Critical challenges associated with the adoption of social media: A Delphi of a panel of Canadian human resources managers

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A B S T R A C T

Although still young, social media platforms (SM) have already attracted over a quarter of the world's population rendering SM very attractive for organizations. SM adoption presents challenges that may prevent organizations from capitalizing on them to improve performance; thus indicating a need to analyze critical challenges, before taking relevant initiatives. This article identifies 13 most critical challenges associated with the adoption of SM. First a framework is derived from a systematic review of challenges associated with the adoption of SM for HR management (HRM) in three major research databases: ABI/INFORM Complete, Business Source Complete and Web of Science. Second the framework is used in a Delphi survey of 28 Canadian human resources (HR) managers. Statistical analysis includes Cohen Kappa, Kendall's W, Wilcoxon rank test, and cluster analysis. This paper contributes to HRM and Information Systems (IS) research literature on SM adoption in general and provides specific insights to practitioners.

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1. Introduction

Despite their youth social media platforms (SM) have already reached as many as 26% of the global population, compared to the Internet with a 35% penetration worldwide (We Are Social, 2015). In Canada, the penetration rate of the Internet and SM are 86% and 82% respectively (Canadians Internet, 2015).

Many scholars emphasize the transformative impact of SM on organizations (Aral, Dellarocas, & Godes, 2013). A survey by The Conference Board (Larcker, Larcker, & Tayan, 2012) reveals that organizations are not yet capitalizing on the potential of SM. Similarly, McKinsey (2011) indicates that executives admit SM could offer new opportunities for improving performance if organizational challenges related to their adoption diminish. Still others stress the magnified effects of SM challenges in the context of human resources management (HRM) and call for more research in this context (e.g., Gibbs, MacDonald, & MacKay, 2015).

A systematic review of SM adoption for HRM included in this study reveals three major weaknesses in the current literature. First, the majority of studies are normative and lack empirical or theoretical foundation. Second, few studies focus on the perspective of HR managers. Third, the related body of knowledge is scattered; thus lacking

an all-encompassed, integrated framework. Such a framework is important in facilitating knowledge cumulation as well as evidence-based practice.

This study responds to the above calls by first providing a framework that identifies challenges associated with the adoption of SM for HRM. Building on the framework derived from the systematic review, this research — using a Delphi survey design — empirically examines the challenges associated with the adoption of SM for HRM, from the perspective of HR managers by answering the following question: "What are the most critical challenges to the adoption of SM for HRM?" Challenges are here defined, as any issue an organization may have that may prevent them from adopting SM for HRM.

Following the introduction, the conceptual background is outlined. Then the research methodology is presented. The subsequent section is devoted to the presentation and discussion of the research findings. Lastly, the article concludes with implications for research and practice as well as directions for future research.

2. Background

2.1. Human resources function and technology

With the emergence of strategic HRM, the focus of HRM function has moved towards the contribution of human capital in the development of organizational-level strategic capabilities (Lengnick-Hall, Lengnick-Hall, Andrade, & Drake, 2009). In this context, numerous scholars recognize that electronic HRM (e-HRM) constitutes one of the most

important levers on which HR managers can rely in their pursuit of organizational strategic objectives (Marler & Fisher, 2013). Accordingly, the HRM function is evolving from a highly *labor intensive* function towards a *technology-based* function (SHRM Foundation, 2011). Hence, not surprisingly, most surveys reveal an increasing tendency in the breadth and variety of applications and technologies associated with e-HRM (e.g. e-recruitment and employee self service), which more and more includes social media platforms (CedarCrestone, 2013; Sierra-Cedar, 2014). Given the fast growing trend of SM adoption by individuals and within organizations, SM are now among the leading technologies associated with e-HRM that are opportune to leverage.

2.2. Defining social media

Thus far, no consensus has emerged on the definition of social media platforms (e.g., Kaplan & Haenlein, 2010; Osch & Coursaris, 2013). For the purpose of this research, an adaptation was made to the definition by Larson and Watson (2011, p. 3) as this definition best captures the spirit of the phenomenon while excluding all technologies not identified as social media. Social media platforms are defined as: "the set of connectivity-enabled applications that facilitate interaction and the co-creation, exchange, and publication of information [within, between, and] among firms and their networked communities of [stakeholders]". Based on their functionalities SM are divided into six groups of applications (Kaplan & Haenlein, 2010): collaborative projects (e.g. Wikipedia), blogs and microblogs (e.g. Twitter), content communities (e.g. YouTube), social networking sites (e.g. Facebook, LinkedIn), virtual social game (e.g. World of Warcraft), and virtual social worlds (e.g. Second Life). Each medium offers unique capabilities and constraints.

Beyond the above-mentioned functional characteristics, SM also have other characteristics that distinguish them from other computer-mediated communication (CMC) applications (Romiszowski & Mason, 1996) such as emails, instant messaging or intranet: the large reach and speed of actions undertaken in the virtual world of SM, their permanency and the high potential level of transparency (Tufts, Jacobson, & Stevens, 2015).

