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Reflecting on the Conceptualization of Organizational Readiness and its Relationship with IT Implementation Success

par
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Reflecting on the Conceptualization of Organizational Readiness and its Relationship with IT Implementation Success

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Résumé

Cette thèse de doctorat s'intéresse à la conceptualisation de la prédisposition organisationnelle et ses implications sur l'implantation des systèmes d'information. Le concept de prédisposition organisationnelle a été étudié dans la littérature en SI depuis plusieurs décennies et permis des avancées importantes sur divers sujets, y compris, l'adoption des SI (Iacovou et al. 1995), le succès d'implantation des SI (Zhu et al. 2010), l'externalisation (Kien et al. 2010), la gestion des connaissances (Rusly et al. 2012), et les services basés sur l'infonuagique (Loebbecke et al. 2012). Malgré les implications importantes de ce concept pour notre domaine, aucune évaluation détaillée et critique de la conceptualisation et des implications de celui-ci n'existe à ce jour. Cette lacune a entrainé des ambiguïtés quant au sens du concept de prédisposition organisationnelle, et a contribué à des résultats ambivalents concernant les liens entre ce construit et d'autres concepts reliés, tels que le succès de l'implantation des SI (Martin et al. 2008; Rusly et al. 2012; Shahrasbi et Paré 2014).

L'objectif principal de cette thèse est donc de clarifier le concept de prédisposition organisationnelle et d'approfondir notre compréhension des effets de ce dernier sur le succès de l'implantation des SI. Pour cela, le premier essai a pour objectif d'examiner la littérature existante et d'évaluer de manière critique le concept de prédisposition organisationnelle. Sur la base des conclusions de cette analyse et des résultats d'une série d'entrevues auprès de spécialistes en gestion du changement et en gestion de projet SI, nous proposons une conceptualisation multidimensionnelle de la prédisposition organisationnelle. La conceptualisation proposée a pour but d'approfondir notre compréhension de ce concept dans notre domaine. Cette conceptualisation a également pour objectif de fournir une base fiable pour les futures études visant à développer les propriétés psychométriques et des instruments de mesure associés à ce concept (Basole 2007; Martin et al. 2008). Une première version de cet essai, intitulé «Rethinking the Concept of Organizational Readiness: What Can IS Researchers Learn from the Change Management Field», a été présentée à la *Americas Conference on Information Systems (AMCIS)* en août 2014.

Le deuxième essai vise un développement théorique et examine la relation entre la prédisposition organisationnelle et le succès de l'implantation des SI dans les organisations. Comme mentionné précédemment, les études empiriques antérieures sur la relation entre la prédisposition organisationnelle et le succès de l'implantation des SI, ont menés à des résultats non concluants. En outre, l'approche de variance adoptée dans les études antérieures a conduit à une compréhension limitée de la nature de cette relation, et, plus particulièrement, de l'influence de la prédisposition organisationnelle sur la dynamique du processus d'implantation (Goodman and Griffith 1991; Paré 2002). Afin d'ouvrir cette «boîte noire» et mieux comprendre les mécanismes et processus sous-jacents qui relient la prédisposition organisationnelle au succès de l'implantation des SI, nous avons mené une enquête qualitative auprès de 30 experts en gestion de projet et en gestion du changement TI. En utilisant une approche de théorisation ancrée comme principale méthodologie de recherche, nous avons développé, de manière inductive, un cadre conceptuel composé de deux liens conceptuels, et quatre processus de médiation qui expliquent le lien entre la prédisposition organisationnelle et le succès de l'implantation des SI. Tel que démontré dans la thèse, le cadre conceptuel proposé a plusieurs implications théoriques et pratiques. Une version antérieure de cet essai, intitulé «Inside the 'Black Box': Investigating the Link between Organizational Readiness and IT Implementation Success», a été présenté à la *International Conference on Information Systems (ICIS)* en décembre 2015.

Mots-clés: Prédisposition organisationnelle en SI, transformation basée sur les TI, succès de l'implantation des SI, revue de littérature, enquête qualitative, entrevue avec des experts.

Méthodologies de recherche: Enquête qualitative, entrevues réalisées auprès d'experts, revue de la littérature.

Abstract

This doctoral thesis focuses on the conceptualization of organizational readiness and its implications for IT implementation success. Organizational readiness has been studied in the IS literature for several decades and yielded valuable insights on various IS topics, including IT adoption and implementation (Iacovou et al. 1995), IT implementation success (Zhu et al. 2010), IT outsourcing (Kien et al. 2010), knowledge management (Rusly et al. 2012), and cloud-based services (Loebbecke et al. 2012). Despite the strong and growing implications of this construct for the IS discipline, as of today there is no comprehensive and critical assessment of the conceptualization of this construct and of its implications for our field. This has led to ambiguities surrounding the meaning of organizational readiness, and has contributed to ambivalent results regarding its links to other constructs including IT implementation success (Martin et al. 2008; Rusly et al. 2012; Shahrasbi and Paré 2014).

In light of the above, the main objective of this thesis is to clarify the conceptualization of organizational readiness and to further investigate its relationship with IT implementation success. To that end, the first essay aims to review the extant literature and critically appraise the conceptualization of organizational readiness construct in our discipline. Based on the findings of this review and the insights gained from a series of in-depth interviews with seasoned IT project/change management specialists, we propose a multi-dimensional conceptualization of organizational readiness. The proposed conceptualization is expected to broaden and deepen our collective understanding of this important construct in our domain. It is also likely to provide a reliable basis for the future studies that aim to develop psychometric properties and measurement instruments for this construct (Basole 2007; Martin et al. 2008). An earlier version of this essay, entitled "Rethinking the Concept of Organizational Readiness: What Can IS Researchers Learn from the Change Management Field," was presented at the *Americas Conference on Information Systems (AMCIS)* in August 2014.

The second essay aims at theory building and investigates the relationship between organizational readiness and IT implementation success. As mentioned above, previous

empirical studies on the relationship between organizational readiness and IT implementation success report inconclusive results. In addition, the "variable approach" that has been adopted in prior studies has yielded limited insights on the nature of this relationship and, more importantly, on the influence of organizational readiness on the dynamics of implementation process (Goodman and Griffith 1991; Paré 2002). In order to open the "black box" and shed light on the underlying mechanisms and processes that link organizational readiness and IT project success, we conducted a qualitative survey with 30 IT project/change management experts. Using a grounded theory approach as our main methodology, we inductively derived a framework which is comprised of two conceptual paths and four mediating processes that link organizational readiness to IT implementation success. The proposed conceptual framework is expected to have several implications for both research and practice. An earlier version of this essay, entitled "Inside the 'Black Box': Investigating the Link between Organizational Readiness and IT Implementation Success," was presented at the *International Conference on Information Systems (ICIS)* in December 2015.

Keywords: Organizational readiness, IT-based transformation, IT implementation success, literature review, qualitative survey, expert interview.

Research methods: Qualitative survey, expert interview, literature review

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List of Acronyms

IT: Information Technology

IS: Information Systems

SCT: Social Cognitive Theory

OCB: Organizational Citizenship Behavior

ERP: Enterprise Resource Planning

CRM: Customer Relationship Management

EDI: Electronic Data Interchange

RFID: Radio-frequency Identification

SME: Small and Medium Enterprise

To my Mom and Dad, whom I inherited the passion for knowledge and learning.

To Mina, for her endless love and support.

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This thesis is due, and I am indebted, to the help and support of many people. First, I would like to express my deepest gratitude to my thesis advisor, Dr. Guy Paré, who has not just been a PhD advisor for me, but a mentor and a good friend. I will remain always grateful to his genuine support and mentorship. I am also grateful to the generous support of the Chair of Information Technology in Healthcare and the Department of Information Technology at HEC Montreal.

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Preface

[Write your preface here.]

Introduction

Information Technology (IT) has been a major source or driver of organizational changes and transformations in the recent century (Davenport 1998; Markus 2004; Piccoli and Ives 2005). Recent scholarly and professional publications suggest that the number of, and investments in, major IT-based organizational transformations, such as ERP and CRM initiatives, are growing at ever-increasing rates (Gartner 2014; Lucas et al. 2013; Wurster et al. 2008). Nonetheless, the success rate of these complex IT-based projects is still on the low side (The Standish Group 2013; Nelson 2007; Dwivedi et al. 2015). Over the past couple of decades, information systems (IS) researchers and practitioners identified several factors that contribute to IS project success (Barki et al. 2001; Raymond 1990; Ein-Dor and Segev 1982; Thong 2001). While the nature of impact in some of these factors, such as project risk, is negative warning organizations against their weaknesses or undesired outcomes, others like organizational readiness contribute to success by enabling managers to proactively embark on projects with sufficient preparation and change supportive plans. Organizational readiness can also lead to a collective confidence at the employees' level, which may contribute to their collaboration and higher level of engagement during the implementation phase (Armenakis et al. 1993; Weiner 2009). These implications of organizational readiness have made it an interesting and unique construct for the researchers in different fields, including information systems (Iacovou et al. 1995; Martin et al. 2008).

Organizational readiness has its roots in the change management discipline and is often regarded as the unfreezing stage of Lewin's organizational change model (Coch and French 1948; Jacobson 1957; Lewin 1947; Lewin and Cartwright 1951). Since it was first introduced by change management scholars, organizational readiness has been investigated in different disciplines, including healthcare (e.g., Weiner et al. 2008), human resources (e.g., Eby et al. 2000), marketing (e.g., Weeks et al. 2004), and information systems (e.g., Iacovou et al. 1995).

In the IS discipline, organizational readiness has been studied in various contexts and yielded valuable insights on several topics, including organizational IT adoption and

implementation (Iacovou et al. 1995), IT implementation success (Zhu et al. 2010), IT outsourcing (Kien et al. 2010), knowledge management (Rusly et al. 2012), and cloud-based services (Loebbecke et al. 2012). Nonetheless, despite its important implications and the growing interests of IS researchers to this construct, organizational readiness suffers from major conceptualization issues, which appeared to be the main causes for the mixed results on the relationship between this construct and other constructs, including IT projects success (Martin et al. 2008; Rusly et al. 2012; Shahrasbi and Paré 2014). As we explain later, previous empirical results on the relationship between organizational readiness and IT project success are ambivalent and raise important questions regarding the nature and strength of association between these two constructs (e.g., Croteau and Li 2003; Jun and Cai 2003).

In light of the above, this thesis aims to broaden and deepen our collective understanding of the organizational readiness construct and of its relationship with IT implementation success. In particular, the first essay focuses on the conceptualization of this construct and reviews more than two decades of the relevant literature. Based on the results of this comprehensive review and the insights from a panel of IT project/change management experts, this essay proposes a multi-dimensional conceptualization of organizational readiness construct. The proposed conceptualization is expected to improve our collective understanding of this construct and provide a reliable basis for the future studies that aim to develop psychometric properties for organizational readiness in our discipline.

Another explanation for the mixed results in the literature is associated with the temporal distance that separates the two constructs as conceptualized in previous research models and empirical studies. More precisely, organizational readiness is usually assessed during the pre-implementation stage, whereas IT project success represents a post-implementation construct. Our review of the extant literature shows no theoretically-grounded process explanation of why and how pre-implementation organizational readiness may positively influence IT implementation success. In other words, our review reveals that prior studies on this topic mainly adopted a variance approach (Markus and Robey 1988). In order to open the "black box" and shed light on the main processes or mechanisms that link organizational readiness to IT

implementation success, we conducted a qualitative survey of 30 IT project/change management experts. We inductively derived from our semi-structured interviews a conceptual framework, which includes two main conceptual paths with four underlying mechanisms that explain how and why organizational readiness can effectively influence IT implementation success. We discuss the implications of our findings for both research and practice.

As explained above, these two research essays that compose this doctoral thesis are complementary and aim to deepen our collective understanding of the concept of organizational readiness and its association with IT implementation success. Figure 1 below summarizes the two essays with regard to their main objectives, methodologies, and key contributions.

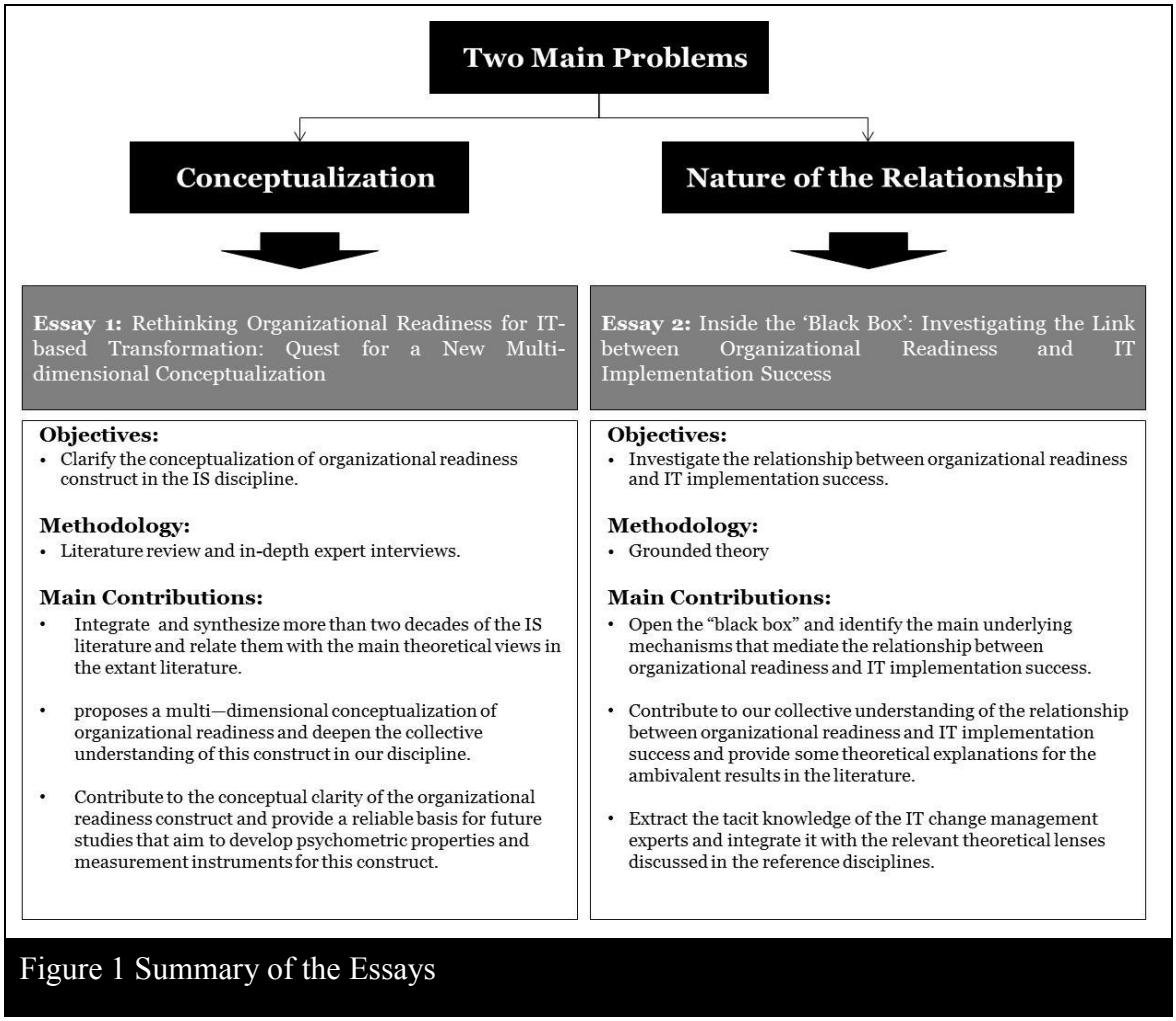

Figure 1 Summary of the Essays

Chapter 1
Essay 1 – Rethinking Organizational Readiness for IT-based Transformations: Quest for a Multi-dimensional Conceptualization[1]

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[1] An earlier version of this essay, entitled "Rethinking the Concept of Organizational Readiness: What Can IS Researchers Learn from the Change Management Field," was presented at the *Americas Conference on Information Systems* (AMCIS) in August 2014.

Abstract

The concept of organizational readiness has been investigated in information systems (IS) research for more than two decades and has yielded valuable insights on core IS topics, including, organizational IT adoption and implementation, IT implementation success, IT outsourcing, and knowledge management. Despite the strong implications of organizational readiness to the IS discipline and the growing interest of IS researchers in this construct, little attention has been given to the conceptualization of this construct and its underlying dimensions (Martin et al. 2008; Rusly et al. 2012; Shahrasbi and Paré 2014). Drawing on the results of a thorough and comprehensive literature review and the insights of the IT change management experts, this study proposes a refined conceptualization for organizational readiness. It discusses how the proposed conceptualization is likely to deepen our collective understanding of this multi-dimensional construct and provide better explanations for some of the previous ambivalent results on the relationship between organizational readiness and its referent phenomena in our discipline.

Key words: IT-based transformations, organizational readiness, conceptual development, literature review, expert interviews.

1.1 Introduction

The organizational readiness construct was originally proposed by the change management theorists to describe the 'unfreezing stage' of organizational change implementations (Armenakis et al. 1993; Coch and French 1948; Jacobson 1957; Lewin 1947). Since it was first introduced, the construct has been applied to a variety of contexts and research fields, including organizational theory (Holt et al. 2007), health sciences (Weiner et al. 2008), human resources (Eby et al. 2000), marketing (Weeks et al. 2004), and information systems (Iacovou et al. 1995). In the information systems (IS) discipline, over the past two decades, organizational readiness has been studied in different contexts and has yielded valuable insight on various topics, such as organizational IT adoption and implementation (Iacovou et al. 1995), IT implementation success (Zhu et al. 2010), IT outsourcing (Kien et al. 2010), knowledge management (Rusly et al. 2012), and cloud-based services (Loebbecke et al. 2012). Nevertheless, despite the strong implications of organizational readiness for the IS discipline and the growing interest of IS researchers in this construct, little attention has been given to the conceptualization of this construct and its underlying dimensions (Basole 2007; Martin et al. 2008; Shahrasbi and Paré 2014). Our survey of the extant literature shows that more than half of the previous studies did not provide any conceptual definition or detailed information about the operationalization of organizational readiness. This has led to several ambiguities surrounding the meaning of this construct over time and contributed to ambivalent results on the relationship between organizational readiness and its main referent phenomena (Iacovou et al. 1995; MacKay et al. 2004; Shahrasbi and Paré 2014).

