Abstract

Start-up organizations are disrupting previously stable industries with new business models. Existing organizations in these environments need to strategically improvise, that is develop the ability to rapidly seize opportunities, and without prior planning, creatively reconfigure their operational capabilities. As a dynamic capability, strategic improvisation (SI) requires three factors: real-time information, instantaneous communication and memory. We proposed that a well-developed information management capability (IMC), IT infrastructure flexibility (ITIF), and organizational memory (OM) facilitate SI. We analyzed results from a telephone survey of IT executives using two methods, variance-based PLS and set-theoretic qualitative comparative analysis (QCA). These methods provide a more complete understanding of the complex relationships among SI and IT capabilities such as IMC and ITIF. PLS findings confirm their enabling roles. QCA findings further indicate that these IT capabilities and OM play different, complementary roles in SI. Implications for research and practice are presented.

Keywords

Information management capability, strategic improvisation, IT infrastructure flexibility, survey, PLS, QCA, empirical.

Introduction

In the sharing economy, many business models rely on the ability of organizations to leverage proprietary software applications. Companies like AirBnB, Uber, or Zulilly have disrupted the hotel, taxi, e-retail industries, respectively, by providing new options to consumers. In most industries, information technology (IT) capabilities play an important role in enabling organizations to respond to disruptions and take other competitive actions (Ferrier et al. 2010; Sambamurthy and Zmud 1997). Past research informs us that IT capabilities are linked to the development of different types of capabilities in turbulent environments, including dynamic capabilities like organizational learning (e.g., Bhatt and Grover 2005) and operational capabilities like new product development capabilities (e.g., Pavlou and El Sawy 2006).

Industries like the taxi industry, once considered fairly stable, are now experiencing high levels of turbulence brought about by companies like Uber or Lyft. In these dynamic environments, successful organizations are the ones that manage to rapidly identify and seize opportunities, and to reconfigure their operational capabilities accordingly. In strategic management, this capability relates to improvisation (Pavlou and El Sawy 2010). Improvisation is not limited to start-ups and has also been studied in many settings, including medium-sized organizations operating in mature industries (Moorman and Miner 1998a). The ability to effectively improvise requires three main factors, real-time information, instantaneous communication and memory, that can be IT-enabled (Crossan et al. 2005; Pavlou and El Sawy 2010). In new product development, improvisational capabilities are very effective in facilitating reconfigurations of operational capabilities and leading to more competitive actions (Pavlou and El Sawy 2010). Our knowledge of how IT capabilities influence improvisation in organizations remains limited to new product development in the extant research. Considering that improvisation has been observed with organization-level and strategic decisions and actions (Baker et al. 2003; Miner et al.
2001), it is important to better understand the role of IT capabilities in these contexts.

Consequently, in this study, we focus on SI, defined as the "top managers' ability to spontaneously and creatively integrate, build, and reconfigure internal and external resources and capabilities to address unpredictable and rapidly changing strategic opportunities and threats" (Levallet and Chan 2015, p. 2), and seek to understand the role that IT capabilities play in enabling SI. Specifically, we focus on two IT capabilities, information management capability (IMC), and IT infrastructure flexibility (ITIF), along with one resource, organizational memory (OM).

To achieve this goal, we conducted a telephone survey of IT executives in 82 organizations. We examined our data using two analytical methods, variance-based structural equation modeling (SEM) and set-theoretic crisp set Qualitative Comparative Analysis (csQCA, Ragin 1994). The variance-based method allows us to study IT capabilities and SI from a 'connection' perspective, assuming that the enabling impact of IT capabilities on SI can be measured (El Sawy 2003). In contrast, the set-theoretic configurational approach takes a 'fusion' perspective, examining complex interdependence among IT capabilities and SI (El Sawy 2003). CsQCA results indicate that in organizations with high SI, ITIF is combined with IMC or OM, but not both. Research and practical implications are discussed.

**Literature Review and Research Model**

**Strategic Improvisation**

Improvisation has been defined as actions taken by individuals when lack of time limits the ability to plan (Crossan et al. 2005; Moorman and Miner 1998b). Building on improvisational characteristics first identified in jazz and theatre, organizational improvisation refers to a pattern of actions taken by organizational members that are spontaneous (i.e., not planned) and require some creativity to achieve an organizational objective (Vera and Crossan 2005). Improvisation has been examined at multiple levels (e.g., individual, team, organizational) using different theoretical perspectives, notably organizational learning and dynamic capabilities.

