, 2013). Facebook is a technology, but the real-world system necessitating the use of Facebook is the social network it represents. When an individual uses a personal technology for a work purpose, the domain of use is altered. Repurposing Facebook involves using the technology to represent two social networks, personal and work. The degree of similarity, or overlap, between the two domains determines the level of domain congruence.

Domain congruence can influence CCRF in two ways. First, if the two domains are congruent, the representation of one domain is more likely to correspond to the other. Using the example of Facebook, if an individual's personal and work social networks overlap, then an accurate representation of their personal network is more likely to also be an accurate representation of the individual's work network. Second, when domains overlap, it is also more likely that the individual will recognize fidelity from prior use. Domain congruence clarifies the comparison across what might appear to be disparate entities. If an individual uses a technology to create communications for a personal audience, the correspondence of the communications with the work domain can be more easily evaluated if their work audience involves the same individuals.

We hypothesize that domain congruence is positively related to CCRF. Overlaps in both directions (the extent to which the prior domain overlaps with the future domain, and vice versa) increase the cross-context representational fidelity of prior technology use.

H3: Domain congruence is positively related to cross-context representational fidelity.

3.3 Future Technology Use Conditions

An individual is likely to believe that technology use will be useful in the work domain if the individual's prior use accurately represents a desired work-related end product. However, a second necessary condition for the formation of that belief is the ability of the user to access (or recreate) the representation from prior use. The potential for creating a faithful representation can only be realized if the user is able to utilize the resources necessary to create that faithful representation (Burton-Jones & Grange, 2013). Cross-context representational fidelity comprises the *backward-looking* component (evaluating prior use), while the *forward-looking* component (evaluating future use conditions) must still be considered.

One of the potential differentiators between personal technology use and work-related technology use is the set of resources made available to the user (Fichman, 1992). In changing resource conditions, an individual may not be as capable of using a technology in the same manner as before. According to representation theory (Burton-Jones & Grange, 2013), the resources necessary to create the representation of a domain are comprised of physical and surface "structures". These structures, the hardware and software components involved in using a technology, enable the user to create a faithful representation.

In repurposing scenarios, the same structures used in the individual's prior experience may not be available for work-related use. For example, whereas a mobile phone may have been used to access Facebook for personal use, some organizations are cautious about the use of mobile devices in the workplace (Shim et al., 2013). In this situation, the individual would have to access Facebook from a different device, with potentially different physical and surface structures. If that individual lacks confidence in using Facebook on the work device, the perceived usefulness of Facebook for work purposes may be hindered.

Confidence in using a technology can be evaluated through computer self-efficacy (CSE). CSE, in its general form, is defined as "a judgment of one's ability to use a computer" (Compeau & Higgins, 1995, p. 192). Prior research has empirically demonstrated the link between CSE and usefulness beliefs (Hasan, 2006; Shih, 2006; Thatcher, Zimmer, Gundlach, & McKnight, 2008). The more confident an individual is that they can use a technology effectively, the more the individual will perceive the technology to be useful for work tasks (Hsu et al., 2009). In this study, we consider a more contextualized form of CSE, since we are concerned not with the individual's confidence in using a certain device, but with using a specific technology on a specific device (or devices). Therefore, we use "work device CSE," or the ability of an individual to use a technology on their work device(s).

Since repurposing may require an individual to use different tools when interacting with the technology (Schalow et al., 2013), it is imperative that we account for the individual's confidence in using the new tools. We predict that the more confident an individual is in their ability to use a technology on a work device(s), the more useful the individual will perceive the technology for work purposes.

H4: Work device CSE is positively related to perceived work-related usefulness.

3.4 Social Influence

Technology repurposing may also be influenced by the individual's social environment. Subjective norm is a strong determinant of technology-related behavioral decisions—both those which involve initial use (Schepers & Wetzels, 2007) and post-adoptive use

(Fadel, 2006; Jasperson et al., 2005). This effect is even more pronounced with newer technologies, as social features embedded in newer technologies enhance the influence of social peers (Dickinger et al., 2008). As the normative pressure from an individual's peer group increases, so will the desire to meet that normative standard.

Repurposing involves altering the spirit of a technology, such that the individual changes the domain in which the technology is used. Some individuals may be hesitant to make the switch, but the influence of their peer groups can help ease the transition. For example, a teacher may be more likely to create YouTube videos for class instruction if the teacher has peers which have already done this before. Because social influence drives individual behavioral decisions (Ajzen, 1991), we hypothesize that the higher the social influence of an individual's peers to use a technology for work, the greater the likelihood that the individual will intend to repurpose the personal technology for work tasks.

H5: Subjective norm is positively related to an individual's intention to use a personal technology for work purposes.

3.5 Control Variables

To ensure the validity of our findings, we controlled for individual and organizational factors that may influence our dependent variables. Individual differences were assessed in terms of age, gender, and personal innovativeness with technology (PIIT). Previous studies have investigated the effects of age and gender on behavioral beliefs/intentions (Gefen & Straub, 1997; Morris & Venkatesh, 2000). PIIT, similarly, has been shown to affect behavioral beliefs/intentions (Agarwal & Prasad, 1998). We included these individual differences as control variables on perceived usefulness and intention to repurpose. Additionally, we included perceived behavioral control (PBC) to capture restrictions that individuals may have in using a personal technology for work purposes. The consumerization of IT brings about significant concerns for organizations regarding maintaining proper security in the face of a proliferation of devices and technologies (Koch et. al, 2014). As such, a person's repurposing may be limited or restricted by organizational policies. Utilizing PBC somewhat accounts for the fact that an individual's intention to repurpose may be affected by their perceived ability to use a certain technology for work purposes.

4 Method

To test our research model, we conducted a cross-sectional field survey. Properly evaluating our hypotheses required a sample of individuals who had already adopted a personal technology and had the opportunity to use it for work purposes in the future.

We selected Facebook Messenger as the technology of interest, as it is one of many social media technologies that could be repurposed for work communications (Leonardi et al., 2013). With approximately 500 million users[3] Facebook Messenger is a widely diffused personal technology, presenting ample opportunity for repurposing.

Facebook Messenger allows for the sending and receiving of many different types and styles of messages. For example, one individual may send many pictures and videos, while another may send primarily text-based messages. The large feature set creates an environment where CCRF is possible, though not guaranteed for all individuals, because it permits many different ways of sharing work-pertinent information.

Though Messenger can be used for personal and work-related tasks, Facebook markets the technology as a means of communicating with personal contacts. For example, Facebook promotes the group messaging functionality of Facebook Messenger with the following phrase, "Keep in touch with the important groups of people in your life, like your family and best friends."[4] Figure 2 shows examples of Facebook Messenger advertisements that communicate a similar message. Furthermore, Facebook offers a different mobile application for work-specific communication called Workplace by Facebook.

The presence of two segmented applications strongly suggests that Messenger is intended for personal communication while Workplace is intended for work-related communication. The messaging and advertising from Facebook provide us with a clear indication that the intended spirit of the technology lies in the personal domain, as advertising is often indicative of the technology designer's intentions (DeSanctis & Poole, 1994).

Because of the increasingly blurred boundaries between personal and work domains (Ashforth et al., 2000), many individuals may have notable overlaps in their social networks. It is common for individuals to become friends with work colleagues (Ingram & Zou, 2008), thereby integrating their personal and work social networks. As such, Facebook Messenger allows us to investigate a technology that is both available for repurposing (as the intention is personal) and potentially suitable for repurposing (with overlapping communication styles and audiences) for some individuals.

[3] http://newsroom.fb.com/company-info/ (Retrieved in 2014)

[4] https://www.messenger.com/features (Retrieved in 2015)

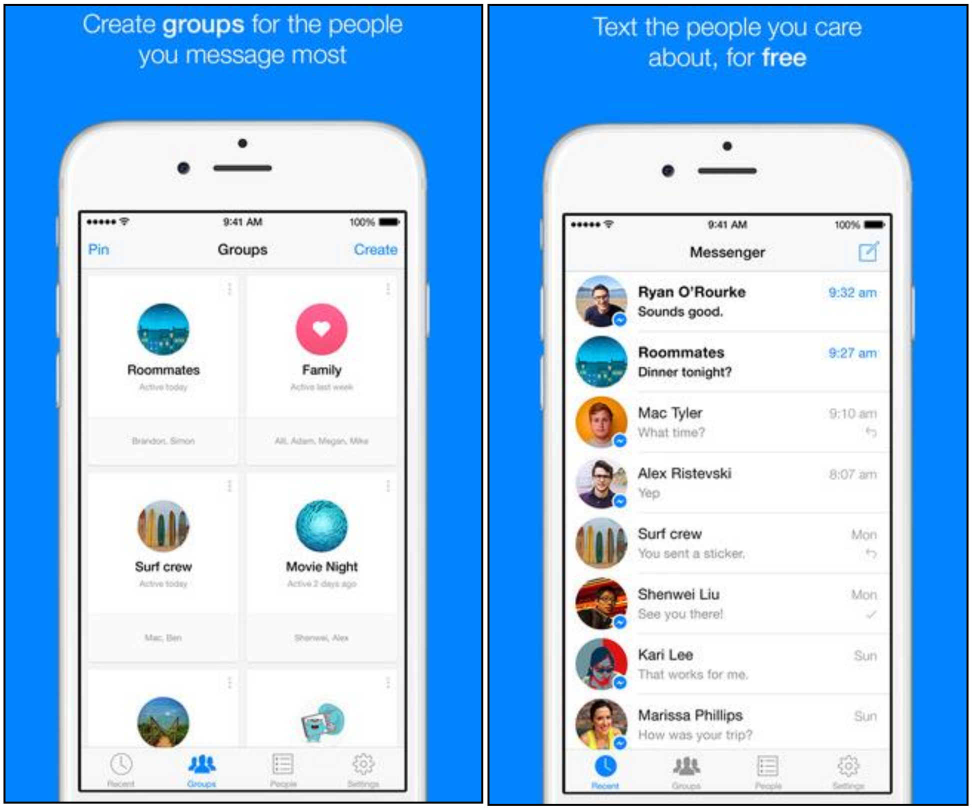


Figure 2. Example Facebook Messenger Advertisements[5]

5 Main Study and Hypothesis Testing

5.1 Measures

Given that there is not a well-established measure for cross-context representational fidelity, we used established techniques to develop a measure (Churchill, 1979; Moore & Benbasat, 1991). Specifically, we conducted an in-person pretest and two survey pilot tests (which included other measures) to establish the validity of our new measure (more detail on our procedure is available in Appendix B).

Domain congruence, pertaining to interpersonal communications, was assessed by the degree to which the individual's Facebook Messenger audience overlaps with their work audience. The audience of a communication not only comprises the object of a message, but also influences the manner in which the message is communicated (Giles & Ogay, 2007). If a technology is used to represent the communications of a social network, then the individuals which comprise that network are central to the makeup of the domain. Thus, to measure domain congruence in communications, we evaluated the degree of audience overlap, as the audience influences both the object and the message involved in those communications. We utilized a formative measure asking the respondents to note the degree of overlap in both directions: the percentage of the Facebook Messenger audience that overlaps with the current work audience and the percentage of the work audience that overlaps with the current Facebook Messenger audience. This form of measurement is consistent with referent measurements of communication audience, which often involve numerical entry (Ksiazek, 2011; Prior, 2012; Webster & Ksiazek, 2012).

The remainder of measures were adapted from existing instruments. Notably, we operationalized computer self-efficacy as the aggregated second-order construct, which features reflective items for the formative subdimensions comprising the internal and external components of the construct (Thatcher et al., 2008). Items were adjusted to direct the respondent toward an evaluation of the use of Facebook Messenger. Definitions of constructs are presented in Table 3. A complete set of items is presented in Appendix A.