2.3. Social media platforms and human resources management

SM are recognized by HR professionals as important tools for HR management and are more and more used by HR managers to support HR related activities. For instance, concerning the recruitment process, a survey of HR managers by the SHRM foundation reveals that 57% of organizations are using LinkedIn while 30% are using professional or association social networking sites and 19% are using Facebook (SHRM, 2015).

With the aim to systematically identify challenges associated with the adoption of SM for HRM, a systematic review is performed on research published prior and up to July 5th 2015 in three major research databases: ABI/INFORM Complete, Business Source Complete and Web of Science. To be eligible, studies had to fulfill two inclusion criteria: (1) be a peer-reviewed article published in English; (2) report on social media in the context of HRM. The research strategy used combinations of three key words: "human resource", "social media", and "Web 2.0". The key word Web 2.0 was included as the terms social media and Web 2.0 are often used interchangeably (Berthon, Pitt, Plangger, & Shapiro, 2012).

Starting with 82 articles (see Fig. 1), the set of eligible articles was reduced to 33 after reading the abstracts. Based on the predetermined inclusion criteria, 16 articles were included in the review. Reasons for exclusion included: no challenges identified (15); no relation to SM (1) or no relation to business (1).

Prior research on IS suggests that adoption and implementation of technology innovation are influenced by technological, organizational, and environmental factors (e.g. Poba-Nzaou & Raymond, 2011). The *technological*, *organizational*, and *environmental* (TOE) framework (Tornatzky & Fleischer, 1990) is one of the most extensively used frameworks for investigating the adoption of technology innovation (Venkatesh & Bala, 2012). Within TOE, technological context portrays both internal and external technologies pertinent to the firm and include factors such as availability of current and new technological innovation. Organizational context includes characteristics of the organization such as firm size and the extent of resources available within the organization. Among other resources, *slack resources* refer to resources that are in excess when compared with an organization's current functioning needs. Environmental context is the field in which the firm operates; including the industry characteristics. Table 1 presents the synthesis of the challenges found in the 16 studies of the systematic review; the challenges are organized according to the TOE framework.

A more detailed analysis of the results of the systematic review reveals that half of SM studies are related to employment relationships, recruitment and selection. With regard to the technology, three studies investigate SM networking sites; only one investigates blogs, while the remainder studies investigate SM in general. Apart from the review of employee-use of social media by El Ouirdi, El Ouirdi, Segers, and Henderickx (2015) and the five studies that use Law-related materials
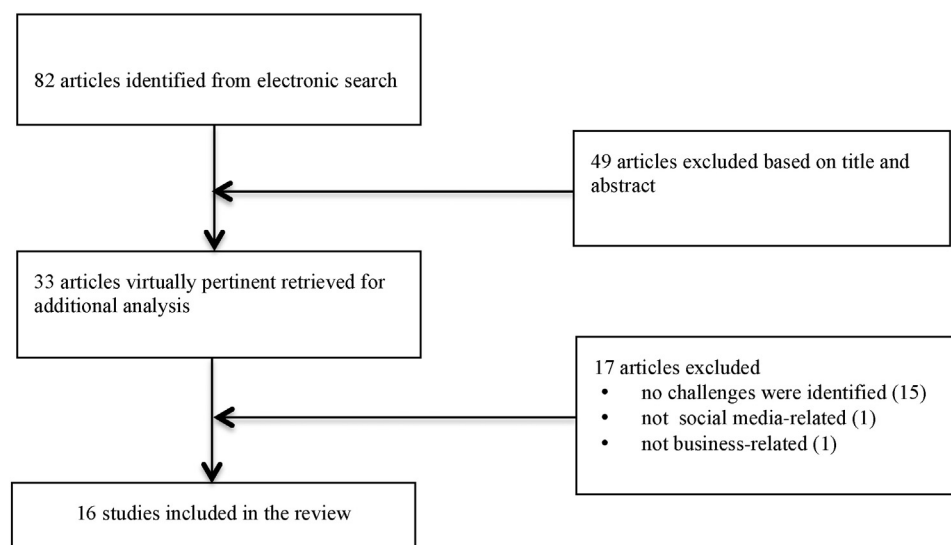

Fig. 1. Flow chart of study selection process.

Table 1
Challenges associated with the adoption of social media platforms for HRM.

