IMPACTS OF IT ACCEPTANCE AND RESISTANCE BEHAVIORS: A NOVEL FRAMEWORK

Completed Research Paper

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Abstract

Despite the progress that has been made in understanding acceptance and resistance, there remains a need to further clarify into what behaviors they translate and what their impacts are. On the basis of our review, acceptance and resistance are associated with a range of behaviors, which in turn are related to various individual and organizational impacts. We suggest that taking these behaviors at face value is misleading and that a better understanding of their impacts lies in taking organizational intent into account. We develop propositions to provide a theoretical explanation of the impacts of IT-related behaviors associated with acceptance and resistance in light of their conformity with IT terms of use. Generally, acceptance and conformity with terms of use result in positive impacts but may occasionally have adverse consequences. Similarly, resistance and non-conformity typically have negative consequences but may sometimes benefit the organization.

Keywords: Technology Use, User Behavior, Acceptance, Resistance, IT Impacts, Terms of Use, Organizational Intent
Introduction

Clear advances have been made in understanding IT acceptance and resistance behaviors. Over time, numerous theoretical models have been proposed and used to study acceptance of IT (e.g., TAM, Davis, 1989; TPB, Taylor and Todd, 1995; IDT, Moore and Benbasat, 1991; SCT, Compeau and Higgins, 1995; UTAUT, Venkatesh et al. 2003; CMUA, Beaudry and Pinsonneault, 2005; and ISURA, Barki et al. 2007). The literature also shows increasing interest in resistance to IT. The theoretical models used in this stream of research focus on interaction (Markus 1983), passive resistance and misuse (Marakas and Hornik 1996), the multilevel nature of resistance (Lapointe and Rivard 2005), workarounds (Ferneley and Sobreperdez 2006), status quo bias (Kim and Kankanhalli 2009), avoidance (Kane and Labianca 2011), or cynicism (Selander and Henfridsson 2012).

Acceptance and resistance have been associated with various behavioral manifestations such as use, appropriation, misuse, and non-use. Typically, acceptance and resistance behavioral manifestations have been studied in independent ways. Theoretical explanations that can help reconcile the disparate research streams associated with these two core IS constructs are thus needed (van Offenbeek et al. 2012). In this perspective, one of the main premises of this paper is that acceptance does not always imply effective use and resistance does not necessarily imply non-use. Neither resistance nor acceptance can be considered good or bad per se. We suggest that acceptance and resistance are associated with a complex mix of behaviors, which in turn relate to various individual and organizational impacts. On the basis of a review of the literature on user acceptance and resistance and their associated behaviors and impacts, we propose a framework that maps this literature and provides a new lens for examining their associated behavioral manifestations and impacts. Our literature review revealed that study results on impacts of IT-related behaviors are mixed. For example, enhanced use of IT has been found to leverage the fit between IT features and task requirements (e.g. Davidson and Chismar, 2007; Jasperson et al., 2005) but also to create misalignments and problems with related business processes (Kang and Santhanam, 2003). In the same vein, compulsive use of IT has been found to enable faster response time to work requests (Middleton and Cukier, 2006) but also to reduce employees’ availability and concentration on tasks (Chou et al. 2005).

In order to make sense of the contradictions in IS research results regarding the individual and organizational impacts of user acceptance and resistance behaviors, we propose to consider these behaviors in light of their conformity – or lack thereof – to organizational intent. In other words, impacts of IT-related behaviors should be understood in relation to organizational intent (generally embodied by organizations through the IT terms of use) in order to fully account for their nuances. We further suggest that user resistance and deviation from IT terms of use sometimes benefit the organization. Similarly, we show how IT acceptance and compliance with organizational IT terms of use may, at times, have unintended adverse consequences. Using the concept of organizational intent, we outline contingencies that contribute to the explanation of such findings.

All in all, we seek to provide a forward looking theoretical explanation (Grover et al. 2008) for mixed research results about the impacts of acceptance and resistance behavioral manifestations. We aim at providing an explanation for why acceptance behaviors may sometimes lead to negative impacts as well as why resistance behaviors can occasionally lead to positive impacts in a work context.

From a theoretical perspective, our paper provides new insights about the impacts of IT-related behavioral manifestations. It also helps to reconcile and explain seemingly paradoxical results about impacts of acceptance and resistance behaviors. From a practical perspective, a better understanding of the intricacies of user acceptance and resistance will help managers to further promote behaviors that are in line with the organizational goals for their IT implementations. On the one hand, managers are responsible for fostering the appropriate use of IT in their organization (Jasperson et al. 2005). On the other hand, they have to adequately respond to user resistance, regardless of its legitimacy (Rivard and Lapointe 2012). Indeed, if users resist because an IT or its terms of use are inadequate or would have ill-effects, managers must find ways to correct the situation and prevent organizational disruptions. If user resistance behaviors are illegitimate and/or dysfunctional, managers still have to find appropriate responses to avoid sterile disturbance.
The paper is organized as follows: Our method for the review of the literature is presented first, followed by our proposed framework for linking acceptance and resistance behavioral manifestations with IT terms of use. Next, we develop propositions to explain the impacts of these behaviors in organizational contexts. The paper ends with a discussion of the implications of our propositions for research and practice and identifies avenues for future research.

**Review Method**

We started with a literature review that focused first on acceptance and resistance. Our review covers papers published since 1971 in leading North American and European IS journals as well as in top management journals that publish IS research. These journals include (in alphabetical order) the *European Journal of Information Systems*, *Information and Management*, *Information and Organization*, *Information Systems Journal*, *Information Systems Research*, *Information Technology and People*, *Journal of Information Technology*, *Management Science*, *MIS Quarterly*, and *Organization Science*. Seminal papers on acceptance or resistance published elsewhere were also included in our review.