Previous research also appears equivocal regarding the main dimensions of organizational readiness (Martin et al. 2008; Rusly et al. 2012; Shahrasbi and Paré 2014). While a big chunk of the literature has conceptualized organizational readiness as a unidimensional construct, a few studies have proposed multiple dimensions (Basole 2007; Martin et al. 2008; Shahrasbi and Paré 2014). Nevertheless, the diversity of the proposed dimensions in addition to a lack of sufficient effort to synthesize and integrate this fragmented body of knowledge has increased the ambiguity and fuzziness

surrounding the conceptualization of this construct (MacKay et al. 2004; Martin et al. 2008; Rusly et al. 2012). In this regard, Martin et al. (2008) suggest that "while the importance of organizational readiness for successful innovation adoption and implementation has been highlighted repeatedly, there is [yet] no consensus about which dimensions constitute organizational readiness" (p. 3). For their part, Rusly et al. (2012) also indicate "although there is considerable research on readiness, there is little consistency in defining and conceptualizing the term. This is largely due to its abstract nature, which has resulted in various definitions. […], unfortunately, previous literature tends to discuss only a fraction of readiness aspects and fails to provide a comprehensive representation of the construct" (p. 331). We concur with these authors that, in the absence of a conceptual clarification of this construct, efforts to develop reliable measurement, create cumulative knowledge, and inform practice will likely remain stalled.

Keeping these limitations in mind and aiming to better understand the meaning of organizational readiness and its implications for the IS discipline, we first reviewed the extant IS literature and identified a total of 93 articles that considered organizational readiness as a key construct. As detailed later, our review revealed six common dimensions of organizational readiness. In addition, we conducted 30 in-depth interviews with seasoned IT project/change management specialists. We aimed to refine the dimensions extracted from the extant literature and to see whether we could possibly capture other salient dimensions beyond those proposed in previous studies (Sartori 1984; Weiss 1995). Overall, this article aims to contribute to conceptual clarity and the content validity of the organizational readiness construct in the IS discipline (Straub 1989; Edwards 2003; Mackenzie et al. 2011).

The remainder of the essay is structured as follows. First, we review the construct of organizational readiness and its key dimensions according to the previous IS literature. Then, we present the methodology adopted in this study. Next, we propose a new conceptualization of organizational readiness based on our summary of the literature and our empirical work. Last, we discuss the implications of the study for research and practice.

1.2 Background

Relevance of Organizational Readiness for the IS Discipline

The ubiquitous and strategic nature of IT-based transformations in organizations, the low rate of acceptance, and the high rate of their implementation failures have made organizational readiness an interesting topic for both IS researchers and practitioners (Iacovou et al. 1995; Jha et al. 2009; Snyder and Fields 2006). For more than two decades, IS researchers have used the construct of organizational readiness to explain and predict various phenomena. The construct was first introduced by Iacovou et al. (1995) who referred to organizational readiness as the availability of resources required for successfully adopting and implementing information systems in organizations. They argue that IS adoption and implementation greatly depend on the availability of sufficient financial and technological resources and an adequate IT infrastructure. Following Iacovou et al. (1995), several studies found a significant relationship between organizational readiness and organizational IS adoption in different contexts (Chwelos et al. 2001; Grandon and Pearson 2004).

Investigating the relationship between organizational readiness and IT project success represents another important research topic in our domain. Previous studies have hypothesized a positive link between organizational readiness and IT implementation success. For example, Gargeya and Brady (2005), who examined the relationship between readiness and success in the specific context of ERP implementations, suggest that organizational readiness has a major influence on several implementation success criteria. For their part, Zhu et al. (2010) also found a positive and significant relationship between organizational readiness and IT implementation success.

While the abovementioned topics have constituted the main body of research on organizational readiness in our discipline, other studies have striven to expand the implications of this construct. For instance, Ranganathan and Balaji (2007) investigated the role of organizational readiness in the context of IT outsourcing. Having studied both successful and unsuccessful cases of IT outsourcing, these authors suggest that firms' internal ability and preparation to undertake outsourcing projects (i.e., "IT outsourcing readiness") is one of the main precursors to the success of IT outsourcing

initiatives. As another example, Loebbecke et al. (2012) examined organizational readiness in the specific context of IT cloud-based services. Using an in-depth case study of a cloud transition in a multinational automotive company, they proposed seven criteria to assess organizations' technological readiness for transferring to cloud-based platforms. Finally, Rusly et al. (2012) proposed a conceptual model that highlights the role and influence of organizational readiness in the successful deployment of knowledge management initiatives.

Notwithstanding the growing number of IS studies investigating the concept of organizational readiness, a comprehensive and critical assessment of the prior conceptualizations of this construct in our field has not yet been undertaken. As will be shown later, our comprehensive literature review reveals several conceptual problems, including a lack of cumulative tradition and consensus regarding the meaning and nature of organizational readiness and a lack of alignment between the proposed conceptualizations in IS research and those found in the change management field. As mentioned earlier, we concur that the abovementioned problems have limited our collective understanding of this construct and contributed to mixed results (Martin et al. 2008; Rusly et al. 2012; Shahrasbi and Paré 2014).

1.3 Literature Review

Methodology

We conducted a comprehensive and rigorous narrative review (Paré et al. 2015) in order to synthesize the prior literature and obtain a finer understanding of the conceptualization of the organizational readiness construct in the IS discipline. As a first step, we conducted a keyword search in the following databases: *ABI/INFORM Complete, EBSCO, ISI Web of Knowledge,* and *Science Direct*. The list of selected keywords comprises: *organizational readiness, change readiness, organizational preparedness, change preparedness,* and *E-readiness*. No time restriction was applied and our search was restricted to scholarly journals and peer-reviewed English articles. We excluded study protocols, research notes, short reports, cover stories, commentaries, book reviews, and editorials. Overall, our initial search produced a total of 1,177 articles.

All articles were then carefully examined in two consecutive rounds. First, we screened the articles based on their title and abstract. This led us to exclude 1,071 articles. We kept articles that were relevant to the IS field and studied organizational readiness as a key construct. Second, a backward search (Webster and Watson 2002) allowed us to identify 15 additional articles, which resulted in a total of 121 articles for the full-text review. Articles that were unavailable in our university library databases or that investigated readiness at the individual level were then excluded (see Figure 1.1). As a result, 93 articles were included in our final sample.

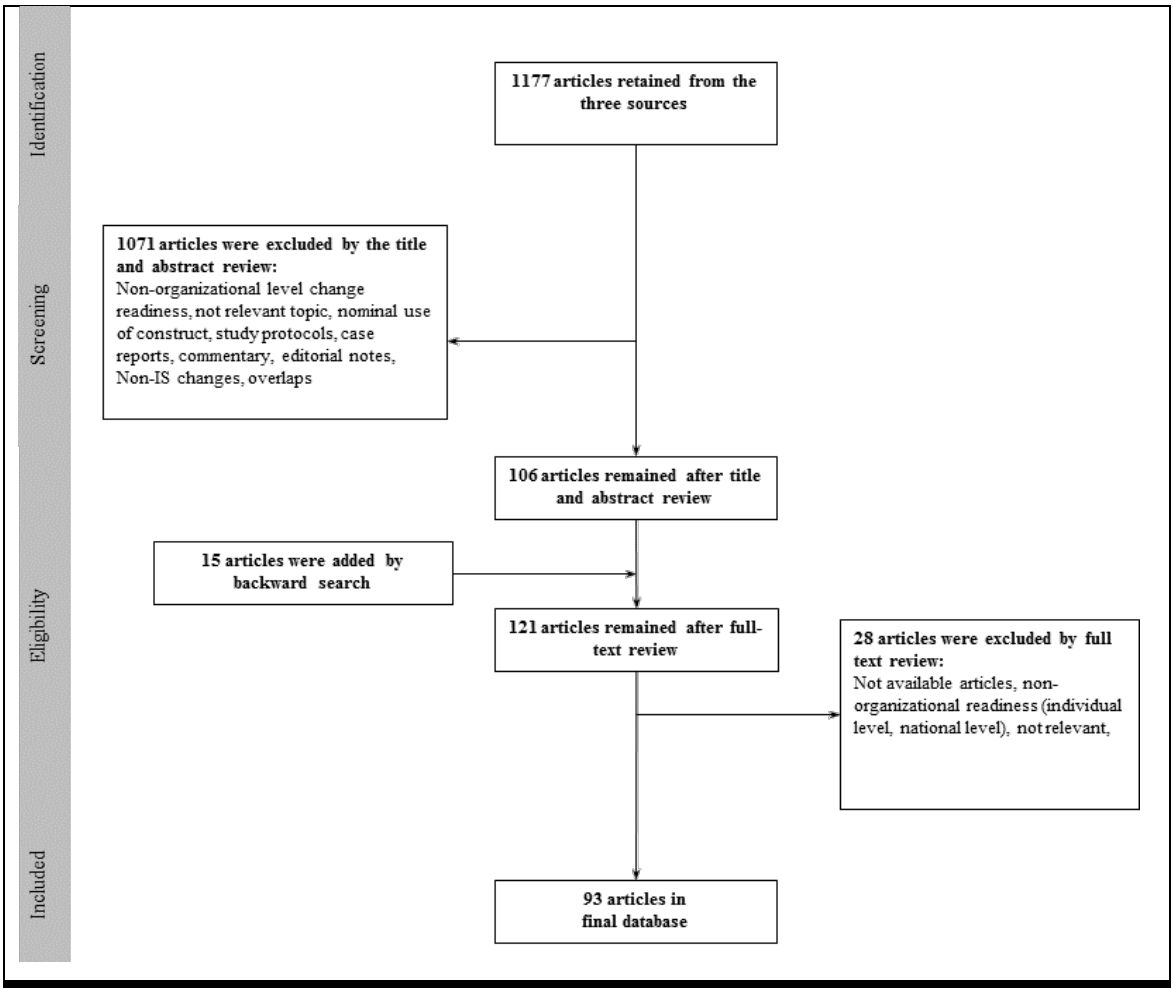

Figure 1.1 Flow Diagram

To analyze how organizational readiness has been conceptualized within our field, we developed a coding scheme (see Appendix 1.1). Our scheme included 37 codes grouped under four categories: 1) general profile of the articles, 2) research theme and key

findings, 3) methodological details and study design, 4) conceptualization and operationalization of the organizational readiness construct. We then assessed the reliability of the coding scheme. To do so, we conducted a pretest with 10 (20%) randomly selected articles. Two independent raters, in addition to the main researcher, coded the articles independently, discussed, and resolved disagreements in separate meetings and in one final joint meeting. As shown in Table 1.1, the results show a strong agreement rate among the two independent coders and the first author of this essay. Importantly, the sources of discrepancies did not appear to be systematic across coders. In light of these results, we felt the coding scheme showed high reliability (Tinsley and Weiss 1975).

Table 1.1 Inter-rater Agreement Rates

	Researcher and rater #2	Researcher and rater #3	Rater #2 and rater #3
Inter-rater agreement rate	87%	82%	82%

As a following step, we extracted from each article the core elements of the organizational readiness construct, including the conceptual definitions and the proposed dimensions. In many cases, the lack of explicitly stated conceptual definitions forced us to scrutinize the operational measures to figure out the authors' perspective of the construct. Last, following other reviews in our field (e.g., Leidner and Kayworth 2006; Roberts et al. 2012), a thematic analysis was conducted to identify and categorize the key dimensions of organizational readiness found in previous studies. Thematic analysis is a systematic approach or method to synthesize the literature and to eliminate duplicates and homonyms (Boyatzis 1998).

Findings

First, our results were consistent with the observation of the previous studies (MacKay et al. 2004; Martin et al. 2008; Rusly et al. 2012) and identified two main problems concerning the conceptualizations of organizational readiness in the IS literature. First, we observed that more than half of the reviewed articles fail to provide a clear conceptual definition for organizational readiness. The majority of these articles (49 articles) did not provide any conceptual definition, while many others (43 articles) lack

sufficient detail on the way they operationalized and measured this construct (see Table 1.2). These issues caused several ambiguities surrounding the conceptualization of organizational readiness construct and contributed to the fuzziness of its meaning and its main dimensions (Barki 2008; Suddaby 2010).

Our review also identified a lack of cumulative tradition in the literature regarding the proposed/adopted dimensions of organizational readiness. As shown in table 1.2, the variety of organizational readiness dimensions in the previous literature, even across studies that investigate similar phenomenon, led to a fragmented literature in light of no previous structured review.

Second, our thematic analysis determined six core dimensions of organizational readiness in accord with the previous studies in the IS literature. Below, we present these dimensions in decreasing order of importance (i.e. beginning with the most cited).

Table 1.2 Profile of the Reviewed Articles

No	Authors (Year)	Conceptual Definition	Operationalization Detail	Technological Readiness	Financial Readiness	Strategic Readiness	Process Readiness	Cultural Readiness	Psychological Readiness
1	Iacovou et al. (1995)	Yes	Yes	√	√				
2	Guha et al. (1997)	No	No					√	
3	Clark et al. (1997)	No	No		√		√		
4	Rao (2000)	No	Yes	√		√			
5	Jun et al. (2000)	Yes	Yes	√	√		√		
6	Chwelos et al. (2001)	Yes	Yes	√	√				
7	Mehrtens et al. (2001)	Yes	Yes	√					
8	Kuan and Chau (2001)	No	Yes	√	√				
9	Stratman and Roth (2002)	Yes	Yes	√					
10	Motwani et al. (2002)	No	No					√	
11	Jun and cai (2003)	No	Yes	√	√	√	√	√	
12	Ocker and Mudambi (2003)	No	No	√	√	√	√	√	
13	Grandon and Pearson (2003)	No	Yes	√	√				
14	Croteau and Li (2003)	Yes	Yes	√					
15	Roberts et al. (2003)	No	No						
16	Lee and Cheung (2004)	No	Yes	√	√				

Table 1.2 Profile of the Reviewed Articles									
No	Authors (Year)	Conceptual Definition	Operationalization Detail	Technological Readiness	Financial Readiness	Strategic Readiness	Process Readiness	Cultural Readiness	Psychological Readiness
17	Tsao et al.(2004)	No	No						
18	Grandon and Pearson (2004) a	No	Yes	√	√				
19	Grandon and Pearson (2004) b	Yes	Yes	√	√				
20	MacKay et al. (2004)	No	Yes	√	√				
21	Zhu et al. (2004)	Yes	Yes	√					
22	Asif and Mandviwalla (2005)	No	No	√			√	√	
23	Motwani et al. (2005)	No	No					√	
24	Grageya and Brady (2005)	No	No	√	√				
25	Molla and Licker (2005)a	Yes	Yes	√	√	√		√	
26	Molla and Licker (2005)b	Yes	Yes	√	√	√		√	
27	Sen et al. (2006)	Yes	No						
28	Nikolaeva (2006)	No	No		√		√		
29	Raymond et al. (2006)	No	No	√	√	√	√		
30	Henriksen et al. (2006)	No	No						
31	Sutanonpaiboon and pearsons (2006)	No	Yes	√	√	√			
32	Zhu et al. (2006)	Yes	Yes	√					
33	De Soysa and Nanayakkara (2006)	No	No	√		√	√		
34	Brown and Russell (2007)	No	Yes	√	√		√	√	
35	Chan and Ngai (2007)	Yes	Yes	√	√				
36	Saffu et al. (2007)	No	Yes	√	√				
37	Tan et al.(2007)	No	Yes	√	√	√		√	
38	Lee and Shim (2007)	Yes	Yes	√	√				
39	Basole (2007)	Yes	No	√	√	√	√		
40	Quaddus and Hofmeyer (2007)	No	Yes	√	√				
41	Ranganathan and Balaji (2007)	No	No						
42	Saffu et al.(2008)	Yes	Yes	√	√				
43	Doolin and Haj Ali (2008)	Yes	Yes	√	√				
44	Hadaya and Pellerin (2008)	Yes	Yes	√	√	√			
45	Pai and Yei (2008)	No	No						
46	Pan and Jang (2008)	No	Yes	√					
47	Martin et al. (2008)	Yes	No	√		√	√		
48	Misra (2008)	No	No	√	√	√	√	√	

Table 1.2 Profile of the Reviewed Articles									
No	Authors (Year)	Conceptual Definition	Operationalization Detail	Technological Readiness	Financial Readiness	Strategic Readiness	Process Readiness	Cultural Readiness	Psychological Readiness
49	Razmi et al. (2008)	No	No	√	√	√	√	√	
50	Kollman et al. (2009)	Yes	Yes	√	√				
51	Chong et al. (2009)	Yes	Yes	√	√	√			
52	Xu et al. (2009)	Yes	Yes	√	√	√			
53	Ramdani et al. (2009)	Yes	No	√	√				
54	Zheng et al. (2009)	No	No	√	√	√			
55	Chang (2010)	Yes	Yes	√	√	√			
56	Oliveira and Martins (2010)	No	Yes	√	√				
57	Zhu et al. (2010)	No	Yes			√	√		
58	Molla et al. (2010)	Yes	Yes	√	√	√	√		
59	Kim and Garrison (2010)	No	Yes	√	√				
60	Azadegan and Teich (2010)	Yes	No	√	√		√	√	
61	Mouzakitis a & Askounis (2010)	No	Yes	√	√	√			
62	Tsai et al. (2010)	No	Yes	√					
63	Hadaya and Pellerin (2010)	Yes	Yes	√	√	√			
64	Li (2010)	Yes	No	√					
65	Sammon and Adam (2010)	No	No	√		√	√	√	
66	Sawang and Unsworth (2010)	Yes	No	√	√				
67	Rotchanakitumnuai (2010)	Yes	No	√			√		
68	Kien et al. (2010)	No	No	√	√		√		
69	Ifendo (2011)	No	Yes	√					
70	Alam et al. (2011)	Yes	Yes	√	√				
71	Lin et al. (2011)	Yes	Yes				√	√	
72	Turban et al. (2011)	No	No						
73	Paré et al. (2011)	Yes	Yes						√
74	Pham et al. (2011)	Yes	Yes	√	√				
75	Lip-Sam and Hock-Eam (2011)	Yes	Yes	√	√				
76	Molla et al. (2015)	No	No	√		√	√	√	
77	Palmer et al. (2012)	No	No	√	√				
78	Saprikis and Vlachopoulou (2012)	Yes	Yes	√	√				
79	Leung and Law (2012)	No	Yes	√	√	√			

Table 1.2 Profile of the Reviewed Articles									
No	Authors (Year)	Conceptual Definition	Operationalization Detail	Technological Readiness	Financial Readiness	Strategic Readiness	Process Readiness	Cultural Readiness	Psychological Readiness
80	Rusly et al. (2012)	No	No			√			√
81	Loebbecke et al. (2012)	No	No	√					
82	Venkatesh and Balla (2012)	Yes	Yes	√					
83	Aziz et al. (2012)	Yes	No	√		√	√		
84	Unsworth et al. (2012)	No	Yes	√					
85	Ahmadi et al. (2013)	Yes	No	√	√	√	√	√	
86	Yetton et al. (2013)	No	No		√				
87	Ahmadi et al. (2014)	No	No						
88	Rsuly et al. (2014)	Yes	No				√	√	√
89	Ahmadi et al. (2015)a	Yes	No	√		√	√	√	
90	Ahmadi et al. (2015)b	No	No						
91	Ram et al. (2015)	Yes	Yes	√	√				
92	Yang et al. (2015)	Yes	Yes	√		√			
93	Mangula et al. (2015)	Yes	No	√	√				
Total		44 (Yes)	51 (Yes)	73	55	30	26	19	3

Technological readiness: Technology is the core component of all IT-based transformations in organizations. Accordingly, "technological readiness" has been defined as the extent to which an organization has all the required technological resources (e.g., hardware, software, application) and infrastructural capacity (e.g., network, architecture, data platforms) to adopt and implement a new system successfully (Iacovou et al. 1995; Molla and Licker 2005b; Venkatesh and Bala 2012). Put differently, technological readiness reflects the organization's technological capability and infrastructural capacity that are required to successfully adopt and implement a new system and to integrate it within the existing infrastructure and IT architecture. For instance, Molla and Lickers (2005) define technological readiness in the context of E-commerce adoption as the extent to which an organization has the required technological resources (e.g., PC, LAN, intranet) to develop and implement an E-commerce platform or infrastructure, the extent to which it has a reliable network and internet connectivity, and the extent to which the current network and bandwidth have the capacity to bear the load of E-commerce online transactions. Zhu et al. (2006) define technological readiness as organizations' capacity and capability to introduce new technological changes. They argue that firms with a higher level of IT sophistication (Paré and Raymond 1991) and technological competence are more likely to be ready to adopt and assimilate new technologies more easily.