[5] https://itunes.apple.com/us/app/messenger/id454638411?mt=8 (Retrieved in 2015)

Table 3. Constitutional Definition and Operationalization of Constructs

Construct	Definition	Operationalization	Reference
Cross-context representational fidelity	The degree to which the individual's prior technology use provides a representation of their work domain	Self-developed six-item Likert scale	Burton-Jones & Grange (2013)
Domain congruence	The degree to which the audience of the individual's technology communications corresponds with their work audience	Self-reported numerical measure	
Work device computer self-efficacy	The individual's confidence in their ability to use the technology on their work device(s)	Six-item Likert scale	Thatcher et al. (2008)
Perceived usefulness	The extent to which the individual believes that using the technology will enhance job performance	Four-item Likert scale	Strader et al. (2007); Davis et al. (1989)
Satisfaction	The degree of pleasurable or positive emotional state resulting from the individual's prior use of the technology	Four-item Likert scale	Wixom & Todd (2005)
Subjective norm	The belief that people who are important to the individual think that they should use the technology for work purposes	Three-item Likert scale	Venkatesh et al. (2012)
Intention to repurpose technology	The individual's intention to use the personal technology for work-related purposes	Four-item Likert scale	Wixom & Todd (2005)

5.1 Data Collection

We used SurveyMonkey's "Audience" service to collect data (e.g. Brandon et al., 2013; Mackiewicz & Yeats, 2014). SurveyMonkey offers access to a panel of thousands of full-time employees across a variety of US geographic regions, occupational types, and demographic characteristics. They work to ensure that respondents match desired criteria and that valid responses are received.

We began with an initial sample of 1,402 respondents that responded to the survey. SurveyMonkey uses filtering questions to ensure that only respondents drawn from the intended sample frame receive the full survey. For our study, we used two filtering questions ("Do you use Facebook Messenger and/or Facebook Chat?" and "Do you currently use Facebook Messenger and/or Facebook Chat for work-related communications?"). 507 respondents marked "yes" to the first question and "no" to the second question, and thus were allowed to view the full survey. Technology repurposing involves both continuance with a technology and adoption with a domain. The two filtering questions allowed us to narrow our sample frame according to both criteria. Those individuals who had never used Facebook Messenger were filtered since they had no prior experience to assess. Those individuals currently using Facebook Messenger for work-related communications were filtered since they had less of a need to assess the fidelity of their prior use. The filtered respondents answered only the first two questions and did not see the remainder of the survey.

We further filtered our respondents through one of the demographic questions in the full survey. In asking respondents to note the size of their work communications audience, those that responded that they did not communicate with anyone for work purposes were removed from the study, since they had no reason to use Facebook Messenger for work purposes. Thus, the number of respondents that fit within our sample frame was 345. The first step in our analysis was to identify unusual or outlying responses. Thirty responses were removed because of impractical values or straight-lining (Hair et al., 2013). [6]

We then sought to identify both univariate and multivariate outliers, using the recommendations of Tabachnick and Fidell (2006). Multivariate outliers were identified by calculating Mahalanobis distance. We removed four responses that possessed values outside of the $p = 0.001$ threshold and were separated from the remaining cases. Since the outliers constituted only 1.3% of our sample (4 out of 315), they are unlikely to be a concern for our results.

[6] One respondent noted that 100% of their work audience comprised current Facebook Messenger contacts, but none of their Facebook Messenger audience comprised current work colleagues. This respondent was removed from the sample. The remaining 29 removed responses were because of straight-lining, which was determined through overly fast response times and/or excessive similar responses. Also, in evaluating the data, we came across some instances (< 25%) where, based on the values provided, it was possible that the respondents provided the number of audience members rather than a percentage, though this could not be confirmed. We checked the results for H3 with and without these responses and the conclusions were unchanged, thus we elected to retain these responses.

Table 4. Sample Characteristics (N=311)

Variable	Value	Frequency	% Respondents
Age	21 and under	4	1.30%
	22 to 34	93	29.9%
	35 to 44	88	28.3%
	45 to 54	76	24.4%
	55 and over	50	16.1%
Gender	Male	138	44.4%
	Female	173	55.6%
Education	Less than High School	2	0.6%
	High School / GED	35	11.3%
	Some college	58	18.6%
	2-year college degree	37	11.9%
	4-year college degree	125	40.2%
	Master's / doctoral / professional degree	54	17.4%
Job type	Executive / Top management	19	6.1%
	Middle management	65	20.9%
	Supervisory	40	12.9%
	Administrative / clerical	76	24.4%
	Technical	49	15.8%
	Other / no response	62	19.9%
Facebook Messenger: use experience	Less than 6 months	37	11.9%
	6 months to 1 year	59	19.0%
	1 year to 18 months	58	18.6%
	18 months to 2 years	28	9.0%
	More than 2 years	129	41.5%
Device(s) used to access Facebook Messenger	Mobile phone	250	80.4%
	Tablet	96	30.9%
	Laptop computer	153	49.2%
	Desktop computer	96	30.9%

Our final sample totaled 311 cases. Of our respondents, very few (< 3%) noted less than one month of Facebook Messenger experience. The sample was relatively equally distributed in terms of job type and demographic characteristics. Roughly 80% of our sample used Facebook Messenger on a mobile phone, with many (62%) noting use of the technology on multiple devices. Sample characteristics are presented in Table 4. One of our constructs, *domain congruence* (~7.50), noted kurtosis values outside of the acceptable range. A logarithmic transformation (Tabachnick & Fidell, 2006) was applied to the domain congruence variables to bring their values into an acceptable range.

5.2 Nonresponse Bias

To check for nonresponse bias, we used a wave analysis to compare characteristics of early vs. late respondents (Armstrong & Overton, 1977). The first 40 respondents were compared to the last 40 respondents, with the results displayed in Table 5. The lack of a significant difference between early and late respondents provided evidence that nonresponse bias did not significantly affect our results.

5.3 Common Method Bias

Common method bias was controlled for by using Chin et al.'s (2013) measured latent marker variable (MLMV) approach. The MLMV approach uses a set of unrelated marker variables to extract common method variance at the individual item level. Each survey item was regressed against four marker variables to form two new sets of items. The residuals alone were used to evaluate the structural model, while the random error was replaced in the items to evaluate the measurement model. The goal of the method is to remove common method bias prior to analysis. The four marker variables used in our survey are included in Table 6.

5.4 Measurement Model

The measurement model was assessed through a confirmatory factor analysis (CFA) in SPSS Amos Version 22.0. Constructs with reflective items were included in the analysis. The formative structure of domain congruence prevented its inclusion in the CFA because of the identification problems presented when using covariance-based SEM programs (MacCallum & Browne, 1993).

Table 5. Test of Nonresponse Bias: Wave Analysis

	Mean	S.D	*t*-stat	*p*-value (2-tail)
Facebook Messenger use frequency				
Early respondents	3.95	1.36	-0.769	0.444
Late respondents	4.17	1.26		
Facebook Messenger use history				
Early respondents	4.60	1.55	-0.301	0.764
Late respondents	4.70	1.42		
Size of work communication audience				
Early respondents	3.28	1.24	-0.089	0.929
Late respondents	3.30	1.26		
Education				
Early respondents	4.55	1.63	0.531	0.597
Late respondents	4.38	1.29		

Table 6. Marker Variable Items

MKR1	Music is important to my life.
MKR2	Prisoners should serve their full time.
MKR3	I find rugby interesting.
MKR4	When it comes to art, I prefer paintings over photography.

Table 7. Measurement Model Fit Indices

Fit index	Reference	Cutoff value	Measurement model
Chi square / df	Tabachnick & Fidell (2007)	< 2	1.715
Comparative fit index (CFI)	Hu & Bentler (1999)	> .95	0.967
Non-normed fit index (NNFI)	Hu & Bentler (1999)	> .95	0.962
Root mean square error of approximation (RMSEA)	Hu & Bentler (1999)	< .06	0.048
		90% CI (0, .08)	(.042, .054)
Standardized root mean square residual (SRMR)	Hooper et al. (2008)	< .08	0.034

Common fit statistics such as CFI, NNFI, RMSEA, SRMR, and Chi Squared/df suggest a good overall fit of the model (see Table 7). We also evaluated individual item loadings. One item with a loading of less than 0.707 was excluded from structural analysis (Hair et al., 2006). Formative measures were assessed according to the criteria suggested by Petter et al. (2007). Multicollinearity was evaluated by calculating the variance inflation factor (VIF) statistics. Values larger than 3.3 indicate potential issues with Type II error (Diamantopoulos & Winklhofer, 2001). VIF values for the two subdimensions of CSE were 1.74. The two formative items for domain congruence had VIF values of 2.11. Thus, multicollinearity was not present in our formative measures (Hair et al., 2011). While the weights for one of the domain congruence items (DOM1) and one of the subdimensions of CSE (CSE-Internal) were nonsignificant (p > 0.05), both were included to ensure content validity.

Discriminant validity for the measurement model was assessed using heterotrait-monotrait (HTMT) analysis in SmartPLS Version 3.[7] Henseler et al. (2015) have called for this new evaluation of discriminant validity, as they note the unacceptably low sensitivity of the Fornell-Larcker test (Fornell & Larcker, 1981). HTMT calculates a ratio of the shared variance between two constructs to the average of the two constructs' internal shared variances. Values above a conservative cutoff of 0.85 indicate problems with discriminant validity. After performing this analysis, all of our constructs passed the HTMT test (results available in Appendix C).

[7] As noted, computer self-efficacy is a second-order aggregate construct, with reflective indicators and formative sub-dimensions. Thus, we assessed convergent validity using CB-SEM by loading each item onto its respective sub-dimension. Then, we assessed discriminant validity in PLS by creating a second-order construct.

6 Results

6.1 Structural Model

SmartPLS Version 3 was used to evaluate our structural model in two steps. First, a baseline model was created, without moderating effects, to evaluate Hypotheses 1, 3, 4, and 5. All direct relationships were tested using this baseline model. Second, we tested a model that included the direct relationships and added a moderator to evaluate Hypothesis 2. To test for moderation, we followed the recommendations of Henseler and Fassott (2010). Moderation effects were examined using the product of sums approach (Goodhue et al., 2007). A moderating variable was created with one indicator—the product of the sums of the indicators of the exogenous variables. This new variable was included alongside the original variables for PLS analysis. Figures 3 and 4 report the results of these models.

6.2 Direct Relationships

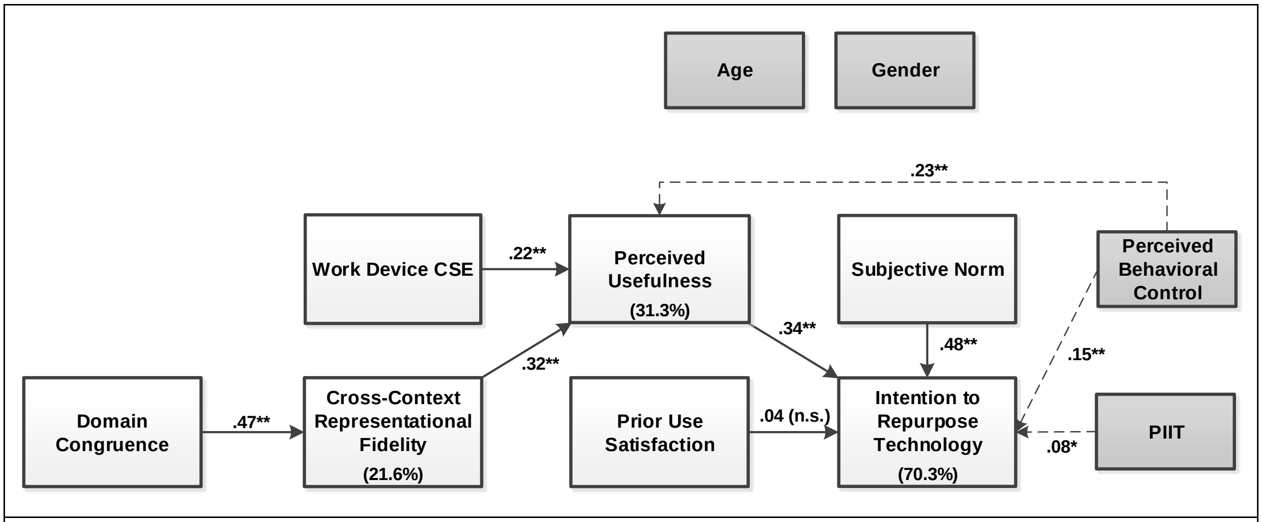
Hypotheses 1, 3, 4, and 5 were evaluated using the recommended protocols from Henseler et al. (2009) and Chin (2001). Path coefficients were established using PLS bootstrapping with 500 subsamples. CSE was modeled using the repeated indicators approach in PLS (Becker, Klein, & Wetzels, 2012).

The results of our analysis (Figure 3) indicate support for the proposed relationships for Hypotheses 1, 3, 4, and 5. Each relationship was significant at $p < 0.01$. Perceived usefulness was directly influenced by both CCRF (H1: $\beta = 0.32$, $p < 0.01$) and work device computer self-efficacy (H4: $\beta = 0.22$, $p < 0.01$). These findings lend support to our assertion that usefulness beliefs are influenced by both an evaluation of prior use (CCRF) and an evaluation of future use conditions (CSE).