The process leading to the identification of the papers to be included in our review comprised three steps. The first step consisted of querying online search engines (e.g. EBSCO Business Source Premier, ABI Proquest) for the above mentioned journals using *accept* or *acceptance* and *resist* or *resistance* as keywords. Second, the decision on whether or not to include a paper in the study was made after reading all the identified papers using inclusion and exclusion criteria. A number of papers in which the word “acceptance” or “resistance” was only mentioned in passing – for example, in reference to the “Technology Acceptance Model” without any further reference to “acceptance” or any related behavior – were excluded from the study. Similarly, papers were withdrawn from our initial pool when the occurrence of either “acceptance” or “resistance” was only found in their title or keywords list. Finally, we included other relevant papers addressing acceptance or resistance behaviors but which were published in other outlets. These papers were identified using the list of reference of the papers previously included in our sample. Using the criteria described above, an in-depth assessment of those papers led to the inclusion of a few additional papers. As a result, we kept 187 papers (149 for acceptance and 38 for resistance) published between 1977 and December 2012.

We then undertook a second round of literature review to identify additional papers that dealt explicitly with IT-related behaviors and their impacts. This second set of articles was collected from a keyword search of academic databases (e.g. EBSCO Business Source Premier, ABI Proquest, Google Scholar). In addition, because keywords could not always capture all relevant articles, we surveyed the abstracts of top IS journals, as per the AIS “basket of six” (*MIS Quarterly*, *Information Systems Research*, *Journal of Management Information Systems*, *European Journal of Information Systems*, *Journal of the Association for Information Systems* and *Information Systems Journal*). We excluded papers that only mentioned an IT-related behavior or impact in passing without describing it or that relied on general arguments to suggest impacts for IT-related behaviors without supporting evidence. We retained a total of 64 additional papers in this second round of the review.

**A Framework for Understanding Acceptance and Resistance Behavioral Manifestations**

The IS literature mostly treats acceptance and resistance as a dichotomy. Although these studies have been very useful in furthering our understanding of user reactions to IT, they do not account for the overall complexity of these phenomena. In this regard, our literature review reveals the extent to which IS research implicitly takes for granted that acceptance leads to use and resistance very often results in non-use. In addition, acceptance and resistance have been studied using relatively narrow lenses and mostly in independent ways. This has often led to compartmentmenting behaviors under the acceptance and resistance umbrellas.

In the IS literature, acceptance and resistance have been most often defined and conceptualized as a
behavior – use vs. non-use – or as an intention (e.g., Davis, 1989; Markus 1983; Venkatesh et al., 2003). At times, they have also been defined in alternate manners, for example as an attitude (e.g., Wixom and Todd, 2005) or a process (e.g., Cooper and Zmud, 1990; Ferney and Sobreperez, 2006). These conceptualizations have not distinguished between acceptance and resistance, on the one hand, and intentions, behaviors, attitudes and impacts associated with them, on the other. Following Ferney and Sobreperez (2006) and Meyer (1997), we posit that reactions to IT implementation such as acceptance and resistance are multi-dimensional constructs that share the same conceptual space. We propose that they comprise an emotional dimension (e.g. fear, excitement), a cognitive dimension (e.g. performance expectancy, perceived control) and an attitudinal dimension (e.g. like, dislike), which can range from strongly positive to strongly negative. These, in turn, lead to behavioral manifestations which are many and varied (e.g. user or task adaptation, venting anger, delegation, and even sabotage). These behavioral manifestations are related to various individual and organizational outcomes.

We also argue that one’s behavior is not always explicitly representative of acceptance or resistance (e.g. reluctant use of system). For instance, acceptance and use are often used interchangeably in the literature (e.g. Sykes et al. 2009; Venkatesh et al. 2003) whereas resistance to IT has often been considered a behavior that should be prevented and eradicated (e.g. Kossek et al. 1994; Dos Santos and Sussman 2000). These assumptions do not take into account the fact that sometimes acceptance may be related to misuse and that resistance may prove beneficial to an organization. For example, resistance may convey useful information that can ultimately prevent misuse behaviors (Marakas and Hornik 1996) or other undesirable outcomes such as the use of a dysfunctional system (Ferney and Sobreperez 2006). Therefore, one’s usage of a system is not always representative of acceptance or resistance.

Although it may sometimes be appropriate to choose IT use as a proxy for acceptance in voluntary settings, this is not necessarily the case in mandatory settings. Moreover, even in voluntary settings, if no other option is available to the individual, usage cannot automatically be taken as representative of one’s acceptance of IT. One may have the intention to use a given IT only because no other – or better – option is available. In fact, this could represent a case of resistance where the IT is used as little as possible. Likewise, while acceptance does not necessarily translate into extensive or productive use, resistance may involve using IT extensively, albeit for counterproductive ends. This suggests that focusing solely on behaviors, without taking into account the underlying factors that influence them, will provide only a partial, incomplete understanding of their related impacts. Behaviors cannot always be assessed at face value; they may have unexpected, or even not directly observable, impacts.

In order to fully grasp the impacts of individuals’ IT-related reactions and behaviors in the workplace, we argue that researchers should not overlook the organizational intent. We define “organizational intent” as the overall expectations of the organization that is implementing a technology vis-à-vis its purpose and the way that it should be used. We contend that it is an appropriate construct to contextualize and understand IT-related individual behaviors. In IS research, organizational intent, which has also been labeled as strategic intent, has been used in studies of outsourcing (e.g. Beasley et al. 2009; DiRomualdo and Gurbaxani 1998; Gottschalk and Solli-Saether 2006), e-commerce (Agrawal et al. 2000), and IT business value (Tallon et al. 2000).

