Reconciling ambiguity with interaction: implementing formal knowledge strategies in a knowledge-intensive organization

Alejandra Marin, Jason Cordier and Tahir Hameed



Alejandra Marin, Jason Cordier and Tahir Hameed are all based at the SolBridge International School of Business, Woosong Educational Foundation, Daejeon, Republic of Korea.

Abstract

Purpose – *The purpose of this paper is to look at the actions autonomous knowledge workers perform to implement formalized knowledge strategies as part of an accreditation.*

Design/methodology/approach – *Using a strategy-as-practice framework, this paper follows a qualitative approach to study the implementation of a standard in a business school. The data collection was carried out over a 14-month period, with access to interviews, observations, meetings minutes and other institutional information.*

Findings – *Even though faculty members received similar information, the standard was implemented in different and conflicting ways. Three themes explain these differences: different approaches to ambiguous knowledge management practices, enablers and inhibitors of knowledge sharing and different conceptions of continuous improvement.*

Research limitations/implications – *As this was a single case, findings are not broadly generalizable. The research is based on rich data over a prolonged period, albeit in a very specific setting where unique actor and structural characteristics are not generally representative of the wider business and organizational environment. The nature of the university setting is quite unique. Although possible links to other fields which share some specific similarities with universities are provided, the contextual limitations are acknowledged. Accordingly, the work is presented as a basis for future enquiry when investigating implementation, especially activity-based research within knowledge-intensive organizations.*

Practical implications – *This paper provides a deep analysis of the actions knowledge workers perform when implementing standards promoted by organizational directives. It exposes tensions and conflicts among knowledge workers when implementing a standard. Our model is the basis for insights on how managers can balance the tensions of creative change and stable structure.*

Originality/value – *This paper describes how ambiguity and human interactions can reveal a deeper understanding of the different stages of standards implementation. It provides a model that uses the level of ambiguity and structure to explain how knowledge workers interacted in groups and as a whole can implement Assurance of Learning.*

Keywords *Knowledge workers, Strategic ambiguity, Knowledge sharing, Standards, Practices, Assurance of learning*

Paper type *Research paper*

Received 13 November 2015
Revised 22 March 2016
21 June 2016
Accepted 7 July 2016

The authors would like to thank the guest editor and two anonymous reviewers for their valuable insights that helped improve this paper. An earlier version was presented at 31st EGOS Colloquium held in July 2015 at Athens.

1. Introduction

Standards can be a key mechanism by which organizations manage knowledge and attempt to improve organizational performance (Ataseven *et al.*, 2014; Lin and Wu, 2005). Yet, the often long and painful path of implementation does not always result in the materialization of intended benefits (Massingham and Massingham, 2014). The implementation of standards produces a flurry of activity in which organizational actors make sense of not only internal organizational directives but also normative

expectations of the wider field (Guler *et al.*, 2002; Power, 2007). The responses of these actors result in creativity or variations in the actions undertaken by individuals or groups as they implement the standard (Sandholtz, 2012; Stensaker and Falkenberg, 2007). In particular, when autonomous knowledge workers are faced with implementing standardized practices, they can become a part of a conflicting dynamic that sees their professional identities pitted against organizational interests (Jarzabkowski, 2005). Engrained in this socially constructed environment, the sharing of tacit knowledge is a core component in how actors make sense of a standard and then implement it. Yet, practices around tacit to tacit sharing are not well understood in general (Gold *et al.*, 2001; Nonaka, 1994; Nonaka and Von Krogh, 2009), whereas particularly, gaps exist in understanding how autonomous and skilled knowledge workers share tacit knowledge when implementing standards.

Using the higher education sector, this paper presents a case study of autonomous knowledge workers implementing knowledge management (KM) practices embedded within industry standards. The study of standardized KM practices and the manner they are implemented is especially important within knowledge-intensive organizations (KIO), as these organizations are constantly struggling with high levels of uncertainty and ambiguity (Alvesson, 1993). Standards can act as a mechanism to reduce levels of ambiguity among stakeholders (Timmermans and Epstein, 2010). We use a business school as our empirical case. Academic staff within the university setting represent knowledge workers in that they create, apply, transmit and acquire knowledge (Kelloway and Barling, 2000). Universities thus fall under the definition of KIOs provided by Starbuck (1992) and Alvesson (1993) as human capital acts as an essential resource for organizational survival, whereas ambiguity is pervasive.