As a type of organizational improvisation, SI impacts organizational strategy and objectives (Baker et al. 2003; Miner et al. 2001), and refers to the patterns of improvisational actions taken by top management teams with potential impact on the whole organization. Jazz players and actors in improvisation theatre develop an ability to improvise by practicing and learning how to 'be spontaneous' (Weick 1998). Similarly, we use the dynamic capabilities perspective and conceptualize SI as a dynamic capability, that when practiced and repeated, can be used to quickly reconfigure other capabilities within the organization and enhance organizational performance (Baker et al. 2003; Miner et al. 2001). A dynamic capability is an organization's "ability to integrate, build, and reconfigure internal and external resources and capabilities to address rapidly changing environments" (Teece et al. 1997, p.517). Capabilities refer to the ability to manage valued resources that keep an organization running and help address daily challenges (Bharadwaj 2000). Specifically, we define SI as an organization's "top managers' ability to spontaneously and creatively integrate, build, and reconfigure internal and external resources and capabilities to address unpredictable and rapidly changing strategic opportunities and threats" (Levallet and Chan 2015, p. 2).

To be able to strategically improvise, top managers rely on and leverage their current knowledge of the organization, its resources and capabilities (Danneels 2011; Miner et al. 2001). This is similar to the jazz metaphor, where jazz band players are only able to improvise a song because they have a common knowledge base to start from (e.g., Barrett 1998; Weick 1998). More specifically, three factors are critical to SI: access to real-time information, the ability to communicate instantaneously and OM (Crossan et al. 2005; Vera and Crossan 2005). Past IS research has shown that the effective use of cooperative work systems that facilitate real-time information and communication is associated with improvisational capabilities in new product development teams (Pavlou and El Sawy 2010). However, organizational memory systems do not facilitate improvisational capabilities in highly turbulent environments (Pavlou and El Sawy 2010).

In this study, in addition to OM, we propose that two IT capabilities, IT-enabled IMC and ITIF, are associated with SI. IMC provides top managers with access to real-time information. ITIF provides the foundations for IMC while also facilitating instantaneous collaboration and seamless exchange of information.
IT Capabilities and Strategic Improvisation

IT-enabled Information Management Capability

SI relies on the ability to reconfigure existing organizational capabilities in a spontaneous and creative way, when no planning is possible (Baker et al. 2003; Miner et al. 2001). Because organizational leaders need to first understand what their current capabilities are, IMC also provides access to that information in real-time. For instance, organizational leaders who can access key capabilities’ performance indicators in their organization are in a better position to reconfigure them quickly if needed. IMC is defined as the ability to provide accurate, timely, reliable and secure information and knowledge to facilitate business decisions, using IS (Mithas et al. 2011). Since knowledge can be defined as information with meaning (Alavi and Leidner 2001), knowledge underlies the organization’s IMC (Choo et al. 2006). Information and codified knowledge are considered explicit (Alavi and Leidner 2001), while knowledge based on personal experience is considered tacit (Nonaka and Takeuchi 1995). Despite the difficulty in codifying tacit knowledge, research has shown that knowledge can be managed through hybrid approaches that include IT-based and non IT-based approaches (Jasimuddin et al. 2012).

A strong organizational IMC is based on processes that manage the information lifecycle, and ensure the collection, organization, sharing and maintenance of ‘good’ information (i.e., timely, accurate, reliable and secure information (Marchand et al. 2000; Mithas et al. 2011). IMC is associated with improved organizational performance (Mithas et al. 2011). From a variance-based perspective, we hypothesize that:

H1: Higher levels of information management capability enhance strategic improvisation.

IT Infrastructure Flexibility

ITIF, or “the ability of a firm’s IT infrastructure to enable quick development and support of various system components” (Kim et al. 2011, p.496) is characterized by scalable, adaptable, modular and compatible IT systems (Kim et al. 2011; Tallon and Pinsonneault 2011). A flexible IT infrastructure plays a foundational role to IMC. When IT systems are compatible and adaptable, information can be collected, analyzed and shared much more efficiently and rapidly across the organization (Levallet and Chan 2015). In addition, ITIF facilitates instantaneous communication among top managers and across the organization. Collaboration systems are integrated within the IT infrastructure, including information and knowledge management systems. Top managers can leverage flexible IT infrastructure to gather and discuss rapidly changing information effectively. From a variance-based perspective, we hypothesize that:

H2: Higher levels of IT infrastructure flexibility enhance strategic improvisation.