Additionally, we found that domain congruence significantly influences CCRF (H3: $\beta = 0.47$, $p < 0.01$). Those individuals already communicating with work colleagues through Facebook Messenger noted greater CCRF of their prior use. While many individuals keep their personal and professional lives distinct, our results suggest that the overlapping of domains in prior technology use increases the correspondence between prior use and future tasks. Finally, we found that social influence has a direct impact on the intention to repurpose (H5: $\beta = 0.48$, $p < 0.01$). Individuals are more apt to desire repurposing if they are surrounded by others who encourage such behavior.

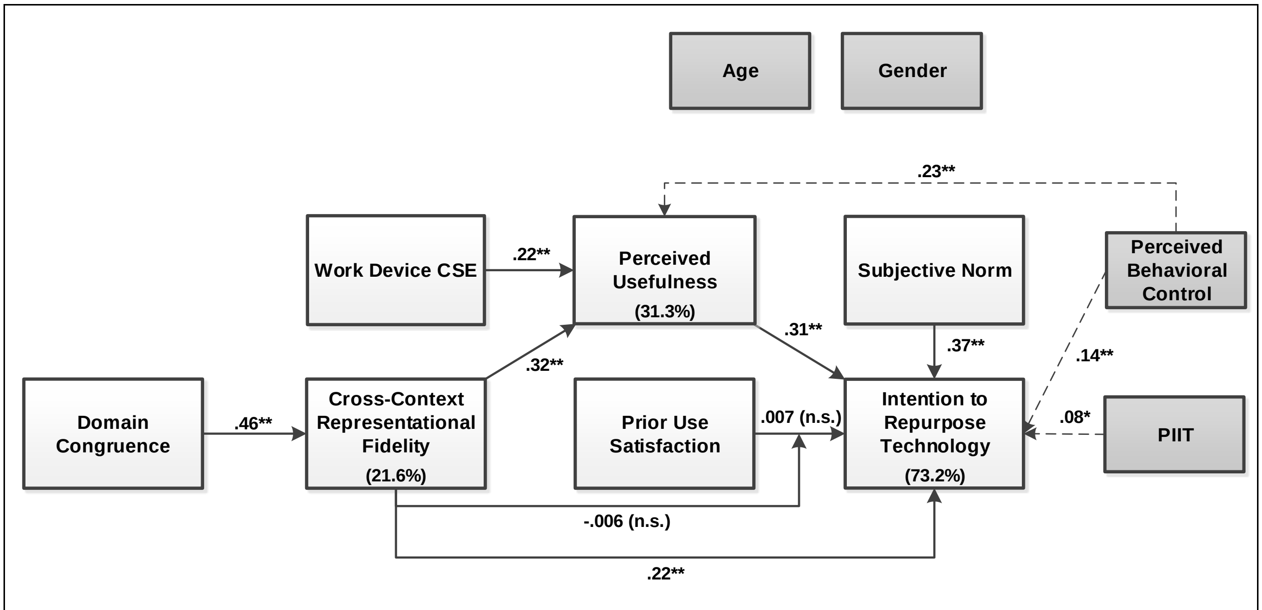
6.3 Moderating Relationship

Hypothesis 2 proposed a positive moderating effect of CCRF on the relationship between satisfaction and intention to repurpose. The initial analysis (Figure 4) found no evidence of moderation (H2: $\beta = -0.006$, $p > 0.05$). The moderating effect size of CCRF ($f^2 < 0.001$) provided further evidence that an overall moderating impact of the relationship between satisfaction and intention to repurpose is not present (Cohen, 1988).



Note: Dotted lines represent significant control variable effects (non-significant effects not shown). Terms in parentheses represent the percentage of explained variance. *$p < 0.05$; **$p < 0.01$

Figure 3. Results: Baseline Model



Note: Dotted lines represent significant control variable effects (non-significant effects not shown). Terms in parentheses represent the percentage of explained variance. *$p < 0.05$; **$p < 0.01$

Figure 4. Results: Moderation Model

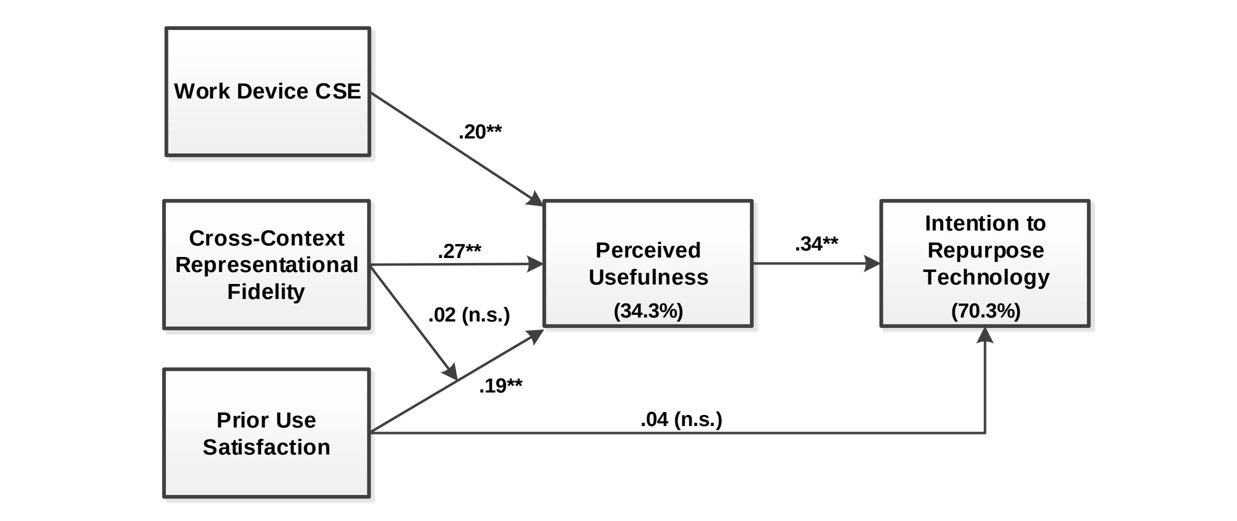
Curiously, our structural model indicated a nonsignificant relationship between satisfaction and intention to repurpose (β = 0.007, $p > 0.05$), which differed from the significant positive correlation between the two constructs (ρ = 0.23, $p < 0.01$). To understand the nature of this relationship, we elected to investigate the potential for a mediating effect. Therefore, we ran a post hoc structural model using PLS bootstrapping which specified a direct relationship from satisfaction to intention to repurpose and an indirect relationship through perceived usefulness (results displayed in Figure 5).

Mediation, according to Baron and Kenny (1986), requires three conditions to be present: (1) The independent variable must be related to the mediator, (2) the independent variable must be related to the dependent variable before the mediator variable is introduced, and (3) the mediating variable must be related to the dependent variable. In this case, all three conditions were met (see Table C1 for construct correlations). Thus, we found initial evidence to support mediation between satisfaction and intention to repurpose.

Next, we examined whether the mediating effect was partial or complete. To investigate this, the independent variable (satisfaction) was included as a predictor of the dependent variable (intention to repurpose) with the mediating variable (usefulness) added as a control. Our post hoc mediating model (see Figure 5) revealed a nonsignificant direct path from satisfaction to intention to repurpose (β = 0.04, $p > 0.05$) and a significant direct path from satisfaction to usefulness (β = 0.19, $p < 0.01$). Additionally, the total effect of satisfaction on intention to repurpose was significant (β = 0.10, $p < 0.01$). Thus, the relationship between satisfaction and intention to repurpose was significant, but only when usefulness was excluded. Upon its inclusion, the relationship was found to be insignificant. Based on this evidence, we conclude that perceived usefulness fully mediates the relationship between satisfaction and intention to repurpose.

Given evidence of mediation, we reevaluated the moderating effect of CCRF, using perceived usefulness as the dependent variable, rather than intention to repurpose. In this post hoc model, as before, the moderating effect of satisfaction on perceived usefulness was not significant (β = 0.02, $p > 0.05$).

We then tested the moderating effect using simple regression, dividing the respondents into three groups, using a median split on CCRF. This allowed us to test the relationship between satisfaction and perceived usefulness at low, medium, and high levels of CCRF. The results, presented in Table 8, indicate that satisfaction may affect perceived usefulness, but not at the lowest level of CCRF. Thus, we can surmise that there may be a minimum level of CCRF that must be met for satisfaction to predict perceived usefulness. With at least a moderate degree of CCRF, greater satisfaction with prior use of the technology increases the belief that the technology can be useful for work-related tasks. At the lowest level of CCRF—in those situations where an individual's prior technology use offered the least correspondence to work tasks—the satisfaction from prior use may be of little relevance in predicting work-related usefulness beliefs. Table 9 summarizes the results of hypothesis tests.



Note: for simplicity in depiction, control variables and subjective norm are not displayed. Path coefficients for these variables were not substantively different from the main structural model. Terms in parentheses represent the percentage of explained variance. **$p < 0.01$

Figure 5. Post Hoc Mediation Analysis

Table 8. Post Hoc Test of Moderation

Level	Cross-context representational fidelity	Regression coefficient	*p*-value
1	Low	0.123	0.213
2	Medium	0.282	0.004
3	High	0.331	0.001

Note: At each level of CCRF, a simple regression was run with satisfaction as the independent variable and perceived usefulness as the dependent variable.

Table 9. Results of Hypothesis Tests

Hypotheses		Supported?
H1	Cross-context representational fidelity is positively related to perceived usefulness.	Yes
H2	Cross-context representational fidelity moderates the relationship between the individual's satisfaction with his or her prior use and intentions to repurpose a technology.	No
H3	Domain congruence is positively related to cross-context representational fidelity.	Yes
H4	Work device computer self-efficacy is positively related to perceived usefulness.	Yes
H5	Subjective norm is positively related to an individual's intention to repurpose a personal technology for work purposes.	Yes

7 Discussion

Responding to Baskerville's (2011) call, the field of information systems has demonstrated a growing interest in explicating the broadening use of personal technologies. Given that individuals are increasingly using personal technologies for work purposes (Niehaves et al., 2012), we investigated the motivations for such adaptations. In doing so, we extended IS continuance theory to develop an explanation for technology repurposing's sources and implications.

Prior research has evaluated the antecedent motivations of work-related technology use when an individual has no prior experience using the technology or when the individual is currently using the technology for work purposes. Our study adds to IS literature through an investigation of work-related technology use when prior use may have been directed toward a different objective. We provide a theoretical explanation for individuals' repurposing of personal technologies for work tasks. Most notably, we demonstrate that *how* an individual has previously used a technology (or what the technology was used to accomplish) informs the individual's work-related beliefs through the perceived congruence between prior technology use and future work tasks. Our empirical study confirmed most of the hypotheses.

7.1 Limitations and Future Research

Like all research, this study has limitations. We utilized a market research company to increase the number of organizations from which we drew respondents. Future researchers could investigate our hypotheses within a specific organization, or by using a methodology that allows for tighter control over the domain in which the technology of interest is used.

One of the boundary conditions for this study is that employees have some degree of control over their ability to repurpose technologies for work purposes. We recognize, and state in our introduction, that some organizations impose limitations for such adaptive behavior. Since our focus was on individual beliefs, attitudes, and intentions, we used a control variable to account for variability in terms of employers allowing employees to repurpose. Because we operationalized perceived behavioral control at a high level (e.g., it captured general control beliefs), further work is needed that investigates whether specific forms of control, such as choice over passwords, choice of device, and choice of location, shape technology repurposing. Further, the impact of cross-context representational fidelity should also be investigated from an organizational policy perspective, highlighting how such facilitating conditions encourage or prevent repurposing from taking place. Researchers could examine the role of security policies and managerial support in hindering or encouraging technology repurposing. Two employees working for different organizations may have a similar desire to repurpose but dissimilar ability.

The behavior of interest for this study was the personal-to-work repurposing of technology use. However, we recognize that repurposing can be conceptualized in the opposite direction as well, with individuals using work technology to accomplish personal tasks. For example, an individual could use a project management application from work to manage a house remodel in their personal life. While this behavior is not specifically within the scope of our study, we would expect the research model to be equally accommodating to both types of repurposing. Thus, future researchers could examine whether domain congruence influences the CCRF of a work technology with personal tasks and whether that fidelity results in greater perceived usefulness of the work technology for personal tasks.