Other studies proposed IT knowledge and expertise as another important component of technological readiness (Kim and Garrison 2010; Mehrtens et al. 2001; Ifinedo 2011). For example, Mehrtens et al. (2001) argued that successful organizational IT adoption requires both knowledgeable and skilled IT staff and professionals to implement and support the new system as well as knowledgeable and skilled non-IT staff to be able to operate with the new system and to incorporate it in their daily tasks and activities. Thus, they defined technological readiness as an organization's level of technical knowledge and expertise among its IT professionals as well as its level of IT literacy and knowledge among non-IT professionals. For his part, Ifinedo (2011) defines technological readiness as "the technical expertise and competence available to the organization" (p. 260). He argues that a lack of readiness in this domain is one of the main barriers to the successful introduction and implementation of new technologies in

the context of small firms. In short, our review of the extant literature shows that technological readiness represents the most important or popular dimension of organizational readiness in our field. More precisely, 76% of our reviewed articles (n=73) proposed technological readiness as a key dimension of organizational readiness.

Financial readiness: IT-based organizational transformations are also known as resource-intensive projects (Cha et al. 2015; Hirschhorn 2002; Markus 2004). Adopting a new ERP system, for instance, may cost organizations millions of dollars (Al-Mudimigh et al. 2001; Rao 2000). In addition, the adoption of enterprise systems may require the deployment of a new IT infrastructure and architecture, which may substantially increase the cost of IT implementation. The previous literature has highlighted the importance of availability of sufficient financial resources in IT projects (Ein-Dor and Segev 1978; Rosner 1968; Thong 2001). For example, Rosner (1968) suggests that sufficient financial resources are the main determinants of innovation adoption in organizations. More precisely, he argues that financial slack resources allow organizations to adopt innovations and to explore new ideas. For their part, Kwon and Zmud (1987) posit that successful IT projects require sufficient financial resources and slack to support the adoption, implementation, and sustainability of the technology in organizations. Last, Bouchard (1993) suggests that financial capability to pay for installation, implementation, and integration of new IT systems is a core criterion for the adoption decision in small firms.

In short, financial readiness, which refers to the extent to which an organization has sufficient funds and financial capacity to adopt and successfully implement a new information system, has been proposed as another important dimension of organizational readiness in previous IS studies (Grandon and Pearson 2003; Iacovou et al. 1995). Our review indicates that 55 out of 93 articles (59%) in our sample included financial readiness as a sub-dimension of organizational readiness.

Process readiness: Information systems are built to support organizations' structures and business processes. Hence, most IT-based transformations pose dramatic changes to organizations' structures and processes. In many cases, the gap between organizations' existing processes ('as is') and those that are required and compatible with the new

system (‘to be’) force organizations to go through a major structural redesign and process re-engineering effort prior to system deployment (Davenport 2000; Loebbecke and Palmer 2006).

Previous studies suggest that the maturity and flexibility of organizations regarding their main business processes and operations are one of the key indicators of readiness in the context of IT-based transformations (Davenport 2000; Ein-Dor and Segev 1978; Raymond 1990). More specifically, they indicate that organizations with more flexible structures and business processes can typically respond more rapidly and effectively to technological changes. Similarly, organizations with documented, standardized, and formalized business processes are generally well prepared to adopt new technologies and to adapt their processes to the technological transformations (Basole 2007; Raymond et al. 2006). Consequently, process readiness is often defined as the extent to which the existing business processes are in line with and support the proposed IT-based transformation (Basole 2007; Chang and Chen 2005; Martin et al. 2008). For example, Chang and Chen (2005) define process readiness as the level of fit between organizations’ existing business processes and those compatible with the adopted technology. Basole (2007) defines it as the capacity of organizational processes to support and facilitate the adoption and implementation of new information systems. He suggests that well-defined, documented, managed, and optimized processes involve a high level of readiness in this domain and can facilitate the transition between the ‘as is’ and ‘to be’ phases. Last, Martin et al. (2008) define process readiness as “the degree of formalization of the processes, reflected by the existence of documentation, rules, procedures, and clear management practices” (p. 5). In short, our literature review shows that approximately 30% of the articles (n=26) consider process readiness as a dimension of organizational readiness.

Strategic readiness: The level of strategic readiness represents another dimension that has been mentioned in previous studies (Basole 2007; MacKay et al. 2004; Ocker and Mudambi 2003). These studies characterize strategic readiness as composed of two main elements, namely, top management support and a clear vision or strategic direction for the IT project. Each of these will be examined in turn.

First, top management support has been one of the most acknowledged success factors of IT implementation projects (Damanpour 1991; Raymond 1990; Sharma and Yetton 2003). To be successful, an IT project requires the approval and active support of top management and leaders (Ein-Dor and Segev 1978; Zmud 1984). The reviewed studied suggest that the more IT projects are aligned with and in support of the organization's main objectives, the more they will get the attention and support of the top management teams and leaders (Ocker and Mudambi 2003). Second, prior studies also highlight the importance of having a clear vision or strategic direction for IT projects (Davenport 1998, 2000; Razmi et al. 2008; Somers and Nelson 2001). For example, Davenport (2000) attributes the high rate of IT project failures to a lack of well-defined and clear business vision and strategic goals before their inception. He indicates that IT project managers should clearly define the vision, strategic goals and expected benefits associated with a particular project. This vision should address the critical needs of the business and be aligned with and supportive of the strategic direction of the organization (Ocker and Mumdabi 2003). In short, prior studies suggest that a lack of strategic readiness can be a major risk for the deployment of complex IT-based transformations, such as implementation of ERP or CRM systems (Ocker and Mumdabi 2003; Zhu et al. 2010). Our review identified 30 articles (32%) that refer to one or both elements of strategic readiness.

Cultural readiness: Organizational culture has been recognized as an influential factor that can facilitate or inhibit organizational change implementations of various kinds (Guha et al. 1997; Kettinger and Grover 1995; O'Reilly et al. 1989). In the context of IT-based transformations, previous studies suggest that introducing new technological changes requires an open and receptive organizational culture that supports change and embraces new technological innovation (Guha et al. 1997; Holahan et al. 2004; Ocker and Mudambi 2003; Zmud 1984). Correspondingly, cultural readiness has been proposed as another dimension of organizational readiness in the context of IT-based transformations. Although the previous studies did not provide any clear definition for this dimension, cultural readiness can be referred to as the extent to which the organization's culture is open and receptive to new changes and the new IT-based transformation in particular (Guha et al. 1997; Motwani et al. 2002, 2005). For instance,

Guha et al. (1997) found that organizations with relatively higher cultural readiness are more successful in their IT-based transformation initiatives than those with low cultural readiness. They posit that key values, such as openness, risk taking, innovativeness, and trust may promote cultural readiness in organizations, whereas others, like risk avoidance, ambivalence, and excessive competition, may discourage the development of a change receptive and innovative culture. Our review reveals that approximately 20% of the articles in our sample (n=19) considered the notion of cultural readiness in their conceptualization or operationalization of organizational readiness.

Psychological readiness: Some recent studies also highlight the importance of employees' collective state of mind that shapes their behaviors in supporting or resisting technological change and implementation of a new information system (Paré et al. 2011; Rusly et al. 2012; Shahrasbi and Paré 2014). The importance of psychological readiness, as originally proposed by change management theorists (Armenakis et al. 1993; Weiner et al. 2008; Weiner 2009), stems from its significant influence on employees' attitudes and behaviors towards the new system and the associated changes in organizations (Shahrasbi and Paré 2014). These studies argue that employees' psychological readiness, specifically in the early stage of a project (e.g., pre-implementation), can shape their attitudes towards the new system and influence their collaboration and active participation during the implementation phase (Paré et al. 2011; Shahrasbi and Paré 2014). For example, Paré et al. (2011) define psychological readiness as a collective construct that reflects employees' cognitive and emotional inclination to accept, embrace, and adopt a particular plan to purposefully alter the status quo. Similarly, Rusly et al. (2012) define psychological readiness as the extent to which the employees feel collectively competent and capable to deliver the change (p. 332). Our review identified three studies (2%) that either investigated or simply discussed the importance of psychological readiness in the context of IT-based transformations.

Summary

Overall, our comprehensive review suggests that organizational readiness appears to be a multi-dimensional construct (See Table 1.3). More precisely, altogether previous IS studies have considered six main dimensions as presented above. As a next step, we

believe it is important to empirically validate such conceptualization with experts in the field. We agree with other scholars in our field that such an empirical validation may not only contribute to the conceptual clarity and the content validity of the organizational readiness construct, but also help to develop a common language between researchers and practitioners in this particular area (Barki 2008; Jansen 2010; Suddaby 2010; Zhang et al. 2016). Further, it will likely allow us to refine the dimensions extracted from the extant literature and see whether we can identify other, yet complementary dimensions of organizational readiness (MacKenzie et al. 2011; Sartori 1984). Next, we explain our methodology and then present and discuss our main findings.

Table 1.3 Dimensions of Organizational Readiness Extracted from the Previous Literature

Dimension	Definition	Sample items adapted from the previous studies	Key References
Technological readiness	The extent to which the organization has the required resources and technological capacity to adopt and implement the new IS.	- To what extent does organization have the required technological resources and equipment to adopt and implement the new IS? - To what extent does our organization have the necessary infrastructural capacity to implement and support the new IS? - Is there an adequate level of integration in our IT infrastructure to support the new IS and facilitate its operation in the organization? - Do we have a high bandwidth of internet connectivity in our organization? - Do we have a well computerized and mature network? - Does our IT staff have sufficient knowledge and experience to implement and support the new IS? - Does non-IT staff have the necessary IT literacy and knowledge to work with the new IS?	Iacovou et al. (1995) Molla and Licker (2005) Mehrtens et al. (2001) Chwelos et al. (2001) Zhu et al. (2006)
Financial readiness	The extent to which the organization has the required financial readiness and funds to adopt and implement the new IS.	-To what extent does our organization have the required financial resources to invest in and adopt the new IS? - To what extent does our organization have the required financial resources to buy, implement, and support the new IS? - What portion of the organization budget is committed to the adoption and implementation of the new IS?	Iacovou et al. (1995) Chwelos et al. (2001) Grandon and Pearson (2004) Chang (2010)

Table 1.3 Dimensions of Organizational Readiness Extracted from the Previous Literature

Dimension	Definition	Sample items adapted from the previous studies	Key References
Strategic readiness	The extent to which there is a clear vision and a high level of management support for the adoption and implementation of the new IS in the organization.	- Do we have a clear vision for the adoption and implementation of the new system and its main objectives? - Is our vision for the new IS aligned with our overall IS strategic plan and IT vision in the organization? - Is our vision widely shared and understood across the company? - Do people have a good comprehension of the main implications that the new IS will have for our organization and our business? - Does top management strongly support the adoption and implementation of the new system in our organization?	Martin et al. (2008) Basole (2007) Razmi et al. (2008)
Processes readiness	The extent to which the current business processes can support and facilitate the adoption and implementation of the new system.	- To what extent is the new IS aligned and compatible with our current business processes and work practices? - To what extent is the new IS aligned and compatible with the anticipated (to-be) work practices? - To what extent are our business processes documented, formalized, and optimized with regard to the upcoming IT-based transformation? - To what extent do we need to improve and reengineer our business processes?	Basole (2007) Martin et al. (2008) Razmi et al (2008) Zhu et al. (2010) Raymond et al. (2006)

Table 1.3 Dimensions of Organizational Readiness Extracted from the Previous Literature

Dimension	Definition	Sample items adapted from the previous studies	Key References
Cultural readiness	The extent to which the organization's culture is open and receptive to adoption and implementation of the new system.	No previous measures are available	Guha et al. (1997) Motwani et al. (2002, 2005) Molla and Licker (2005)
Psychological readiness	The extent to which the organizational members are collectively primed, capable, and motivated to adopt the new system and accept its outcome.	No previous measures are available	Paré et al. (2011) Rusly et al. (2012)

1.4 Qualitative Field Survey

Methodology

Data Collection

To achieve our research objectives, we conducted a series of in-depth interviews with IT project/change management experts. We deem this group of respondents most relevant to our study in that they are typically involved in multiple phases of IS implementation projects and are most likely hands-on and knowledgeable about change management issues in the context of IS projects. In addition, they often work closely with other members of the IS project team (e.g., managers and executives, IT specialists, and end-users), which gives them a unique and multi-disciplinary insight on the topic of our study.

To recruit our respondents, we first adopted a purposive sampling approach (Patton 2002) and started with 20 potential candidates from our personal and professional contacts. All candidates had many years of experience in managing large and complex IT implementation projects and were educated in the relevant fields, including information systems, change management, management, and business administration (see Table 1.4). We select our candidates from different educational and professional backgrounds to ensure that we cover different perspectives. The candidates were then contacted and invited to participate in our study through email. From our initial list, a total of 15 candidates responded and agreed to participate, among which ten were selected for interview in the first wave of our data collection. As we went forward with our data collection, we also adopted a snowball sampling strategy in which we asked our respondents to suggest other candidates as they see fit. As such, 25 other candidates were added to our sample from which we interviewed 15 people in the second wave of our data collection. As shown in table 1.4, all respondents had many years of relevant work experience, and more than 15 years of experience in managing IS projects. In total, we conducted 30 in-depth interviews and the average length of each interview was approximately 60 minutes.

Before starting our interviews, we developed an interview guide (see Appendix 2), and refined it using three pilot interviews (Myers and Newman 2007). Then, face-to-face interviews with our respondents were conducted. All interviews were recorded with the consent of the respondents and notes were taken during each interview. All interviews began with a generic question regarding the meaning of organizational readiness construct. For example, we asked our respondents to define organizational readiness in their own words (e.g., What does organizational readiness mean to you in the context of IT projects? In your opinion, what are the key signs or indicators that show readiness in organizations for undertaking a technological change or an IT-based transformation? In your opinion, what are the key signs/indicators that show lack of sufficient readiness?) We then asked them to illustrate and support their "definitions" with examples from real-life IT projects that they had been involved in (e.g., Can you describe a project in which you feel the organization had sufficient readiness for a planned IT-based transformation? What makes you think that the organization was ready? Can you describe for us a project in which you feel the organization was lacking sufficient readiness for undertaking a planned IT-based transformation?) To minimize the response bias, we avoided sharing with our respondents the dimensions of organizational readiness as found in the extent literature until the end of each interview. As explained below, we transcribed and started our analysis in parallel with our data collection, and we continued our interviews until we reached theoretical saturation (Eisenhardt 1989; Patton 2002).

Table 1.4 Profile of the Experts

Main Expertise (n)	**Relevant years of Experience (n)**	**Education (n)**	**Relevant Certificate (n)**	**Organization Type (n)**
IT project managers (7) IT change management specialists (23)	More than 20 years (14) Between 10 to 20 years (13) 10 years or less (3)	Information Systems (12) Change management (8) Business Administration (6) Other (4)	CMP (Prosci) (10) Accenture Cert. (5) IBM Certified (4) PMP (20) ITIL (2) Other (4)	Consulting firms (19) Other (11)

Data Analysis

First, we transcribed all interviews. Transcriptions were done by a professional transcriber and verified by the principal researcher. All transcripts were then imported into Nvivo 10 (www.qsrinternational.com). We used Nvivo to enhance our coding process and run queries on the data.

To codify our interviews, we first developed a coding scheme inspired by the dimensions we found in the literature (see Appendix 1.3). This was in line with our objective to empirically validate these dimensions and to examine the identified conceptualization from our literature review. We tested our coding scheme with five interviews and checked the results with the members of the thesis committee at two different phases: 1) after coding 10 interviews, and 2) after finishing up the first round of coding. Suggestions for improvement were documented after each meeting and implemented for the remaining interviews.

While our first round of analysis confirmed the relevance of all the identified dimensions from the literature, we realized that our preliminary coding scheme may have been too broad missing sufficient level of granularity for addressing the details embedded in our data. For instance, the notion of "technological readiness," as suggested in the literature, contained different meanings, including the organizational access to the required technological resources, the availability of knowledge, skillset and competencies, and the compatibility of the IT infrastructure and architecture in the organization with the new system. As such, using the code "technological readiness" was limiting our analysis in that we could not distinguish between these concepts and highlight their differences. Nor we could explore new ideas and the dimensions that may emerge from our data. Therefore, we revised our coding strategy by following a content analysis approach (Fink 2003; Patton 2002). This approach provided us with leeway to stay close to our data and inductively identify new ideas or concepts. As such, we continued our coding process by generating open codes as we reviewed the verbatim text (Patton 2002). Next, open codes were compared and contrasted through an iterative process of "selective coding" (Charmaz and Belgrave 2002). In this way, relevant codes were combined to create higher level concepts when they reflect similar concepts or

implied the same meaning. Also, as exemplified earlier, some codes were broken down if they maintained multiple meanings or aspects as emerged from the text. An example for the former is resource availability, which reflects the extent to which the organization has access to the required resources, including financial resources, technological resources, knowledge and skills, and combined some aspects of the earlier dimensions, i.e., "financial readiness" and "technological readiness." This process helped us to clarify our conceptualization and refine some of the dimensions that we found earlier in the literature.