TOE dimensions	Challenge description	Support in the literature
Technological	Network security issues	Neill and Moody (2015)
	Blending of personal and professional roles	Tufts et al. (2015), Hauptmann and Steger (2013), Mainiero and Jones (2013), Brown and Vaughn (2011), Jacobson and Tufts (2013)
	Complexity and high speed of technological change of SM	Gibbs et al. (2015)
	Radical newness character of the SM tools	Mainiero and Jones (2013)
	Uncertainties about the business value of SM	Calvasina et al. (2014), Neill and Moody (2015), Martin et al. (2009)
	Potential source of network congestion	Hauptmann and Steger (2013)
	Information quality with regard to job/work relevance	Tufts et al. (2015), Gibbs et al. (2015), Brown and Vaughn (2011), Curran et al. (2014), Calvasina et al. (2014)
Organizational	Organizational culture change	Gibbs et al. (2015), Thomas and Akdere (2013)
	Issues of misconduct	Curran et al. (2014), Tufts et al. (2015), Lieber (2011), Hauptmann and Steger (2013), Martin et al. (2009), Thomas and Akdere (2013)
		Herrin and Ingram (2010), Madera (2012), Mainiero and Jones (2013), Martin et al. (2009), El Ouirdi et al. (2015), Myers (2014), Neill and Moody (2015), Brown and Vaughn (2011), Wyld (2008), Jacobson and Tufts (2013)
	Lack understanding of SM	Gibbs et al. (2015), Lieber (2011), Hauptmann and Steger (2013), Thomas and Akdere (2013), Martin et al. (2009)
	Lack of knowledge of laws and regulations and fear to violate them	Curran et al. (2014), El Ouirdi et al. (2015), Herrin and Ingram (2010), Lieber (2011), Madera (2012), Myers (2014), Tufts et al. (2015), Wyld (2008)
	Lack of top management support	Martin et al. (2009), Thomas and Akdere (2013)
	Lack of internal guiding policies	Tufts et al. (2015), Gibbs et al. (2015)
Environmental	Legal and regulatory issues	Curran et al. (2014), Tufts et al. (2015), Gibbs et al. (2015), Lieber (2011), Calvasina et al. (2014), Madera (2012), El Ouirdi et al. (2015), Hauptmann and Steger (2013), Myers (2014), Brown and Vaughn (2011), Wyld (2008), Mainiero and Jones (2013), Jacobson and Tufts (2013),
	Ethical issues	Curran et al. (2014), Gibbs et al. (2015), Brown and Vaughn (2011), Mainiero and Jones (2013), Tufts et al. (2015), Madera (2012)

(Brown & Vaughn, 2011; Calvasina, Calvasina, & Calvasina, 2014; Herrin & Ingram, 2010; Lieber, 2011; Myers, 2014), only four studies have a theoretical foundation. The studies by Hauptmann and Steger (2013) and Neill and Moody (2015) use Structuration and Role theories respectively, whereas the study by Madera (2012) and Mainiero and Jones (2013) use Organizational Justice theory and Ethical Models respectively.

3. Research design

3.1. The Delphi survey

The Delphi survey is a widely accepted and well-established research method (Paré, Cameron, Poba-Nzaou, & Templier, 2013). This research adopts the "ranking-type" variant of Delphi survey, which is generally composed of three phases: brainstorming, narrowing-down and ranking.

As shown in Fig. 2, the Delphi survey was undertaken following a two-step procedure, namely, the brainstorming phase and the ranking phase; the narrowing-down phase has been skipped as the list of challenges contained less that 20 items and thus deemed manageable (Schmidt, 1997).

3.2. Composition of the panel

Experts were selected on the basis that they occupy a position in HRM within an organization (Paré et al., 2013). Initially 63 potential respondents were identified from researchers' professional networks and one professional HR association in Canada. A formal invitation to participate in the study was sent by email to the expert candidates.

Overall, 30 experts agreed to participate; 2 were unable to commit to the study due to time frame constraints; with the remaining experts being non-respondents. The final participation rate to the initial call was 48%. Thus, the first survey was sent out to 30 experts with 28 received responses, representing a response rate of 93%. All panelists were anonymous to each other during the whole research process.

Table 2 presents the demographic profile of the study panel of 28 Canadian HR managers. The panel has an average of 8 years of

professional experience in HRM, with a majority (61%) making professional use of SM. The breadth of perspectives provided by the study sample ensures the validity of the results (Linstone & Turoff, 2002).

3.3. Data collection and analysis

3.3.1. Phase 1: brainstorming

During the brainstorming phase each expert was asked to provide as many challenges as possible perceived to inhibit organizations from adopting SM for HRM; along with a brief description of each challenge. Altogether, the panelists provided 96 challenges. The data analysis follows principles of interpretative research suggested by Klein and Myers (1999). One of the research team members' read and re-read the responses starting in run-of-river mode, to develop a deep understanding of the material. Then the researcher conducted a semantic analysis of the responses following three steps (Tanner & Stone, 1998). During the first step, each statement was copied in a table. Thereafter, statements conveying the same meaning were grouped. In so doing, the researcher created categories. Lastly a label was assigned to each set of responses.