Domain congruence was assessed through self-reporting of the overlap of audiences in personal and work domains. Given the complexity of interpersonal communications, we felt that the development of a perfect measure of congruence in communications across two domains was beyond the scope of this study. Nonetheless, audience overlap provides a rich approximation of domain congruence for our purposes. The audience of communication impacts not only who receives a communication, but how and why the communication is made—individuals adapt communications for their audience (Giles & Ogay, 2007). Therefore, the overlap of audiences is an integral component of investigating communication domain congruence. Future researchers could further develop domain congruence by extending it to other domains.

Our sample consisted entirely of individuals that have used Facebook Messenger but were not currently using it for work purposes. Researchers could extend our findings by conducting a study where such individuals were included. We would expect that, in pure continuance scenarios, cross-context representational fidelity would be less impactful for future usefulness beliefs than for those individuals not currently using the technology for work-related purposes. Further insights could be drawn if researchers considered the length and breadth of work-related use. Do individuals that have a long history with a technology in one domain rely more on the fidelity of their prior experience than those with less history? Our study was set up much like an adoption study. Future researchers could look at continuance scenarios to see where cross-context representational fidelity is more (or less) influential.

Finally, our research model included computer self-efficacy, the measurement of which has been the subject of debate in recent years (Marakas et al., 2007). We elected to use the aggregated, reflective measure offered by Thatcher et al. (2008) while noting that other researchers have advocated for a purely formative measure of the construct (Marakas et al., 2007). By using a measure that utilizes reflective items, we mitigated the pitfalls of purely formative measures, specifically in regard to the conceptualization of CSE (Hardin et al., 2008). Nonetheless, we recognize that CSE can be measured in different ways and we encourage researchers to investigate our findings using alternative measures.

7.2 Contributions

Our findings shed light on the burgeoning phenomenon of technology repurposing in several ways. First, we investigated the repurposing of personal technologies for work tasks. Today's technological environment has increased the opportunities for such repurposing. Thus, it is vital that we investigate why individuals take advantage of those opportunities. We developed a new construct, CCRF, to study this topic. Second, we developed and tested a model to study technology repurposing, utilizing the perspective offered from representation theory. Through our analysis of that model, we demonstrated that CCRF is a key driver of repurposing, offering a construct that serves as the link between prior and future behavior. Finally, not only did we conceptualize CCRF for technology repurposing, we also developed and tested a new measure for the construct. We encourage future researchers to examine the contextual and technological characteristics that may motivate repurposing more broadly. Table 10 summarizes our major findings and implications for research and practice.

Table 10. Key Findings

Key findings	Implications for research and practice
1. Cross-context representational fidelity provides a mechanism for influencing behavioral intentions in repurposing scenarios.	The recognition of correspondence between prior and future technology use across domains can influence an individual's intention to migrate a technology.
2. Cross-context representational fidelity is predictive of perceived usefulness.	An individual's perceptions regarding future repurposing are influenced by the behaviors previously performed with the technology.
3. Prior satisfaction may impact intention to repurpose, mediated by perceived usefulness, but only at minimum levels of cross-context representational fidelity.	Individuals who see no correspondence with their prior technology use are less likely to be influenced by satisfaction. At medium and high levels of fidelity, satisfaction is more predictive of future intention to repurpose a technology.
4. Domain congruence is predictive of cross-context representational fidelity.	Domain overlaps not only align technology use behaviors but also enable the recognition of fidelity from prior use.
5. Work device CSE is predictive of perceived usefulness.	An individual's usefulness beliefs are influenced by their perception of the technology and the device(s) on which they will use the technology. Ignoring the potential changing of devices limits our understanding of technology repurposing.

7.3 Implications for Research

Our findings offer important implications for future research in information systems. First, we found that *cross-context representational fidelity provides a mechanism for influencing behavioral intentions in repurposing scenarios*. Researchers can use the construct to predict post-adoptive use in changing domain scenarios. While our study looked at personal-to-work repurposing, we would expect that the construct could be applied in other scenarios where contextualization might be relevant. CCRF could be used to predict an individual's intention to use a CRM system that was used at a previous company. Additionally, CCRF could be applied in repurposing scenarios in the reverse of our study, with individuals repurposing a work technology for a personal purpose. For example, an individual might utilize a database technology they use at work to track home workouts. In this way, we offer a more generalizable approach to repurposing than the "IT consumerization" literature, which is intentionally more narrowly focused specifically on the personal-to-work migration.

This research offers interesting implications for those who study technology adaptations. Whereas prior work has often focused on adaptations and extensions within the work domain, our study on repurposing indicates that individuals can also extend their use across domains. For example, Bagayogo et al. (2014) described examples where individuals extended current technology features to new tasks. However, the examples they found in the literature pertained to within-context extensions. We encourage researchers interested in studying technology adaptations to consider cross-context adaptations. Our findings, along with our conceptualization of CCRF, should promote new, interesting questions in the adaptation literature.

Regarding CCRF, we found that *cross-context representational fidelity is predictive of perceived usefulness.* The manner in which an individual uses a technology influences the individual's desire to migrate that use. In this sense, prior experience may be either beneficial for or detrimental to work-related technology use. When CCRF is high, prior experience is beneficial, enabling the user to model how the technology might be used for work tasks. Beyond this, researchers should examine how different forms of technology use enhance opportunities to identify CCRF. Individuals who increase the breadth of their technology use (i.e., use the technology to achieve many different aims) may note more fidelity with their work tasks. Inversely, our findings suggest that when CCRF is low, prior experience may weaken the perception of future usefulness. For example, an employee asked to consider using YouTube to create training videos may negatively perceive its work-related usefulness if they have extensive experience using YouTube for vastly different purposes. CCRF, then, could offer an explanation for resistance to technology implementations of personal technologies in the workplace (Lapointe & Rivard, 2005). It is possible that individuals whose prior technology use offers no correspondence to their work tasks may be less inclined to change the way they use the technology.

Our findings offer interesting insights for the application of affordance theory in the field of information systems. Repurposing a technology to a new domain could involve the actualization of a new affordance or not, depending on the alignment between the two domains. If two domains are incongruent, then repurposing is less likely unless the individual is able to identify a new or different affordance for the technology, one required to meet the disparate needs of the new domain. Whereas our study highlights that repurposing may be more likely when adaptations or alterations to the perceived affordances of the technology are minimized, one interesting avenue for future research might consider how individuals discover new affordances in order to repurpose a technology into an incongruent domain.

Researchers could extend our findings by considering the impact of repurposing on organizational outcomes such as work performance, job satisfaction, etc. While the potential for positive benefits is available through repurposing, there could be scenarios where negative outcomes emerge. Research on IT consumerization notes that there are security risks inherent when individuals use personal devices to access work resources (Harris et al., 2012). Similar security risks may be present when bringing personal technologies into the workplace. Beyond security, other negative organizational effects may be present. Researchers could examine whether repurposing increases the disparity of technologies used by co-workers, something that could lead to disunity within an organization or department. While CCRF is a driver of technology repurposing, it is imperative that we investigate when and how repurposing can be beneficial to organizations.

Another promising research direction would be to take a different theoretical perspective to investigate technology repurposing. For example, migration theory (Lee, 1966) has been used to explain several phenomena in the general migration context (Stimson & Minnery, 1998). According to migration theory, individuals migrate when they are attracted by a new location (pull factors) and/or repelled by a current location (push factors) but not constrained by intervening obstacles (mooring factors). Such push, pull, and mooring factors can be used to explain why people "migrate" from one current domain to a new domain of using a technology.

Though an overall moderating effect was not present, we found that *prior satisfaction may impact the intention to repurpose, mediated by perceived usefulness, but only at minimum levels of cross-context representational fidelity*. We found that a minimum threshold of CCRF is necessary for satisfaction to impact perceived work-related usefulness. This finding may aid future investigations into the question: "Does prior satisfaction matter in situations where technology use is adapted?" Our study indicates that repurposing a technology requires users to significantly change their behavior, prior satisfaction may be of limited value in predicting future use.

As expected, we found that *domain congruence is predictive of cross-context representational fidelity*. Users who noted a high degree of overlap between their communication audiences also recognized greater fidelity. Future research should extend these findings, elaborating on the contextual issues that motivate and/or necessitate repurposing. One interesting extension of our findings would be to investigate the impact of domain congruence on technostress (Tarafdar et al., 2019). While domain congruence increases cross-context representational fidelity, it could also lead to overloading feelings that have positive or negative consequences. Recent trends suggest that the personal/work convergence will increase in the years to come (Jones et al., 2013); therefore, it is vital that researchers build upon our work and continue to investigate how real-world overlaps influence technology repurposing.

Finally, our findings demonstrate that, in repurposing scenarios, it is also important to consider the resources available in the work domain. Technology use does not exist in a vacuum; thus, while an individual may have used a technology in a manner perfectly aligned with their work tasks, that experience is less pertinent if the individual is not confident that the technology can be used at work. Accordingly, we found that *work device CSE is predictive of perceived usefulness*. Future research could extend these findings by investigating the factors that increase an individual's confidence in using a technology for work, specifically a technology that has already been used in a different domain. For example, does familiarity with a technology on one device increase or decrease the user's confidence in using the technology on a different device? Is technology use device dependent, or is it flexible across resource conditions? Answering such questions is important, because efficacy beliefs are thought to be not only technology specific but also domain specific (Agarwal et al., 2002; Thatcher & Perrewe, 2002; Kaczmarek & Kaczmarek-Kurczak, 2016).

7.4 Implications for Practice

Many researchers have identified benefits from the use of personal technologies in the workplace (for a summary, see Niehaves et al., 2012). Our study offers considerations and prescriptions for managers who wish to encourage the repurposing of personal technologies.

Our findings regarding CCRF indicate that an individual's prior experience using technologies informs perceptions regarding its usefulness in the workplace. When individuals note congruence between their prior technology use and their work tasks, they perceive it to be more useful for those work tasks. Thus, managers wishing to encourage the use of personal technologies can offer interventions to increase CCRF or, in the case of low fidelity, weaken its effect. One prescription would be to allow employees to use their personal technologies freely, since by expanding the behaviors enacted through the technology, they are more likely to discover congruence with their work tasks.

Additionally, managers could allow employees to use a personal technology in a trial fashion, providing a specific example regarding how the technology might be used for work purposes. These actions could help shape the employee's prior experience, making CCRF more likely. From the opposite perspective, managers could allow individuals to align their work activities with the activities they perform personally, thereby ensuring congruence through altering their work tasks. By aligning personal technology use with work activities, individuals can more easily find opportunities to repurpose the technology for work-related benefits.

Regarding domain congruence, we found that when real-world personal and work domains are aligned, individuals are more likely to discover fidelity with their prior technology use. This implies that managers should seek to actively help individuals align their personal and work lives in order to open up the possibility of recognizing fidelity. Regarding communications, we found that domain congruence is an important driver of CCRF. Individuals who communicate with the same individuals both at work and on Facebook Messenger are more likely to recognize the fidelity of the technology with their work-related communications. Thus, managers should encourage communication between employees outside of work as a means of discovering opportunities to use new technologies for intraorganizational communication.

Finally, we note the importance of computer self-efficacy when an individual considers the use of a personal technology at work. Managers can utilize training to increase employee confidence in using technologies on work devices. Employees who are unsure of their ability to use the technology at work may be unsure of the usefulness of the technology for work tasks.

8 Conclusion

The increasing ubiquity of computing devices and applications has changed how individuals engage with technologies. This study seeks to improve the understanding of how and why individuals blur the boundaries between technologies used in their personal lives and technologies used at work. To do so, we provide a theoretical perspective with empirical support for technology repurposing, i.e., the act of using a personal technology for work-related tasks. As research continues to investigate why individuals migrate technologies across domains, our study offers a fresh perspective on this interesting new form of technology use.

References

Agarwal, R., & Prasad, J. (1998). A conceptual and operational definition of personal innovativeness in the domain of information technology. *Information Systems Research*, *9*(2), 204-215.

Agarwal, R., Sambamurthy, V., & Stair, R. M. (2000). The evolving relationship between general and specific computer self-efficacy—An empirical assessment. *Information Systems Research*, *11*(4), 418-430.

Ahuja, M. K., & Thatcher, J. B. (2005). Moving beyond intentions and toward the theory of trying: effects of work environment and gender on post-adoption information technology use. *MIS Quarterly*, *29*(3), 427-459.

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, *50*(2), 179-211.