Our study focuses on an explicit intention of a business school to implement a formal knowledge strategy as part of an industry accreditation. We study departments within the business school that implemented the same standard in starkly different ways, despite each receiving the same explicit information. Through a practice lens (Jarzabkowski, 2002; Perrin, 2012), we present a fine-grained qualitative analysis of the actions that resulted in implementation variation, focusing on tacit knowledge sharing and members' identity concerns.

We respond to the recent calls to better understand implementation of standardized practices in KIO (Anand *et al.*, 2007), continuing to enrich KM through the analysis of practices and actions in KM (Perrin, 2012). Our overarching research question is:

RQ1. How do members of a KIO implement formal knowledge strategies?

Specifically, we ask:

RQ2. What role does the autonomy of knowledge workers and knowledge ambiguity have on the process of standards implementation in a KIO?

Although this research context is the education sector, with all its idiosyncrasies (Mintzberg, 2004), we believe that these questions are relevant to organizations in commercial sectors such as research labs, managing consulting, engineering companies and IT services. Even though our results are the product of a single in-depth case analysis, they provide rich insights that warrant further investigation to keep strengthening our understanding of dynamics that affect KM in KIOs.

In the following section, we introduce literature on strategy-as-practice (SAP), KM and identity work of knowledge workers. These views help us frame the gaps that guide our empirical enquiry. We then present our empirical case after which we present our findings before moving to the discussion section. Here, we use the three theoretical frameworks discussed in the literature to develop a model based on our findings. We finish with practical implications, limitations and directions for future research.

2. Literature review

KM has recently been studied using a SAP approach (Peltokorpi and Vaara, 2014; Zander, 2011; Corbett-Etchevers and Mounoud, 2011; Jarzabkowski and Wilson, 2006; Perrin, 2012). This approach looks at constant changes in the daily practice and praxis of practitioners to understand how organizational outcomes are created (cf. Whittington, 1996, 2007; Jarzabkowski, 2002, 2003; Jarzabkowski *et al.*, 2012). *Practices* refer to "routinized types of behavior" (Reckwitz, 2002, p. 249) that actors use while they are strategizing. Explanations of *praxis* cover "the concrete, unfolding activity as it takes place" (Suddaby *et al.*, 2013, p. 332). *Practitioners* of strategy are the internal and external actors that interpret change and enact strategy through praxis (Jarzabkowski and Spee, 2009). Actions taken in the implementation of KM may be reflexive, in that they are significantly affected by technical, organizational, social and cognitive factors, which in turn might affect how workers perform the assigned practices (Jarzabkowski *et al.*, 2012; Perrin, 2012). Moreover, in this view, social reality is always in a state of becoming, which implies that practice is ongoing and will evolve over time. Thus, SAP is rooted in the idea that there is a difference between what people think and what people actually do (Jarzabkowski, 2002).

We frame the understanding of standards implementation in a KIO following the SAP perspective (Suddaby *et al.*, 2013; Helms *et al.*, 2012). We define standards as rule-like mechanisms aimed at the achievement of an optimum degree of order in a given context (Brunsson *et al.*, 2012). An increasing number of standard setting agencies are emerging across a wide range of fields, with the education sector being no exception (Durand and McGuire, 2005). More often than acknowledged, professionals do show dissatisfaction about certain demands that standardization practices impose (Sandholtz, 2012; Lampland and Star, 2009). However, there is still limited understanding of the challenges knowledge workers, with highly specialized skill sets, face when implementing standards motivated by organizational and industry demands. We believe that a better understanding of those challenges and the factors affecting those challenges can strengthen how KIOs are managed.