IT-related behaviors may, or may not, be in line with organizational goals. Indeed, organizations typically do not implement new IT for the sake of implementing new IT. The rationale behind IT investments must be taken into account – whether it is to increase individual or departmental productivity, improve customer service, decrease operational costs, and the like – if we are to accurately assess impacts or users’ behaviors and make sense of counter-intuitive research results. To help employees use technology in a way that most effectively supports the organizational intent, firms generally devise acceptable IT usage policies or terms of use as a mean to ensure the reach of their intent (Siau et al. 2002). In other words, they outline the way users are expected to behave in relation to IT. Terms of use may be communicated through policies (Doherty et al. 2011), training, informal communications and user interfaces, among others. Likewise, learning resources may convey IT terms of use (e.g. Kang and Santhanam 2003; Mathieson et al. 2001; Robey et al. 2002; Sein et al. 1999). Indeed, the resources made available to users – including user manuals, help desks and interactions with IT personnel – help communicate system-use expectations. Informal communication also plays an important role in communicating IT terms of use. Several studies found informal communication to be a means for users to gather information about the usefulness and the expected application of IT (Barki et al. 2007; Rogers 2003). IT terms of use help
convey these expectations and thereby influence how IT properties are interpreted and used (Barki et al. 2007; DeSanctis and Poole 1994). Finally, a technology’s interface also may be used to communicate IT terms of use. A number of studies also have shown that IT has material properties (e.g. DeSanctis and Poole 1994; Markus and Silver 2008; Orlikowski, 2000) that, to some extent, may dictate how they are to be used. For example, technologies such as Enterprise Resource Planning (ERP) impose a collection of highly codified workflows detailing their terms of use. Likewise, some health information systems have their interface set up so that physicians follow certain procedures for diagnosis and drug prescriptions (Davidson and Chismar 2007).

Users’ conformity or non-conformity to these IT terms of use depends on factors such as their perception of these terms’ appropriateness, flexibility and enforceability. It also depends on their anticipation of the related consequences on future performance evaluations or promotion opportunities (e.g. Brown et al. 2002; Xue et al. 2011). In other words, users’ conformity with IT terms of use varies across situations according to a number of factors.

We suggest that taken together, the acceptance-resistance axis and the notion of conformity – or lack thereof – with the IT terms of use provide a rich and useful framework. Such a framework can be used to classify and understand the numerous IT-related behaviors that are reported in extant IS research. As detailed in the next sections, our proposed framework helps isolating categories of IT-related behaviors that are qualitatively different from each other in terms of their nature and impacts.

A new mapping of the literature

Figure 1 maps IT-related behaviors along acceptance and resistance on one axis and conformity/non-conformity with IT terms of use on the other. The behaviors shown in each quadrant can be associated with varying levels of use. In other words, use can vary from 0 to 1 in each quadrant. A number of observations can be made from Figure 1. First, based on our review of the literature, most of the research of the last 40 years can be mapped into the upper right quadrant of Figure 1 (acceptance/conformity). However, this is not taking into account the fact that usage may dissimulate resentment or translate into problematic usage such as fraudulent use. Thus, our mapping suggests that IS research has relied too heavily on the “face value” of IT usage without paying sufficient attention to the characteristics of such usage and the alignment with organizational terms of use.

A second observation from Figure 1 is that resistance does not always imply non-use. When users deliberately commit errors (e.g., Ferneley and Sobreperez 2006), they actually use the IT. Misuse (e.g. Marakas and Hornik 1996) and minimal use are also manifestations of resistance even though they involve system use. Resistance manifestations such as gossiping or bashing can even be associated with compliant usage behaviors performed because of social pressure or enforced by management (Lapointe and Rivard 2005).

Third, acceptance does not always imply that one will use IT in conformity with IT terms of use. For instance, in the case of delegation of one’s use responsibilities, there can be acceptance and usage, but delegation sometimes entails not using IT in the intended way, as alluded to in Beaudry and Pinsonneault (2005). Similarly, acceptance can translate into use of IT that does not conform to the IT terms of use with behaviors such as abusive use (e.g., Kuheli 2010) compulsive use (e.g., Davidson and Walley, 1985) or addictive use (e.g., Lapointe et al. 2013; Turel et al. 2011).

Fourth, very few studies have focused on the behaviors included in Quadrants 2, 3 and 4 of Figure 1. In this regard, Nelson (1990) and Silver et al. (1995) noted that misuse is an organizational phenomenon that is understudied. Yet, sufficient instances of such behaviors can be found in the literature to warrant in-depth examination. For example, Pentland (1989) discusses instances of individuals over-reporting their level of IT use. Kuheli (2010) describes cases of fraudulent use of IT. Turel, Serenko and Bontis (2008; 2011) found addictive use to be a problem in organizations. Several system misuse examples have

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1 It is important to note that we do not claim that our mapping of behavioral manifestations within the four quadrants is precise or exhaustive. It has been provided for discussion purposes only. Use, for example, could be placed anywhere in the “acceptance/conformity” quadrant, or in any quadrant. We do not want to imply that our positioning of the behavioral manifestation in any given quadrant is indisputable.
been provided by Marakas and Hornik (1996) while Prasad and Prasad (2000) and Ferneley and Sobreperez (2006) have documented instances of users deliberately committing errors while using IT.

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**Figure 1. Mapping of IT-Related User Behavioral Manifestations**

Fifth, there is a need to provide a finer-grained understanding of the impacts of IT-related behaviors. If resistance-related behaviors prevent the ongoing use of a system that is flawed, they may ultimately prove beneficial to the organization. Similarly, if acceptance promotes the use of an inadequate system, adverse outcomes could result for the organization. To better capture these nuances and shed some light on what acceptance and resistance entail in the organizational context, we further reviewed and analyzed the related literature.

### Impacts of IT-related behaviors

In the next sections, we present the findings of our review of IT-related behaviors and associated impacts, discuss these relationships and put forth theoretical propositions.

#### Quadrant 1: Acceptance and Conformity with IT Terms of Use

Behaviors in this quadrant are characterized by acceptance and conformity with IT terms of use. The various behaviors in QUADRANT 1 (Figure 1) thus represent cases where users embrace a system and engage with it in the way expected of them. It may go beyond accommodating and routinizing a system to tailoring and leveraging it. IT use is the most commonly studied behavior in the literature. It is seen as mediating the influence of IT on personal and organizational outcomes (e.g. Burton-Jones and Straub 2006; Davis 1989; DeLone and McLean 1992; 2003; Seddon 1997). Other behaviors found in QUADRANT 1 such as appropriation, routinization and enhanced use have received much less attention.