Ajzen, I., & Fishbein, M. (1977). Attitude-behavior relations: A theoretical analysis and review of empirical research. *Psychological Bulletin*, *84*(5), 888.

Armstrong, J. S., & Overton, T. S. (1977). Estimating nonresponse bias in mail surveys. *Journal of Marketing Research*, *14*(3), 396-402.

Ashforth, B. E., Kreiner, G. E., & Fugate, M. (2000). All in a day's work: Boundaries and micro role transitions. *Academy of Management Review*, *25*(3), 472-491.

August, T., Niculescu, M. F., & Shin, H. (2014). Cloud implications on software network structure and security risks. *Information Systems Research*, *25*(3), 489-510.

Bagayogo, F. F., Lapointe, L., & Bassellier, G. (2014). Enhanced use of IT: A new perspective on post-adoption. *Journal of the Association for Information Systems*, *15*(7), 361-387.

Bajaj, A., & Nidumolu, S. R. (1998). A feedback model to understand information system usage. *Information & Management*, *33*(4), 213-224.

Barber, L. K., & Jenkins, J. S. (2014). Creating technological boundaries to protect bedtime: Examining work-home boundary management, psychological detachment and sleep. *Stress and Health*, *30*(3), 259-264.

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, *51*(6), 1173.

Baskerville, R. (2011). Individual information systems as a research arena. *European Journal of Information Systems*, *20*(3), 251-254.

Becker, J.-M., Klein, K., & Wetzels, M. (2012). Hierarchical latent variable models in PLS-SEM: Guidelines for using reflective-formative type models. *Long Range Planning*, *45*(5), 359-394.

Bhattacherjee, A. (2001). Understanding information systems continuance: An expectation-confirmation model. *MIS Quarterly*, *25*(3), 351-370.

Bhattacherjee, A., Davis, C. J., Connolly, A. J., & Hikmet, N. (2018). User response to mandatory IT use: A coping theory perspective. *European Journal of Information Systems*, 27(4), 395-414.

Bhattacherjee, A., & Lin, C.-P. (2015). A unified model of IT continuance: three complementary perspectives and crossover effects. *European Journal of Information Systems*, *24*(4), 364-373.

Brandon, D. M., Long, J. H., Loraas, T. M., Mueller-Phillips, J., & Vansant, B. (2013). Online instrument delivery and participant recruitment services: Emerging opportunities for behavioral accounting research. *Behavioral Research in Accounting*, *26*(1), 1-23.

Burkus, D., Gallo, A., Achor, S., Gielan, M., & Valcour, M. (2017). *Research: Keeping work and life separate is more trouble than it's worth.* Harvard Business Review. https://hbr.org/2016/08/research-keeping-work-and-life-separate-is-more-trouble-than-its-worth

Burton-Jones, A., & Grange, C. (2013). From use to effective use: A representation theory perspective. *Information Systems Research*, *24*(3), 632-658.

Buyya, R., Broberg, J., & Goscinski, A. M. (2010). *Cloud computing: Principles and paradigms.* Wiley.

Carter, M., & Grover, V. (2015). Me, my self, and I(T) conceptualizing information technology identity and its implications. *MIS Quarterly*, *39*(4), 931-958.

Chin, W. W. (2001). *PLS-graph user's guide.* CT Bauer College of Business, University of Houston.

Chin, W. W., Thatcher, J. B., Wright, R. T., & Steel, D. (2013). Controlling for common method variance in PLS analysis: The measured latent marker variable approach. In H. Abdi, W. W. Chin,, V. Esposito Vinzi, G. Russolillo, & L. Trinchera (Eds.), *New perspectives in partial least squares and related methods* (pp. 231-239). Springer.

Churchill, G. A. (1979). A paradigm for developing better measures of marketing constructs. *Journal of Marketing Research*, *16*(1) 64-73.

Cohen, J. (1960). A coefficient of agreement for nominal scales. *Educational and Psychological Measurement*, *20*, 37-46.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences.* Lawrence Erlbaum.

Compeau, D. R., & Higgins, C. A. (1995). Computer self-efficacy: Development of a measure and initial test. *MIS Quarterly*, *19*(2), 189-211.

Cooper, R. B., & Zmud, R. W. (1990). Information technology implementation research: A technological diffusion approach. *Management Science*, 36(2), 123-139.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, *13*(3), 319-340.

Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User acceptance of computer technology: a comparison of two theoretical models. *Management Science*, *35*(8), 982-1003.

DeSanctis, G., & Poole, M. S. (1994). Capturing the complexity in advanced technology use: Adaptive structuration theory. *Organization Science*, *5*(2), 121-147.

Diamantopoulos, A., & Winklhofer, H. M. (2001). Index construction with formative indicators: An alternative to scale development. *Journal of Marketing Research*, *38*(2), 269-277.

Dickinger, A., Arami, M., & Meyer, D. (2008). The role of perceived enjoyment and social norm in the adoption of technology with network externalities. *European Journal of Information Systems*, *17*(1), 4-11.

DiMicco, J. M., & Millen, D. R. (2007). Identity management: Multiple presentations of self in Facebook. *Proceedings of the 2007 International ACM Conference on Supporting Group Work.*

Esmaeilzadeh, P. (2021). How IT identity affects individuals' personal health devices (PHDs) use behaviors? An empirical study. *Information & Management*, *58*(1), Article 103313.

Eugenio, S. (2017). *4 ways personal technology outperforms enterprise software.* Entrepreneur. https://www.entrepreneur.com/article/287867

Fadel, K. (2006). Individual infusion of information systems: The role of adaptation and individual cognitions. *Proceedings of the Americas Conference on Information Systems*.

Farrell, M. B. (2013). *E-mail a thing of past for business, young*, Boston Globe. http://www.bostonglobe.com/business/2013/03/29/mail-gets-cold-shoulder/xWOVx0s9h8EXVs8t6MxrmO/story.html

Fichman, R. G. (1992). Information technology diffusion: A review of empirical research. *Proceedings of the International Conference of Information Systems.*

Fishbein, M., & Ajzen, I. (1975). Belief, attitude, intention and behavior: An introduction to theory and research. *Philosophy and Rhetoric*, *10*(2), 130-132.

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, *18*(3), 39-50.

Gaskin, J., Godfrey, S., & Vance, A. (2018). Successful system use: It's not just who you are, but what you do. *AIS Transactions on Human-Computer Interaction*, *10*(2), 57-81.

Gefen, D., & Straub, D. W. (1997). Gender differences in the perception and use of e-mail: An extension to the technology acceptance model. *MIS Quarterly*, *21*(4), 389-400.

Giddens, L., & Tripp, J. (2014). It's my tool, I know how to use it: A theory of the impact of BYOD on device competence and job satisfaction. *Proceedings of the Americas Conference on Information Systems.*

Giles, H., & Ogay, T. (2007). *Communication accommodation theory*. In B.B. Whaley & W. Samter (Eds.), *Explaining communication: Contemporary theories and exemplars* (p. 293-310). Lawrence Erlbaum.

Goggin, G. (2012). *Cell phone culture: Mobile technology in everyday life*. Routledge.

Goodhue, D. L., & Thompson, R. L. (1995). Task-technology fit and individual performance. *MIS Quarterly*, *19*(2), 213-236.

Goodhue, D., Lewis, W., & Thompson, R. (2007). Research note-statistical power in analyzing interaction effects: Questioning the advantage of PLS with product indicators. *Information Systems Research*, *18*(2), 211-227.

Groysberg, B., & Abrahams, R. (2014). Manage your work, manage your life. *Harvard Business Review*, *92*(3), 58-66.

Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006). *Multivariate data analysis* (Vol. 6): Pearson Prentice Hall.

Hair, J. F., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2013). *A primer on partial least squares structural equation modeling (PLS-SEM)*. SAGE.

Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing Theory and Practice*, *19*(2), 139-152.

Hambleton, R. K., & Rovinelli, R. J. (1986). Assessing the dimensionality of a set of test items. *Applied Psychological Measurement*, *10*(3), 287-302.

Hardin, A. M., Chang, J. C.-J., & Fuller, M. A. (2008). Clarifying the use of formative measurement in the IS discipline: The case of computer self-efficacy. *Journal of the Association for Information Systems*, *9*(9), 544-546.

Hasan, B. (2006). Delineating the effects of general and system-specific computer self-efficacy beliefs on IS acceptance. *Information & Management*, *43*(5), 565-571.

Henseler, J., & Fassott, G. (2010). Testing moderating effects in PLS path models: An illustration of available procedures In V. Esposito Vinzi, W. W. Chin, J. Henseler, & H. Wang (Eds.), *Handbook of partial least squares* (pp. 713-735). Springer.

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, *43*(1), 1-21.

Henseler, J., Ringle, C. M., & Sinkovics, R. R. (2009). The use of partial least squares path modeling in international marketing. *Advances in International Marketing*, *20*, 277-320.

Hong, S., Kim, J., & Lee, H. (2008). Antecedents of use-continuance in information systems: Toward an integrative view. *Journal of Computer Information Systems*, *48*(3), 61-73.

Hsieh, J. P. A., & Wang, W. (2007). Explaining employees' extended use of complex information systems. *European Journal of Information Systems*, *16*(3), 216-227.

Hsu, M. K., Wang, S. W., & Chiu, K. K. (2009). Computer attitude, statistics anxiety and self-efficacy on statistical software adoption behavior: An empirical study of online MBA learners. *Computers in Human Behavior*, *25*(2), 412-420.

Hsu, P. F., Yen, H. R., & Chung, J. C. (2015). Assessing ERP post-implementation success at the individual level: Revisiting the role of service quality. *Information & Management*, *52*(8), 925-942.

Ingram, P., & Zou, X. (2008). Business friendships. *Research in Organizational Behavior*, *28*, 167-184.

Ives, B., & Junglas, I. (2008). APC forum: Business implications of virtual worlds and serious gaming. *MIS Quarterly Executive*, *7*(3), 151-156.

Jarvenpaa, S. L. (1989). The effect of task demands and graphical format on information processing strategies. *Management Science*, *35*(3), 285-303.

Jasperson, J. S., Carter, P. E., & Zmud, R. W. (2005). A comprehensive conceptualization of post-adoptive behaviors associated with information technology enabled work systems. *MIS Quarterly*, *29*(3), 525-557.

Jones, F., Burke, R. J., & Westman, M. (2013). *Work-life balance: A psychological perspective*: Psychology Press.

Junglas, I., Goel, L., Ives, B., & Harris, J. (2019). Innovation at work: The relative advantage of using consumer IT in the workplace. *Information Systems Journal*, *29*(2), 317-339.

Karahanna, E., Agarwal, R., & Angst, C. M. (2006). Reconceptualizing compatibility beliefs in technology acceptance research. *MIS Quarterly*, *30*(4), 781-804.

Kaczmarek, M., & Kaczmarek-Kurczak, P. (2016). The FFM personality traits and general and domain-specific self-efficacy, and social support as predictors of small business performance in cultural and creative industries: A longitudinal and cross-sectional studies. *Personality and Individual Differences*, *101*, 487.

Koch, H., Zhang, S., Giddens, L., Milic, N., Yan, K., & Curry, P. (2014). *Consumerization and IT department conflict*. Paper presented at the 35th International Conference on Information Systems, Auckland, New Zealand.

Ksiazek, T. B. (2011). A network analytic approach to understanding cross-platform audience behavior. *Journal of Media Economics*, *24*(4), 237-251.

Lapointe, L., & Rivard, S. (2005). A multilevel model of resistance to information technology implementation. *MIS Quarterly*, *29*(3), 461-491.

Lee, E. S. (1966). A theory of migration. *Demography*, *3*(1), 47-57.

Leonardi, P. M., Huysman, M., & Steinfield, C. (2013). Enterprise social media: Definition, history, and prospects for the study of social technologies in organizations. *Journal of Computer-Mediated Communication*, *19*(1), 1-19.

Loose, M., Weeger, A., & Gewald, H. (2013). *BYOD–The Next Big Thing in Recruiting? Examining the Determinants of BYOD Service Adoption Behavior from the Perspective of Future Employees.* Paper presented at the Americas Conference on Information Systems, Chicago, IL.

Louis, M. R., & Sutton, R. I. (1991). Switching cognitive gears: From habits of mind to active thinking. *Human Relations, 44*(1), 55-76.

Ma, X., Kim, S. H., & Kim, S. S. (2014). Online gambling behavior: The impacts of cumulative outcomes, recent outcomes, and prior use. *Information Systems Research*, *25*(3), 511-527.