To cast light onto possible challenges knowledge workers might face when implementing standards in a KIO, we draw on the foundational research on knowledge creating and sharing by Nonaka and his colleagues (Nonaka, 1994, Nonaka and Takeuchi, 1995, Nonaka and Teece, 2001) and Szulanski's framework on sticky knowledge (Szulanski, 2002; Szulanski *et al.*, 2004). Among the four types of interactions that are able to transfer both tacit and explicit forms of knowledge, this research suggests that *socialization* (i.e. transforming tacit knowledge through shared experiences) is perhaps the most challenging to study (Nonaka, 1994; Polanyi, 1967). Even though there have been studies on knowledge sharing and tacit knowledge (Holste and Fields, 2010; Nonaka and Von Krogh, 2009), research on knowledge workers and knowledge sharing pose unique questions (Gardiner, 2016). These members are highly autonomous, but their specialized expertise tends to create silos of communication. Moreover, although organizations provide infrastructure, knowledge sharing might still be difficult to accomplish (Gardiner, 2016). Scholars also acknowledge that organizational knowledge sharing cannot be achieved simply through planning and providing infrastructure or institutional support. It is through daily individual or group activities that socialization can unfold (Barley and Kunda, 2001; Patriotta, 2003a, 2003b; Hislop, 2013; Gardiner, 2016).

Szulanski's framework on stickiness of knowledge argues that knowledge is difficult to transfer among different participants. Factors such as low levels of expertise and arduous relationships, among others, decrease the level of knowledge shared (Szulanski, 2002). In our case, KIOs pose specific challenges when analyzing the sticky knowledge framework, because their human capital has high levels of expertise and experience (Starbuck, 1992). Key members in KIOs tend to have formal education and

experience equivalent to a doctoral degree and exhibit high levels of absorptive capacity. However, other aspects such as the level of ambiguity surrounding the standard, different motivations of those implementing a standard and social interactions can still affect the level of knowledge transfer among group members. Our research focuses on these factors.

Literature on management practices in KIOs (Starbuck, 1992; Alvesson, 2001) holds important applications for our framework. This literature highlights the individual and collective struggles that members in these types of organizations constantly face. As explained by Alvesson (2001, p. 877), "given the high level of ambiguity [. . .], involving a strong dependence on somewhat arbitrary evaluations and opinions of others, many knowledge intensive workers must struggle more for the accomplishment, maintenance and gradual change of self-identity, compared to workers whose competence and results are more materially grounded". Building upon this work, a vein of literature has investigated the identity work of actors. In KIOs, this pays attention to the work individuals engage in to shape relatively coherent and distinctive notions of personal and professional self-identity (Sveningsson and Alvesson, 2003; Brown, 2015; Gardiner, 2016). Moreover, it has been acknowledged before that knowledge workers construct their identities in constant connection with knowledge sharing practices (Crane, 2012). We therefore take into account individuals' actions related to perceptions of who they are as professionals as part of the factors that might affect the implementation of standards.

3. Research setting and methods

We used an exploratory case study research design that used inductive qualitative techniques (Partington, 2000; Orlikowski, 2002; Ambrosini *et al.*, 2007). Accordingly, we broadly started our research with the desire to explore what activities were used by knowledge workers in the implementation of standardized knowledge practices. Our collection and analysis concentrated on activity; *what* is being done, by *whom* and *how* (Johnson *et al.*, 2003; Jarzabkowski, 2003). This has been used in similar cases (Ambrosini *et al.*, 2007; Perrin, 2012). Through the iterative process of theoretical sampling (Suddaby, 2006; Glaser and Strauss, 2009), a backwards and forwards process occurred between uncovering broad themes, reviewing the literature and gradually narrowing our empirical enquiry to an area that resulted in our final research questions.

3.1 Research site

The field work of our study was undertaken over a 14-month period in a business school. The school was chosen as it sought and subsequently achieved the prestigious Association to Advance Collegiate Schools of Business[1] (AACSB) accreditation. Obtaining the accreditation was the highest strategic priority of the school with significant resources deployed in support of its acquisition. Through this process, we were presented with the opportunity to view knowledge-based occupations (Gardiner, 2016) in which the varied roles and activities undertaken by actors have a profound impact on identity (Beck and Young, 2005); often with professional and managerial interests in conflict with each other (Jarzabkowski, 2005).