Thereafter, drawing on TOE framework dimensions as vehicles the researcher derived abstraction and linked panel members' responses to theoretical categories in a manner rooted in the "principle of abstraction and generalization" by moving back and forth within and between panel members' responses and the TOE framework dimensions following the hermeneutic circle principle (Klein & Myers, 1999). The final combined list included 13 challenges after removing duplicates and grouping statements conveying the same meaning. A second and a third member of the research team critically reviewed the combined list for clarity in regard to experts' responses. Next, a fourth researcher was asked to assign 55 segments randomly selected from experts' responses to the corresponding item on the combined list. The inter-coder reliability indicated a substantial inter-rater agreement (Cohen kappa = 0.74) (Landis & Koch, 1977). At the end, all panel members validated the list. Table 3 shows the revised framework of SM challenges based on the Delphi study.
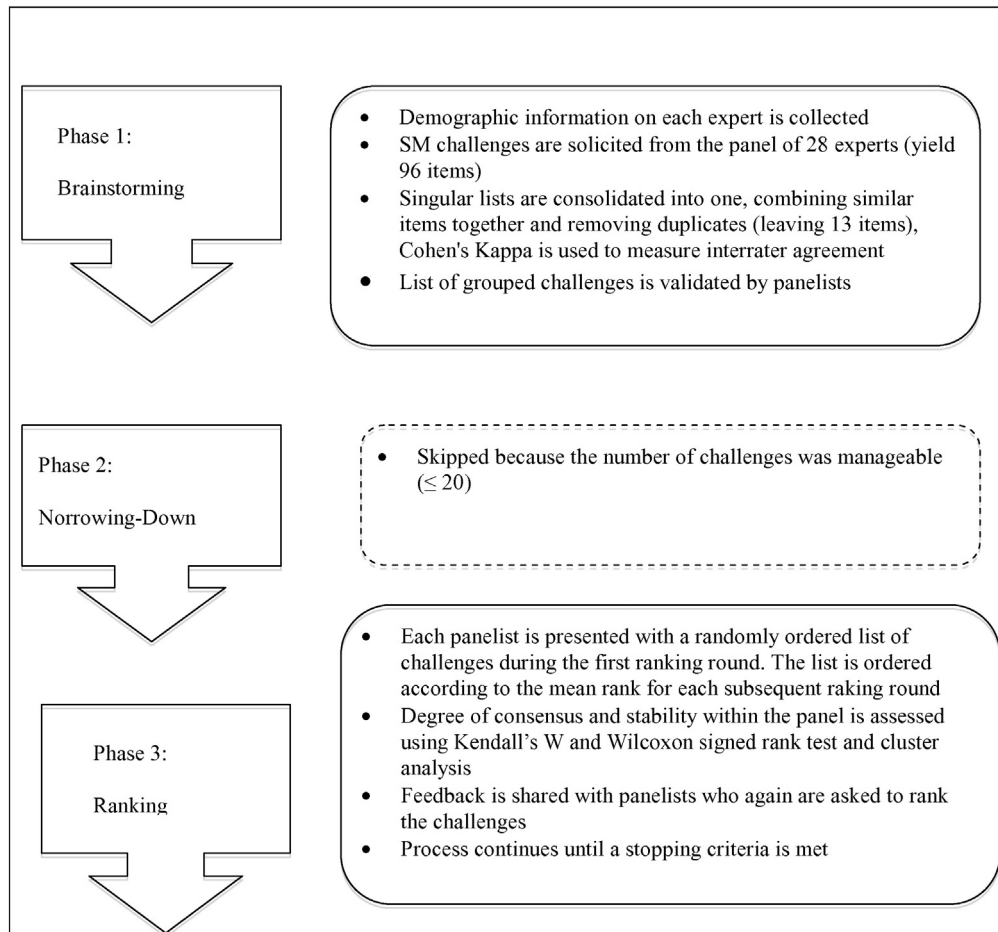
Fig. 2. Summary of the two phases of the Delphi Survey.

Table 2
Demographic profile of the panel members.

	Male	8 (29%)
Gender	Female	20 (71%)
Age (years)	<30	11 (39%)
	30–39	8 (29%)
	40–49	4 (14%)
	50–59	4 (14%)
	>60	1 (4%)
Professional experience in HRM (years)	<=5	16 (57%)
	6–10	7 (25%)
	>10	5 (18%)
Professional use of SM	Yes	17 (61%)
	No	11 (39%)
Highest education degree	Other undergraduate degree	8 (29%)
	Bachelor	16 (57%)
	M. Sc./M.B.A.	4 (14%)
Functional background	Generalist	21 (75%)
	Recruitment and Selection	2 (7%)
	Training and Development	2 (7%)
	Compensation and Payroll	1 (4%)
	Health and Safety	1 (4%)
	Change Management	1 (4%)
Role	Senior Manager	9 (32%)
	Manager	8 (29%)
	HR staff	11 (39%)
Size of organization	Large (> = 500)	6 (21%)
	Medium (100–499)	3 (11%)
	Small (< =100)	19 (68%)
Type of industry	Manufacturing	18 (64%)
	Services	10 (36%)

3.3.2. Phase 3: ranking

During the initial round of the third phase, panel members were asked to rank the challenges in order of priority from a random ordered list of 13 challenges.

After the first ranking round, the Kendall's W revealed a very weak consensus on the rankings (W = 0.13). Thus, a second round of ranking was conducted (see Fig. 2); feedback included: the level of consensus, expert own first-round rankings, and the mean rank of each challenge. The challenges were listed in order of average ranking received in the second-round ranking (Schmidt, Lyytinen, Cule, & Keil, 2001). Panel members returned twenty questionnaires, out of which four were discarded because of missing data.

As shown in Fig. 3, a hierarchical stopping criteria was adapted from Dajani, Sincoff, and Talley (1979). First, the stability of the rankings was evaluated between the two ranking rounds by computing the Wilcoxon signed rank test (see Table 4).