Organizational Memory

OM is defined as the declarative memory and procedural memory retained by an organization that can be used to make decisions (Moorman and Miner 1998b; Walsh and Ungson 1991). Following Moorman and Miner (1998a), we propose that SI benefits from procedural memory and declarative memory. Procedural memory is characterized by the availability of a large number of diverse routines. These procedures and rules can constitute the ‘base’ necessary for top managers to initiate capability reconfigurations and effectively improvise. However, capability reconfigurations may not be very creative or novel in this case, since they are based on existing routines and patterns (Moorman and Miner 1998b). This view of OM is consistent with Pavlou and El Sawy’s (2010) use of project and resource management systems as a way to make project rules available to new product development teams. On the other hand, declarative memory, referring to more general knowledge applicable to different contexts, is less constrained by routines. Because of the relative generalizability of this type of memory and the lack of a frame associated with it, capability reconfigurations using declarative memory are more novel and creative, but also slower to occur (Moorman and Miner 1998b). From a variance-based perspective, we hypothesize that:

H3: Higher levels of organizational memory enhance strategic improvisation.

It is important to note that these hypotheses are designed to test a variance-based model. The objective is to determine whether the variables explain some of the variance in SI. In contrast, the csQCA approach aims at understanding whether configurations of IT capabilities and OM exist that are consistently associated with high levels of SI. Therefore, with csQCA, we do not hypothesize relationships but instead report the observed configurations.
Research Methodology

To understand how IT capabilities and OM interact with SI, we conducted a telephone survey. The methodology is outlined below. Space constraints prevent us from providing full details. Additional information (e.g., the list of survey items) is available on request.

Questionnaire Development

Items for all constructs were adapted from past research, except for the SI construct, which was developed for the study. Notably, we adapted the IMC scale developed by Choo et al. (2006). The SI scale was developed based on Pavlou and El Sawy (2010, 2011) and Vera and Crossan (2005). A pre-test, consisting of an item-sorting exercise using an ‘open-card’ approach, was conducted online to assess content validity (Moore and Benbasat 1991). A few items were modified based on eight respondents’ feedback. The survey was piloted with nine respondents, including IT executives and MIS faculty. Statistical analyses using SPSS and Partial Least Squares (PLS) were used to assess the overall model, in terms of normality, reliability, divergent and convergent validity (Straub et al. 2004).

Data Collection

A list of medium-sized Canadian organizations was purchased through the market research company SSI (http://www.surveysampling.com/en). We surveyed medium-sized organizations because they are more likely than start-ups to have developed IT capabilities and tend to provide a ripe organizational context for improvisation (Davis et al. 2009). The organizations were mostly service organizations located in Western Canada and the provinces of Ontario and Quebec. The large majority had been operating for more than 10 years and had less than 250 employees. Key IT decision-makers (e.g., Chief Information Officers, IT directors) were targeted to answer the questionnaire. SSI conducted survey interviews by phone using detailed scripts provided by the authors. In total, 88 respondents from 82 organizations participated. 58% respondents had been in their managerial position for five years or more.

Results

Survey data were analyzed using two analytical methods, a variance-based approach using PLS, and a configurational method using csQCA. Both methods are briefly described below. The results follow.

Analytical Methods Overview

SEM and PLS

SEM is a statistical method that quantitatively tests a theoretical model with multiple outcomes in one step (Schumacker and Lomax 2010). SEM includes measurement model analyses, which can be used to determine construct reliability and validity. Measurement and structural models can be tested together in one step (Schumacker and Lomax 2010). Two main types of SEM techniques exist, with different algorithms (Chin 1998). In PLS analysis (used in this study), ordinary least squares and linear regressions are used to minimize residual variance and maximize explained variance in the dependent variables (Chin 1998, 2010). There are several advantages to using PLS. First, PLS does not make normality assumptions. Second, PLS supports complex models with a large number of indicators. Third (although sometimes debated), PLS can detect effects in very small samples (Chin 1998, 2010; Gefen et al. 2000).

Overview of csQCA

A premise of the configuration approach is that organizational phenomena are interrelated and should be studied from a holistic or systemic perspective (Fiss 2007). The objective is to understand how multiple constructs, or conditions, co-exist as a whole. As such, the configuration method allows researchers to better make sense of complex and interconnected relationships (e.g., among IT capabilities and SI).