In our research, we focus on the implementation of Assurance of Learning (AoL). AoL is a framework for ensuring that clearly defined student learning expectations are met. The processes define core educational outcomes that students are expected to know, then ensures that these are delivered through evaluation. In essence, AoL is a recursive KM process that seeks to continuously improve the delivery of educational content (www.aacsb.edu). The continuous improvement element requires faculty to first decide and then address areas of poor performance outcomes through content delivery and course or curriculum change. The AoL external standard constitutes a significant part of the AACSB's accreditation, yet for this organization, it was almost an entirely unknown concept. AoL has resulted in significant levels of contended discussion

throughout the management education community (Kilpatrick *et al.*, 2008). In our case, faculty and staff across all areas of the school sought to make sense of the ambiguity associated with implementation. Our case setting is accordingly framed in an environment where a high level of knowledge sharing is required for the implementation of contested KM practices. We look not at the transfer of knowledge between faculty and students, but rather the sharing of knowledge between the workforce; knowledge workers involved in the implementation of the standard.

4. Data collection and analysis

Close-with-relationships put forward by Johnson *et al.* (2010) facilitated our collection of data. Access to the "back-stage" (Goffman, 1961) afforded us the ability to pick up on elements that otherwise may have been missed. This allowed for the triangulation of a wide array of data sources, including observation, interviews, minutes, reports, internal and external correspondence and information coming from a centralized data management system. Additionally, corridor encounters and informal interactions further supported data collection. In total, 28 participants, including faculty, staff and leadership, were interviewed, with 33 interviews taking place (Table I). Over the 14 months we were in the field, we were able to analyze three years of data associated with accreditation; two years of pre-accreditation and one year of post-accreditation. The field work commenced two months prior to the final accreditation visit by AACSB and finished one year after the school was informally advised it would be awarded AACSB's accreditation. We used Nvivo 10 for data analysis, developing and refining themes throughout our iterations. Similar to Ambrosini *et al.* (2007), we did not set out to develop empirical generalizations, however, similar to their model, the model we have developed has "generalized applicability", as it offers a framework to be used for further research. Figure 1 depicts the codes-to-theory model that we used, following the guidelines provided by Saldana (2009).