Finally, theoretical coding was also used to enhance our analysis and relate the emergent dimensions of organizational readiness with the main theoretical lenses available in the change management and health sciences literatures (Charmaz and Belgrave 2002; Glaser and Strauss 1967). Below, we present the finalized dimensions and then discuss our results.

Findings

The analysis of our qualitative interviews reveals a total of 10 dimensions of organizational readiness, as presented below. Our results also show that while some of these dimensions represent organizational level constructs, others rest at the collective or group level characterizing the employees' collective readiness for the upcoming IT-based transformation. Below, we present and discuss our results.

Organizational-level Dimensions

1. **Adequate Organizational Resources**

The availability of organizational resources represents one of the main topics discussed by our panel of experts. Consistent with the extant literature, the experts indicated that sufficient organizational resources can play an important role in the adoption and implementation of new technologies, and can provide organizations with the opportunities to be innovative and stay competent in their IT projects. Availability of organizational resources can also assist IT project managers and IT change leaders to support the implementation process and facilitate the change in the organization. The necessary organizational resources are numerous; they include financial resources (i.e.,

sufficient funds and budget to pay for the new system, licensing fees, and contemporary costs of IT implementations), technological resources (i.e., the required technological resources, including hardware, software, application, and network), and knowledge, skills, and competencies (i.e., the required technical and managerial knowledge, skills, and expertise to implement, maintain, and use the new system in the organization). Below we explain and illustrate the nature of each type of resource.

1.1 Financial resources

Consistent with the extant literature, our experts highlighted the importance of financial resources for the adoption and implementation of new technologies. They indicated that IT projects, specifically implementation of large and complex enterprise software solutions such as ERP and CRM systems, are resource intensive projects that require extensive resource planning. Thus, planning and having sufficient financial resources for IT projects allow organizations to afford the high implementation costs, including the initial acquisition costs (e.g., licensing fees and installation costs) as well as the implementation costs (e.g., costs of customization, training, communication and promoting the new system in the organization). Having the right and sufficient resources will also allow project managers to better cope with or tolerate the unexpected events or challenges that characterize most IT projects (Coulon et al. 2013). For example, expert #9 mentioned:

> *"[Availability of financial resources] is an extremely important topic in organizational readiness. Normally, we don't start a project without having sufficient budget confirmed by the top [management], because [lack of resources] may pose serious problems once you start the project."*

Another respondent highlighted the importance of having sufficient financial resources by saying:

> *"Available funds and financial resources is another thing that we usually assess [with regard to organizational readiness]. Because sometimes, organizations want to adopt some [ERP] modules but they don't have sufficient funds for that. And that's another place where we usually help them to be prepared for. We [consultants] help them to adapt their business plans and get the appropriate funding from the top management before they sign-off the project"* (expert #7).

1.2 Technological resources

As mentioned earlier, an IT project requires a broad spectrum of technological resources, including hardware, software, databases, application and data platforms. In line with that, our experts indicated the availability of adequate technological resources as another key aspect of organizational readiness in the context of IT-based transformations. For example, expert #3 stated,

> "*You also should have a strong plan for the technological resources and equipment [that are] required in your project. You must determine how many servers for example you're going to need, or what kind of databases or other equipment you will need. To me all those [technological resources] are like the nuts and bolts for an IT project.*"

In the same vein, another expert commented:

> *"Technological [resources] like hardware and software are the essential things that we should plan properly, do we have it [required technological resources] or should we acquire it?"* (expert #10).

1.3 Knowledge, skills, and expertise

In line with the extant literature, several experts also highlighted the importance of knowledge and capabilities in the context of IT projects. They indicated that introducing complex technological changes requires an array of different skills and capabilities. More precisely, our experts referred to three main domains of knowledge, skills and capabilities that are salient for successful IT-based projects: 1) technical, 2) managerial, and 3) domain-specific. Each of them will be examined in turn.

First, technical knowledge and skills refer to the knowledge, skills, and competencies that are required to implement, integrate, and support the new system in an organization. They encompass the technical expertise and capabilities that are required to design, develop, implement, and maintain a new IT system. For example, expert #6 stated:

> *"Readiness [in the context of IT projects] is all around having the right expertise! Having the right technical people in the project team, like business analysts, app specialists, database manager, etc.!"*

Technical knowledge could also refer to the knowledge and capabilities that the users and change targets must possess to skillfully use the new system and incorporate it in their daily activities. In that regard, expert #22 mentioned:

> *"When you want to do an IT transformation you need people who will understand or are able to find or build the new IT solution. But also, from the business side you need*

> *knowledgeable and competent people who will understand what the solution is and who are able to use and translate that solution into business impact and values!"*

Another respondent stated:

> *"After implementing [the manufacturing module of SAP ERP] we did not have any problem to adopt other modules of the SAP business suite, because the people already knew how to work with SAP, and this time it was fairly simple change" (expert #2).*

Second, managerial skills refer to the knowledge, capabilities, and skills that are required to successfully implement a new IT system in an organization. These include an array of project management and change management knowledge and capabilities as well as interpersonal and communication skills. For example, expert #21 stated:

> "*Some organizations know how to manage projects, and others don't! So, it's a kind of competency that organizations need and the same competency would be around [managing] change; like if you have been going through a change effort, and you know how to manage that! And there's less pressure in those situations. That's what I've seen on my last two projects! So, to me there is this notion of competency both in terms of how to run projects and the competency of how going through that change is also probably defining the readiness."*

Similarly, another participant stated:

> "*So it can be a way of getting a look at how this organization is agile in bringing the change forward. Do they have a process to bring change? Do they have approaches and tools? Do they have knowledge of change management? Some companies don't and it's a factor that makes it harder and sometimes impossible to proceed!"* (expert #16).

Last, domain-specific knowledge, capabilities and skills are related to the new roles, tasks, and responsibilities associated with the introduction of a new system. It is well known that IT-based transformations bring about numerous changes to the way organizations operate. They introduce new tasks, roles, and responsibilities that demand a new set of skills, capabilities, and competencies to cope with the new conditions. According to our experts, in the context of IT-based transformations, while organizations require IT-based capabilities and competencies to be able to develop and implement the new system and hand it on to end users, they also require people who may be less technically skilled but quite knowledgeable about their functional domain and capable of using the new system. For example, expert #29 stated:

> *"When you're implementing a CRM or an ERP, you have to understand that if you are working like this today, you will be working differently tomorrow. That is what I mean when I say that you have to be able to translate what is within the tool into new ways of working in the organization. So, in order to do so you need new ways of working, new roles and responsibilities, new policies, new jobs, and most importantly new competencies. So, you*

have to have the right expertise in IT but also you have to have people who can translate that solution into impacts. So you need a lot of competencies from the business side, but most often organizations would only concentrate on the IT side!"

2. Timing

In addition to the availability of organizational resources, our experts also highlighted the importance of timing in the context of IT-based transformations. They argued that while an organization may have all the required resources and conditions to embark on a new IT-based transformation, an inappropriate timing can pose major barriers and constraints to both inception and implementation of the new system. They indicated that if the IT project calendar is not planned carefully, it may lead to serious problems for the organization and the change targets during the implementation phase, including, change fatigue, frustration, and burnout. According to our experts, proper project timing can have important implications with regard to organizational readiness. In line with this, expert #25 mentioned:

> *"It is important to know that if people are already working 55 hours a week on their day-to-day job, [introducing] a new change is just going to be hard. Or if they are already at 80 percent of their capacity and they have four changes going on [concurrently], they probably can't mentally and physically handle the fifth one. Therefore, it is important that right off the bat, we ask ourselves, is it a good timing? how many project do we have that are concurrently running, right now? Can I add another project? What's the level of saturation of my people? Are people overtired or overworked?"*

Another panelist mentioned:

> *"You have to see if it is a right time for introducing a new transformation according to conditions of the organization and the capacity of your employees. Because you do not want [change] fatigue! You do not want conflict in the organization! You do not want project overload. If people are going to four trainings in one week plus they have to do their routine job, they will not learn any of that. Also psychologically, you want people to be able to be able to accept and absorb new changes in their daily activities. That's why another question that we ask in our assessment is, how many concurrent changes are they going through right now" (expert #11).*

3. IT Infrastructure and Architecture

Flexibility and agility of the existing organizational IT infrastructure and architecture represent altogether another important dimension that was mentioned by our experts. They argued that IT-based transformations require a technological infrastructure that can accommodate the new system and provide a solid foundation for the upcoming changes. Indeed, the lack of an adequate and compatible IT infrastructure and architecture can pose major barriers to the implementation of a new information system, including its integration with current legacy systems. Therefore, our experts suggested that readiness

in this sub-domain reflects the extent to which the current technological infrastructure and IT architecture can support and facilitate the upcoming IT transformation in the organization. In other words, it refers to the extent to which changes and adaptations to the IT infrastructure and architecture are required facilitate the deployment and integration of the new system. It also reflects the extent to which those changes are possible and not in contrast to the normal operations of the organization and its current legacy systems.

Contrary to the extant literature, some experts indicated that having a sophisticated and mature IT infrastructure does not necessarily guarantee a sufficient level of readiness and sometimes it may act as a double-edged sword. More precisely, while mature and sophisticated IT infrastructures can provide a favorable context for the implementation of new information systems, they may pose certain limitations to new IT investments in the organization. For example, expert #22 mentioned,

> "*I think larger corporations, the issue they have with that aspect of organizational readiness is because they invest [lots of money] in their IT infrastructure, and it makes it very tough to make the decision to invest in a major technological transformation. Especially when it means that you take whatever [IT architecture] has been there for 10-15 years! It [the IT infrastructure] has been there for 20 years and now you say okay let's move on to a new world!*"

In sum, our panel of experts suggested that IT infrastructure and architecture is an important aspect of organizational readiness in the context of IT-based transformations, which allow the early identification of potential technological risks and systems integration challenges.

4. Business Processes and Operations

Similar to the above, flexible, formalized, and documented business processes can also facilitate the introduction of new technologies in the organization, and expedite or facilitate the implementation process. As discussed earlier, previous IS studies suggest that organizations with more flexible, formalized, and standardized business processes typically have easier and less demanding IT implementations, whereas others must usually go through a major business process re-engineering effort (Davenport 2000; Basole 2007, Zhu et al. 2010). Consistent with the extant literature, our experts argued

that having business processes that are aligned with the new system usually ease the implementation process and minimize the excessive costs of the structural re-design and business process re-engineering. For example, expert #6 mentioned:

> *"So for me, process is a huge component of readiness in IT projects. It is about making sure that you have all your processes are aligned together and work seamlessly. Honestly, I have not been in one successful project that we did not nail the process piece in advance. So, to me readiness [with regard to processes] means to make sure that you've properly documented the business process and understood clearly day-to-day operations."*

Another expert mentioned,

> *"It is important to verify whether the processes are documented or formalized? Sometimes you start a project and the current processes are not even known or documented. So, how you can improve them if you don't even know them. And most of the time, the first step of an IT project is that they have to go and document all the current ['as is'] processes and then we could think of the proper IT solution"* (expert #1).

5. IT Rules and Policies

Emerging technologies such as cloud-based services and business intelligence solutions have created several privacy and security concerns for organizations. In this line of thought, our experts highlighted the importance of having clear and well-defined IT rules and policies that facilitate the adoption of new technologies and their implementation in organizations. In line with this, our experts argued that, like general business rules and policies that specify the domain and boundaries of strategic direction of the organization, IT-based rules and policies define the scope and boundaries of IT initiatives and their implementation. In many cases, the lack of appropriate IT rules and policies pose significant barriers to the feasibility of IT projects. In certain cases, it can restrict implementation of new technologies or limit the range of functionalities that can be adopted (see Table 1.5). Our respondents concurred that while flexible IT rules and policies can support the introduction of new technologies, strict and rigid IT rules and policies can pose significant barriers to the adoption and implementation of these technologies. In light of this, expert #7, stated:

> "*For example, when we talk about technologies such as cloud-based services some would say that they are ready to adopt all the modules, but, most of the time they haven't checked internally if their IT policies and rules will allow [them] to do so. Others don't check if the new project would be compliant with their security framework. When you work with cloud-based solutions, you do not host your data. So, this is most of the time something that we [as*

consultants] need to let them [clients] know and have them do their homework before committing to anything."

Another expert referred to a situation in a merger and acquisition project where the lack of alignment between the IT rules and policies became a major obstacle at the inception of the project:

"In that project we had to deal with several small companies located in Vancouver and in Quebec. They all had different IT rules and policies. So, we had to first find a way to get everybody adopting the same rules [before embarking on the project]" (expert #5).

Very few studies mentioned the importance of IT rules and policies although this seems to represent a key dimension in the context of IT-based transformations (De Soysa and Nanayakkara 2006; Molla et al. 2011).

6. Leadership and Sponsorship

Consistent with the extant literature, our experts also acknowledged the important role top management support plays in IT-based transformation initiatives. They indicated that organizational readiness is also characterized by strong leadership. According to our experts, this dimension of readiness contains two elements: 1) visible and sustained sponsorship, and 2) a visionary, trusted, motivational leadership. In accord with the extant literature, the experts highlighted the importance of a visible and sustainable executive sponsorship in the organization. They indicated that if top managers clearly understand and reach consensus about the priority and implications of the new system for the organization, they will enthusiastically support the implementation and invest sufficient time and resources into it. In line with this, expert #5 stated:

"To me readiness is achieved when senior management has fully agreed and has a consensus on [the project's] priority. So if everybody agreed that the given IT project is priority #1 [for the organization], to me that's when we are on a right track in terms of readiness."

Another expert mentioned:

"[As another domain], we look into both the leadership and executive sponsorship. I know that it's very typical and every organization right now have project sponsors and its part of their projects charts and so on, but more than that, I look for the behaviors. As a change practitioner, what I look for is: are they going to be present [in the project]? Are they ready to interact and communicate with the people that are delivering the change? Are they capable of passing the right key messages [of the

change] and so on? So for me it's important to have both: being an executive and acting as a leader" (expert #11).

Our experts also highlighted the importance of strong leadership in terms of championing the IT change in the organization. They often referred to the fact that top management and change leaders are the key ambassadors and champions of IT change in such contexts. They indicated that while leadership style may vary from one manager to another, what matters most is that organizational leaders are capable of communicating the coming changes across the organization as well as motivating members of the IT project team and the change targets to put extra efforts.

Collective or Group-level Dimensions

In addition to the abovementioned organizational dimensions, our experts also highlighted the importance of collective readiness. While collective or group-level readiness has been much less discussed in prior IS literature, our experts indicated that reflecting on this aspect is imperative, because employees are the main drivers and targets of IT changes in organizations. In light of this, expert # 26 mentioned,

> *"I believe it is the employees who have to put their hands in [the project] and have to later on live the change every day, and once the consultants are gone they are the ones who are going to have to continue this."*

Another expert mentioned,

> *"It is impossible to bring change in an organization if the people are not ready and [they] don't put their hearts and minds in it together" (expert #3).*

As detailed later, the dimensions of collective readiness are, in essence, in line with the theoretical tenets of what is called psychological readiness in the change management field (Armenakis et al. 1993; Holt et al. 2010; Weiner 2009). Below, we first introduce these dimensions and then we discuss their implications for our own conceptualization effort.

7. Collective Efficacy

Employees' perceived collective efficacy to embark on the new IT initiative and incorporate the changes in their daily activities is one of the main dimensions that was highlighted by our respondents. In line with the previous literature in social psychology

and change management (Bandura 1986; Holt et al. 2007; Weiner 2009), our experts referred to the importance of change targets' collective efficacy and group confidence in implementing the new system and incorporating it in the organizations' daily operations. Collective efficacy has been defined as the extent to which the members of an organization are confident that they can collectively perform a task or implement a change in the organization (Holt and Vardaman 2013; Holt et al. 2010; Weiner 2009). This definition is adapted from Bandura's (1986) notion of individual self-efficacy. It is a group-level construct that reflects employees' shared beliefs about their conjoint capability to perform a unified task or to collectively change the status quo. According to Bandura (2000), in the context of group or organizational activities, employees' collective efficacy and the way they perform in a group is of the main factors that influence their performance and success. In other words, collective efficacy not only relates to the conjoint capability of the group/organizational members, but also relates to their collective ability to perform as a team or a united group.

In line with the above, our experts also argued that employees' group efficacy can contribute to their collective involvement and participation in the project. They stressed that employees' collective efficacy is usually high when they know what to do and how to do it, or as put by expert #14, *"[when] they trust their capabilities to do it [as a team]."*

In line with this expert #26 also mentioned,

> *"[Before embarking on any new IT project] you should ask yourself that whether you are confident that your employees are capable of going through this change. But also, [you should ask] are they confident that they are capable of doing that" (expert #26).*

The experts also mentioned that assessing collective efficacy can have important implications for IT project managers and change leaders at the early stage of a project. Indeed, it can provide valuable information regarding the employees' capability and readiness to deal with the upcoming change and help managers to better plan for the required strategies and plans to facilitate the change process once it started.