MacCallum, R. C., & Browne, M. W. (1993). The use of causal indicators in covariance structure models: some practical issues. *Psychological Bulletin, 114*(3), 533-541.

Mackiewicz, J., & Yeats, D. (2014). Product review users' perceptions of review quality: The role of credibility, informativeness, and readability. *IEEE Transactions on Professional Communication, 57*(4), 309-324.

Marakas, G., Johnson, R., & Clay, P. F. (2007). The evolving nature of the computer self-efficacy construct: An empirical investigation of measurement construction, validity, reliability and stability over time. *Journal of the Association for Information Systems, 8*(1), 16-46.

Merriam-Webster. (n.d.). Domain [Def. 4]. In *Merriam-Webster.com dictionary*. Retrieved 2020, from https://www.merriam-webster.com/dictionary/domain.

Moore, G. C., & Benbasat, I. (1991). Development of an instrument to measure the perceptions of adopting an information technology innovation. *Information Systems Research*, *2*(3), 192-222.

Morris, M. G., & Venkatesh, V. (2000). Age differences in technology adoption decisions: Implications for a changing work force. *Personnel Psychology, 53*(2), 375-403.

Nevo, S., Nevo, D., & Carmel, E. (2011). Unlocking the business potential of virtual worlds. *MIT Sloan Management Review*, *52*(3), 14-17.

Nevo, S., Nevo, D., & Kim, H. (2012). From recreational applications to workplace technologies: An empirical study of cross-context IS continuance in the case of virtual worlds. *Journal of Information Technology*, *27*(1), 74-86.

Niehaves, B., Köffer, S., & Ortbach, K. (2012). IT consumerization: A theory and practice review. *Proceedings of the Americas Conference on Information Systems*.

Olmstead, K., Lampe, C., & Ellison, N. B. (2016). *Social media and the workplace*. Pew Research Center. http://www.pewinternet.org/2016/06/22/social-media-and-the-workplace/

Ortbach, K., Köffer, S., Bode, M., & Niehaves, B. (2013). Individualization of information systems-analyzing antecedents of IT consumerization behavior. *Proceedings of the International Conference on Information Systems*

Peng, J. Z., Sun, Y., & Guo, X. (2014). Antecedents of employees' extended use of enterprise systems: A proactive behavior perspective. *Proceedings of the Pacific Asia Conference on Information Systems*.

Polites, G. L., & Karahanna, E. (2012). Shackled to the status quo: The inhibiting effects of incumbent system habit, switching costs, and inertia on new system acceptance. *MIS Quarterly*, *36*(1), 21-42.

Prior, M. (2012). Who watches presidential debates? Measurement problems in campaign effects research. *Public Opinion Quarterly*, *76*(2), 350-363.

Roca, J. C., Chiu, C.-M., & Martínez, F. J. (2006). Understanding e-learning continuance intention: An extension of the Technology Acceptance Model. *International Journal of Human-Computer Studies*, *64*(8), 683-696.

Rogers, E. M. (2003). *Diffusion of innovations* (5th ed.). Free Press.

Schalow, P. R., Winkler, T. J., Repschlaeger, J., & Zarnekow, R. (2013). The blurring boundaries of work-related and personal media use: A grounded theory study on the employee's perspective. *Proceedings of the European Conference on Information Systems*.

Scheepers, R., & Middleton, C. A. (2013). Personal ICT ensembles and ubiquitous information systems environments: Key issues and research implications. *Communications of the Association for Information Systems*, *33*, Article 22.

Schepers, J., & Wetzels, M. (2007). A meta-analysis of the technology acceptance model: Investigating subjective norm and moderation effects. *Information & Management, 44*(1), 90-103.

Schmitz, K., Teng, J. T., & Webb, K. (2016). Capturing the complexity of malleable IT use: Adaptive structuration theory for individuals. *MIS Quarterly*, 40(3), 663-686.

Segars, A. H. (1997). Assessing the unidimensionality of measurement: A paradigm and illustration within the context of information systems research. *Omega*, *25*(1), 107-121.

Shih, Y.-Y. (2006). The effect of computer self-efficacy on enterprise resource planning usage. *Behaviour & Information Technology*, *25*(5), 407-411.

Shim, J. P., Mittleman, D., Welke, R., French, A. M., & Guo, J. C. (2013). *Bring your own device (BYOD): Current status, issues, and future directions*. Panel discussion at the Americas Conference for Information Systems, Chicago, IL.

Skeels, M. M., & Grudin, J. (2009). When social networks cross boundaries: A case study of workplace use of Facebook and LinkedIn. *Proceedings of the ACM International Conference on Supporting Group Work.*

Sørensen, B. M., & Spoelstra, S. (2011). Play at work: continuation, intervention and usurpation. *Organization*, *19*(1), 81-97.

Stimson, R. J., & Minnery, J. (1998). Why people move to the "sun-belt": A case study of long-distance migration to the Gold Coast, Australia. *Urban Studies*, *35*(2), 193-214.

Strader, T. J., Ramaswami, S. N., & Houle, P. A. (2007). Perceived network externalities and communication technology acceptance. *European Journal of Information Systems*, *16*(1), 54-65.

Sun, H. (2012). Understanding user revisions when using information system features: Adaptive system use and triggers. *MIS Quarterly*, *36*(2), 453-478.

Sun, H., Wright, R. T., & Thatcher, J. (2019). Revisiting the impact of system use on task performance: An exploitative-explorative system use framework. *Journal of the Association for Information Systems*, 20(4), 398-433.

Tabachnick, B. G., & Fidell, L. S. (2006). *Using multivariate statistics*. Pearson Education.

Tarafdar, M., Cooper, C. L., & Stich, J. F. (2019). The technostress trifecta-techno eustress, techno distress and design: Theoretical directions and an agenda for research. *Information Systems Journal*, *29*(1), 6-42.

Taylor, S., & Todd, P. A. (1995). Understanding information technology usage: A test of competing models. *Information Systems Research*, *6*(2), 144-176.

Thatcher, J. B., & Perrewe, P. L. (2002). An empirical examination of individual traits as antecedents to computer anxiety and computer self-efficacy. *MIS Quarterly*, *26*(4), 381-396.

Thatcher, J. B., Zimmer, J. C., Gundlach, M. J., & McKnight, D. H. (2008). Internal and external dimensions of computer self-efficacy: An empirical examination. *Engineering Management, IEEE Transactions on*, *55*(4), 628-644.

Thomson, G. (2012). BYOD: Enabling the chaos. *Network Security*, *2*, 5-8.

Treem, J. W., & Leonardi, P. M. (2013). Social media use in organizations: Exploring the affordances of visibility, editability, persistence, and association. *Annals of the International Communication Association*, *36*(1), 143-189.

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, *27*(3), 425-478.

Venkatesh, V., Thong, J., & Xu, X. (2012). Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology. *MIS Quarterly*, *36*(1), 157-178.

Wand, Y., & Weber, R. (1995). On the deep structure of information systems. *Information Systems Journal*, 5(3), 203-223.

Wang, G., & Nandhakumar, J. (2016). Affordance-based conceptualization of adaptive use of enterprise systems. *Proceedings of the European Conference on Information Systems.*

Webster, J. G., & Ksiazek, T. B. (2012). The dynamics of audience fragmentation: Public attention in an age of digital media. *Journal of Communication*, *62*(1), 39-56.

Wild, T. C., Kuiken, D., & Schopflocher, D. (1995). The role of absorption in experiential involvement. *Journal of Personality and Social Psychology*, *69*(3), 569.

Williams, L. J., & Anderson, S. E. (1994). An alternative approach to method effects by using latent-variable models: Applications in organizational behavior research. *Journal of Applied Psychology*, *79*(3), 323-331.

Wixom, B. H., & Todd, P. A. (2005). A theoretical integration of user satisfaction and technology acceptance. *Information Systems Research*, *16*(1), 85-102.

Appendix A: Survey Measures

Except where noted, items were anchored with a 7-point Likert Scale (*Strongly Disagree … Strongly Agree*)

Bottom of Form

Filtering Questions (Yes/No scale)

- FILT1: Do you use Facebook Messenger and/or Facebook Chat?
- FILT2: Do you currently use Facebook Messenger and/or Facebook Chat for work-related communications?

Satisfaction (Roca, Chiu, & Martínez, 2006; Wixom & Todd, 2005)
The following questions ask you about your prior use of Facebook Messenger:

- SAT1: All things considered, I am satisfied with my prior use of Facebook Messenger.
- SAT2: My interaction with Facebook Messenger has been satisfying.
- SAT3: I have been pleased with the experience of using Facebook Messenger.
- SAT4: I am satisfied with the performance of Facebook Messenger.

Cross-Context Representational Fidelity (Self-developed; see Appendix B for details)
The following questions ask you to compare your prior Facebook Messenger communications with the communications you currently send/receive for work purposes (using any form of technology, e.g. email, instant messaging, Skype, etc.):

- CCRF1: The style of my Facebook Messenger communications is consistent with the style of my work-related communications.
- CCRF2: The messages I send using Facebook Messenger correspond closely with my work-related communications.
- CCRF3: My Facebook Messenger communications accurately reflect my work-related communications.
- CCRF4: The manner in which I communicate using Facebook Messenger closely matches the manner in which I communicate professionally.
- CCRF5: My prior Facebook Messenger communications provide a sufficiently clear picture of my work-related communications.
- CCRF6: My Facebook Messenger communications resemble the communications I want to send professionally.

Domain Congruence (Self-developed)

- Approximately how many individuals do you communicate with using Facebook Messenger?
- DOM1: What percentage of these individuals do you currently communicate with for work purposes (using any form of technology, e.g. email, instant messaging, video-conferencing, etc.)? *(numerical 0-100 measure)*
- Approximately how many individuals do you communicate with for work purposes (using any form of technology, e.g. email, instant messaging, video-conferencing, etc.)?
- DOM2: What percentage of these individuals do you currently communicate with using Facebook Messenger? *(numerical 0-100 measure)*

Work Device Computer Self-Efficacy (Thatcher et al., 2008)
The following questions ask whether you believe you have the necessary skill to use Facebook Messenger on the "work device(s)" you selected [earlier].
Consider the following scenarios, and note whether you believe you have the necessary skill to send a message using Facebook Messenger on your work device(s) under each condition.
I could send a message using Facebook Messenger on my work device(s)…

- CSE1: …if there was no one around to tell me what to do. (I)
- CSE2: …if I had never used a technology like it before. (I)
- CSE3: …if I had only the online help for reference. (I)
- CSE4: …if I was allowed to call someone for help if I got stuck. (E)
- CSE5: …if someone was available to help me get started. (E)
- CSE6: …if someone was available to show me how to do it first. (E)

Perceived Usefulness (Davis, Bagozzi, & Warshaw, 1989; Strader, Ramaswami, & Houle, 2007)
The following questions ask whether you believe that Facebook Messenger could be useful for work-related communications.

- PU1. Using Facebook Messenger would enable me to send work-related communications.
- PU2. I would be able to effectively communicate professionally if I used Facebook Messenger.
- PU3. I believe that Facebook Messenger would be useful in communicating for work purposes.
- PU4. Facebook Messenger would be a productive tool for my work-related communications.

Intention to Repurpose Technology (Venkatesh et al., 2003; Wixom & Todd, 2005)

- INT1: I intend to utilize Facebook Messenger for work-related communications whenever I can.
- INT2: In the future, I intend to send work-related communications using Facebook Messenger.
- INT3: I plan to increase my use of Facebook Messenger for professional communications.
- INT4: In the future, I plan to use Facebook Messenger as a part of my work-related communications.

Subjective Norm (Venkatesh et al., 2012)

- SUB1: People who are important to me think that I should use Facebook Messenger for work-related communications.
- SUB2: People who influence my behavior think that I should use Facebook Messenger for work communications.
- SUB3: People whose opinions that I value prefer that I use Facebook Messenger for work-related communications.

CONTROL VARIABLES

Perceived Behavioral Control (Taylor & Todd, 1995)

- PBC1: I am permitted to use Facebook Messenger for work-related communications.
- PBC2*: I have the resources to use Facebook Messenger for work-related communications.
- PBC3: Using Facebook Messenger for work-related communications is entirely within my control.

Personal Innovativeness in Information Technology (PIIT) (Agarwal & Prasad, 1998)

- PIIT1: If I heard about a new information technology, I would look for ways to experiment with it.
- PIIT2: I am usually among the first to try out new information technologies.
- PIIT3: I like to experiment with new information technologies.