5. Findings

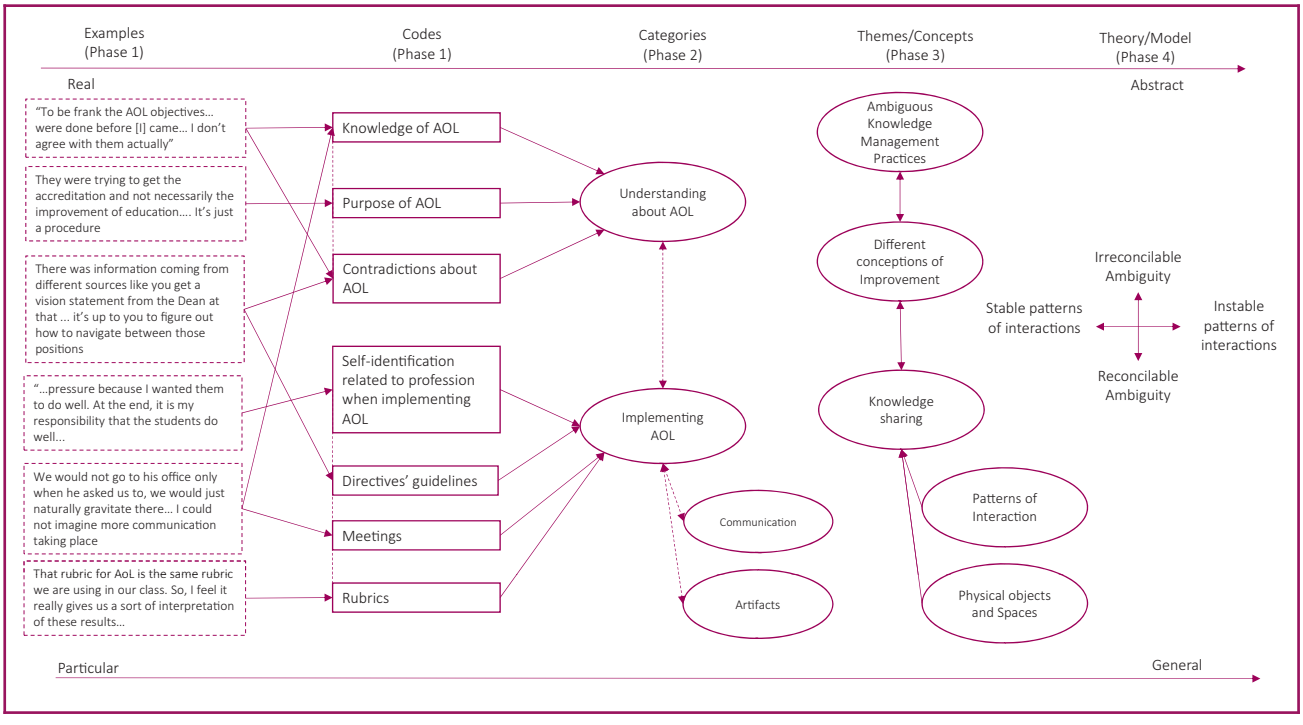
Table II offers an overview of the diffusion of knowledge throughout the implementation process of AoL. This was drawn from multiple institutional document sources, participant interviews and questionnaire data. Our research pays close attention to elements related to *internalization, organization* and *implementation*. The other elements of diffusion of knowledge are presented to help better frame the overall setting of AoL knowledge diffusion and KM within the institution.

From our data collection, we observed that in the pre-accreditation two-year time period during AoL implementation, there were varied responses to top-down directives, which converged into two different types of implementations. In the first instance, a single department which we will refer to as Department A illustrated praxis that was not prescribed from the top. There was an extensive coordination of activities through collective participation with this implementation that did not resemble most of the prescribed mechanisms outlined in process documentation. Department A operated very cohesively as a group, with many different socialization opportunities, and maintained a shared vision

Table I Data collection profile

Participant profile	*Department A*	*Department B*	*Department C*	*Department D*	*Department E*
Department chair	1 of 1	1 of 1	1 of 1	1 of 1	1 of 1
Faculty member	3 of 3	6 of 6	4 of 5	3 of 4	3 of 5
Total % of department	100	100	83	80	67
Top team			2		
AoL admin			2		

Figure 1 Codes-to-theory model used



and goals within the group. In contrast, the other departments (named here Departments B, C, D and E) approached implementation in a more individualistic manner, with limited coordination, engaging mostly in prescribed formal encounters. Their actions follow what was strictly necessary, and in some cases, their actions did not even meet the specified documented criteria.

In the one-year post-accreditation period of analysis, we witness a moderate reduction in the frequency of AoL praxis of Departments B, C, D and E, but a significant reduction of praxis for Department A. The structural configuration of Department A was altered by university-level decisions, and their dynamics of AoL were significantly affected. The praxis related to the implementation of AoL changed drastically as a result of this, so much that we can say the praxis for A is entirely different pre- and post-accreditation. For ease of understanding, we will refer to Department A's implementation as *Implementation One* and the implementation of AoL of the remaining departments of Departments B, C, D and E as *Implementation Two*.

The differences in the way members approached pre- and post-implementation between *Implementation One* and *Implementation Two* have been identified as the result of three different dynamics:

1. different approaches to deal with ambiguous KM practices;
2. enablers and inhibitors of knowledge sharing; and
3. different conceptions of continuous improvement expectations.

In the following section, we explain these three dynamics.