8. Collective Commitment

Our panel of experts also highlighted the importance of employees' commitment and their shared resolve for the new IT initiative and its outcomes. According to the previous

literature, employees' collective commitment has been defined as the organizational members' shared resolve to pursue a course of action for implementing a change and to accept and embrace its outcomes on their daily operations (Holt and Vardaman 2013; Holt et al. 2010; Weiner 2009). In line with this definition, our experts mentioned that employees' collective engagement or commitment represents a key driver for their active participation and collaboration during the IT implementation phase. They maintained that if employees have a common understanding of the implementation objectives and a shared resolve to accomplish them, they are more likely to engage themselves and show more resilience and persistence. In line with this, expert #5 for example mentioned:

> "*I think if you have people that understand [the projects objectives] and are [collectively] committed [to those objectives], they are less likely to put up barriers and avoid participating [in the implementation]. So, from that perspective, I think it simplifies the implementation and makes it easier for you to execute the project.*"

Our experts also argued that a high level of commitment among change targets can contribute to emergence of social capital during the course of an IT implementation and mobilize pro-social and altruistic behaviors. For example, one expert provided an example of a real-life IT implementation project in which the good will and pro-social behaviors from the employees largely influenced project success. He stated:

> *"In this project, there was one region that was really struggling because their stuff was so complex. So, other regions said, 'Why don't you send your data and we'll help you out? We'll get on board!' I was so surprised, [because] most of the time these regions compete against each other, but this time, because they wanted to get to go-live, they went outside the norms of groups, which is like 'they're usually our competitor, but let's help them out, so that we can all get to that same starting point and go from there […] So yeah, you do see more of the Good Samaritan that comes out when they're all vying for the same goal" (expert #2).*

9. Collective Receptivity

Our experts also acknowledged the importance of the employees' receptivity to the new IT initiative and the associated changes in the organization. They argued that employees' receptivity for the new IT initiative and its associated changes in the organization can play a significant role in the way they respond to that change and embrace the new system. They indicated that introducing technological changes in organizations is an uphill battle when employees are not receptive and prone to the new

system and don't see its usefulness and benefits. In this line of thought, expert #10 mentioned,

> *"You can have the most beautiful, shiny, and perfect system, but if the people are not receptive to your new system, they will resist with it to death, and you know what, you should park your 'perfect' system aside."*

Another expert added,

> *"I think you also should see whether [the employees] are ready and receptive [to] this change? Because if you start the project, no matter if you have enough money or everything, you will hit the wall, because the people will not be part of your change" (expert #8).*

10. Clear, Shared and Realistic Project Vision

Last, our panel of experts highlighted the importance of a clear vision and a shared understanding for the implementation objectives. They indicated that organizations should clearly define the objectives being pursued and suggested that a lack of clear and shared project vision is a major barrier to IT project success since it likely creates confusion and conflicts among key stakeholders. For example, expert #19 stated:

> "*For me readiness always starts with a crystal clear vision of what the solution will do for the organization? Having a good understanding of what are the major advantages of the implementation. Do people have a clear understanding of where they stand today and where they want to go? Do they have a shared understanding of the objectives of a project and how the [new system] is going to impact them […] these are all important questions that you'd better have an answer for them before starting a new project [for a client]."*

For his part, expert #11 mentioned:

> "*When we talk about readiness we refer to getting people who work side by side, in the same department, and they can have black and white views if the organization is ready or not to go through the change. A lot of people usually agree that there is need for a change but they might not agree on the nature or scope of the change. So, we primarily want to see if there is a common vision that integrates them together. Is there a harmonious and shared understanding towards change objective and its scope?[…] For example, the project that I am working on now, a lot of folks were seeing it as a light-for-light replacement, and not anticipating the organizational impact of it! The [managers] were saying 'It is just replacing our old system, it will work fine!' The understanding of readiness hinges a lot on the understanding and the awareness of what the initiative is meant to deliver, and if folks [in the organization] are not at that level of understanding why we are doing this and what we are doing exactly, they may be assessing a sort of false positive! And that's why it is important for us to measure the vision first and then move it forward."*

Summary

As explained earlier, our literature review derived six dimensions of organizational readiness, including technological readiness, financial readiness, strategic readiness, process readiness, cultural readiness, and psychological readiness. Our subsequent empirical validation, while confirming the relevance of these dimensions to the context of IT-based transformations, helped us to clarify and refine them and present a finer conceptualization of this construct. Table 1.5 summarizes the finalized list of dimensions along with the sample quotes from the interviews.

Table 1.5 Dimensions of Organizational Readiness According to the Expert Interviews		
Dimensions	**Definitions**	**Illustrative Interview Quotes**
Organizational-level Dimensions		
Organizational resources	The extent to which the organization has all the required resources to embark on and to successfully carry out the new IT-based transformation.	*_ For me, having the resource is essential. Because, without them you cannot do anything! Resources can be financial, technology, people, time, and many other things. (Expert #6)* *_ I'm not starting the project [if the organization lacks the required resources]. Because I know that game and I know that it will not work out! So what I do [if I see lack of readiness in this domain] is to change the scope. I would say I'm not testing that thing or we should sacrifice this functionality [of the new system]? (Expert #8)*
Timing	The extent to which the timing of the new IT-based transformation does not conflict or overlap with other concurrent initiatives in the organization.	*_ It is important to know that if people are already working 55 hours a week on their day-to-day job, [introducing] a new change is just going to be hard. Or if they are already at 80 percent of their capacity and they have four changes going on [concurrently], they probably can't mentally and physically handle the fifth one. Therefore, it is important that right off the bat, we ask ourselves, is it a good timing? How many projects do we have that are concurrently running, right now? Can I add another project? What's the level of saturation of my people? Are people overtired or overworked? (Expert # 25)* *_ You have to see if it is a right time for introducing a new transformation according to conditions of the organization and the capacity of your employees. Because you do not want [change] fatigue! You do not want conflict in the organization! You do not want project overload. If people are going to four trainings in one week plus they have to do their routine job, they will not learn any of that. Also psychologically, you want people to be able to be able to accept and absorb new changes in their daily activities. That's why another question that we ask in our assessment is, how many concurrent changes are they going through right now.* (Expert #11)

Table 1.5 Dimensions of Organizational Readiness According to the Expert Interviews		
Dimensions	**Definitions**	**Illustrative Interview Quotes**
IT infrastructure and architecture	The extent to which the organization's current IT infrastructure and architecture can support and facilitate the new IT-based transformation.	*_ Organizational readiness is also related to the [infrastructural] capacity to move from one system to another. So, does our current infrastructure permit for that change or support it? That's the key question in this domain. (Expert #20)* *_ One of the things we assess [with regard to organizational readiness] is also their current infrastructure. Does the technological infrastructure support the [upcoming] changes? Sometimes our client does not have the architecture to do that. Is the client realistic about [the capacity of] their infrastructure? Do they understand all the implications? For example, my client says 'oh, it's SAP, and we are just going to add one connector and it's going to be fine. But it's not one connector, its 15 connectors, and 15 connectors need over 500 kb/s and your network does not allow those kinds of transactions! (Expert #14)*
Business processes	The extent to which the organization's current business processes can support and facilitate the new change and IT-based transformation.	*_ If we cannot clearly define what your processes are or are they aligned with the change that is going to happen, how would you measure how big is the change? How can you say okay it's a big change or it's trivial? (Expert #29)* *_ If you do a review on your processes you're going to be able to talk about the gaps. When you want to design the future state or 'to be' processes, what you need to know is the difference with the current ('as is') state? [If they say] we don't have the current state. Well, that is what tells me if the change is big or it's trivial! (Expert #15)*

Table 1.5 Dimensions of Organizational Readiness According to the Expert Interviews		
Dimensions	**Definitions**	**Illustrative Interview Quotes**
IT rules and policies	The extent to which the organization has the appropriate IT policies and rules that are in line with and supportive of the upcoming change and the new IT-based transformation.	_ *When you do work with cloud solutions, for example, you do not host your data any longer. Specially, in HR systems this may bring lots of issues. Some countries, like Russia, are now restricting data to go out of their countries. So, if your success factor doesn't have a data center in Russia, then most probably, the client won't be able to adopt the success factor. (Expert #7)* _ *I am having a local client now that [they] have very strict security policies. It depends on their industry as well and if they are governmental they have also some other set of rules and policies as well [to consider]. So, that is another example of what they need and when they say they are ready, at least in the context of things like moving to the cloud, [adequate and supportive rules and policies] is definitely something to look at. (Expert #6)*
Sponsorship and leadership	The extent to which the organization has a visionary, trusted, and motivational leadership, and a visible and sustainable sponsorship for managing and leading the upcoming change and the new IT-based transformation.	_ *[strong] leadership and sponsorship is another thing [that we look into] when we measure organizational readiness. So, we measure do we think that the leaders are able to bring this change forward? Are they ready and capable to communicate things? (Expert #16)* _ *I'm also thinking [about] sponsorship and leadership. If you have very strong sponsorship at the client side, (e.g., CEO level) that will make it very clear that they will not accept silliness! [That] the project is important for the company and we need to do this! If the sponsorship is strong in that way, then people will align. They have a reason to collaborate, because their boss has been very clear. (Expert# 18)*

Table 1.5 Dimensions of Organizational Readiness According to the Expert Interviews		
Dimensions	**Definitions**	**Illustrative Interview Quotes**
Collective or Group-level Dimensions		
Collective efficacy	The extent to which employees are confident that they can collectively implement the new system and incorporate it in their daily activities.	*_ What I am trying to say is that your employees should trust that they can [collectively] do it together. (Expert #14)* *_ I think what we measure here is like if as a team they are able to carry out the change and live with [its outcomes]. (Expert #11)*
Collective commitment	The extent to which employees are committed to implement the new system and accept its outcomes.	*_ If I go in a meeting and the people are not present, or if they don't show motivation, or if they are on their Blackberries and iPhones, that shows me that they are not there! That's a sign that they are not committed, they are not ready. (Expert #13)* *_ I think part of our success is because we didn't impose [the system or change] on our employees. Let's put it this way, we got [an organization-wide] commitment on their part that made them willing to have this change. And this commitment engaged them in the change process, which is not the same as us forcing them into a change. (Expert #9)*

Table 1.5 Dimensions of Organizational Readiness According to the Expert Interviews		
Dimensions	**Definitions**	**Illustrative Interview Quotes**
Collective receptivity	The extent to which employees are collectively receptive to the new IT initiative and its associated changes in the organization.	*_ You can have the most beautiful, shiny, and perfect system, but if the people are not receptive to your new system, they will resist with it to death, and you know what, you should park your 'perfect' system aside. (Expert #10)* *_ I think you also should see whether [the employees] are ready and receptive [to] this change? Because if you start the project, no matter if you have enough money or everything, you will hit the wall, because the people will not be part of your change! (Expert #8)*
Vision clarity and Shared understanding	The extent to which there is clear vision and a shared understanding of the project objectives and goals across the organization.	*_ For me readiness always starts with having a crystal clear vision of what the solution will do for the organization? Having a good understanding of what are the major advantages of the implementation. Do people have a clear understanding of where they stand today and where they want to go? Do they have a shared understanding of the objectives of a project and how the [new system] is going to impact them […] these are all important questions that you'd better have an answer for them before starting a new project [for a client]. (Expert #19)* *_ So we want to see what the vision of the project is? What are the benefits the project owners and managers want to achieve, and how does it link to the bigger vision of the organization? So, it is important to make that link, if that is not done yet! (Expert #1)*

1.5 Discussion

To organize our findings and relate them with the main theoretical perspectives in the extant literature, we adopted the two general views that are proposed in line with the conceptualization of the organizational readiness construct (i.e., structural views and psychological view). For one thing, according to Weiner et al. (2008), studies that have adopted a structural view conceptualize organizational readiness in terms of the organization's capacity and conditions required to embark on and carry out an organizational change successfully (Collins et al. 2007; Devereaux et al. 2006; Simon 1996). According to this view, structural readiness is defined as high-level dimension that reflects the extent to which the organization has all the required resources and structural conditions to initiate a new change and implement it successfully (Weiner et al. 2008). For its part, the psychological view adopted in prior studies reflects the employees' collective state of mind that shapes and drives their collective action during an organizational change (Armenakis et al. 1993; Holt et al. 2010; Holt and Vardaman 2013; Weiner 2009). The proponents of the latter view posit that while a successful organizational transformation depends on the availability of the required resources that facilitate the change (i.e. structural readiness), such initiative may still stall if the organization lacks the active participation and collaboration of its employees, who ought to be collectively passionate, primed, and receptive to the proposed change. For example, Weiner et al. (2008) proposed that "an organization might have all the necessary human, financial, and material resources to implement a change, yet lack the [collective] capability to mobilize, coordinate, and apply those resources in an efficacious manner to produce change." (p. 424) To illustrate this, they referred to a troop of soldiers that is well equipped and trained but demoralized and unconfident, which is no more ready for the battle than a group that is "gung ho" but poorly trained and equipped. Among those who promote the psychological perspective of organizational readiness, most draw their conceptualizations on Armenakis et al. (1993) who defined organizational readiness as "employees' cognitive precursor to their behavior of either resisting or supporting an organizational change initiative" (p. 681). Although this definition was originally suggested to address individual readiness, other

researchers have adapted it at the collective level (e.g., Eby et al. 2000; Holt et al. 2010; Rafferty et al. 2013; Weiner 2009).

The structural and psychological facets of organizational readiness have been considered in "silo" for decades (Weiner et al. 2008). Nevertheless, researchers in the change management and IS disciplines have recently called for a more comprehensive, yet integrative view of organizational readiness; one which would incorporate both perspectives (Weiner et al. 2008; Holt et al. 2010; Holt and Vardaman 2013; Shahrasbi and Paré 2014; Rusly et al. 2012).

In light of the above, we recommend conceptualizing organizational readiness as a multi-dimensional construct that encompasses both structural and psychological dimensions (see Figure 1.2).

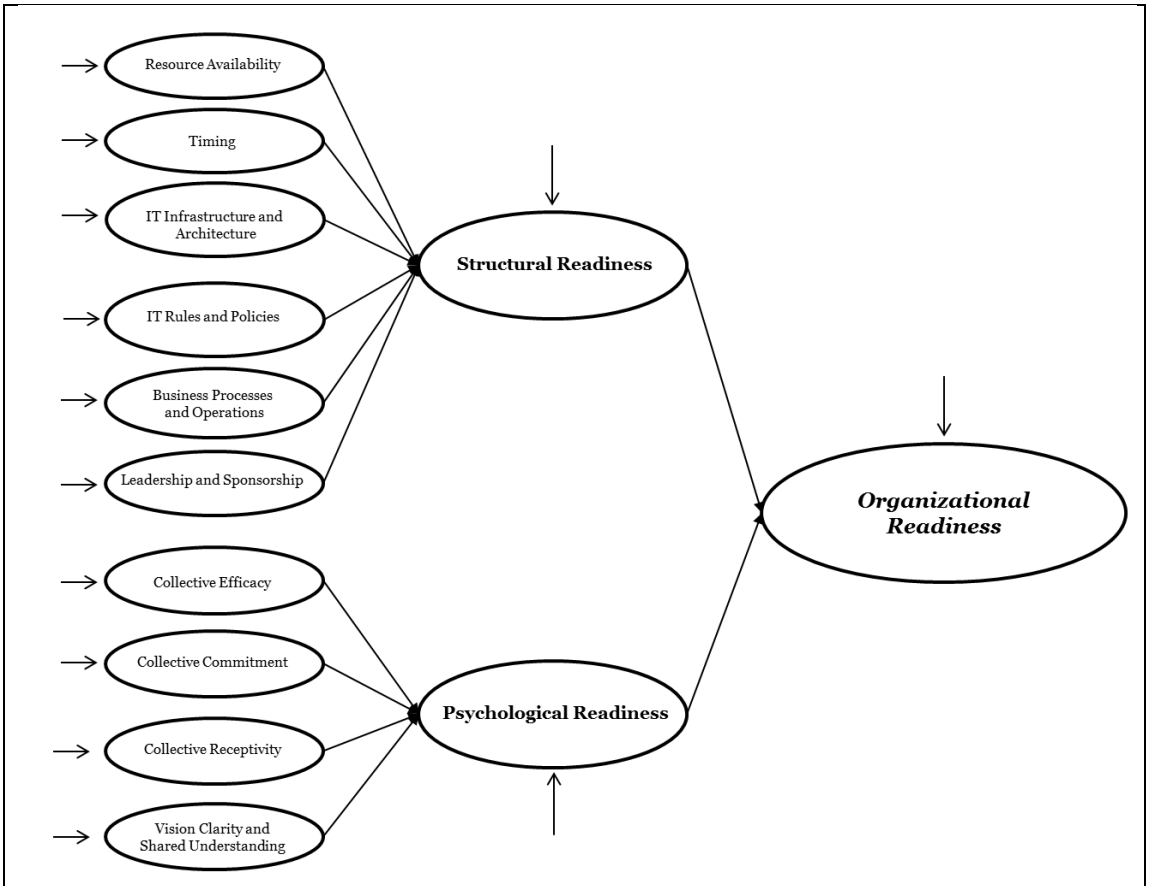

Figure 1.2 Conceptual Model

We define structural readiness within the context of IT-based transformations as the extent to which organizations have all the required resources and the structural conditions to embark on and carry out the new IT-based transformation. Moreover, we define psychological readiness in this context as the extent to which employees are collectively confident in their conjoint capabilities to implement the new system and have a shared resolve to accept and embrace its anticipated outcomes. Psychological readiness also refers to their collective propensity and receptivity to the new change in the organization.

As such, we define organizational readiness as the extent to which 1) the required resources and conditions to a successful IT-based transformation are available, and 2) the organization can count on motivated, passionate, and primed employees who believe in the proposed vision and their collective capacity to make it happen. This definition is different from the previous definitions in the literature in that it conceptualizes organizational readiness as a situational construct and not as a general trait of organizations. In fact, as shown earlier, an underlying premise with the previous conceptualizations is that some organizational attributes, like having abundant slacks or a sophisticated technological infrastructure, can guarantee readiness for technological changes by contributing to a receptive context (Iacovou et al. 1995; Chwelos et al. 2001). Nevertheless, the previous studies in the change management discipline suggest that the content and timing of the change is as important for organizational readiness as an affluent and receptive context (Pettigrew 1987, Weiner 2009). For example, Weiner (2009) argues that "organizational readiness for change is situational; it is not a general state of affairs. Some organizational features do seem to create a more receptive context for innovation and change. However, receptive context does not translate directly into readiness." (p. 2)

Our proposed conceptualization embraces this theoretical premise by conceptualizing organizational readiness as a state and not as a general trait of the organization.

The proposed conceptualization also distinguishes between the dimensions of the readiness construct at the collective and organizational levels. This distinction is important and contribute to a better understanding of the nature of this construct and its relationship with its referent variables (Oreg et al. 2011; Rafferty et al. 2013; Weiner

2009). Rafferty et al. (2013) suggest that the antecedents and consequences of the readiness construct may differ from one level to another; hence, "adopting a multilevel perspective to organizational readiness reveals a range of insights that have been overlooked" (p. 112).

1.6 Implications for Research and Practice

Our results are likely to make two main contributions to the extant literature. First, this study integrates and synthesizes all the main dimensions of the organizational readiness construct that have been discussed in the prior literature. It also integrates the insights of the IT change management domain to refine those dimensions and propose a new conceptualization for this construct. The proposed conceptualization is expected to deepen our collective understanding of this multi-dimensional construct and help build a cumulative tradition in this area (Keen 1980). It also contributes to the conceptual clarity of the organizational readiness construct in the IS discipline, which is deemed important for developing reliable and more accurate psychometric properties and measurement instruments (MacKenzie et al. 2011; Straub 1989). Indeed, future studies can draw on the proposed conceptualization in order to develop reliable and robust measures and psychometric properties (Basole 2007; Martin et al. 2008). Moreover, by juxtaposing the overarching facets of this construct (i.e., structural readiness and psychological readiness), our study integrates and reconciles these complementary views which have been investigated in silo until now. Indeed, as shown earlier, our literature review revealed that the previous conceptualizations in the IS discipline have mainly focused on the structural dimensions (e.g., resources, IT infrastructure, knowledge), while the psychological perspective of organizational readiness remains understudied. We concur with other researchers that such a restrictive conceptualization can limit our understanding of the organizational readiness construct and may have contributed to mixed results and invalid empirical conclusions in our discipline (Martin et al. 2008; Rusly et al. 2012; Shahrasbi and Paré 2014).