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1 This survey is a subset of a larger survey with 143 multiple respondents (IT and non-IT) from 100 organizations. We used telephone interviews to maximize our chances of obtaining responses from respondents with senior positions.
Configurational approaches also allow the researcher to identify how an outcome of interest, here high levels of SI, may be associated with different configurations (e.g., ITIF, IMC and OM patterns). As a set-theoretic configurational method, csQCA assesses the absence or presence of a condition (e.g., IMC) within a specific set (e.g., organizations with high SI).

Cases of surveyed organizations are compared using Boolean algorithms, with the objective of identifying key conditions (e.g., presence of ITIF and absence of OM) that consistently lead to the outcome, here high SI (Fiss 2011). As noted above, organizations with high SI may exhibit different combinations of IT capabilities and OM. The objective of this method is to identify all the combinations that are consistently associated with high levels of SI.

To achieve this goal, three main steps are completed (Fiss 2011). The first step involves the creation of a truth table. This table includes all possible combinations or configurations of the conditions, namely IMC, ITIF and OM, whether or not these combinations are empirically found in the dataset. In csQCA, a condition is either fully present (a ‘1’ is assigned) or fully absent (a ‘0’ is assigned). In this study, there are $2^3$, or eight possible combinations or solutions, based on the presence (1) or absence (0) of each of the three conditions. In the second step, we reduce the truth table based on the dataset. We determine a minimum acceptable solution frequency and consistency (Fiss 2011). The minimum solution frequency is the minimum number of cases, or organizations, that must include a specific combination for it to be studied. Consistency refers to the proportion of organizations with a specific combination that is associated with the outcome (e.g., high SI). For instance, a consistency of 87% for the combination including the presence of IMC, the presence of ITIF and the absence of OM means that this combination is associated with high SI 87% of the time. For this study, we set the minimum solution frequency at 3, and the minimum consistency at 75%, following Fiss (2011). Further reduction of the truth table is completed during the third step using Boolean algorithms based on counterfactual analysis which identifies core versus peripheral conditions to the outcome (Ragin 2008). The algorithm produces different solutions, depending on how strong the link is between a condition and an outcome. Core conditions are included in all solutions, while peripheral ones belong only to some solutions (Fiss 2011).

**PLS Results**

The Kaiser-Meyer-Olkin (KMO) measure and Bartlett’s test of sphericity were used to determine sample adequacy (Field 2009). Construct reliability and validity were assessed to confirm whether the indicators used to measure latent variables represented the constructs well (Chin 2010). After removal of a small number of items (details available from authors), the refined model exhibited high levels of reliability and validity for all constructs, including 1st order constructs (e.g., declarative memory and procedural memory) and 2nd order constructs (e.g., OM). Constructs were evaluated using composite reliability and average variance extracted (AVE). All composite reliabilities were above the recommended threshold of 0.8 (Gefen et al. 2011). Similarly, the AVEs were well above the minimum recommended 0.5 threshold (MacKenzie et al. 2011). Additionally, all items had loadings above 0.7, the minimum acceptable threshold (Nunnally 1978). All items also had much higher loadings on their respective factors than on other factors, satisfying the rule of thumb that “loadings of the measurement items on their assigned latent variables should be an order of magnitude larger than any other loading” (Gefen and Straub 2005, p.93). Finally, construct validity of 2nd order constructs was measured using the adequacy coefficient $R^2_a$ (MacKenzie et al. 2011). Again, results were above the suggested minimum threshold of 0.5 (MacKenzie et al. 2011).

The structural model results are presented below in Figure 1. Three control variables were also included in the analyses: industry, organizational size, and organizational maturity. There is a positive and significant relationship between ITIF and SI (supporting H1), between IMC and SI (supporting H2), but the relationship between OM and SI is not significant (failing to support H3). The antecedents account for 31% of the variance, suggesting that IMC and ITIF impact SI.

**CsQCA Results**

To create the csQCA truth table, we used the standardized factor scores resulting from the PLS analyses. We coded each factor score as either 0 for the absence of a condition or 1 for the presence of a condition. To determine the cutoff value, we checked the factor score distribution and used the mean for normally distributed factors (IMC, ITIF, SI) and the median for other factors (OM). Any value equal to or above the
mean or median was coded as 1, while any value under the mean or median was coded as 0. Before conducting steps 2 and 3 in the QCA analysis, that is reducing the truth table using Boolean algorithm and conducting a counterfactual analysis, we evaluated whether any of the conditions were necessary (i.e., always required) conditions. Cross-tabulation results indicated that no condition is always necessary for high SI (Rihoux and Ragin 2009).