Overall, based on the literature, it appears that QUADRANT 1 behaviors contribute to positive performance outcomes because they contribute to exploit IT capabilities to support organizational goals. A number of
studies report that behaviors found in QUADRANT 1 take advantage of IT automation capabilities to enable greater speed and accuracy in information processing tasks; they also take advantage of IT-enabled information quality improvement and process innovation to increase efficiency and effectiveness (e.g. Jasperson et al. 2005; Saga and Zmud 1994). Similarly, numerous studies show that these behaviors help improve decision-making both in terms of quality and efficiency (e.g. Davidson and Chisman 2007; Leonardi 2007; Orlikowski 1996). Indeed, IT such as decision support systems, sales analysis, and planning and reporting systems are used to facilitate the responsiveness, control, supervision, reliability and adaptability of business processes. Behaviors found in QUADRANT 1 may also help to completely transform task performance and enable new ways of achieving organizational goals (e.g. Markus 1983; Zuboff 1988). In addition, behaviors such as IT appropriation help improve the alignment between technology use and task requirements (Barki et al. 2007; Bruque, Moyano and Eisenberg 2008).

Though QUADRANT 1 behaviors are largely associated with favorable impacts on performance, some studies report that they may occasionally be associated with unintended negative outcomes (e.g. Kang and Santhanam, 2003; Majchrzak et al., 2000; Orlikowski, 2000). QUADRANT 1 behaviors may also have impacts that do not directly relate to performance. In this regard, Zuboff (1988) and Barley (1986) authored papers showing that technology use brings about changes in role relationships. Zuboff (1988), for instance, found that acceptance behaviors such as routinizing the use of a new technology had challenged traditional allocation of tasks to favor greater managerial control over workers using the technology. Her study illustrates the potential conflict between individual and organizational impacts in relation to IT acceptance behavioral manifestations.

Overall, the vast majority of studies found in the literature focus on the positive performance-related impacts of behaviors from QUADRANT 1. Although this focus may be justified because these impacts are most frequent, our survey of the extant literature reveals that other types of impacts exist. Over the years, growing research attention has been paid to these understudied impacts. Some studies account for the intricacies of the context of use and examine how social dynamics shape the adoption, implementation, use and meaning of a technology (e.g. Leonardi and Barley 2010; Orlikowski and Iacono 2001). Often, with the help of a qualitative and grounded approach to studying IT use impacts, this stream of research also highlights that behaviors found in QUADRANT 1 can bring about both negative and non-performance related impacts (e.g. decrease in status and power). As such, they draw attention to the fact that Quadrant 1 behaviors may have undesirable unexpected impacts concurrently with desired ones.

Quadrant 2: Resistance and Conformity with IT Terms of Use

Behaviors in QUADRANT 2 (Figure 1) are characterized on the one hand by resistance and on the other hand by conformity with IT terms of use. Indeed, all behaviors in QUADRANT 2 involve usage of the IT to perform tasks. In that sense, users comply, at least to some extent, with IT terms of use. However, this occurs without user acceptance of the system. Consequently, users are typically less driven “to engage in discretionary constructive use of the technology that is above and beyond the prescribed work activities” (Wang and Butler 2006, p. 453).

Overall, behaviors in this quadrant have received very little research attention; they are mostly discussed incidentally in case studies. Examples of these behaviors include using a system just enough to comply with social pressure (e.g. Lapointe and Rivard 2007), doing as little as possible with a system (e.g. Hirschheim and Newman 1988; Marakas and Hornik 1996; Markus 1983), complying with system terms of use while resorting to humor to discredit it, gossiping about it or complaining about it (e.g. Brown et al. 2002; Prasad and Prasad, 2000; Selander and Henfridsson 2012). These behaviors translate different levels of resistance (Rivard and Lapointe 2012).

While QUADRANT 2 behaviors are associated with resistance, they still imply IT use and can thus translate into performance gains. Indeed, IT use sometimes involves well-structured routine tasks and depends minimally on users’ initiative. In fact, employees may dislike and complain for years about using a system without any noticeable negative impacts on performance, as illustrated in Brown et al. (2002) and the case studies in Lapointe and Rivard (2007). Behaviors found in this quadrant can even favorably impact performance in contexts where users are allowed to take risks, ask questions, raise concerns, state objections and express opinions. In such contexts, employees have opportunities to be assertive and openly challenge the system, which can potentially signal misfits between the IT and the context of use (e.g. Davidson and Chisman 2007; Lapointe and Rivard 2005; Markus 1983). Notwithstanding their
potential to yield favorable outcomes, the literature shows that behaviors in QUADRANT 2 may result in lost opportunities for performance improvement (e.g. Beaudry and Pinsonneault 2005; Lapointe and Rivard 2005; Markus 1983).

QUADRANT 2 behaviors are also reported to impact users’ well-being and emotions. Indeed, they can serve as a coping mechanism to IT-related changes (e.g. Beaudry and Pinsonneault 2005; Marakas and Hornik 1996; Selander and Henfridsson, 2012). This relates to Beaudry and Pinsonneault’s (2005) notion of emotion-focused coping that “aims at regulating personal emotions and tensions, restoring or maintaining a sense of stability, and reducing emotional distress. [It] is oriented only toward one’s self and includes minimizing the consequences of threats” (p.495). To reduce the emotional tensions associated with a system perceived as inadequate or as a threat, users may resort to criticizing, complaining or psychological distancing which are not conducive to increase usage of IT (Beaudry and Pinsonneault, 2010).