* - Dropped because of poor loading in SPSS Amos CFA

Appendix B: Instrument Development—Cross-Context Representational Fidelity (CCRF)

Where appropriate, the process of instrument development followed the general methods of Moore and Benbasat (1991), Churchill (1979), and Segars (1997).

Step 1: Item Creation

As CCRF is a relatively new construct in information systems research, a literature review of existing studies offered no validated survey items for the construct. Following the general procedure of Churchill (1979), a literature review across multiple fields was conducted to identify definitions that could inform the generation of survey items. While few studies in information systems journals have discussed representational fidelity, the construct has been extensively discussed in studies investigating virtual technologies. These studies are applicable to our conceptualization of CCRF, as they compare the outcome of technology use to some aspect of reality. As Burton-Jones and Grange (2012) define representational fidelity as "the extent to which a user is obtaining representations from the system that faithfully reflect the domain being represented (p.642)," the applicability of studies originating from the field of virtual technologies was deemed appropriate.

Though no current items exist for survey measurement of representational fidelity, a number of papers have offered definitions of the construct which were helpful in the development of items for CCRF. Our literature review identified several similar definitions of representational fidelity, from which we derived a potential pool of items. Most studies described representational fidelity as a comparison between the results of technology use and some desired end-state. The manner in which other papers described this comparison (i.e., the wording used to express the concept of "fidelity") aided our development of survey items. These items were added to those derived from the few existing studies on representational fidelity contained within the broader domain of information systems research (e.g. Burton-Jones & Grange, 2013; Wand & Weber, 1995). Special care was taken to ensure that the items were appropriate for our utilization of the construct in the context of technology repurposing. All told, eight items were initially created from the literature review of the domain of representational fidelity.

Step 2: Pretest Interviews

Once the initial pool of items was developed, the measure of CCRF was added to the remainder of the survey for pretesting. During the pretest, potential survey respondents were given the survey items and asked to evaluate the clarity of each measure. The pretest consisted of full-time employees (n=7) across a variety of different industries. These individuals had differing levels of experience and satisfaction with Facebook Messenger. Each individual was told to read through the survey items and identify any that were unclear or difficult to understand. Following the pretest interviews, the survey was edited to alter those items which were deemed unclear. CCRF5 was amended to include a reference to clarity, which would have been absent with the removal of CCRF6. Two items were removed because of their conceptual ambiguity. Six items remained for further examination.

Step 3: Q-Sort

In order to assess the convergent and discriminant validity of our measure for CCRF, we conducted a Q-sort analysis. Q-sorting is an effective means of validating a scale and identifying troublesome items (Moore & Benbasat, 1991). Following the recommendations of Moore and Benbasat (1991), two rounds of Q-sorting were performed using the surveying website Qualtrics. In the first round, judges were provided a set of survey items and asked to categorize the items according to their perception of similarity. The judges were able to create their own groupings and were given the freedom to group the items according to their own liking. The wording of one item was adjusted following the first round because of excessive misplacement. In the second round, the judges were provided the survey items as well as a definition of each of the constructs. The judges were permitted to view the construct definitions while placing each survey item into the grouping that most closely matched the corresponding definition. Excluding one outlier in each round, five judges were used for the first round and four judges were used for the second round. To ensure the highest level of validity, each judge performed the sorting exercise independently and none of the judges were included in both rounds of sorting.

The validity of a Q-sort is determined using a variety of metrics. Item placement ratio measures the degree to which the judges accurately group each item according to the intended construct (Moore & Benbasat, 1991). Average raw agreement measures the average percentage of items that are grouped similarly between pairs of judges. A raw agreement score was calculated for each pair of judges, and the scores were averaged to compute the value. Finally, Cohen's kappa (Cohen, 1960) measures the agreement between judges by comparing the level of agreement against the expected level of agreement based on chance. Any value above 0.65 is deemed acceptable for the Cohen's kappa of a sorting round (Jarvenpaa, 1989; Sun, 2012). Table B1 details the results of these analyses.

Table B1. Measurement Indices for Q-Sorting

	Round	
	1	2
Item placement ratio	0.85	0.87
Average raw agreement	0.74	0.78
Cohen's kappa	0.67	0.70

As a result of the two rounds of sorting one item was dropped, as the measurement indices were all higher with the item excluded (see Table B2 for a detailed breakdown of the items). Five items remained after the multiround q-sort.

Step 4: Pilot Test 1

The next step in validating the measure of CCRF was to pilot test the survey instrument. Two pilot tests were conducted to ensure the highest quality of the instrument. The sample used in the first pilot study consisted of sixty-three usable responses from full-time business students at a medium-sized university in the western United States. The students were offered extra course credit for their participation with an alternative assignment made available for the same credit if they declined to participate.

The results of the first pilot indicated opportunities to improve some of the items, and thus the entire measure. One of the five items (CCRF5) displayed statistical evidence suggesting exclusion; however, this item alone made reference to clarity, which was drawn from the discussion of representational fidelity offered by Burton-Jones and Grange (2013). Therefore, rather than remove the item, we adjusted its wording to include the word "sufficiently." Additionally, to ensure full coverage of the construct, we revived CCRF6, amending its wording to remove references to "receiving" messages, but maintaining the notion of "resembling" from before.

Step 5: Pilot Test 2

For the final step in the process, we used the revised version of the instrument to perform a second pilot test. This pilot test assessed both convergent and discriminant validity. Seventy-four usable responses from students at two different universities were used to aid in these assessments.

Table B2. Pilot Test 2: Item Statistics

Item #	Item	Skewness	Kurtosis	Factor loading	CA*
RF1	The style of my Facebook Messenger communications is consistent with the style of my work-related communications.	0.11	-1.15	0.72	0.91
RF2	The messages I send using Facebook Messenger correspond closely with my work-related communications.	0.37	-1.04	0.74	
RF3	My prior Facebook Messenger communications provide a sufficiently clear picture of my work-related communications.	0.83	0.08	0.82	
RF4	My Facebook Messenger communications accurately reflect my work-related communications.	0.35	-0.80	0.84	
RF5	The manner in which I communicate using Facebook Messenger closely matches the manner in which I communicate professionally.	0.68	-0.37	0.78	
RF6	My Facebook Messenger communications resemble the communications I want to send professionally.	0.74	-0.35	0.81	
Note: All item-factor correlations significant at $p < .05$; * - Cronbach's alpha					

Unidimensionality

While Cronbach's alpha indicated a strong internal consistency among our six items (Table B2), we further tested for unidimensionality to ensure there were no additional underlying factors. To assess unidimensionality, we conducted a confirmatory factor analysis (CFA) using IBM SPSS Amos. The results of this analysis indicated that all six items loaded well (factor loading > .707) on one factor (Tabachnick & Fidell, 2006). To supplement this determination, we investigated the measure's Eigenvalues. Hambleton and Rovinelli (1986) suggest that unidimensionality can be assessed by calculating the ratio of the first and second factor Eigenvalues. They offer a cutoff value of 3. Our value of 6.17 was well above this threshold.

Another means of investigating unidimensionality is to inspect a Scree plot (Williams & Anderson, 1994). This graph gives a visual indication of the measure's factor structure. Departures from the horizontal bottom line help indicate the number of factors within the set of variables. A visual inspection of the Scree plot provided further evidence of the unidimensionality of the measure (Segars, 1997).

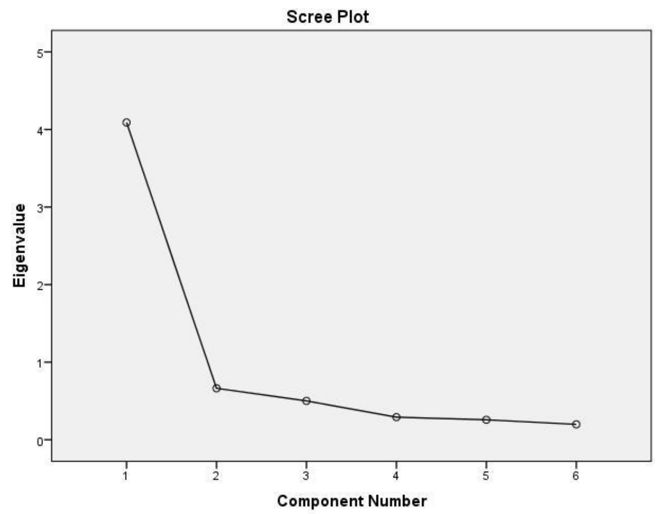


Figure B1. Scree Plot

Discriminant Validity

Finally, we tested for discriminant validity, to ensure that the measure of CCRF was sufficiently distinct from measures of similar concepts (Segars, 1997). Discriminant validity can be assessed through structural equation modeling, whereby the construct of interest is placed in a model with other, similar constructs. In our case, we evaluated CCRF alongside intention to repurpose, perceived behavioral control, and perceived usefulness. The aim was to test whether more variance can be explained through the reflective items for each construct than through the correlation between constructs. To evaluate discriminant validity, we calculated the average variance extracted (AVE) for each construct, as well as all inter-construct correlations. Discriminant validity can be recognized when the square root of each construct's AVE is greater than the correlations with other constructs (Fornell & Larcker, 1981). Table B3 presents the results of this analysis. In each instance, the square root of the AVE was greater than the correlation with the other construct. Additionally, the AVE for CCRF was 0.51, which exceeded the recommended cutoff value of 0.50 (Fornell & Larcker, 1981).

Table B3. Discriminant Validity Analysis*

	AVE	CCRF	INT	PBC	USE
Cross-context representational fidelity (CCRF)	0.51	0.72			
Intention to repurpose (INT)	0.82	0.41	0.91		
Perceived behavioral control (PBC)	0.75	0.19	0.11	0.87	
Perceived usefulness (USE)	0.70	0.43	0.71	0.20	0.83
Note: Square root of AVEs given in cross-diagonal cells					

The results of the second pilot test were favorable. The six-item measure noted a Cronbach's alpha value of 0.91, with no evidence of multidimensionality. Furthermore, when placed in a survey with other constructs, the measure displayed ample discriminant validity, with no exceptional overlapping. Given the positive results of the second pilot sample, it was determined that the measure was ready for use in our full study.

Summary

The measure of CCRF was created following recommended procedures. Items were generated through a thorough literature review and suggestions from Burton-Jones and Grange (2013). These items were refined through a series of pretest interviews, where suggestions were made as to their wording and selection. Following the pretest interviews, a multi-round card sorting exercise was completed, helping to establish the convergent and discriminant validity of the items while also identifying potential issues regarding troubling wording selection. The remaining items were subjected to two pilot tests, where statistical analyses aided the identification of a set of six items that appropriately measure the construct of CCRF. These items, along with the items dropped during the construct development process, are presented in Table B4.

Table B4. Summary of Instrument Development Process

Item	Pretest	Q-sort	Pilot 1	Pilot 2
The style of my Facebook Messenger communications is consistent with the style of my professional communications.	Adjusted	Retained	Retained	Retained (CCRF1)
The communications I send using Facebook Messenger correspond closely with my work-related communications.	Adjusted	Retained	Retained	Retained (CCRF2)
I receive the same types of messages using Facebook Messenger as those I receive professionally.	Dropped	X	X	X
There is no difference between the communication tasks I perform at work and the communication tasks I perform using Facebook Messenger.	Retained	Dropped	X	X
My Facebook Messenger communications accurately reflect my work-related communications.	Retained	Retained	Retained	Retained (CCRF3)
The manner in which I communicate using Facebook Messenger closely matches the manner in which I communicate professionally.	Retained	Retained	Retained	Retained (CCRF4)
My communications experience when using Facebook Messenger is identical to my communications experience at work.	Adjusted	Retained	Adjusted	Retained (CCRF5)
The messages I receive when using Facebook Messenger clearly resemble the messages I receive when communicating professionally.	Dropped	X	Adjusted	Retained (CCRF6)

Table B5. Final Instrument for Cross-Context Representational Fidelity

Item #	Item
CCRF1	The style of my Facebook Messenger communications is consistent with the style of my work-related communications.
CCRF2	The messages I send using Facebook Messenger correspond closely with my work-related communications.
CCRF3	My Facebook Messenger communications accurately reflect my work-related communications.
CCRF4	The manner in which I communicate using Facebook Messenger closely matches the manner in which I communicate professionally.
CCRF5	My prior Facebook Messenger communications provide a sufficiently clear picture of my work-related communications.
CCRF6	My Facebook Messenger communications resemble the communications I want to send professionally.