5.1 Ambiguous knowledge management practices

Although members understood the general goals and reasons behind the implementation of AoL across both *Implementation One* and *Implementation Two*, there was still a considerable amount of individual interpretation when enacting different praxis. This

Table II KM practices and their diffusion in the studied organization

KM practices	*More than a year BEFORE accreditation*	*A year or less BEFORE accreditation*	*A year or less AFTER accreditation*	*More than a year AFTER accreditation*
Knowledge acquisition: external interactions to acquire the knowledge and practices outside the organization				
Meetings with standards-setting organization and its experts for formal requirements and process	High	Very high	Medium	Low to medium
Conferences and seminars	High	High	Low	High
Benchmarking meetings with similar organizations	Low	High	Low	Medium
Knowledge Internalization: Formal and informal sense-making and tacit knowledge-sharing interactions				
Top team and strategic planning meetings	Medium	Very high	High	Medium
Faculty meetings and workshops	Low	High	High	Medium
Departmental/Committee meetings	Low	Low to high	Low	Medium
Informal Individual interactions	Very low	Low	Medium	Medium
Knowledge organization				
Electronic repositories	E-mails/shared folders	Online document control	Online document control	Online document control v2
Queries or uploads to electronic repositories	Very low	High	Medium to low	Medium to low
Electronic process monitoring	None	Online automated	Online automated	Online automated
Defined policies and processes	Medium	High	High	Very high
Other activities at the individual level	Low	Very high	High	High
Knowledge implementation: to achieve organizational goals				
Development or improvement of AoL rubrics at the department level	Low to high	Medium to high	Low to medium	Medium to high
Individual measurement/reporting of AoL	Low	High	Medium	High
Institutional analysis and sharing of AoL data	Very low	Very high	Low	High
Knowledge improvements				
Faculty/Departmental meetings about AoL data and feedback	Very low	Medium	Medium	Medium
Team or individual interactions discussing internalized knowledge and other knowledge	Very low	Low	Low	Medium
Team or individual interactions to share internal knowledge or practices outside the organization	Very low	Medium	Medium	High

caused constant ambiguity because of flux of interactions among beliefs, actions and interpretations. These high levels of ambiguity were evident from the beginning of our commencement of data analysis and have also been found in other studies of implementation of KM practices (Jarzabkowski *et al.*, 2010; Alvesson and Sveningsson, 2003). Members of *Implementation One* navigated this web of possibilities together as a team, whereas the members of departments in *Implementation Two* acted more individualistically.

As *Implementation One* worked together as a group, they managed to define a common purpose when implementing AoL in their daily praxis. This shared purpose throughout the implementation of AoL stemmed from needing a system that provided some guidelines on how to pragmatically interact. As the head of the department said:

> There was information coming from different sources like you get a vision statement from the Dean and that [. . .] it's up to you to figure out how to navigate between those positions'.

As a response to these multiple sources of information, the head of the department goes on to discuss perceived reasons and responses to varied sources of data:

> And it quickly became apparent, in my observation there were people navigating to survive and there are people who were taking sides and there were people who were trying to fly under the radar and AoL seemed like a very good way for us to know what we're supposed to be doing from an academic and an institutional point of view. [Chair, Department A]

In conversations with more senior faculty members from *Implementation Two*, it was evident that they individually believed that the AoL had different levels of importance. The strongest belief was that AoL was attached to obtaining accreditation, as opposed to improving learning outcomes. Here, AoL was seen as either being linked to the mission or, in some cases, merely documenting a link without a true connection. Additionally, interviews illustrated differences in the validity and utility of AoL within the big schema of the education system. One of the participants questioned the utility of AoL in the face of other indicators such as job placement of students once they graduated. However, in the same interview, he did recognize the merits of the system, but pointed out a number of difficulties, related mainly to the subjectivity of the process, in trying to implement it.

There was also a subtle, but relevant, confusion about more specific aspects of AoL such as different evaluation systems. Different members solved this gap in different ways. Some instructors questioned the differences between the grading system and the AoL system and then acted upon it. But, the way in which they solved their questions were either through individual methods or through coordination with others. In *Implementation One*, members managed to resolve the gap as a team; they all agreed on an assessment system and the means for implementation within their classes. *Implementation One*'s Instructor 2 still uses the rubric even though structural changes have resulted in his courses no longer being used as measurement points for AoL; as he explains:

> The AoL scoring was confusing because we'd give them a grade, then you had to give them a different number that was a reflection of the rubric but we were [not] using the rubric.