Overall, behaviors found in QUADRANT 2 are generally reported to be associated with favorable outcomes. Because these behaviors are characterized by users’ reticence toward the IT, the associated performance benefits are however limited compared to those related to behaviors found in QUADRANT 1. Nevertheless, behaviors in this quadrant can also enhance performance by signaling a bad fit between the system and the context of use. Furthermore, they can play a beneficial role in regulating users’ emotions and tensions.

**Quadrant 3: Resistance and Non-conformity with IT terms of Use**

Behaviors in QUADRANT3 (Figure 1) manifest users’ resistance coupled with deviation from IT terms of use. They are mostly mentioned in case studies and are typically considered only nominally (for exceptions, see Ferneley and Sobreperez 2006; Marakas and Hornik 1996). Resistance behaviors that do not conform to IT terms of use can range from non-use (e.g. Batthaterjee and Hikmet 2007) to more subtle forms of challenging the system such as deliberately committing errors (e.g. Markus 1983) or workarounds (e.g. Azad and King 2008; Ferneley and Sobreperez 2006) to behaviors that physically damage the system (e.g. Marakas and Hornik 1996).

Early IT implementation case studies identified resistance to change as a cause of implementation failures (e.g. Swanson 1988). These studies tend to portray opposition to IT as an impediment to performance gains, which needs to be prevented. Recently, a growing number of studies have challenged this view (e.g. Azad and King 2008; Boudreau and Robey 2005; Davidson and Chismar 2007; Wagner and Newell 2006). They show that the impacts of resistance behaviors depend on the specific dynamics in an IT implementation context (e.g. Leonardi and Barley 2010; Orlikowski 1996) and can contribute to averting user alienation.

QUADRANT 3 behaviors are often reported as preventing benefits and unduly impeding performance. The most adverse impacts of these behaviors come from malicious actions such as sabotage (Marakas and Hornik 1996; Ferneley and Sobreperez 2006) and deliberately committing errors with the system (Lapointe and Rivard 2005; Markus 1983). These behaviors not only impede the proper execution of organizational tasks but they can also be associated with tremendous cost. Indeed, they can lead to system shut-down costing significant amounts of resources for system recovery and loss of business (Marakas and Hornik 1996) as well as for data clean-up and reconciliation (Markus 1983). While behaviors such as refusal to use do not entail physical damage and deceit, they can be equally problematic for achieving benefits (Kane and Labianca 2011). Behaviors from QUADRANT 3 can also lead to intergroup conflicts in a context of interdependent use (Lapointe and Rivard 2005; Markus 1983; Wagner and Newell 2006).

Besides their negative consequences, a few studies report that some behaviors found in this quadrant can have favorable impacts as they are sometimes a means to oppose a system that actually compromises task performance (e.g. Ferneley and Sobreperez 2006; Wagner and Newell 2006). Another potential benefit of some of the behaviors found in QUADRANT 3 is that they can signal a system’s inadequacy and trigger necessary organizational interventions. For example, they can help prevent the institutionalization of systems that increase stress and turnover or erode performance levels (Joshi 1991; Marakas and Hornik 1996; Markus 1983; Martinko et al. 1996). Besides their impacts on performance, QUADRANT 3 behaviors may also have an impact on the political equilibrium of an organization. For example, a well-designed system might be shunned by those who fear that it might occasion a loss in their power or status in the organization. In such cases, resistance is a means to secure one’s own interests even if it compromises
organizational goals. Sometimes, such resistance behaviors are also a means for users to oppose organizational control and domination (e.g. Jasperson et al. 2002; Marakas and Hornik 1996). Indeed, users may resort to non-conforming resistance behaviors to preserve their autonomy and job security.

Overall, behaviors in this quadrant are generally reported to undermine performance. They can compromise IT use effectiveness, productivity and even cause system overloads and shut down. Although these behaviors can represent a formidable obstacle to IT implementation success and organization performance, some studies have shown that such behaviors may occasionally have positive impacts.

**Quadrant 4: Acceptance and Non-conformity with IT Terms of Use**

Behaviors in **QUADRANT 4** (Figure 1) manifest user acceptance coupled with a lack of conformity with IT terms of use. They most prominently include addictive/compulsive use (Turel et al. 2008; Turel et al. 2011), abusive use (Griffiths 2003), fraudulent use (Hoffer and Straub 1989; Kuheli 2010) and delegating one’s use responsibilities (Boudreau and Robey 2005; Davidson and Chisman 2007). Addictive/compulsive use represents an excessive or irrational use of IT. It is related to a maladaptive response to IT characterized by excessive level of use and loss of control over use (e.g. inability to stop one’s use). Fraudulent and abusive use refer to a deliberate violation of IT terms of use. Fraudulent use occurs when ill-intentioned employees use the system for prohibited aims. One hallmark of this is unauthorized use of IT to embezzle organizational properties (Straub and Nance 1990; Wells 2009). Abusive use includes unauthorized personal uses of IT such as online gambling, online shopping or playing games on work computers (Griffiths 2003). Delegation of IT use occurs when individuals endorse a system but transfer their usage responsibilities to others.

Addictive/compulsive use impacts have been studied in the context of Internet usage (e.g. Chou et al. 2005; Griffiths 1999), online auctions (Turel et al. 2011) as well as Blackberry and other mobile devices use (Griffiths 2001; Lapointe et al. 2013; Middleton and Cukier 2006; Turel et al. 2008). Some work shows that addictive/compulsive use undermines performance because it reduces or interrupts employees’ availability and concentration for other work tasks (Chou et al. 2005). Although interruptions are not always counterproductive, excessive interruptions lead to productivity losses (Spira and Feintuch 2005). Nevertheless, a few studies suggest that addictive/compulsive use can have positive performance impacts such as faster response time to work requests and increased availability of users for work (e.g. Mazmanian et al. 2006; Middleton and Cukier 2006).

The literature generally reports abusive use to have adverse performance impacts because these behaviors are often at odds with task requirements (e.g. Griffiths 2003). Likewise, fraudulent use is typically reported to have adverse consequences for organizations as it is often associated with significant financial losses for organizations (e.g. Kuheli 2010; Straub and Nance 1990; Straub and Welke 1998). In addition to financial losses, the consequences of fraudulent use include negative publicity, loss of competitive advantage, and even reduced organizational viability (Kankanhalli et al. 2003).