The Wilcoxon signed rank test did not indicate statistically significant differences between the rankings of the first and the second rounds for 9 out of 13 challenges. Thus the rankings between the two rounds were considered stable.

Next, consensus was checked following the hierarchical stopping criteria in case of stability. After the second ranking round, the level of consensus improved slightly. The Kendall's coefficient of concordance (W) rose to 0.35, which represents a weak to moderate level of consensus among panelists (Schmidt, 1997). Given the lack of consensus, a check was then conducted for *majority*, *bipolarity* and *plurality*. *Majority* occurs when >50% of respondents exhibit consistency, *bipolarity* occurs when respondents are equally divided over an issue whereas *plurality*

Table 3
Revised framework based on the results of the Delphi Survey.

Challenge description	Literature review (number of articles dealing with the challenge out of the 16 included in the systematic review)	Current Delphi study
Network security issues	1/16	✓
Blending of personal and professional roles	5/16	Not found in the current Delphi study (NFCD)
Complexity and high speed of technological change of SM	1/16	✓
Radical newness character of SM	1/16	NFCD
Uncertainties about the business value of SM	3/16	✓
Potential source of network congestion	1/16	NFCD
Information quality with regard to Job/Work relevance	5/16	✓
Non professional image and reputation of SM	Not explicitly found in the systematic review (NFSR)	✓
Organizational culture change	2/16	
Issues of misconduct	16/16	✓
Lack understanding of SM	5/16	✓
Lack of knowledge of applicable laws and regulations and fear to violate them	8/16	✓
Lack of top management support	2/16	NFCD
Lack of internal guiding policies	2/16	✓
Lack of internal resources	NFSR	✓
Conservative attitude of managers	NFSR	✓

occurs when a larger portion of the respondents (but <50%) reach agreement.

A hierarchical cluster analysis was undertaken on the ranks of the challenges from the second round of ranking. Because of the ordinal nature of the data, the Complete Linkage algorithm was selected and combined with Chebyshev measure of similarity.

The visual inspection of the dendrogram reveals a two-cluster solution as optimum. One cluster (cluster 1) composed of only seven respondents and the subgroup exhibits a weak to moderate agreement (W = 0.41). The other cluster (cluster 2) composed of nine respondents exhibits a moderate to strong agreement (W = 0.61). As a *majority* group was reached, the Delphi process was terminated.

On comparison, the two clusters display similarities as well as differences with regard to panel members' repartition. Whereas the panel members who hold a "Manager" position are equally divided between the two clusters (50% in each), cluster 2 contain the majority of panel members who hold a "Senior Manager" position (67%) or a "HR Staff" position (57%). Concerning age, virtually all panel members above 30 years are in cluster 2 (80%), but those under 30 years are almost equally divided between the two clusters.

Three other points are worth mentioning with regard to weak consensus. The first explains that the difficulty in reaching an overall consensus may be due to the newness of the adoption of SM for HRM. The second derives from the composition of the panel, which includes
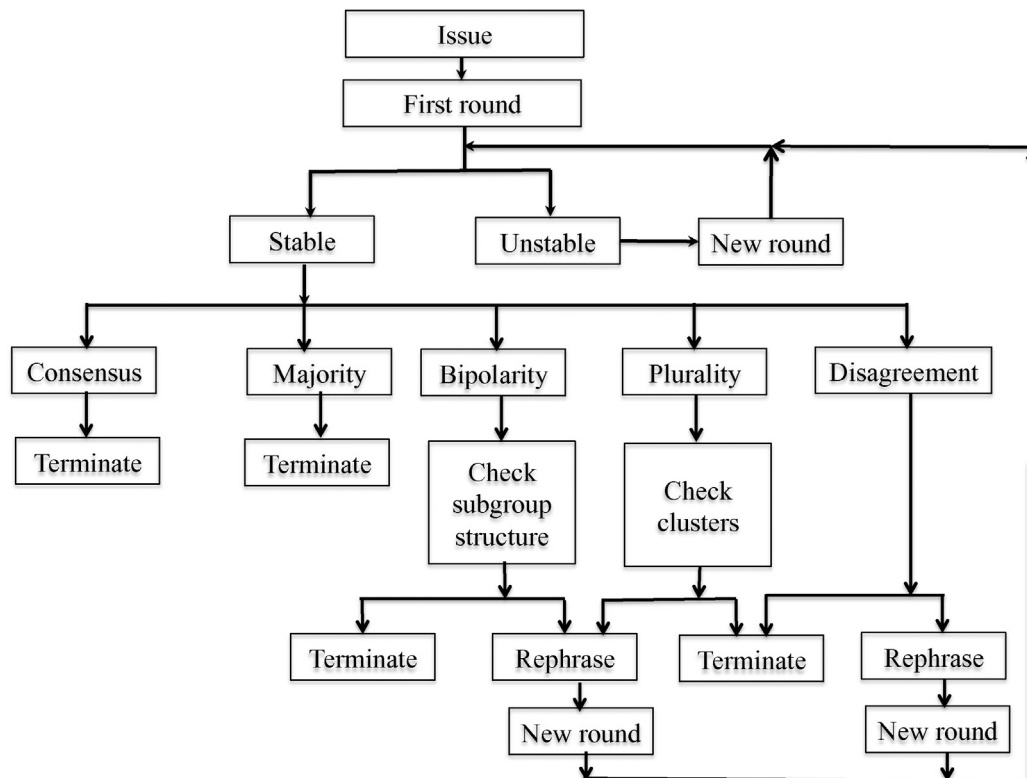

Fig. 3. Hierarchical stopping criteria for Delphi studies (adapted from Dajani et al., 1979, p. 85).