Figure 1. PLS Structural Results

Configuration results for high SI are presented in Table 1. Only configurations above the frequency cutoff and that consistently led to high SI are included in the table which uses the Fiss (2011) notation. A black circle (●) represents the presence of a condition, while a crossed circle (☒) represents the absence of a condition. Additionally, a large circle signifies that the condition is a core element to the presence of the outcome, while a small circle indicates a peripheral (or less important) condition. Solutions are presented in order of solution coverage (equivalent to the variance explained in variance-based analyses). Because the solutions do not include any peripheral conditions, no counterfactual analysis was conducted.

<table>
<thead>
<tr>
<th>Configuration</th>
<th>Solution</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMC</td>
<td>●</td>
<td>☒</td>
</tr>
<tr>
<td>ITIF</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>OM</td>
<td>☒</td>
<td>●</td>
</tr>
<tr>
<td>Consistency</td>
<td>0.87</td>
<td>0.83</td>
</tr>
<tr>
<td>Raw Coverage</td>
<td>0.15</td>
<td>0.11</td>
</tr>
<tr>
<td>Unique Coverage</td>
<td>0.15</td>
<td>0.11</td>
</tr>
<tr>
<td>Overall solution consistency</td>
<td>0.86</td>
<td></td>
</tr>
<tr>
<td>Overall solution coverage</td>
<td>0.26</td>
<td></td>
</tr>
<tr>
<td>Frequency cutoff</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Table 1. CsQCA Results for High Strategic Improvisation

Two solutions with an overall 26% coverage, which would be equivalent to the variance explained in variance-based analysis, and good consistency are provided. The first configuration is present in 15% of the sampled organizations with high SI and includes the presence of ITIF and IMC, in the absence of OM. The second configuration includes the combination of OM and ITIF, in the absence of IMC, and occurs in 11% of the sampled organizations with high SI.
Discussion and Implications

Key Findings

We note three main findings. First, our results demonstrate that IT capabilities and OM have a role to play in SI. Second, this study shows the important complementarity of IMC and other IT capabilities or resources. Third, this study highlights the value of studying complex phenomena using different research methods and analytical tools. The two research methods here yielded different yet complementary results that further our understanding of the relationships among IMC, other IT capabilities, OM and dynamic capabilities like SI. We expand on these findings and present implications for research and practice below.

Implications for Research

IT Capabilities and Strategic Improvisation

We proposed that IMC and ITIF facilitate real-time information and communication, two critical determining factors of SI. Our PLS findings confirm that indeed, these two capabilities enable SI. These findings extend the burgeoning IS literature that suggests that improvisation benefits from IT capabilities (Pavlou and El Sawy 2010). We also add to the research stream asserting that the business value of IT capabilities resides in their indirect impact through other capabilities and dynamic capabilities like SI.

Complementarity of IT Capabilities

Configuration result analyses suggest that IMC and OM play a role in organizations with high levels of SI, but not together. Specifically, in the organizations surveyed, many organizations with high SI had developed strong ITIF, which they combined with either strong IMC or strong OM. This implies that, in itself, the ability to effectively manage information in an organization is not sufficient to support SI in the face of market, technology and other disruptions. Organizational leaders also need to rely on an IT infrastructure that facilitates the access to or the sharing of that information in real-time. For instance, information about the current state of the organization can be easily processed and retrieved using visualization tools, or shared using collaborative systems, provided these systems are integrated and can be easily modified if needed. This aligns with past research suggesting that new product development teams that effectively leverage their collaborative systems and project management systems perform are more effective at improvising the reconfiguration of their operational capabilities (Pavlou and El Sawy 2010). In these organizations, leaders who need to reconfigure operational capabilities to seize an unexpected opportunity rely on the availability of instant information about their organization. They can have a real-time view of their current resources and capabilities, which then allows them to shuffle them or acquire new ones as needed. Our telephone interview data suggest that these organizations have more innovative IS strategies and are generally willing to adopt new technologies (Chen et al. 2010).

