



# A strategic path to study IT use through users' IT culture and IT needs: A mixed-method grounded theory



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## ABSTRACT

We consider recent research in IS, as well as recent advances in the fields of psychology and sociology. As an alternative to existing models, we propose a new strategic path to study IT use through users' IT culture and IT needs. Our contributions are (1) theoretical: we investigate the predictive value for IT usage of several new constructs and show that both expectancy-based and needs-based theories of motivation should be taken into account in acceptance models, (2) methodological: we adopt an exploratory, mixed-method, grounded theory approach and use both quantitative and qualitative data and methods, an unusual approach in IS research that allows new perspectives, and (3) practical: our results highlight the fact that highly IT-aculturated users may hinder (rather than facilitate) new-IT acceptance if their situational IT needs are ignored. Therefore, when the strategic decision of implementing new IT is made, managerial attention must be focused on these users in order to drive toward the alignment of their IT needs and managerially-perceived organizational IT needs.

Our work opens the way to numerous avenues for future research.

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## 1. Introduction

Within the context of today's global business exchanges, information technologies (IT) are implemented in firms to guarantee immediate access to relevant strategic information to support overall cost mastering (Wang et al., 2011), revenue growth (Mithas et al., 2012) and ubiquity (Watson et al., 2011). The acceptance and resulting use of these technologies by intended end-users, thus, remains an essential challenge for most firms, and a major concern in information systems (IS) research (Schwarz and Chin, 2007; Sykes et al., 2009; Venkatesh et al., 2012).

Globalization and information are, however, intertwined with culture (Leidner, 2010), i.e., the set of values espoused by individuals, which must be taken into account in acceptance models (Abraham and Junglas, 2011; Kappos and Rivard, 2008). "Information technology is not values neutral" (Leidner and Kayworth, 2006, p. 371) and IT culture (the subset of IT-related values espoused by individuals) is an important emerging concept in the IS literature (Leidner and Kayworth, 2006, p. 371). To our knowledge, research about the possible linkages between IT culture and IT usage remains, however, very limited.

Users' IT culture may be investigated through their universal needs fulfilled by IT usage and their motivation to use IT (Walsh et al., 2010), as the concepts of needs and motivation have been shown to be interrelated with the concept of values (Rokeach, 1973). Needs are a means to take into account cultural influences (Deci and Ryan, 2008); they are driving behavioral forces (Maslow, 1954). There are, however, two types of needs: universal needs common to all human beings (e.g., power needs or self-accomplishment needs: Maslow, 1954), and other specific needs (e.g., IT needs: Walsh et al., 2010) that

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may be perceived by individuals as they socialize and work. Users' IT needs have been shown to be linked to their IT culture and usage (Walsh et al., 2010) although the relationships between these different constructs have not been fully elucidated.

In organizations, IT investments are mostly decided and validated by managers. Even when the so-called 'social dimension' of strategic alignment is taken into account, IT strategy is mostly aligned with business needs, as perceived by business or IS executives (see, for instance, Heart et al., 2010; Lee et al., 2008; Reich and Benbasat, 2000; Tan and Gallupe, 2006). However, the roles of both governing and working human agencies (and hence their needs) have been recognized as essential in strategic IS research (Besson and Rowe, 2012). Beyond addressing managerially perceived needs, addressing the concern of end-users' acceptance of new IT through the investigation of their own needs is an essential element pertaining to strategic alignment, as it provides a strategic path to IT use; this has not yet been fully explored in the literature (Walsh et al., 2013).

In this article we, therefore, address the following research question: *how do users' IT culture and IT needs influence IT usage?*

As we propose to study a strategic path leading to IT usage, we cannot ignore the Technology Acceptance Model (TAM: Davis, 1989; Davis et al., 1989), which has received substantial empirical support in IS research (e.g., Adams et al., 1992; Agarwal and Karahanna, 2000; Karahanna et al., 2006; Venkatesh et al., 2003). This model and its two main constituting beliefs (perceived usefulness and perceived ease of use) have given rise to a multitude of studies during the last two decades, but empirical results have sometimes been contradictory (see Wu and Du's, 2012 meta-analysis). Furthermore, there are two critical gaps that the TAM does not address: the linkage between intention and actual use, and the motivational content in reasons for acting (Bagozzi, 2007). Also, the importance of the artifact design is not taken into account (Benbasat and Barki, 2007). Finally, it is essential to include in measures of usage "what users actually do in and around the notion of system use" (Benbasat and Barki, 2007, p. 215). In order to move IS research forward, Benbasat and Barki (2007) and Bagozzi (2007) propose to go beyond expectancy-based theories of motivation (Ajzen, 1991), which are the theoretical anchors of the TAM.