The proposed conceptualization also has important implications for managers and practitioners. In line with the extant literature, our results highlight the important influence organizational readiness may have on managers' decisions to adopt and

implement new IT in organizations (Chwelos et al. 2001; Iacovou et al. 1995). According to our experts, assessing organizational readiness at the early stage of an IT project can have valuable implications for project managers and sponsors. Our experts suggest that a reliable and valid tool for assessing organizational readiness could help managers to estimate the gap between the organization's current state ('as is') and the required state ('to be' state) in terms of preparedness or readiness. Such an assessment would in turn provide managers with the opportunity to proactively act upon the gap and resolve them by adopting less costly and more efficient preparation plans at the pre-implementation stage.

In short, our proposed conceptualization broadens and deepens our collective understanding about different facets and dimensions of organizational readiness. It also provides a solid basis for future attempts to develop a reliable and robust assessment tool for the organizational readiness construct. In fact, one of our experts commented on the necessity to have access to such an instrument: *"I think if you can give me a [reliable and robust] tool [to assess organizational readiness] that would be fantastic. Because, I think [assessing organizational readiness] would give me better and more reliable insights [on my decisions] than other things that we typically do in IT projects such as risk assessment. Because assessing the risks identifies the factors that if they are present, we could go wrong. But, [assessing] organizational readiness would show me the factors that if present we would go right. [In other words,] if [indicators of organizational readiness] are all there, the chances that my implementation goes right and be eventually successful is high. I could also take better decisions on when to adopt and implement a new system. So, instead of having a reactive approach, [by only assessing project risk] I can have a positive and proactive view from the beginning"* (expert #20).

1.7 Conclusion

Keen (1980) invited the IS community to build a cumulative tradition around the core concepts and theories in our discipline. Since then, several attempts have been made by leading scholars to clarify different concepts including user involvement (Barki and Hartwick 1994), knowledge management (Alavi and Leidner, 2001), user resistance

(Lapointe and Rivard, 2005), IS strategy (Chen et al. 2010), and absorptive capacity (Roberts et al. 2012). The present study follows a similar objective and aimed to clarify the conceptualization of the organizational readiness construct. To our knowledge, it represents the first attempt in our field to integrate and synthesize the relevant body of knowledge around this construct. Based on a comprehensive and thorough literature review as well as the insights provided by a panel of experts, our study proposes a refined, yet multi-dimensional conceptualization of organizational readiness. We believe that the proposed conceptualization not only deepens our collective understanding of this important construct but also extends its applicability in our current and future theories and models.

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Chapter 2
Essay 2 – Inside the "Black Box": Investigating the Link between Organizational Readiness and IT Implementation Success[2]

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Abstract

The complexity of today's organizational IT-driven transformations, such as implementing ERP and CRM systems, urges companies to conduct upfront preparations to ensure implementation success. Organizational readiness is therefore regarded as a critical precondition that increases the chances of IT implementation success. To deepen the theoretical understanding of the link between organizational readiness and IT implementation success, we present the results of a qualitative survey among a group of seasoned IT project/change management experts and derive a conceptual framework explaining the links between the two constructs.

Keywords: Organizational readiness, structural readiness, psychological readiness, IT implementation success, theory building, qualitative survey

2.1 Introduction

Organizations are investing in Information Systems (IS), such as ERPs and CRMs, at an ever-increasing rate (Gartner 2014; Wurster et al. 2008). While the numerous potential benefits of these systems have made them a top organizational investment priority (Gartner 2014), the technological complexities of their implementations, which are most often attended by low organizational buy-in and outright employee resistance, have made them a top concern and organizational challenge (Ambler 2013; The Standish Group 2013). Therefore, to maximize the chances of IT implementation success, previous literature suggests that organizations must fully prepare — also referred to as establish "organizational readiness" — before embarking on such complex organizational changes (Armenakis et al. 1993; Kotter 1996; Schein 1979).

Organizational readiness has long been recognized by the leading researchers and practitioners as a main precursor to the success of change implementations in organizations (Armenakis et al. 1993; Cohen and Kotter 2005; Kotter 1995). For example, Schein (1979) argues that "the reason so many change efforts run into resistance or outright failure is usually directly traceable to their not providing for an effective unfreezing process before attempting a change induction" (p. 144). Kotter (1995) suggests that the lack of organizational readiness is a main source and a key component of failure in large and complex organizational transformation efforts. Other studies show that the lack of sufficient organizational readiness can lead to negative outcomes for projects, such as project delay, abandonment, and unmet benefits (Cohen and Kotter 2005; Eby et al. 2000). However, previous empirical findings on the relationship between organizational readiness and IT implementation success are inconclusive. Our review of the extant literature shows that while some empirical studies suggest a positive and direct relationship between organizational readiness and IT implementation success (e.g., Gargeya and Brady 2005; Zhu et al. 2010), others have failed to find significant results for this relationship (e.g., Croteau and Li 2003; Jun and Cai 2003).

One possible explanation for these ambivalent results may be related to the "temporal distance" between the two constructs as observed in prior research models and empirical

studies. In other words, organizational readiness construct is usually assessed during the pre-implementation stage, whereas IT implementation success is a post-implementation construct. Nevertheless, our literature review did not show any solid theoretical explanation that elucidates how and why organizational readiness influences IT implementation success, and how its benefits may emerge over the course of an IT implementation process. This has limited our collective understanding of the nature of this relationship, and has raised questions regarding the association between the two constructs in our discipline (Ram et al. 2015).

A second explanation may be that the relationship between organizational readiness and IT implementation success has been typically regarded as a "black box". Indeed, the "variable approach" that characterizes the bulk of reviewed studies has yielded limited insights on the dynamics of implementation process (Goodman and Griffith 1991; Paré 2002). Goodman and Griffith (1991) state that "the variables approach to [IT] implementation tends not to inform us about the complexity between multiple predictors and criteria," (p. 264) and urge IS researchers to develop theories that identify the underlying mechanisms and processes that explain why certain variables at the implementation stage are important, and why they affect some criteria and not others. In line with these recommendations, we believe that opening the black box and identifying the underlying mechanisms and processes that mediate the link between organizational readiness and IT project success will most likely contribute to the advancement of knowledge in this domain. This is particularly important because IT project failures most often happen not because of the technology per se, but because of how it is implemented (Betts 2003; Klein and Knight 2005; Lyytinen and Hirschheim 1987). In addition, drawing on Venkatraman (1989), we maintain that opening the black box can also provide explanations for some of the ambivalent results in the literature because the mediating mechanisms and variables account for a significant proportion of the relation between the predictor and the criterion.

A third and final explanation may be related to the conceptualization and measurement of organizational readiness. As discussed in the first essay, previous literature of organizational readiness in the IS discipline has conceptualized this construct mainly as a set of structural attributes (e.g., resources, infrastructure, knowledge and expertise),

and the psychological side of readiness has been understudied (Shahrasbi and Paré 2014). We believe that reflecting on the employees' psychological readiness and its influence on IT implementation success is imperative because employees are considered the most valuable and influential assets of organizations that can highly affect the destiny of projects and success of an organizational initiative (Abdinnour-Helm et al. 2003; Armenakis et al. 1993; Herold et al. 1995).

In light of the above, we maintain that further progress will require more complex and realistic models, and the development of alternative perspectives for investigating the link between the two constructs. Therefore, our main objective is to develop a solid conceptual framework that identifies the key underling mechanisms that relate organizational readiness and IT implementation success. To achieve our goal, we adopted a grounded theory approach and conducted a series of in-depth interviews with a group of seasoned IT project/change management experts. We believe that the resulting conceptual framework can improve our collective understanding of the relationship between these two constructs and of how benefits of organizational readiness may emerge over time. It may also contribute to obtaining a fine-grained and more comprehensive portrait of the 'IT implementation puzzle' (Swanson 1988; Paré 2002; Goodman and Griffith 1991).

The remainder of the essay is structured as follows. Next, we define the core constructs of our study and briefly review previous empirical findings on the relationship between organizational readiness and IT implementation success. We then present our research methodology. This is followed by the presentation and interpretation of the research findings, i.e. the proposed conceptual framework and its set of research propositions. Lastly, we discuss the contributions of our work and suggestions for future research.

2.2 Literature Review

Conceptualization of the Core Constructs

As discussed in the previous essay, organizational readiness has been defined differently in the IS literature. While some studies conceptualized organizational readiness as a uni-dimensional concept, others have proposed multiple dimensions for this construct (Basole 2007; Guha et al. 1997; Molla and Licker 2005; Shahrasbi and Paré 2014). Nevertheless, despite the diversity of the proposed dimensions in the literature, they can be categorized into two general categories, which are also reflecting the two overarching dimensions of organizational readiness, i.e., 'structural readiness' and 'psychological readiness.' In the context of IT-based transformations, structural readiness has been defined as the extent to which the organization has all the required resources and essential conditions (e.g., infrastructure, flexible and compatible business processes, knowledge and expertise) to successfully implement the new IS and to reap the planned benefits. In other words, structural readiness has to do with the organizations' capacity and structural competencies to embark on and carry out a new IT-based transformation (Iacovou et al. 1995; Shahrasbi and Paré 2014).

While an organization requires structural resources for a successful IT implementation, it also requires high morale and socially-primed employees who are collectively capable and committed to adopt to mobilize those resources and to reap the planned benefits. Previous empirical findings in the field of change management suggest that change targets' collective state of mind and beliefs at the pre-implementation stage can significantly influence their attitudes and behaviors towards the proposed change, which are important factors for their participation and collaboration during the course of a change initiative (Armenakis et al. 1993; Jimmieson et al. 2004; Wanberg and Banas 2000). As such, psychological readiness has been proposed as another overarching dimension of organizational readiness. Precisely, it refers to the extent to which employees (change targets) are collectively primed, capable, and committed to take the course of action and change the status quo in the organization (Armenakis et al. 1993; Shahrasbi and Paré 2014; Weiner 2009). It also reflects their collective propensity and receptivity to the new change.

Drawing on the recommendations in the extant literature, we conceptualized organizational readiness as a multi-dimensional construct that encompasses both the structural and psychological dimensions (Holt et al. 2010; Shahrasbi and Paré 2014; Weiner et al. 2008). We deem that such conceptualization will help us capture both the capacity and willingness of organizational members for the upcoming IT-based transformation (Holt and Vardaman 2013; Shahrasbi and Paré 2014; Weiner et al. 2008).

Also, following DeLone and McLean (1992, 2003), Paré (2002), and Nelson (2005), we conceptualize IT implementation success as a multi-dimensional construct that includes both the efficiency of implementation operations — i.e., process success— and the effectiveness of the implementation outcomes — i.e., outcome success. Process success refers to the extent to which the project is completed on time, on budget, and based on the pre-defined scope and quality; whereas outcome success reflects the extent to which the new system is being used in the organization and the planned benefits (e.g., individual or organizational performance) are fully realized. We concur with prior research that taking together the two dimensions can yield a more comprehensive view of this construct (Bartis and Mitev 2008; Nelson 2005; Paré 2002).

Relationship between Organizational Readiness and IT implementation Success

Our review of the extant literature identified 12 articles that empirically examined the relationship between readiness and IT project success (see Table 2.1). It also showed that while the hypothesized link between the two constructs has been statistically significant in some studies (e.g., Gargeya and Brady 2005; Zhu et al. 2010), others did not find a significant relationship between organizational readiness and IT implementation success. Interestingly, some studies suggested that this relationship may be mediated by other factors. For example, Jun and Cai (2003) hypothesized a direct link between organizational readiness and seven measures of IT implementation success, but only one was found to be significant. Pai and Yeh (2008) also failed to find positive significant relationship between readiness and E-business implementation success. They suggest that this relationship may be mediated by other factors, such as the quality of implementation process. For their part, Ram et al. (2015) proposed that the relationship between organizational readiness and ERP implementation success may be

mediated by the quality of project management, training and support, business process engineering, and system integration.

More importantly, our literature review identified a dearth of theoretical underpinnings for the proposed link between the two constructs. More specifically, most of the reviewed articles did not provide sufficient theoretical explanations, nor did they base their assumptions for the hypothesized link on robust theoretical lenses. In other words, the atheoretical nature of previous studies in this area has limited our collective understanding of the underlying mechanisms and channels that link readiness and IT success.

Finally, despite the recent calls in the extant literature for a multi-dimensional conceptualization of organizational readiness, most of the previous articles considered readiness with its structural attributes (e.g., resources, infrastructure, knowledge and expertise), and the psychological readiness of the organization has remained understudied (see Table 2.1). As mentioned earlier, reflecting on psychological readiness and its implication for IT implementation success is important because employees' perceptions and beliefs in the early stages of an organizational change is the main source and a key driver of their attitudes and behaviors towards the proposed change, and are also the main cause for their support and engagement during the implementation phase (Abdinnour-Helm et al. 2003; Herold et al. 1995; Armenakis et al. 1993).

Table 2.1 Prior Empirical Studies in the IS Discipline					
Authors (year)	**Research Method**	**Type of IT**	**Conceptualization**		**Key Findings**
			Readiness	**Success**	
Stratman and Roth (2002)	Questionnaire survey	ERP	Structural readiness	Outcome	Results of a survey conducted in 79 North American manufacturing firms suggest a positive and significant link between change readiness and ERP success (i.e. business performance).
Motwani et al. (2002)	Case study	ERP	Structural readiness	Outcome	The in-depth case study suggests that organizational readiness is a major predictor of ERP project success.
Jun and cai (2003)	Questionnaire survey	EDI	Structural readiness	Outcome	Results of a survey conducted in 85 US manufacturing firms fail to show a significant link between organizational readiness and EDI success. Also, out of seven hypothesized links between organizational readiness and success measures only one is found to be significant.
Croteau and Li (2003)	Questionnaire survey	CRM	Structural readiness	Outcome	Results of a questionnaire survey in 57 firms do not indicate the presence of a direct link between readiness and CRM implementation success. The authors suggest that the link between the two constructs may be mediated by factors, such as the organization's level of knowledge management capabilities.
Motwani et al. (2005)	Case study	ERP	Structural readiness	Outcome	A multiple case study conducted in four organizations reveals that firms may increase chances for ERP success by committing upfront readiness.
Grageya and Brady (2005)	Case survey	ERP	No definition provided	No definition provided	On the basis of a content analysis of published cases, the authors observed that organizational readiness is the most commonly reported predictor of SAP implementation success.
Pai and Yei (2008)	Questionnaire survey	E-Biz systems	No definition provided	Outcome	Results of a survey conducted in 106 manufacturing firms suggest that the link between organizational readiness and e-business system success is mediated by the quality of the implementation process.

Table 2.1 Prior Empirical Studies in the IS Discipline					
Authors (year)	**Research Method**	**Type of IT**	**Conceptualization**		**Key Findings**
			Readiness	**Success**	
Zheng et al. (2009)	Case study	EHR	Structural readiness	Process and outcome	On the basis of a case study of information systems adoption and implementation in healthcare sector, the authors suggest that upfront readiness may help hospitals adopt EHR systems more mindfully. They also argue that readiness may facilitate the implementation and increase the chances of employees' buy-in and organization-wide system use.
Mouzakitis and Askounis (2010)	Questionnaire survey	B2B systems	Structural readiness	Outcome	Results of a survey in a single consulting firm using B2B integration systems suggest a significant and positive link between organizational readiness and implementation success.
Zhu et al. (2010)	Questionnaire survey	ERP	Structural readiness	Outcome	Results of a survey in 65 retail firms reveal a significant and positive link between organizational readiness and ERP implementation success.
Sammon and Adam (2010)	Case study	ERP	Structural readiness	No definition provided	On the basis of a case study of four organizations that adopted ERP, the authors observed and suggest that pre-implementation organizational readiness can be an effective strategy to avoid and overcome some of the common implementation challenges and problems, and increase the chances of implementation success.
Ram et al. (2015)	Questionnaire survey	ERP	Structural readiness	No definition provided	The authors suggest that the positive relationship between organizational readiness and ERP implementation success may be mediated by the quality of project management, training and support, business process engineering, and system integration.

2.3 Research Methodology

Research Approach

To achieve our main objective, we adopted grounded theory not as a simple way of coding data, but as a method of theory development (Charmaz and Belgrave 2002; Lazenbatt and Elliott 2005; Urquhart and Fernández 2006). Grounded theory has been proposed as "a qualitative research method that seeks to develop theory that is grounded in data systematically gathered and analyzed" (Urquhart et al. 2010, p. 357). A key characteristic of grounded theory research is the absence of pre-formulated hypotheses since theory building, not theory testing, is the main objective being pursued (Urquhart 2012). This does not necessarily mean that researchers should not look at the extant literature before embarking on the empirical work, only that they should not impose ideas from the literature on the coding of data. While preconceived theoretical ideas could hinder the emergence of ideas that should be firmly rooted in the data, (Glaser and Strauss 1967), the founders of the approach state that "the researcher does not approach reality as a tabula rasa but must have a perspective that will help him or her abstract significant categories from the data" (p. 3). Grounded theory is increasingly common in the IS field because the method is extremely useful in developing context-based, process-oriented descriptions and explanations of various phenomenon (Urquhart et al. 2010). More details on the data collection and data analysis are presented below.

Data Collection

We used the same dataset from essay #1 to investigate our research questions for this study. This was possible in light of the questions that we asked from our respondents regarding the potential benefits and implications of organizational readiness in addition to the questions about the concept *per se*. More specifically, during our interviews, we asked our respondents to describe how they see the benefits of organizational readiness during the course of an IT implementation project. Moreover, we asked them to share with us some real-life experiences where organizational readiness was the core component and a main driver of the success in IT implementation projects. We also asked them to describe situations in which the lack of organizational readiness caused problems during the course of an IT implementation which failed.

Data Analysis

Data collection and data analysis were conducted in parallel. First, the interviews were transcribed and imported into the Nvivo 10 software (www.qsrinternational.com). Next, we embarked on our data analysis by reviewing the interview transcripts and generating open codes as they emerged from the verbatim texts (Charmaz and Belgrave 2002; Glaser and Strauss 1967; Urquhart 2012). We then reviewed, compared, and refined the emergent codes through an iterative "selective" coding process (Charmaz 2014; Glaser and Strauss 1967). At this step, some emergent codes were also combined to make higher level categories, including concepts and relationships (Glaser and Strauss 1967). According to (Urquhart 2012), selective coding is not simple, nor is it a linear process. It requires that researchers repeatedly go through the verbatim texts and the emergent codes to make better sense of the data and initial empirical observations. As such, to facilitate our data analysis, we created several "memos" in parallel to our coding process to keep track of the emergent concepts and theoretical ideas. After analyzing 10 interviews, the preliminary findings were shared with the members of the thesis committee and their suggestions for improvement in the coding process were implemented for the remaining interviews.