Our findings also demonstrate that IMC is not always the best IT capability to effectively improvise. In some contexts, especially environments where OM is valued, organizations with high SI have developed a strong infrastructure flexibility and OM, without a strong IMC. Our interview data suggest that these organizations are more cautious regarding making IT investments (Chen et al. 2010). Although previous findings suggest that organizational memory systems do not contribute to improvisation in new product development teams (Pavlou and El Sawy 2010), our results indicate that the effect of OM may be more prevalent in organizations following a conservative IS strategy focused on ITIF. Past studies also call for better understanding the factors leading to IMC, including ITIF (e.g., Marchand et al. 2000; Mithas et al. 2011). Our study empirically demonstrates that organizations with an innovative IS strategy have complementary IMC and ITIF. This combination is a very good “recipe” for SI. We also demonstrate that IMC may be less useful than OM in improvising organizations with a conservative IS strategy. This enhanced understanding of when and how IMC is most beneficial to SI constitutes an important contribution to the IT capabilities and dynamic capabilities research streams.

Need to Study Complex Phenomena Using Different Lenses

The use of two analytical methods, variance-based and configuration-based, allowed us to uncover complex relationships among four constructs. The variance-based approach established the positive effect
of ITIF and of IMC on SI but also suggested a more minor role for IMC and a negligible role for OM. In contrast, configuration analyses suggested IMC and OM each play a role in organizations with a high SI. While researchers have repeatedly called for studying the role of IT capabilities using a co-evolution and interrelatedness lens (e.g., El Sawy 2003; El Sawy et al. 2010; Tanriverdi et al. 2010), limited research has embraced this perspective. In part, this is due to the use of analytical tools like variance-based methods that may not fully provide holistic insights into phenomena. In this study, we followed the call from El Sawy and colleagues (2010) and sought to better understand how IT capabilities, such as IMC, and OM, interrelate in organizations that display traits of high SI by using a well-developed configurational approach. Furthermore, we used the same dataset to compare our results using a variance-based approach and the configurational approach. Results are encouraging as they show that using both methods provides a more complete picture of the relationships among our four constructs of interest. While our study is a first step to show the complementarity between variance-based and configurational analytical methods using a single dataset, limited space does not allow us to expand on this complementarity from a theoretical perspective. Future research should more fully review these two methods and further assess their potential complementarity for the study of interrelated and ‘fused’, complex organizational phenomena.

Implications for Practice

This study’s findings have implications for practitioners. SI can be viewed as an alternative to strategic planning when there is no time to effectively plan, for example, when there is an unexpected industry disruption. Top managers in organizations that compete in relatively stable environments may find SI of limited value. Thus, it is important for managers to first assess their potential need for SI. However, provided SI is able to benefit the organization, a critical first step is to ensure that top managers have a clear and current view of their organization’s resources and capabilities. No matter the type of organization, reviewing the IT infrastructure and addressing any shortcomings that may limit flexibility can achieve this objective. A flexible IT infrastructure is the first step (e.g., to support systems that facilitate communication). After this, depending on the organization’s willingness to invest in new technologies, managers should concentrate on developing their IMC or their OM.

Limitations and Future Research

There are limitations to this study. As we discussed earlier, some of the data do not follow a normal distribution. Although this did not constitute an obstacle for PLS or csQCA analyses, it did limit the type and number of statistical checks that could be conducted. Additionally, while we used single expert respondents for the survey, single method bias checks confirmed the very limited impact on the results.

The limitations of this study also constitute promising areas for future research. In this study, we focused on factors that, using a variance-based term, are viewed as antecedents of SI. Thanks to csQCA results, we have an enhanced knowledge of the interaction among these antecedents. We still need to better understand how they interact with SI itself. We also need to identify other factors that come into play in organizations with high SI. For instance, it would be important to know how levels of environmental turbulence might affect our findings (Pavlou and El Sawy 2010). Furthermore, we did not assess the organizational impact of SI. Obtaining insights on how SI is interconnected with other capabilities like organizational learning or agility, and ultimately performance, is an important area for future research.

Conclusion

The objective of this study was to better understand how organizations seize unexpected business opportunities that may require the creative and unplanned reconfiguration of their capabilities. We proposed that two IT capabilities, IMC and ITIF, play an important role in organizations with high SI. Findings from a telephone survey of medium-sized Canadian organizations confirmed our hypotheses. By analyzing our data using a configurational method, we also uncovered different combinations associated with high SI. These suggest that top managers who improvise may rely on a flexible IT infrastructure combined with either a strong IT-enabled IMC or OM. These findings highlight the important role of IT capabilities like IMC and emphasize the need to better understand how SI, IT capabilities and other organizational capabilities collectively influence organizational effectiveness.
Acknowledgements

We gratefully acknowledge the financial and research assistance of the Social Sciences and Humanities Research Council of Canada, The Monieson Centre at Queen’s University, Jim Denford and Wynne Chin.

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