Following Benbasat and Barki's (2007) call to investigate IT design, there has been an essential impetus in the IS research community in recent years to unfold the features of different IT designs and to investigate their related specific properties that influence people's perceptions and use. Some works in past literature do not, however, study specific software and designs; they consider IT as a variable in itself. One may, therefore, consider these two streams of research within the IT usage literature: one stream investigates specific systems and their situational task-related design (e.g., Maier et al., 2013, who study an e-recruiting system); and the other stream investigates computers, software and more generally IT understood as generically defined (e.g., Andersen, 2001; Newkirk et al., 2003, who study IS/IT planning) and, in some cases, as context-related (e.g., Tarafdar and Vaidya, 2006, who study IT assimilation in Indian organizations). Both these streams of research are important and should be taken into account in new models.

In this article, we consider recent research in the IS field as well as recent advances in the fields of psychology and sociology: among various other works found in the literature, we more specifically use and move forward Walsh et al.'s (2010) grounded theory (GT) qualitative work; we also ground our reflection in the recent and ongoing works of Deci, Ryan, Valleraud and their teams. This allows us to address some of the challenges set by Bagozzi (2007) and Benbasat and Barki (2007) in their criticism of the TAM, although we choose a path to IT use that is tangential to those proposed by these authors.

We take into consideration in our work the users' different types of motivation – expectancy-based motivation (in which the desirability of an outcome determines behavior: Vroom, 1964) and needs-based motivation (in which needs are an internal force that guides behavior: Maslow, 1954) – as well as their different types of needs – universal needs (common to all human beings) and IT needs (task-related, context-related and global needs for IT as perceived by users) – and apply them to study the path leading from IT culture to IT use. Our research design paves the way for a multi-level perspective on the concept of IT usage: a global perspective linked to the user's personality, a contextual perspective linked to the relevant context investigated (e.g., work in a given organization), and a situational perspective linked to a specific system design. We propose new variables that provide new perspectives on the path leading to IT usage. Three of the variables proposed (individual IT culture, global IT needs, and contextual IT needs) relate to IT as a variable in itself, 'IT' being used in this instance as a generic term. We are, however, also concerned here with the actual use of (and not the intention to use) some specific IT: an e-learning exchange platform used by students and professors in the context of a European business school. The fourth variable (situational IT needs) relates to this specific IT. Our results show that situational IT needs constitute a direct explanatory variable, with very good predictive value, for the use of the investigated platform. The explanatory power of this variable for the actual use of the platform is more robust across samples than the TAM constructs. The other variables that we propose as antecedents of users' situational IT needs allow us to investigate how and why user profiles, usually perceived as facilitating "ambassadors" (Thomson et al., 2011) during new-IT project implementation, may turn into Nemesis-type<sup>1</sup> profiles if these users perceive that their situational IT needs are not fulfilled by the proposed software. These users may then jeopardize the implementation of strategic IT in organizations.

The new path to IT use that we propose through users' IT culture and needs allows new insights about some generative mechanisms (Bhaskar, 1979, 1989, 1998, 2002) leading to IT acceptance and usage. The methodological approach adopted in the present work is rather unusual in empirical IS research and is, as such, another contribution of the present study. In a critical realist stance, we use an exploratory GT mixed-method approach with both qualitative and quantitative data and methods. For the quantitative data set, we investigate a population of 282 participants (198 students and 84 professors);

<sup>1</sup> Nemesis is the Greek remorseless goddess of revenge. (Source: [http://en.wikipedia.org/wiki/Nemesis\\_%28mythology%29](http://en.wikipedia.org/wiki/Nemesis_%28mythology%29))

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