In addition to the various ways **QUADRANT 4** behaviors affect organizational performance, they may also affect users personally. This has been found to be the case for addictive/compulsive use as it sometimes leads to cognitive and psycho-emotional ailments such as techno-stress (Ragu-Nathan et al. 2008; Tarafdar et al. 2007). In this regard, addictive/compulsive use has been associated with increased perception of work overload and decreased organizational commitment (Turel et al., 2011). Furthermore, there is some conflicting evidence suggesting that behaviors such as delegating one’s IT use responsibilities may be problematic but may also prevent outright rejection of a system (e.g. Boudreau and Robey, 2005; Davidson and Chisman, 2007).

Overall, while the literature focusing on these behaviors is fairly scarce, **QUADRANT 4** behaviors seem to have a diverse range of personal and organizational impacts. Generally speaking, their impacts are reported to be negative. Addictive/compulsive use is associated with negative impacts including a decrease in task performance and sometimes techno-stress. It has been occasionally noted, however, that it can have favorable outcomes such as increased user availability and responsiveness to work. Abusive use and fraudulent use have both been associated with negative consequences given that they directly affect employees’ productivity and the integrity of organizations’ information assets.
Theoretical development

Impacts of Acceptance and Resistance Behavioral Manifestations

Overall, our review shows that IT-related behaviors and their impacts are diverse and complex. We argue that to understand IT-related behaviors and their impacts, users’ behavioral manifestations typically associated with either acceptance or resistance must be studied in light of organizational intent. Otherwise, taking them at face value may be misleading. Specifically, it makes more evident the fact that IT use cannot be assumed to always have favorable impacts and that behaviors associated with resistance cannot be assumed to have solely negative impacts. Rather, there is a need for a nuanced explanation for the impacts associated with acceptance and resistance behavioral manifestations.

To a large extent, the IS literature treats IT use as representative of acceptance and takes for granted that it is aligned with organizational intent while resistance entails non-use and is at odds with this intent. Early on, Davis (1989) argued that “computer systems cannot improve organizational performance if they aren’t used. Unfortunately, resistance to end user systems by managers and professionals is a widespread problem. To better predict, explain and increase user acceptance, we need to better understand why people accept or reject computers” (p.982). While plausible under certain conditions, this dichotomous view of IT-related behaviors and their impacts is not readily applicable in many instances, for example when IT is accepted but misused or when actual use does not support organizational intent. While behaviors listed in QUADRANT 1 of Figure 1 are generally reported to have positive performance impacts, QUADRANT 4 behaviors, which are also associated with acceptance, are generally shown to have negative impacts. QUADRANT 3 behaviors are also typically reported to have negative performance impacts. In contrast, QUADRANT 2 behaviors are associated with resistance but they are generally reported to have mild positive impacts.

IT-related behaviors’ conformity with terms of use, or the lack thereof, plays an important role in determining the nature of their impacts. IT terms of use are often the necessary means to achieve organizational intent. One of the ways in which conformity with terms of use influences the impacts of IT-related behaviors is by facilitating efficiency in task performance. Organizations continuously engage in information processing and problem solving activities for which they have to institute rules and guidelines in accordance with their goals (Simon, 1976, p. 79). As for any rules, IT terms of use provide a means for efficient IT use by simplifying users’ decision-making and helping coordinate actions such that they all contribute to organizational intent. For example, the proper functioning of ERP systems requires terms of use that restrict and channel users’ choices through highly prescriptive user interfaces (Butler and Gray 2006, p. 221).

Another way IT terms of use positively influences the impacts of IT-related behaviors is by curtailing behaviors that are directly at odds with organizational intent. Having employees conform to IT terms of use can help prevent them from ill-advised usage behaviors that conflict with organizational intent (e.g. spending work time on online gaming sites or excessive or ill-intentioned use). IT terms of use are also a means of setting expectations that prevent employees from unduly dismissing a system or wasting its potential (Karahanna et al. 1999). Additionally, conformity with IT terms of use is associated with positive impacts when it helps enforce compliance with institutional rules. Many times, institutional rules, rather than efficiency considerations, are the primary determinant of organizational success and IT terms of use can help in meeting these rules (DiMaggio and Powell 1983; Meyer and Rowan 1977). Organizations generally benefit from enforcing IT terms of use that reflect these standards. Inversely, and maybe surprisingly, some behavioral manifestations of resistance may conform to IT terms use and support the organizational intent. Resistance does not necessarily preclude system use and the related performance gains. User resistance may only be voiced or experienced mostly emotionally without any major incidence on use and would thus hardly be different from use behaviors that translate acceptance the system. Hence, resistance does not always preclude organizations from reaping the benefits associated with system use.
Proposition 1

When IT terms of use effectively support organizational intent,

a) non-conforming IT-related behaviors yield negative impacts even if they are associated with users’ acceptance;

b) conforming IT-related behaviors yield positive impacts even if they are associated with users’ resistance.

Conformity with IT Terms of Use and Organizational Intent: Explaining Paradoxes

Despite the fact that behaviors in conformity with IT terms of use generally yield impacts that are aligned with organizational intent, some studies suggest that this is not always the case. In some instances, it appears that IT related behaviors that are in conformity with terms of use can have unintended consequences. This is in line with seminal studies in management positing that any rule or prescribed course of action can yield unintended consequences and hamper organizational goals (Barnard 1968; Blau 1962; Gouldner 1954). Sometimes, IT terms of use are promoting counterproductive behaviors and/or discouraging productive ones and thus conformity may have adverse consequences. For example, some studies highlight the fact that enterprise systems impose detailed and strict terms of use that are ineffective in exception handling. Conformity in such cases results in adverse consequences such as slowing down work processes or occasioning workarounds that have far-reaching consequences (e.g. Markus 1983; Wei, Wang and Ju 2005). These terms of use seek to curtail customization in favor of predictability and standardization. Customization may however prove to be the key to unleashing ERP’s potential to improve performance (Lim et al. 2005).