Table 4
Summary of the challenges associated with the adoption of social media plaforms for HR Management.

Dimensions	Challenges	Support in the literature	First Round ($N = 16$)	Second Round ($N = 16$)	Wilcoxon signed rank test	
			Mean rank	Mean rank (std. dev.)	Z value	Sig. (2-tailed)
Technological	Uncertainties about the business value of SM	Yes	5.9	5.3 (3.30)	−0.66[a]	0.507 (NS)
	Non professional image and reputation of SM	No	6.3	11.4 (2.10)	−3.21[b]	0.001**
	Complexity and high speed of technological change of SM	Yes	7.4	8.5 (3.85)	−0.95[b]	0.345 (NS)
	Issues of information quality with regard to Job/Work relevance	Yes	7.6	7.6 (3.22)	−0.03[b]	0.977 (NS)
Organizational	Lack of understanding of SM	Yes	4.8	8.6 (3.10)	−2.41[b]	0.016*
	Issues of Misconduct	Yes	5.8	4.4 (2.71)	−1.48[a]	0.139 (NS)
	Lack of internal resources	No	5.2	7.1 (3.30)	−0.24[a]	0.812 (NS)
	Lack of internal guiding policies	Yes	6.6	7.1 (3.678)	−0.82[b]	0.411 (NS)
	Lack of knowledge of applicable laws and regulations and fear to violate them	Yes	7.6	9.4 (2.83)	−1.37[b]	0.170 (NS)
	Network security issues	Yes	8.6	3.4 (2.37)	−2.82[a]	0.005*
	Conservative attitude of managers	No	8.0	5.5 (3.39)	−1.67[a]	0.092 (NS)
	Issues of organizational culture change	Yes	9.6	5.9 (3.32)	−2.48[a]	0.013*
Environmental	Legal and regulatory issues	Yes	7.9	8.9 (2.77)	−1.28[b]	0.200 (NS)

NS = not significant.
[a] Based on positive ranks.
[b] Based on negative ranks.
* $p < 0.05$.
** $p < 0.005$.

three different levels of decision-making. In fact, Liu, Zhang, Keil, and Chen (2010) report zones of concordance and divergence between different levels of decision-making with regard to risk perceptions. This study assumes that the same may apply to the perception of challenges. The third is rooted in one of the canons of the Delphi Survey methodology that underscores that consensus is not the aim of Delphi; the number of rounds is solely based on the stability of the rankings (Linstone & Turoff, 2011).

4. Results and discussion

Interestingly, the list in Table 4 consists of challenges associated with each of the dimensions of the Technology-Organization-Environment (TOE) framework. All but three challenges can be related to those found in the academic literature. The next section follows a discussion of these three challenges not explicitly identified in the academic literature on SM adoption for HRM: *lack of internal resources*, *conservative attitude of managers*, and *non-professional image and reputation of social media platforms*. Given the novelty of SM, the four challenges related to SM technology itself but identified in the extant literature are also discussed below.

4.1. Challenges not explicitly identified in the literature but not related to social media platforms themselves

4.1.1. Lack of internal resources

The fact that the lack of internal resources is perceived as a challenge for adopting SM for HRM is consistent with the Technology-Organization-Environment (TOE) model; that recognizes the extent of slack resources as an influencing factor in the adoption of technological innovation (Tornatzky & Fleischer, 1990). Indeed, in the case of information technology innovation adoption such as SM, the extent of slack resources are of great importance as they may "be allocated to organizational experimentation in the form of a pilot project" (Swanson, 1994, p. 1081). The importance of slack resources is accentuated in the case of adoption of complex technological innovation such as SM. Based on Swanson (1994)'s typology of IS innovation, SM adoption can be considered a IS Type III (in a scale of I to III) innovation because SM reshape the boundaries of the adopting organization.

Empirical evidence suggests HR managers already recognize SM as important for HRM. Hence, the fact that the lack of resources hinders the adoption of SM for HRM further suggests that HR managers may have difficulty in making a business case for SM, which in turn, make

them a low priority for organizations. This conclusion is consistent with the challenge related to uncertainty about business value associated with SM.

4.1.2. Conservative attitude of managers

Congruent with the findings of this research are the findings by Kaganer and Vaast (2010) of the analysis of SM policies; which reflect a conservative understanding of SM that can be considered as leading to a conservative attitude of managers. After analyzing 25 corporate SM policies through the lens of Social Representation theory, the above mentioned authors found that the understanding of SM by decision-makers is dominated by anchoring over objectification processes. Anchoring and objectification are processes by which representations are formed, maintained and changed (Markova, 2000). Although both anchoring and objectification contribute to the stability and change of representations; anchoring is more oriented towards remaining in the existing state while *a contrario*, objectification is orientated towards change.