Appendix C: Full Survey Data Analysis Support Documentation

Table C1. Correlations Among PLS Components and AVEs

		C.A.	AVE	1	2	3	4	5	6	7	8	9	10	11	12
1	**Age**	1	1	**1**											
2	**Gender**	1	1	-0.08	**1**										
3	**CSE: External**	0.94	0.90	-0.08	-0.10	**0.95**									
4	**CSE: Internal**	0.84	0.76	-0.06	-0.04	0.65	**0.87**								
5	**Domain cong.**	n/a		0.04	-0.04	0.00	-0.11								
6	**Int. to repurpose**	0.98	0.94	-0.03	-0.07	0.11	0.04	0.48	**0.97**						
7	**PBC**	0.91	0.91	-0.01	-0.13	0.17	0.10	0.39	0.59	**0.96**					
8	**PIIT**	0.88	0.80	-0.10	-0.15	0.00	0.06	0.08	0.25	0.17	**0.90**				
9	**CCRF**	0.95	0.81	0.03	-0.10	0.01	-0.08	0.47	0.65	0.41	0.17	**0.90**			
10	**Satisfaction**	0.95	0.88	0.14	0.01	0.06	0.10	0.12	0.23	0.10	0.12	0.25	**0.94**		
11	**Social norm**	0.97	0.95	0.04	-0.06	0.10	0.01	0.51	0.75	0.58	0.15	0.60	0.15	**0.97**	
12	**Usefulness**	0.95	0.88	-0.03	-0.16	0.24	0.23	0.29	0.66	0.41	0.20	0.43	0.29	0.49	**0.94**

Note: Square root of AVEs bolded and underlined; CA = Cronbach's alpha; off-diagonal elements represent correlations among constructs; significant correlations at $p < 0.05$ indicated by grey shading

Table C2. Hetero-Trait Mono-Trait (HTMT) Analysis

		1	2	3	4	5	6	7	8	9	10
1	**Age**										
2	**Gender**	0.08									
3	**CSE: External**	0.08	0.10								
4	**CSE: Internal**	0.10	0.05	0.72							
5	**Int. to repurpose**	0.03	0.07	0.11	0.04						
6	**PBC**	0.01	0.13	0.18	0.11	0.62					
7	**PIIT**	0.10	0.16	0.02	0.11	0.27	0.20				
8	**CCRF**	0.03	0.10	0.03	0.09	0.67	0.44	0.18			
9	**Satisfaction**	0.14	0.02	0.06	0.12	0.24	0.11	0.13	0.26		
10	**Social norm**	0.04	0.06	0.10	0.04	0.77	0.62	0.17	0.62	0.16	
11	**Usefulness**	0.03	0.16	0.25	0.26	0.68	0.44	0.21	0.44	0.30	0.51

Note: Henseler et al. (2015) recommend a conservative cutoff value of 0.85 for assessing discriminant validity; domain congruence was not assessed because of its formative specification

Table C3. PLS Construct Loadings and Cross-Loadings

	AGE	CCRF	CSE	CSE_INT	CSE_EXT	DOM	GENDER	INT	PBC	PIIT	SAT	SOC	USE
AGE	1	0.03	-0.09	-0.06	-0.08	0.04	-0.08	-0.03	-0.01	-0.10	0.14	0.04	-0.03
CCRF1	0.04	0.86	0.00	-0.03	0.03	0.39	-0.06	0.54	0.38	0.17	0.26	0.52	0.37
CCRF2	0.04	0.91	-0.02	-0.07	0.02	0.42	-0.07	0.59	0.38	0.15	0.20	0.55	0.35
CCRF3	0.00	0.93	-0.03	-0.07	0.01	0.42	-0.11	0.61	0.36	0.14	0.18	0.56	0.39
CCRF4	0.07	0.88	-0.01	-0.07	0.04	0.39	-0.07	0.52	0.34	0.12	0.28	0.49	0.37
CCRF5	0.00	0.94	-0.06	-0.10	-0.01	0.47	-0.09	0.63	0.35	0.22	0.20	0.58	0.40
CCRF6	0.02	0.89	-0.04	-0.07	-0.01	0.42	-0.13	0.61	0.40	0.13	0.23	0.54	0.42
CSE1	-0.11	-0.08	0.75	0.88	0.53	-0.12	-0.05	0.01	0.09	0.06	0.06	0.02	0.19
CSE2	-0.10	-0.08	0.70	0.85	0.45	-0.09	-0.02	0.06	0.09	0.14	0.12	-0.03	0.22
CSE3	0.03	-0.05	0.84	0.87	0.70	-0.07	-0.04	0.02	0.07	-0.03	0.09	0.04	0.18
CSE4	-0.09	0.03	0.89	0.65	0.93	0.01	-0.08	0.13	0.16	-0.01	0.06	0.09	0.24
CSE5	-0.09	0.01	0.89	0.61	0.97	0.02	-0.11	0.10	0.15	0.00	0.07	0.11	0.23
CSE6	-0.05	-0.01	0.86	0.58	0.94	-0.02	-0.09	0.08	0.16	0.00	0.04	0.08	0.20
DOM1	0.03	0.38	-0.04	-0.07	0.00	0.82	-0.02	0.43	0.31	0.11	0.12	0.43	0.28
DOM2	0.04	0.46	-0.05	-0.11	0.00	0.99	-0.04	0.47	0.39	0.06	0.11	0.50	0.27
GENDER	-0.08	-0.10	-0.08	-0.04	-0.10	-0.04	1	-0.07	-0.13	-0.15	0.01	-0.06	-0.16
INT1	0.00	0.61	0.09	0.05	0.10	0.46	-0.08	0.96	0.57	0.25	0.21	0.74	0.65

INT2	-0.02	0.63	0.08	0.04	0.10	0.46	-0.08	0.97	0.58	0.26	0.24	0.72	0.64
INT3	-0.04	0.63	0.08	0.02	0.11	0.47	-0.05	0.97	0.56	0.24	0.22	0.74	0.63
INT4	-0.05	0.63	0.09	0.03	0.12	0.47	-0.05	0.97	0.55	0.23	0.24	0.71	0.63
PBC1	0.00	0.42	0.12	0.08	0.13	0.41	-0.14	0.58	0.96	0.16	0.07	0.58	0.43
PBC3	-0.02	0.36	0.17	0.11	0.19	0.33	-0.11	0.53	0.95	0.17	0.12	0.53	0.35
PIIT1	-0.07	0.12	0.07	0.10	0.03	0.05	-0.12	0.19	0.16	0.85	0.11	0.12	0.18
PIIT2	-0.12	0.15	-0.01	0.01	-0.03	0.06	-0.12	0.23	0.15	0.91	0.06	0.15	0.13
PIIT3	-0.08	0.18	0.03	0.06	-0.01	0.09	-0.15	0.25	0.15	0.92	0.15	0.13	0.22
SAT1	0.08	0.17	0.11	0.14	0.07	0.06	0.05	0.17	0.10	0.11	0.89	0.12	0.24
SAT2	0.12	0.26	0.08	0.08	0.07	0.13	0.00	0.24	0.10	0.11	0.96	0.16	0.28
SAT3	0.16	0.25	0.08	0.10	0.05	0.12	0.00	0.23	0.09	0.12	0.96	0.14	0.30
SAT4	0.15	0.25	0.05	0.07	0.03	0.12	0.00	0.23	0.08	0.12	0.94	0.14	0.27
SOC1	0.04	0.58	0.08	0.03	0.10	0.45	-0.05	0.73	0.58	0.15	0.14	0.97	0.48
SOC2	0.02	0.59	0.06	0.00	0.09	0.50	-0.05	0.73	0.55	0.15	0.16	0.98	0.47
SOC3	0.04	0.58	0.06	0.00	0.10	0.51	-0.07	0.74	0.57	0.15	0.14	0.98	0.48
USE1	-0.05	0.32	0.31	0.30	0.27	0.22	-0.14	0.56	0.41	0.17	0.23	0.40	0.92
USE2	-0.06	0.40	0.30	0.28	0.27	0.23	-0.16	0.57	0.39	0.15	0.26	0.42	0.93
USE3	-0.01	0.45	0.19	0.15	0.19	0.32	-0.14	0.68	0.39	0.20	0.29	0.52	0.95
USE4	0.00	0.42	0.17	0.12	0.17	0.30	-0.14	0.65	0.35	0.21	0.31	0.49	0.94

Table C4. Construct Descriptive Statistics

	Mean	SD
CCRF1	3.54	1.72
CCRF2	3.12	1.76
CCRF3	3.17	1.74
CCRF4	3.53	1.77
CCRF5	3.28	1.77
CCRF6	3.44	1.82
CSE1	5.20	1.77
CSE2	5.21	1.62
CSE3	5.01	1.77
CSE4	5.04	1.68
CSE5	4.86	1.80
CSE6	4.83	1.85
DOM1	9.71	19.47
DOM2	8.86	18.07
INT1	3.14	1.86
INT2	3.21	1.86
INT3	3.19	1.85
INT4	3.19	1.84
PBC1	3.32	1.99
PBC3	3.55	2.08
PIIT1	5.10	1.35
PIIT2	4.44	1.67
PIIT3	5.00	1.35
SAT1	5.61	1.16
SAT2	5.61	1.15
SAT3	5.56	1.16
SAT4	5.58	1.18
SOC1	2.99	1.72
SOC2	2.98	1.72
SOC3	3.04	1.77
USE1	4.44	1.78
USE2	4.47	1.89
USE3	4.25	1.89
USE4	4.14	1.88

Note: These values represent construct means and standard deviations prior to common method variance removal. After removal, all constructs had a mean of 0 and a standard deviation of approximately 1.

About the Authors

James (Jim) Burleson is an assistant professor of information systems at Cal Poly's Orfalea College of Business. He received his PhD from Clemson University in 2016. His work appears in *Communications of the Association for Information Systems*, *Information & Management*, and is forthcoming in *The Data Base for Advances in Information Systems*. Dr. Burleson's research focuses on the human component of technology adoption and use, the impact of technology on the changing nature of work, and the methodologies used by social scientists to study technology in today's world.

Varun Grover is the George & Boyce Billingsley Endowed Chair and Distinguished Professor of IS at the Walton School of Business, University of Arkansas. He has published extensively in the information systems field, with over 300 refereed journal publications and ten recent articles, ranking him among the top four researchers globally. Dr. Grover has an h-index of 96 which is ranked in the top 5 in the field, and over 44,000 citations in Google Scholar. Thompson Reuters recognized him as one of 100 Highly Cited Scholars globally in all Business disciplines. He is senior editor for *MISQ Executive*, editor of the *Journal of the Association for Information Systems* Section on Path Breaking Research, and has served as senior editor for *MIS Quarterly* (2 terms), the *Journal of the Association for Information Systems* (2 terms), and *The Data Base for Advances in Information Systems*. Dr. Grover's current work focuses on the impacts of digitalization on individuals and organizations. He is the recipient of numerous awards from USC, Clemson, University of Arkansas, AIS, Academy of Management, DSI, the OR Society, Anbar, PriceWaterhouse, among others for his research and teaching. He is an AIS Fellow and AIS LEO recipient for lifetime achievement.

Jason Thatcher holds the Milton F. Stauffer Professorship in the Department of Management Information Systems at Temple University's Fox School of Business and Management. Dr. Thatcher studies strategic, human resources, and cybersecurity issues related to the effective application of information technologies in organizations. His work appears in *Journal of the Association for Information Systems, MIS Quarterly, Information Systems Research, Journal of Applied Psychology* and other refereed outlets. He is presently a senior editor at the *Journal of the Association for Information Systems* and *Information Systems Research*. He has served as senior editor at *MIS Quarterly*. In his free time, Dr. Thatcher works on updating his Victorian-era home, reading science fiction (not fantasy), and mastering the art of searing a good steak.

Heshan Sun is a professor of management information systems at the University of Oklahoma's Price College of Business. He has broad research interests around how information systems profoundly influence and interact with individuals, organizations, and society. His research has been published (or will appear) in journals such as the *MIS Quarterly, Information Systems Research*, *Journal of the Association for Information Systems*, among others. He is currently a senior editor of the *AIS Transactions on Human-Computer Interaction*. He has served two terms as an associate editor for *MIS Quarterly*. For more information, visit his website at https://www.ou.edu/price/mis/people/heshan-sun.