The previous examples illustrate specific situations where conformity with IT terms of use is expected to have positive impacts when taken at face value. Organizationally-sanctioned behaviors such as routinization are sometimes undeservedly encouraged because quantity of use is mistaken for quality of use (e.g. Ash et al. 2004). This is the case when users comply with IT terms of use of a system that is dysfunctional and actually opposes organizational intent. For example, Markus’s (1983) study illustrates how conformity with the terms of use of a corporate accounting system significantly compromised the data reporting processes of a group of divisional accountants. This suggests, on the one hand, that when IT terms of use are not aligned with organizational intent, conformity may not yield expected impacts. In these cases, QUADRANT 1 behaviors would not lead to the desired organizational outcomes. Indeed, contrary to the widespread assumption that more use is better, more counterproductive use would probably impede productivity. On the other hand, non-conforming IT-related behaviors may at times have favorable impacts. In some instances, non-conforming behaviors can help deal with technologies that are constraining or incompatible with organizational goals. As such, an employee’s delegation of his/her IT usage responsibilities can be functional even if it contradicts the IT terms of use. Rivard et al. (2011) report a case where physicians resorted to delegating their data entry responsibility because they considered it was taking too much time and contributed to keeping them away from their patients. Although the IT terms of use required data entry to be done by the physicians, deviating from the terms of use was justified in the interest of efficiency of clinical practices and quality of care. Similarly, behaviors such as refusal to use or workarounds can benefit the organization if they help avoid dysfunctional terms of use or signal the need to improve them.

Behaviors such as withdrawal, doing as little as possible with a technology or refusal to comply with certain aspects of IT terms of use can also help mitigate the adverse consequences of IT terms of use misaligned with organizational intent. Thus, non-conforming behaviors can help mitigate the adverse consequences of IT terms of use. In this regard, previous studies have shown that behaviors that differ from organizational directives to better address contingencies unforeseen by these directives (e.g. Smith et al. 1983) may represent various adaptation initiatives that help avoid impacts that would be incongruent with organizational intent. Their findings suggest that IT users may perform non-conforming IT-related behaviors in the interest of the organization. In addition, some studies suggest that non-conforming IT-related behaviors may be purposely undertaken to improve
work practices (e.g. Ferneley and Sobreperoz 2006; Azad and King 2012). Ferneley and Sobreperoz use the terms “essential” workarounds to refer to workarounds that have positive organizational consequences. As an illustration, they mention the case of fire officers who worked around the IT’s terms of use by logging into the system using someone else’s credentials in order to collaboratively file electronic incident report forms. While this practice did not conform to the IT terms of use, incident reports were actually more accurate than they would have been if officers had been conforming to the IT terms of use.

As discussed above, IT terms of use are sometimes inadequate such that conformity may lead to negative impacts while non-conformity may result in positive impacts. In other words, users’ conformity to IT terms of use can yield impacts that harm the organization in unanticipated ways. Similarly, behaviors typically associated with resistance can occasion deviation from IT terms of use that are in the interest of the organization. In such situations, when IT terms of use do not support the organizational intent, user acceptance or resistance becomes irrelevant. Therefore:

**Proposition 2**

When IT terms of use are misaligned with organizational intent,

a) conforming IT-related behaviors yield unintended negative impacts even if they are associated with users’ acceptance;

b) non-conforming IT-related behaviors may result in positive impacts even if they are associated with users’ resistance.

**The Role of Individual and Organizational Agency**

IT terms of use may not address all contingencies surrounding IT use. Consequently, choosing appropriate IT-related behaviors remains largely at users’ discretion. User initiatives can include modifying problematic features or developing additional ones. In this regard, a number of studies underline the fact that many ITs afford individuals opportunities to materially change them (e.g. Dodgson et al. 2007; Leonardi 2011; Majchrzak et al. 2000). Even for IT users who do not have the capabilities to customize and adapt IT themselves, there is sometimes the support of co-workers or in-house IT staff (Pollock et al. 2007).

Additionally, users may engage in personal adaptation in order for their IT-related behaviors to yield impacts aligned with organizational intent. This adaptation may involve adjusting personal habits and work routines to fit the requirements of the technology, learning new skills (e.g. Beaudry and Pinsonneault 2005; Orlikowski 1996; Tyre and Orlikowski 1994), or adjusting work commitment (Majchrzak and Cotton 1988). Users may seek to overcome knowledge barriers that prevent effective system use. For example, they may experiment with different ways of using an IT, read help manuals to understand how to use different features, or learn from other users or IS professionals (Bruque et al. 2008; Sykes et al. 2009).

Users may also request changes to IT terms of use. In some occasions, to better enable impacts aligned with organizational intent, they may initiate adjustments to the IT terms of use. For example, Wei et al’s (2005) case study describes how many misalignments between the new ERP and the supported business processes were resolved by implementing system change requests from users.

**Proposition 3**

User initiatives that better align IT-related behaviors with organizational intent yield positive impacts.

Organizations can also play a role by responding adequately to problematic IT-related behaviors and/or terms of use. Such responses have to ensure that IT terms of use are truly aligned with the organizational intent. In this regard, organizations have a lot to gain from considering IT-related behaviors as a source of information. Managers ought to pay attention and respond to behaviors that are at odds with the IT terms of use. Such behaviors sometimes signal the need for organizations to take action (Markus and Tanis 2000; Rivard and Lapointe 2012, Saga and Zmud 1994). Deviation from terms of use can also be triggered by users’ fears of negative consequences such as workforce reduction (Lim et al. 2005). In such cases,
organizations may have to respond by providing the necessary assurance to dispel those fears (Brown et al. 2002; Rivard and Lapointe 2012). In addition to responding to deviation from IT terms of use, organizational interventions may have to target undesirable behaviors that stem from resistance or even acceptance of a system such as compulsive or fraudulent use (Wells 2009). They can curtail these behaviors by adjusting the terms of use. For example, a large information technology company prohibited its employees from sending electronic messages because the vast majority of these were irrelevant to the employees’ tasks and ultimately compromised their performance (Allen 2011).