4.2. Challenges associated with social media platforms

4.2.1. Non-professional image and reputation of SM

Klang and Nolin (2011) suggest two dimensions of the perceived image of SM; within the first dimension, SM is seen as either *only a problem* or as *also a resource* for the firm. For instance, in the first case, they are seen as potential threat to the reputation of the adopting organization or as a distraction for employees (CIPD, 2013). In this view, the adoption of SM is seen foremost as a source of challenges that bring about such issues as employee misconduct or network security.

Conversely in the second case, for example, SM are resources that allow for new ways of networking, voicing employees' opinions, etc. Within the second dimension, SM are seen either as a set of *homogeneous* or *heterogeneous* platforms (Klang & Nolin, 2011). The image of social media platforms as homogeneous is almost unexpected given their diversity as well as their distinct "affordances in the sense that new combinations of SM and organizational features will continually create possibilities or challenges that will affect organizational form and function" (Zammuto, Griffith, Majchrzak, Dougherty, & Faraj, 2007, p. 750).

Non-professional image and reputation of SM is the only challenge associated with the technology itself that was not found in the literature. This finding denotes an explicit link with the challenge related to the lack of understanding of SM by some managers.

This study suggests that the view of SM as having a "non-professional image" is reductionist and underpins the *homogeneous* image as well as the *only-a-problem* image. This finding is surprising since a survey conducted by SHRM (2013) reveals that more than three-quarters (77%) of organizations report using social networking sites to recruit potential job candidates, which represents an increase from 34% in 2008 to 56% in 2011.

In sum, the findings suggest that an organization's perceived image and reputation of SM can hinder the adoption of SM. When linked to the findings of prior studies, those of this study also underscore that perceived image and reputation have an influence on the frame of the policies that an organization can put in place to deal with both opportunities and challenges associated with the adoption of SM for HRM.

4.2.2. Complexity and high speed of evolution of SM

Only one study, from the systematic review included in this study, Gibbs et al. (2015), identifies the complexity and high speed of evolution of SM technology as a challenge hindering SM adoption for HRM. The authors underscore that this specific challenge highlights difficulties for aligning the specialized needs of HRM with available SM platforms.

Complexity can be defined as the degree to which a technological innovation is perceived as relatively difficult to understand and use (Rogers, 1995). A study conducted by Grant Thornton (2011, p.5) indicates that "the speed with which social media has grown in the last five years has caught many executives by surprise." Scholars also underscore the complexity of SM with emphasis on their heterogeneity. In this respect, Li and Bernoff (2008) categorization of SM illustrates their multiple usages which can have various organizational implications: people creating (blog, user generated content, and podcast); people connecting (social network and virtual worlds); people collaborating (wikis and open source); people reacting to each other (forums, ratings, and reviews); people organizing content (tags); people accelerating consumption (rss and widgets). The complexity related to the heterogeneity of social media platforms is accentuated by both the large size and the complexity of SM data that make their management and analysis even harder today (Hsu & Srivastava, 2011).

4.2.3. Uncertainty about the business value of SM

Social media platforms business value is defined "as the organizational performance impacts of [SM] at both the intermediate process level and the organization wide level, and comprising both efficiency impacts and competitive impacts" (Melville, Kraemer, & Gurbaxani, 2004, p. 287). Rigorous characterization of SM business value with reliable metrics is of utmost interest for organizations (Hoffman & Fodor, 2010). Indeed, this characterization is one of the prerequisites for aligning SM adoption initiatives with organizational goals (Culnan, McHugh, & Zubillaga, 2010) but the exercise is not a straightforward task. In fact, a quick search for "ROI" social media using Google search engine by Hoffman and Fodor in 2010, yielded over 2.5 million hits. When completed five years later by the authors of this study, the same search returned over 56 million hits. Although achieving business value from social media platforms, is not straightforward (Culnan et al., 2010), nor is easy the task of measuring business value associated with social media. However, SM can provide notable impacts for organizations and HR managers.

Three studies, from the systematic review included in this study, identify the uncertainty about the business value of SM as a major challenge hampering the adoption for SM for HRM. Martin, Reddington, Beth Kneafsey, and Sloman (2009) call attention to the lack of data and uncertainty about not only benefits of SM, but also their costs. Calvasina et al. (2014) underscore the need to develop metrics with objectives associated with SM in relation to HRM; suggesting metrics such as candidate per source, hires per source, cost per hire, and time to hire. Neill and Moody (2015) suggest ten metrics; some of which are notably relevant for HRM including: hits on recruiters' profiles and job applicants received or recruited through social media platforms.

4.2.4. Quality of information provided by SM with regard to job/work relevance

Information quality is an important aspect of any technology including social media platforms. Wixom and Todd (2005) identify four most cited dimensions of information quality that are here applied to SM: *completeness* which represents the extent to which SM provide all necessary information needed for a specific requirement of a HRM activity; *accuracy* which represents the HR manager's perception that the information provided by SM is correct; *format* which represents the HR manager's perception of how well the information is presented by SM; and *currency* which represents the HR manager's perception of the extent to which the information presented through SM is up to date.