The abovementioned coding process identified several generic codes relevant to the benefits of the organizational readiness in the context of IT implementation projects (e.g., facilitating the implementation process, expediting the change in the organization, increasing the chances of project success, increasing organizational buy-in, reducing implementation time). Nevertheless, most of these codes rest on a high level of theoretical abstraction, lacking details regarding how these benefits are emerging during the course of an IT project. Therefore, to assist with our data analysis and developing a set of research propositions, we focused on the examples and stories of the real-life IT implementation projects described by our respondents. This allowed us to build up a "chain of evidence" as proposed by Huberman and Miles (1994), and to gradually identify general patterns among different stories and examples. Accordingly, we used "theoretical coding" to extract the relationships between the identified categories and to relate them to our earlier made observations and theoretical assumptions (Charmaz 2014; Urquhart 2012).

Finally, to better make sense of our empirical observations and refine our research propositions, we also surveyed the extant literature and compared and contrasted our findings against several theoretical lenses in the extant literature. This exercise, which is also known as "theoretical integration" (Bergaus 2015; Charmaz 2014; Urquhart 2012), helped us to relate our empirical findings to the previous studies and situate them within the current theoretical lenses in the extant literature. It is also in line with a key step of theory building research (i.e., "enfolding literature"), which corresponds to the active comparison of the emergent concepts, hypotheses, or theories, and situate them within existing theories and models in the literature (Dubé and Paré 2003; Eisenhardt 1989). The next section presents and discusses the key findings of our empirical study.

2.4 Findings

Figure 2.1 shows the conceptual framework which emerged from our analyses. It proposes two complementary conceptual links along with four underlying mechanisms that mediate the relationship between organizational readiness and IT implementation success. In line with this framework, two overarching research propositions are also proposed.

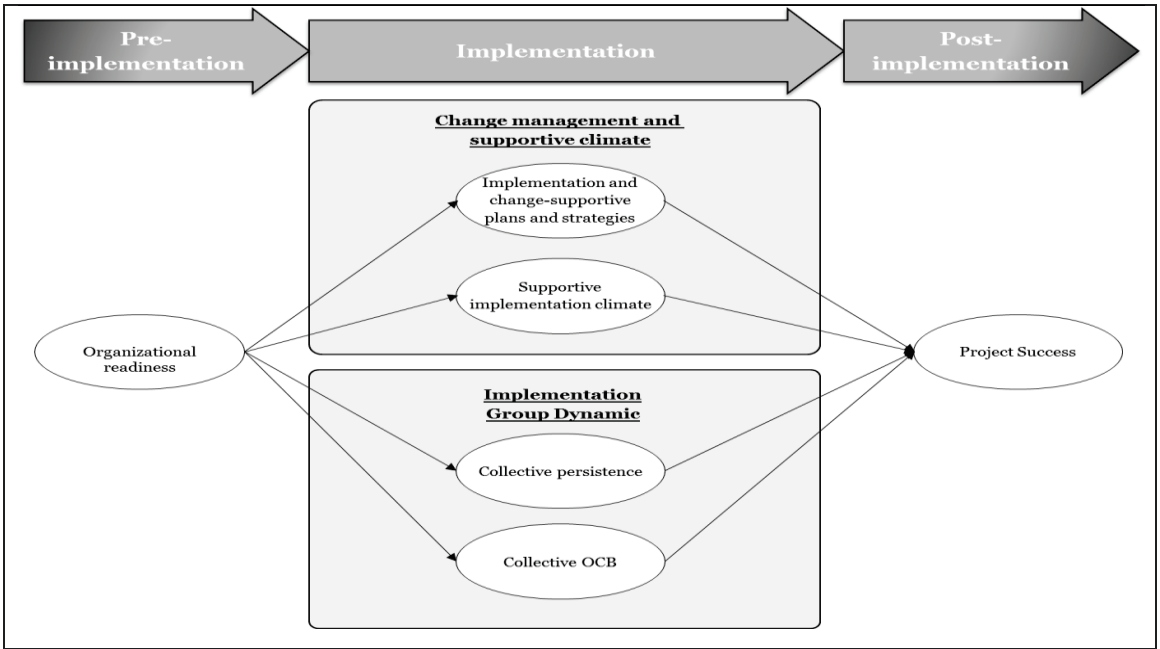

Figure 2.1 Emerging Conceptual Framework

Link 1: Relationship between Structural Readiness and IT Implementation Success

According to our analysis, an important implication of structural readiness is to provide the capacity and opportunities for the IT project managers and change leaders to facilitate the implementation process and expedite the change in the organization. More specifically, our experts argue that, in the context of an IT implementation, project managers and change leaders ought to adopt an array of change management strategies and action plans to support the implementation activities and enhance the change process in organizations. Such strategies, also identified by previous studies, include, but are not limited to, educational and training programs, user support and user participation, workshops and project road shows, rewards and communication plans (e.g., Frahm and Brown 2005; Klein et al. 2001; Klein and Ralls 1997; Rousseau 1988).

Nevertheless, adopting such strategies is not likely without a clear plan and a high-level of structural readiness in the organization. Our experts indicate that pre-implementation structural readiness can provide valuable opportunities for IT project managers and change leaders to embark on the IT implementation in a context that allows them to organize and set up sufficient and appropriate change management strategies, and accordingly maximize project success. They also argue that the lack of structural readiness, on the other hand, confines managers with limited options on-hand, and often forces them to escalate the project and delay the outcomes. In addition, it puts a great deal of pressure on the implementation team and other members of the organization, including the change targets and end users of the new system.

In light of the above, expert #16 mentioned,

> *"[structural readiness] will help you to plan for [the change management] activities and practices, and execute [the implementation] better. Having money will give you leeway to do more [change supportive] activities. Having staff, not necessarily the ready one, but available ones [is also important because] availability [of resources] will give you things that you can work with."*

Expert #2 provided an example of a successful project that benefited from a high level of pre-implementation structural readiness, and stated,

> *"[In that project] we organized a lot of [change management] plans at the implementation phase. For example, we did lots of communication [across the organization]. We organized several [educational] workshops and road shows […] and*

> *all these were possible because we [could] afford it. I was very fortunate to have a decent budget to do the right and proper activities. That's the other thing! Sometimes, when you have little money, or when no resources [are] available; you can't execute all the [best practices] that you have planned for*."

Finally, expert #6 provided an example of the negative consequences associated with the lack of structural readiness in an IT implementation project,

> *"If there are certain things that you would like to do [as a project manager or change leader] in the project and the organization have some resource constraints, for example, if time is an issue or [they] have other resource constraints, it causes frustration [in the implementation team and the change targets]. And you have to give up some activities to meet those constraints. Often that happens [in my projects] and then what it actually jeopardizes is the project success."*

Our panel of experts also indicated that structural readiness not only helps to advance implementation process and plans, but also sends a clear message to employees about the importance and priority of the project and the new system in the organization. In other words, top management commitment and sponsorship to the creation of a ready context for the change sends a clear message regarding the priority of the project, and this can increase the engagement of employees and expedite the implementation of the new system in the organization. In line with this, expert #7 mentioned:

> *"[Pre-implementation structural readiness] makes [the employees] to realize that [the project] is important. You should keep its importance in people's minds. So, it creates credibility around the project and make [employees to] buy-in."*

Our experts also indicated that it is more likely that the employees would hold a common perception of the project priority if there is a visible commitment and sponsorship from the top management team. In line with this, expert #26 suggested that:

> "*I believe that sponsors should be involved at the very beginning [of the project] and they have to show their involvement, because employees look up to their managers as [the ones] who are showing them the road and guiding them. So they have to feel that the top level management is convinced about the transformation itself, otherwise they won't not buy-in [either]."*

Link 2: Relationship between Psychological Readiness and IT Implementation Success

Our group of experts indicated that having a collaborative "group dynamic" is an important advantage with respect to psychological readiness for IT implementation projects. In organizational studies, the term "group dynamic" refers to a system of behaviors and psychological processes occurring within or between social groups (Hogg and Williams 2000). The experts maintained that IT implementation is a socially interactive process in which people from different units have to interactively work together. They suggested that, in such contexts, success is dependent on people working closely and collaboratively as a team. They indicated that organization-wide psychological readiness, i.e., having people who are collectively confident in their shared capacity to execute and live the envisioned change and who are collectively committed to accomplishing it successfully, contributes to a positive and collaborative group dynamic within and between the working units, eventually paving the way for success. For example, expert #2 supported her arguments for this stance by giving an example of a successful ERP implementation project in which the shared resolve and commitment among employees led to an organization-wide collaboration and eventual success of the project. She said,

> *"In this project, there was one region that was really struggling because their stuff was so complex. So, other regions said, 'Why don't you send your data and we'll help you out? We'll get on board!' I was so surprised, [because] most of the time these regions compete against each other, but this time, because they wanted to get to go-live, they went outside the norms of groups, which is like 'they're usually our competitor, but let's help them out, so that we can all get to that same starting point and go from there […] So yeah, you do see more of the Good Samaritan that comes out when they're all vying for the same goal."*

In the same line of thought, another expert stated,

> *"For me, a ready organization is collaborative, [whereas] an unready organization is not collaborative. You are still going to face the issues; [however] it's how you overcome them that matters. Upfront, putting measures in place to make a collaborative organization will be well worth the investment. So it would be good to assess readiness upfront and then see how much you need to invest in it" (expert #18).*

The experts also pointed to employees' group cohesiveness and collective persistence in achieving implementation objectives as other important component of psychological readiness. They indicate that if employees have a common understanding of the

implementation objectives and a shared resolve to accomplish them, they are more likely to engage in the implementation activities and show more resilience and persistence to accomplish the implementation outcomes. In line with this, one of the experts gave an example of a successful IT implementation project in which the employees' group cohesiveness — deep root in their collective commitment and a shared understanding of the implementation objectives — was the main source and a key driver of their collective persistence in achieving the IT project objectives. She stated,

> *"I remember, [in the ALPHA project] we were working really tight, shoulder-to-shoulder! If somebody was getting desperate a bit, we were just pushing him again and giving him a pep talk [...] we were working really hard and were not counting the hours. We were working more as a team. We were more structured based on our analysis because we knew that there was no way that we could fail this project"* (expert # 8).

In the same line of thought, another expert mentioned:

> *"I think part of our success [in this project] was because we didn't impose [the system or change] on our employees. Let's put it this way, we got [an organization-wide] commitment on their part that made them willing to have this change. And this commitment engaged them into the change process, which is not the same as us forcing them into a change" (expert #9).*

Summary

As discussed above, our analysis revealed four underlying mechanisms that mediate the links between organizational readiness and IT implementation success (see Table 2.2). More specifically, our experts proposed that structural readiness can positively influence IT implementation success by 1) providing a favorable context for IT project managers and change leaders to organize and set up sufficient and appropriate change supportive strategies and action plans, and 2) contributing to a strong and change supportive implementation climate. Our results also propose two links between psychological readiness and IT implementation success. These links include 1) mobilizing the employees' collaboration and encouraging their pro-social and citizenship behaviors (OCB), and 2) reinforcing their group cohesiveness and collective persistence. Below, we discuss how these mediating mechanisms are related to some theoretical models in the extant literature.

Table 2.2 Summary of the Research Findings		
Constructs	**Relationships**	**Illustrative quotes from the interviews**
Structural Readiness and IT Implementation Success	Provide a favorable context for IT project managers and change leaders to organize and set up sufficient and appropriate change supportive strategies and plans.	*_ [Structural readiness] will help you to plan for [the change management] activities and practices, and execute [the implementation] better. Having money will give you leeway to do more [of these] activities. Having staff, not necessarily the ready one, but available ones [is also important because] availability [of resources] will give you things that you can work with. (Expert # 16)* *_These are the factors that show if an IT implementation is going to be easy or not. And if these factors are not available and the organization is not ready, it affects your change management plan and activities. It is going to be harder and more complex and you need to work more, but you have less resource to work with. It just makes the project for you [as a project manager or change leader] harder and more complex to manage. (Expert # 10)* *_ [Lack of structural readiness] is really a pressure! It puts a lot of pressure on your shoulders [as a project manager] and on the others [team members and the change targets] as well, because you should cut everything. If you are just presenting your project plan and you think the cost of it will be X dollars, and the company says, 'I'm allowing you only 75% of this amount.' I'm sorry! But, I'm going to cut the scope of the project! (Expert #8)*
	Contribute to a change supportive and strong IT implementation climate.	*_ [Pre-implementation structural readiness] makes [the employees] realize that [the project] is important. You should keep its importance in people's mind. So, it creates credibility around the project and make [employees to] buy-in. (Expert #7)* *_ I'm also thinking [about] sponsorship. If you have very strong sponsorship at the client-side, CEO level that will make it very clear that they will not accept silliness! [That] the project is important for the company and we need to do this! If the sponsorship is strong in that way, then people will align. They have a reason to [buy-in]! (Expert #18)* *_ You should 'walk the talk' and not just say 'Oh this is important!'—No, you have to show that this is so important that you are on it! So it will surely simplify and help that to be a success. To me alignment on priority is a huge determinant of success, because everybody knows this [project] is important! (Expert #5)*

Table 2.2 Summary of the Research Findings		
Constructs	**Relationships**	**Illustrative quotes from the interviews**
Psychological Readiness and IT Implementation Success	Mobilize employees' collaboration and encourage their pro-social and citizenship behaviors during the IT implementation process.	_ *In this project, there was one region that was really struggling because their stuff was so complex. So, other regions said, 'Why don't you send your data and we'll help you out? We'll get on board!' I was so surprised, [because] most of the time these regions compete against each other, but this time, because they wanted to get to go-live, they went outside the norms of groups, which is like 'they're usually our competitor, but let's help them out, so that we can all get to that same starting point and go from there […] So yeah, you do see more of the Good Samaritan that comes out when they're all vying for the same goal. (Expert #2)* _ *For example, it happened during our training where some people could not [participate] because they had too much to do, and you see some people were [voluntarily] saying, 'Okay, let's all help them out that all of us can start training at the same time and at the same level.' Or, in other cases, if somebody was fallen behind or was sick or something, others were coming onboard and say, 'we'll help you get through this.' (Expert #15)* _ *"For me, a ready organization is collaborative, [whereas] an unready organization is not collaborative. You are still going to face the issues; [however] it's how you overcome them. Upfront, putting measures in place to make a collaborative organization will be well worth the investment. So it would be good to assess that upfront and then see how much you can invest in it." (Expert #18)*
	Reinforce employees' group cohesiveness and motivate their collective persistence in accomplishing the IT project objectives.	_ *"I remember [in ALPHA project] we were working really hard, shoulder-to-shoulder! If somebody was getting desperate a bit, we were just pushing him again and giving him a pep talk [...] we were working really hard and were not counting the hours. We were working more as a team. We were more structured based on our analysis because we knew that there was no way that we could fail this project." (Expert # 8)* _ *[In that project] we said "we will fight this together and we'll make it happen." And it was just because that we were so much convinced and had confidence that we can make this [change] happen. Because, otherwise, we needed a miracle [to make it happen]! (Expert #28)* _ *"I would say from a human perspective, it's very good to be in an environment where everyone is aligned. If people are aligned from the beginning, you are much stronger in dealing with challenges that pop-up, instead of focusing on give and take in the project, which then you don't work harder and together to find a viable solution [for the implementation problems]." (Expert #7)*

2.5 Discussion

To organize our findings and situate them with respect to prior literature, we borrowed some concepts from the main theoretical lenses in the extant literature. More specifically, to theorize the identified links between structural readiness and IT implementation success, we borrowed two concepts related to innovation implementation theory, namely: "implementation and change-supportive plans, strategies, and practices" and "implementation-supportive climate" (Klein et al. 2001; Klein and Sorra 1996). More specifically, we draw on the findings of Klein et al. (2001) regarding the determinants of innovation implementation success. The authors propose that IT implementation success is greatly dependent on organizational change-supportive strategies and implementation plans. Through a survey of 39 organizations that deployed Manufacturing Resource Planning (MRP) systems, they observed that organizations can increase their chances for IT implementation success by employing high-quality and sufficient change-supportive plans and implementation-related promotional strategies. Building on their findings and on the preliminary observations from our own interviews, we propose that structural readiness can positively influence IT implementation success by increasing project managers' opportunities for employing sufficient implementation and change-supportive plans and strategies, and by minimizing an organization's need for further remedial actions and recovery plans during the implementation phase. Importantly, Klein et al. (2001) also proposed a positive link between implementation success and an organization's implementation-supportive climate. They argue that the chances of implementation success will increase if the employees consider the project to be an organizational priority. Consequently, we posit that structural readiness can positively influence IT implementation success by creating an organization-wide supportive climate that highlights the importance of the implementation and the use of the new system for the organization. To summarize, we propose that:

> ***Proposition 1:*** *The positive effects of structural readiness on IT implementation success are mediated by change-supportive plans, strategies, and practices as well as by the presence of an implementation-supportive climate.*

Next, to support our empirical findings regarding the importance and influence of psychological readiness on IT implementation success, we related our observations to the theoretical underpinnings associated with Social Cognitive Theory (SCT). SCT posits that people's perception of their team's collective efficacy will affect their effort expenditure and their persistence in performing a particular group task or team activity (Bandura 1986, 1988). Previous empirical findings that rely on this theory suggest that team members with high collective efficacy will exert more effort and show more collective persistence in performing team activities, and that this will affect their team's performance and, ultimately, project success (e.g., Bandura and Cervone 1986; Kahn and Nauta 2001; Nel 2007; Savard and Rogers 1992). For example, in the field of sports, Hodges and Carron (1992) found a positive relationship between a team's collective efficacy and its level of persistence and performance. By giving random bogus performance feedback to the participants in their study, Greenlees et al. (2010) found that teams with higher initial collective efficacy exert more collective effort and persistence in their tasks and activities compared to those with relatively lower initial collective efficacy. Lichacz and Partington (1996) observed that social loafing, i.e., reduced individual effort in team activities, was lower in teams with high collective efficacy than in those with relatively lower collective efficacy. Interestingly, organizational behavior research also suggests that organizational citizenship behavior (OCB) is positively correlated with collective commitment (Podsakoff et al. 2000). OCB is defined as pro-social and extra-role discretionary behavior, which is not specified by role prescriptions in the organization, but which facilitates the accomplishment of organizational or team objectives (Katz and Kahn 1966). It includes an array of different behaviors, such as cooperating with others and helping them when faced with heavy workloads in a project, volunteering to solve a problem in order to allow a project to progress faster, and sharing important information with other team members (Chun et al. 2013; Podsakoff et al. 2000).