**Proposition 4**

When users conform to IT terms of use, organizational interventions that better align IT terms of use with organizational intent yield positive impacts.

**Discussion and Conclusion**

Our study makes significant contributions to IS research. First, we propose that acceptance and resistance behavioral manifestations are intrinsically complex and imply much more than a use/non-use dichotomy. Acceptance and resistance are actually associated with a vast array of behavioral manifestations – many of which have been understudied – that can be beneficial or detrimental to the individual and the organization. We propose a new mapping of the literature on IT-related user behaviors along two dimensions. The first dimension represents acceptance/resistance and the second represents the extent to which IT-related behaviors conform or not to IT terms of use. By framing the literature around these dimensions, we show that there is no *de facto* value (e.g. good or bad) that can be attributed to the behaviors associated with acceptance and resistance. Indeed, the impacts of each of these behaviors need to be understood through the lens of organizational intent. Ultimately, some resistance behaviors may be of value for the organization, while some acceptance related behaviors may be detrimental.

Our analysis of the literature suggests that the impacts of acceptance and resistance are mediated by their behavioral manifestations. These behavioral manifestations are diverse and their impacts cannot be fully appreciated by simply considering whether or not a system is used. Impacts of acceptance and resistance depend on whether or not they are manifested through behaviors conforming to IT terms of use, which ought to be designed to support organizational intent. Our study reveals that taking only the face value of acceptance and resistance behavioral manifestations into consideration may be misleading in many occasions. We also highlight the fact that a number of behaviors can be associated with both acceptance and resistance. They range from minimal use to workarounds and delegation.

Overall, our study shows the multifaceted nature of acceptance and resistance by identifying four broad categories of behaviors through which they manifest. Our framework helps make sense of the sometimes paradoxical impacts reported for a variety of behaviors documented in the literature. It also articulates a more nuanced account of the impacts of IT-related behaviors.

More precisely, our study results in three important observations about the impacts of IT-related behaviors, which help explain paradoxes in extant literature. The first observation is that there are general patterns regarding the impacts of each of the four categories of IT-related behaviors identified in this paper. For example, IT-related behaviors that are characterized by acceptance and conformity with IT terms of use generally lead to positive impacts while those characterized by acceptance and non-conformity with IT terms of use typically lead to negative impacts. As a corollary, the second important observation is that IT terms of use provide control structures that organizations can rely on to facilitate impacts aligned with organizational intent. With the concept of organizational intent, we provide new insights with respect to the multiple factors that shape the impacts of IT-related behaviors, shedding a new light on these issues from the perspective of organizational intent. Our explanations depart from the dominant view of IT implementation which seems to imply that IT terms of use are customarily in line with organizational goals. Our study rather reveals that IT terms of use might, at times, not be aligned with the organizational intent (e.g. Boudreau and Robey, 2005; Ferneley and Sobreperez, 2006). When this is the case, IT terms of use sometimes might have to be revised, or even opposed, in order to yield favorable outcomes for organizations (e.g. Lapointe and Rivard, 2005; Newman and Robey, 1992). The third observation is that IT terms of use may at times fail to support organizational intent. Indeed, IT
terms of use may occasionally be misaligned with organizational intent and have the unintended consequence of discouraging productive behaviors and encouraging counterproductive ones. In these cases, acceptance may lead to negative impacts while resistance may give way to more favorable impacts. Employees and organizations can better align inadequate terms of use to ultimately yield more favorable impacts.

**Avenues for future research**

Our next step in further developing this work will be to explore the dynamics of acceptance and resistance. For example, research efforts should be directed at developing a process theory of users’ reactions to IT. Identifying the dynamics of this process will make it possible to link antecedents, manifestations and outcomes together and lead to a better understanding of individual reactions over time. Such studies may reveal the phases individuals go through in terms of their reactions to IT implementation.

Also, future studies may examine how organizations react to specific IT-related behaviors. Such studies may help explain why, when and how organizations consider some resistance behavioral manifestations as feedback while they see others as mere annoyance. It could provide a finer-grained explanation of the conditions under which resistance and deviations from IT terms of use lead to positive impacts.

Another avenue for future research would be to determine the best approaches for organizations to defining IT terms of use or policies aligned with organizational intent so to ensure a coherent message to users. Studies are also needed to assess the extent to which potential or current users should be involved in this policy development process. In addition, there is a need to study if and why the impacts of conformity to IT terms of use are more important depending on the technology used. To do so, researchers may want to consider the role of affordances of IT artifacts.

In this paper, we proposed one explanation for the different impacts of acceptance and resistance behavioral manifestations. We believe that future research should investigate other contingencies so as to propose a more nuanced account of IT-related behaviors and their impacts.

**Contributions to practice**

This paper makes several contributions to practice. First, it provides managers with insights about the impacts of a wide range of user IT-related behaviors. Previous studies have shown that organizations’ investments are wasted if employees refuse to use new IT (Markus and Keil 1994; Venkatesh et al. 2003). Our paper shows that even if a system is actually used, organizations may not reap the full benefits of their investments. That is the case when individuals do not use IT properly, do not use all the relevant features of a given technology to complete their tasks, do not use the right features or tools, and even when they over-use an IT. Our study also suggests that non-conforming resistance behaviors such as workarounds and refusal to use a system are not always counterproductive; organizations may even benefit from such behaviors. Similarly, it reveals that acceptance behaviors, while usually desirable, also have the potential to result into negative consequences for individuals and organizations. Overall, our analysis provides valuable managerial insight by highlighting the circumstances under which IT-related behaviors can have positive and negative impacts.

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