In the context of adoption of SM for HRM, information accuracy is particularly important due to links with ethical and legal challenges from the perspective of information producer or consumer (Elefant, 2011).

SM have accentuated the immediacy, fragmentation and permanency of information exchange to the extent that being literate about SM is strongly desired for both roles of information producers and consumers given the potential consequences in each role (Bowen, 2013). This assertion applies to HR managers in both roles of producers and consumers of information on social media platforms.

Five studies, from the systematic review included in this study, identify the quality of information provided by social media as a major challenge inhibiting SM adoption for HRM. Calvasina et al. (2014) draw attention to the general lack of accuracy in information found online. According to Curran, Draus, Schrager, and Zappala (2014), research results are inconsistent on how truthfully people depict themselves in social media platforms and how accurate is the information they expose to others. However, the authors of this study highlight that the quest for alternate sources of information on potential candidates to substitute classical job references, still render social media platforms a very attractive source of information for HR managers. One importance of this quest can be evidenced by an increase in lawsuits over job references (Elmer, 2012).

Another worthy finding, by Curran et al. (2014) who compared college students and HR professionals' views on the information available on SM platforms; noting that both populations expressed conflicting views regarding the extent to which individuals could learn about a job candidate through their Facebook page. More specifically, HR professionals perceive that they are capable of acquiring more knowledge about job candidates, through social media profiles, than believed to be possible by the candidates themselves.

Brown and Vaughn (2011) underscore the need for sharply verifiable and validated theoretical constructs that represent the information available on SM platforms as well as their job relevance. They also indicate that information available on SM may be distorted and their content validity has yet to be demonstrated. Tufts et al. (2015) report that 55% of the participating organizations of their survey ($N = 172$) were not using information on job candidates available on SM for HRM because they thought such information may not be related to work-related potential or performance.

The same study reveals that the small groups of organizations that use SM for screening candidates do so because investigating candidates on SM yields greater information on candidates than resumes or cover letters. Gibbs et al. (2015) also view the relevancy of information available on social media platforms as a challenge and concur with Brown and Vaughn (2011) as to the lack of validity of such information.

5. Research contributions and limitations

The study of SM adoption and use in organizational settings and particularly HRM is still very young (Treem & Leonardi, 2012), despite empirical evidence of their ubiquitous presence in the business environment of firms worldwide. This research focuses on the identification of challenges that inhibit organizations from adopting SM for HRM and

which may also prevent them from capitalizing on SM in the pursuit of strategic organizational outcomes. This exploratory study is an initial step towards a deeper understanding of factors that inhibit organizations from adopting SM for HRM.

A ranking-type Delphi method facilitated the identification of 13 challenges perceived as most important by a panel of 28 Canadian HR managers. To understand these challenges in the context of organizational settings, their classification was done according to three categories derived from Tornatzky and Fleischer (1990) framework TOE-Technology-Organization-Environment. This study contributes to the nascent body of knowledge on the adoption of social computing in two ways. First, by providing an initial foundation for understanding these challenges from HR managers' perspectives. Findings from the systematic review by the authors of this study reveal that this is one of the first endeavors to focus on challenges associated with SM adoption from HR managers' perspectives and the first investigation of Canadian HR managers' views of SM adoption.

From a practical standpoint, this research provides HR managers as well as consultants with an initial structured lens to better understand critical challenges associated with the adoption of SM by organizations. These challenges require further examination, if organizations are to efficiently develop SM initiatives such as communication, training, and policy development.

From a methodological standpoint, this research provides two main contributions: (1) the research provides a rigorous analysis of Delphi Survey statements collected from panel members integrating Cohen Kappa statistics and two principles of interpretive research (Klein & Myers, 1999): the fundamental principle of Hermeneutic Circle, the principle of Abstraction and Generalization; (2) a stringent discussion of the Delphi Survey stopping criteria that includes Dajani et al. (1979) architectural stopping criteria, Kendall's W, the Wilcoxon signed rank test and hierarchical cluster analysis.

To conclude, the authors note some areas of limitations, and call for further studies of social media platforms in HRM. First, though adequate for a Delphi survey and methodologically sufficient, the size of the Delphi panel was small. Second, SM seem to be adopted in two primary ways in organizational settings (Leonardi, Huysman, & Steinfield, 2013). Organizations can adopt popular public social media or enterprise SM not accessible to the public. As the first option is the focus of this study, investigating enterprise SM constitutes another direction for future studies. Third, as this initial study focuses on only one country, Canada; the authors also recommend that future study investigate the views of HR managers in other countries as such studies can increase the validity of the findings from this study. Fourth, as this initial study focuses solely on challenges; the authors also recommend that future study include *Best Practices* to equip organizations in dealing with the identified challenges. Lastly, future research may benefit from adopting other research methods as well, such as case study or survey, which may provide richer insights than the Delphi survey used in this study.

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