Finally, the social capital theory provides valuable insights on the importance of shared mindset and socially constructed bonds. Social capital theory proposes that social ties and group cohesiveness (i.e., a strong feeling of "we" or "collective") among group members are important predictors of their collective action and, more importantly, their

collective performance (Adler and Kwon 2002; Burt 1997; Kwon and Adler 2014; OH et al. 2004). Social capital is defined as the "resources embedded in a social structure that are accessed and/or mobilized in purposive action" (Lin et al. 2001, p.29). It can be manifested in the form of goodwill, fellowship, sympathy, and social intercourse among the members of a group, and can affect the performance and success of their collective activities (Bolino et al. 2002; Kwon and Adler 2014; Lin et al. 2001; Podsakoff and MacKenzie 1997). In prior organizational studies, social capital theory has been used to explain why individuals choose not to free-ride, but instead voluntarily contribute and show prosocial and altruistic behaviors (Bolino et al. 2002; Oh et al. 2004; Wang et al. 2006; Wasko and Faraj 2005). For example, Wasko and Faraj (2005) show that knowledge contribution is higher in networks with higher level of social connections or ties among its members. For their part, Wang et al. (2006) examined social capital theory in the context of ERP implementations. They surveyed more than 120 companies that implemented ERP and found that employees' collective commitment and willingness to participate in these projects represent two imminent antecedents of team cohesiveness, which in turn affect IT implementation success.

We posit that the abovementioned concepts and underlying theoretical lenses can be adapted to the context of IT implementation projects because they are team-based initiatives that involve organization-wide collaboration between different groups of people (May 2013; Real and Poole 2005). We maintain that psychological readiness influences IT implementation success by allowing a positive group dynamic in which employees exert more collective persistence and show more collaborative and citizenship behaviors during the implementation process. Therefore, we formulate our second research proposition as follows:

> ***Proposition 2:*** *The positive effects of psychological readiness on IT implementation success are mediated by employees' collective persistence and citizenship behaviors during the implementation phase.*

2.6 Implications for Research and Practice

Our study makes several contributions to both research and practice. First, our findings are likely to contribute to the extant literature by deepening our collective understanding of the relationship between organizational readiness and IT implementation success. As mentioned earlier, the previous literature has typically postulated a direct link between organizational readiness and IT implementation success, while it paid little attention to unfolding the 'black box' and scrutinizing the link between the two constructs (Ram et al. 2015). The proposed conceptual framework in this study represents a first step to that end and identified some of the main underlying mechanisms that link the two constructs. Another value of our conceptual framework is to potentially bridge the two relatively distant phases of the IT implementation process (pre-implementation and post-implementation) and to provide some theoretical explanations to the ambivalent results in the literature (Swanson 1988; Paré 2002; Goodman and Griffith 1991).

Second, our findings support and underscore the multi-dimensional nature of organizational readiness construct (Armenakis et al. 1993; Rusly et al. 2012; Shahrasbi and Paré 2014, Weiner et al. 2008). Indeed, by juxtaposing the two overarching dimensions of organizational readiness, our framework highlights the importance of such conceptualization and the value of taking a more holistic perspective to this construct in our discipline.

Third, this study extracts the tacit knowledge from the practical realm and relates it to the relevant theoretical lenses discussed in the reference disciplines (Weiss 1995). In fact, the grounded theory approach adopted in this study deepened our understanding of the focal phenomenon, given the paucity of theoretically-grounded research in this domain. This is in line with the essential premises of the grounded theory approach, which is acknowledged as a valuable research methodology to broaden and deepen the collective understanding towards complex organizational phenomena (Urquhart et al. 2010; Charmaz 2006).

The findings of this study also have important implications for managers and practitioners. First, our results highlight and clearly demonstrate the implications of

employees' psychological readiness for the IT implementation process and success. As discussed earlier, our experts argue that although structural readiness is widely recognized as an undisputable precursor to IT implementation success, managers should not disregard the importance of employees' psychological readiness. Nor should they underestimate the employees' attitude and beliefs regarding the upcoming changes, since they are the main driver and targets of the change in organizations (Armenakis et al. 1993; Benjamin and Levinson 1993; Markus 2004).

Second, our findings clearly show that the lack of organizational readiness has negative impacts on the IT implementation process which may, in turn, hinder project outcomes. In addition, it forces organizations to organize and set up ad hoc recovery plans in response to these shortages in order to cope with the upcoming situations. According to our experts, these plans are often costly and more time consuming. Therefore, it is more beneficial for IT project managers and change leaders to ensure organizational readiness before embarking on a new IT project, otherwise they may require bearing excessive costs and efforts during the implementation phase, and this can jeopardize project success.

2.7 Limitations and Suggestions for Future Research

Results of this study must be interpreted in light of its possible limitations. Although our findings provide interesting insights and add to our collective comprehension of the study's main phenomenon, we acknowledge that the proposed links between organizational readiness and IT project success may not be exhaustive. Therefore, future studies can build on our conceptual framework and identify other complementary mechanisms that mediate the link between organizational readiness and IT implementation success. Future studies can also empirically test the two research propositions in different IT project contexts. However, thoughtful consideration is required regarding an appropriate study design and context. More specifically, while the proposed conceptual framework is pitched at the organizational level, it embodies constructs at the organizational and group levels (Klein et al. 1999; Klein and Kozlowski 2000). Therefore, we posit a multi-level approach is required to be able to capture all the relevant constructs and links. It is also suggested to identify respondents

from a diverse and representative array of IT implementation stakeholder groups (e.g., target users, top managers, and implementers) in order to obtain a holistic view and also minimize single-source bias.

Another limitation is related to the links between the identified mechanisms and IT implementation outcome success (i.e., effectiveness of the implementation outcomes). As mentioned earlier, recent studies suggest a multi-dimensional conceptualization of IT project success, one which encompasses and represents both the process and outcome success (Bartis and Mitev 2008; Nelson 2005; Paré 2002). Our empirical results only provide support for the links between organizational readiness and IT implementation process success (i.e., time, budget, and scope). In other words, we did not find significant evidence in our data for the positive influence of organizational readiness on project outcome success, as proposed by some previous studies (e.g., Motwani et al. 2005; Zhu et al. 2010). We deem that part of this limitation may be related to the potential bias in our sample which is limited to the views of certain groups of IT implementation stakeholders, namely, project managers and external consultants. Therefore, we suggest that future studies investigate the links between organizational readiness and IT project success from the perspectives of other key stakeholders including project team members, change targets, and end users of the new system.

2.8 Conclusion

This study investigated the relationship between organizational readiness and IT implementation success. Drawing on the results of a qualitative survey, the study proposed a conceptual framework, including two conceptual paths and four underlying mechanisms that link the two constructs. While the proposed mediating mechanisms may not be exhaustive, the present study represents a first step toward opening the "black box" and clarifying the nature of the relationship between these two constructs. In this sense, the proposed conceptual framework constitutes an important contribution to the extant IS literature. In complement to the four research propositions, we offer some theoretical explanations for the ambivalent results on the relationship between organizational readiness and IT implementation success.

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Conclusion

To conclude, the two essays of this doctoral thesis are expected to make significant contributions to both research and practice. From a theoretical perspective, the proposed conceptualization of organizational readiness for IT-based change is likely to deepen our collective understanding of this important construct in our field. More specifically, by juxtaposing the core dimensions of organizational readiness, our conceptualization integrates and reconciles the existing views in the extant literature and proposes a realistic, yet comprehensive view of this concept (Martin et al. 2008; Rusly et al. 2012; Shahrasbi and Paré 2014). Importantly, it will provide a reliable basis for future studies that aim to develop reliable and valid measurement instruments for this construct. For its part, the conceptual framework developed in the second essay broadens and deepens our understanding of the relationship between organizational readiness and IT implementation success. It identifies and explains the underlying mechanisms that mediate the association between these two constructs and provides solid theoretical explanations for the ambivalent results in the extant literature.

Furthermore, the grounded theory approach adopted in this thesis allowed us to offer some alternative, yet complementary insights to the extant literature. Grounded theory has been proposed as a robust methodology to derive original theoretical perspectives when there is a paucity of theoretically-grounded research and empirical findings (Charmaz and Belgrave 2002; Corbin and Strauss 1990; Glaser and Strauss 1967). In this thesis, grounded theory was used not only as a technique to code and analyze our empirical data, but as a methodology to inform our theory development efforts (Corbin and Strauss 1990; Urquhart 2012; Urquhart et al. 2010). Moreover, our empirical investigation contributes to the extant literature by extracting the tacit knowledge of a panel of IT project/change management experts on this topic and relating such knowledge to existing theoretical lenses from relevant reference disciplines. By juxtaposing the perceptions and understandings of our experts and integrating these with various theoretical lenses, our empirical results thus provide valuable insights regarding the conceptualization of the organizational readiness construct in our discipline.

Finally, from a practical standpoint, our findings highlight the importance of assessing both components of organizational readiness, namely, structural readiness and psychological readiness, in the context of IT-based transformations. Indeed, IT project managers and sponsors must not only pay attention to the extent to which the organization has all the required resources and structural conditions to initiate a new change. They must also consider their employees' psychological readiness since change targets are often considered to be the most important assets and key drivers of changes in organizations (Armenakis et al., 1993; Benjamin and Levinson, 1993; Markus, 2004). More specifically, our findings highlight that while structural readiness is important due to the resource intensive and complex nature of large IT projects, it should not divert IT managers' attention from the employees' cognitive and emotional inclination to accept, embrace, and adopt a particular plan to purposefully alter the status quo. Therefore, IT project managers and change leaders are strongly encouraged to be sensitive to change targets' collective readiness since it can significantly influence their support for IT-based initiatives and, in turn, their active participation during change initiatives.

This thesis also has some limitations. Weiner et al. (2008) argue that reviewing organizational readiness is difficult since the literature is not structured, nor, are there widely accepted keywords or search terms. We concur with these authors and believe that the results of review may be bounded to the keywords, bibliographic databases, and the selection criteria we used. Although we feel confident that our literature review is exhaustive enough to reflect the main conceptualization views of organizational readiness in the extant literature, we cannot rule out the possibility of missing some novel conceptualization that has been presented in recent working papers or published in the "gray literature."

Second, the proposed conceptual model and the links in our second essay are not exhaustive. Future studies can build on this conceptual model and identify other complementary mechanisms that mediate the link between organizational readiness and IT implementation success. Future studies can also empirically test the two research propositions in different IT project contexts.

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Appendix

Appendix 1.1 – Coding Scheme – Literature Review

A. General Information

Article #: ___ Author's: _____Journal name: _____
Year: _____ Vol. _____ No. ____ Pages: _____ - _____

B. Research Theme and Key Findings

1. Research Theme/Topic
What are the main research themes/topics of the study?
_____
2. Theoretical lenses:
What are the main theories/theoretical lenses that have been used in the article?
_____
3. Key findings
What are the key findings?
_____

_____

_____

_____

_____

_____

C. Methodological Details and Study Design

4. Nature of the study
Is the study empirical or conceptual?
☐ Conceptual ☐ Empirical
5. Purpose of the study
What is the main purpose of the study?
☐ Theory building ☐ Theory testing
☐ Descriptive ☐ Instrument development/validation
6. Main methodology
What is the main methodological approach of the article?
☐ Quantitative ☐ Qualitative ☐ Mix ☐ Not applicable
_____
What are the methodologies used in the study? (Check all that apply)
☐ Questionnaire survey ☐ Case study
☐ Qualitative survey (interviews) ☐ Experiment (lab or field)
☐ Action research ☐ Secondary data
☐ Ethnography/grounded theory ☐ Field study (Qualitative)
☐ Instrument development/validation ☐ Other_____
7. Unit of analysis
What is the unit of analysis?
☐ Network of organizations ☐ Organization
☐ Project ☐ Individual

☐ Group or team ☐ Unit or department
☐ Other: _____

8. Study settings

What types of organizations are involved in this study?

_____

What is the profile of the organizations? (Check one per line)

☐ Public ☐ Private ☐ Both ☐ Not Available
☐ Small/medium ☐ Large ☐ Both ☐ Not Available

9. Nature of the change /initiative/innovation

What type of change/intervention/innovation is at the heart of the change process?

☐ IT/IS _____ ☐ Change as general _____
☐ Other _____ ☐ Not specified

10. Timing of data collection

The study has been conducted cross-sectional or longitudinally?

☐ Cross-sectional ☐ Multiple cross-sectional ☐ Longitudinal

The data about organizational readiness are collected at what stage of the change process?

☐ Before the change was implemented (Pre-implementation/prospective data)
☐ During the change process (Implementation/ongoing assessment)
☐ After the change was implemented (Post-implementation/retrospective data)
☐ At multiple stages (different organizations in the sample at different stages), specify:

_____

☐ Not specified

D. Conceptualization and Operationalization of Organizational Readiness

11. Conceptualization of organizational readiness

What term/s do the authors use for "Organizational readiness"?

☐ Organizational readiness ☐ Change readiness
☐ Readiness ☐ Organizational preparedness
☐ Other: _____

Do the authors provide any conceptual definition?

☐ Yes ☐ No

If yes, please specify:

_____ Page # _____

Is the definition borrowed from prior studies? (Check all that apply)

☐ Armenakis and Harris 2002 ☐ Holt et al. 2007 ☐ Armenakis et al. 1993
☐ Iacovou et al. 1995 ☐ Eby et al. 2000 ☐ Chwelos et al. 2001
☐ Others _____ ☐ No one

12. Dimensions of organizational readiness

Organizational readiness conceptualized as a unidimensional or multi-dimensional construct?

☐ Unidimensional ☐ Multi-dimensional

If multi-dimensional, what are the main dimensions identified by the study?

_____

13. Psychometric properties of the measures

Does the study provide an operational definition for organizational readiness?

☐ Yes ☐ No

If yes, please specify:

_____ Page# _____

Are the measures borrowed from prior studies? If yes, please specify: _____

Which psychometric properties have been assessed in the manuscript? (Check all that apply)

☐ Reliability
☐ Construct validity
- {☐ Content validity ☐ Face validity ☐ Convergent validity ☐ Discriminant validity

What type of variable does organizational readiness represent in the paper?

☐ Dependent variable ☐ Independent variable
☐ Mediator/intervening ☐ Moderator ☐ Not applicable

What type of measure does the construct represent?

☐ Reflective ☐ Formative
☐ Not applicable ☐ Not specified

What type of data is used to measure the "organizational readiness" construct?

☐ Self-reported/perceptual ☐ Objective
☐ Mix ☐ Not applicable

Who are the main respondents? (Check all that apply)

☐ Managers /sponsors ☐ Change targets (target users) ☐ Change implementers/champions
☐ Others _____ ☐ Not Specified

14. Complementary notes

Please enter any complementary notes here:

_____

_____

_____

_____

_____

_____

Appendix 1.2 – Interview Guide

Interview Guide

Interview No……

Date……Time……..

A. Introduction

- Breaking the ice by explaining the main objectives and plan of the interview for the respondent.
- Ask for the respondent's permission to record the interview.
- Explain the confidentiality and anonymity of the answers.
- Sign the forms related to the ethical committee.
- Ask if the respondent has any question before the interview start?

B. Profile of the Respondent

- This section of the interview aims to obtain some information regarding the respondent's background and experience in accordance with the main topic of the study.
    - Can you briefly provide some background information regarding your education and job history?
        - Education (e.g., degree and field of study, any relevant certificate about project management or change management or IT, etc.)
        - Professional (e.g., previous work experience, organizations, projects, positions, etc.)
    - Can you also talk about the IT projects that you have managed or have been involved?

C. Respondents' Opinion on the Concept

- This section aims to identify the respondent's opinion regarding the concept of organizational readiness.
    - So, as my first question, I want to know your personal view of the term "organizational readiness" in general and in the particular context of IT projects.
    - Can you please explain what comes to your mind when you hear the term organizational readiness for an IT project or an IT-based transformation?
    - What are the main dimensions/areas that you think of?
- At the end of this section, the researcher should try to recap and clarify the definition or the main dimensions mentioned by the respondent, and ask for further explanations or real-life examples.

D. Assessment of organizational readiness

- Do you think it is necessary to assess organizational readiness in the context of IT projects?
- What are the methods that you use to assess organizational readiness in context of IT projects?
    - Do you use formal questionnaires and measurement tools?
- As an experienced manager, how do you think it is helpful/beneficial to assess organizational readiness before starting an IT project?
- What criteria do you take into consideration in order to assess organizational readiness in your projects?

E. Implications of Organizational Readiness for Project Success

- The objective of this section is to understand why OR is important, that is, why it is an important precursor to IT project success.
    - In your opinion, what are the main benefits and advantages of organizational readiness for an IT project?
    - What are the main benefits of organizational readiness during an IT implementation and for the project success?
    - How do you think readiness can impact project success?
    - Could you please describe a real-life project that organizational readiness has been a major driver or a main source of project success? How readiness helped the project to be successful?
    - Could you please also describe an example that the lack of sufficient organizational readiness has been a major driver or the main source of the failure of the project? How do you think the lack of readiness impact and lead the project to failure?

F. Concluding Remarks

- Final comments and conclusion
    - At the end, is there any other thing else or final comment that you would like to add to what we discussed today?
- Thanking the interviewee for his time and participation!

Appendix 1.3 – Coding Scheme – Interviews

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a-*priori* coding scheme			
Code label	**Description/ definition**	**Code type**	**Hierarchical relations**
Conceptualization	Whether the text passage is related to or could be useful to explain/enhance the conceptualization of "organizational readiness".	parent	Nodes\\conceptualization
Technological readiness	The extent to which the organization has the required resources and technological capacity to adopt and implement the new IS.	child	Nodes\\conceptualization\\financial readiness
Financial readiness	The extent to which the organization has the required financial readiness and funds to adopt and implement the new IS.	child	Nodes\\conceptualization\\technological readiness
Process readiness	The extent to which the current business processes can support and facilitate the adoption and implementation of the new system.	child	Nodes\\conceptualization\\process readiness
Cultural readiness	The extent to which the organization's culture is open and receptive to adoption and implementation of the new system.	child	Nodes\\conceptualization\\cultural readiness
Strategic readiness	The extent to which there is a clear vision and a high level of management support for the adoption and implementation of the new IS in organization.	child	Nodes\\conceptualization\\strategic readiness
Psychological readiness	The extent to which the organizational members are collectively primed, capable, and motivated to adopt the new system and accept its outcome.	child	Nodes\\conceptualization\\psychological readiness

Reports\\coding scheme-1 Page 1 of 1

Appendix 1.4 – List of the reviewed articles

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