Here, the instructor is referring to ambiguity regarding evaluation of individual students as required for a course grade and then an evaluation of a student for the purpose of AoL. We observed that many instructors found the notion of evaluating for the student and evaluating for the program difficult to reconcile in the initial stages of implementation. The instructor goes on to note:

> Eventually, what we were trying to do is we were trying to take the AoL rubric and make it the rubric that we would use for assessing our papers, that was what we use, we use a rubric [. . .] Actually, I still use the same rubric right now.

There was a constant flux of interactions among beliefs, interpretations, perspectives and the praxis that AoL generated across the members of the organization. In this respect, AoL generated different connections throughout the members of the organization (Feldman and Rafaeli, 2002). We notice that the dynamics of the interactions in *Implementation One* had a stronger effect in building a shared understanding that influenced the praxis of their members. Our interviews with the remaining departments in *Implementation Two* seemed to demonstrate a less cohesive and shared understanding about AoL and about its implementation affecting their praxis and interpretations.

5.2 Enablers and inhibiters of knowledge sharing

As described in our literature review, one of the key aspects when implementing KM practices is the sharing of knowledge among organizational members (Nonaka, 1994; Nonaka and Takeuchi, 1995). However, as also acknowledged, this sharing is a rather difficult activity that is easier said than done. We identified two sets of factors related to structure that influence the propensity to share knowledge among the members of this organization. On one hand, we observed the presence of repetitive patterns of interaction or the lack thereof, which were both formal and informal. The second group of factors were

related to physical objects that took on different meanings in both of the implementations of the AoL.

5.2.1 Patterns of interaction among members. In *Implementation One*, the members were fulfilling the roles of instructors. They were brought by the chair of the department under the previous dean's suggestion to develop in-house capabilities to strengthen specific practical and foundational skills of the students. The origin of this department was, therefore, very specific, with the chair of the department having a visible and influential part in the department development. The department chair had autonomy to decide who to hire and how to organize the teaching activities. These instructors had worked together previously in another institution, so there was a shared history among them. Other department members fell into step with this group dynamic.

Additionally, in *Implementation One*, it appeared that the department was rather isolated from the remainder of the other departments. There was limited interaction and communication at other levels (within AoL and outside of AoL) with the rest of the organization, and instructors were conscious that they were different from other faculty members constituting the other departments. Moreover, although Department A worked together, they enjoyed a certain level of autonomy because as it was expressed and there was not much oversight, as the department head pointed out:

> One of the issues we had as newcomers in the organization was a lack of communication between departments which we mentioned in other conversations, but also in terms of what is the expectation [was] [. . .] The team had two expressions from my point of view, [our] department and then everybody else [. . .]. [Chair, Department A]

Implementation One exhibited very strong internal communication during the pre-accreditation time period. This favored tacit interactions, as opposed to the formally prescribed process of a departmental meeting at the beginning of the semester. This underpinned the team dynamics of *Implementation One*, acting as a foundation for the sharing of knowledge about a common goal. However, the strong communication dynamic and the praxis that resulted from this diminished when the chair of *Implementation One* and his team found out that this position was being removed; as one instructor stated:

> We would not go to his office only when he asked us to, we would just naturally gravitate there [. . .] I want to say on a daily basis, and I didn't learn to gravitate there to talk about Canadian hockey, we went there to literally [. . .] I mean this might sound strange, and this might be my only opportunity to say this, but often people are disillusioned or frustrated because what is supposed to be happening and what does happen are very far from each other, or not anywhere near what they are supposed to be [. . .] But I'm telling you we were brought in as a team to address the students and to assist them, and that is what we lived and breathed every moment we were here. That is what we talked about on a daily basis and am not exaggerating [. . .] I could not imagine more communication taking place. And this was from the beginning of the first week we were hired until the time that [the head of the department] found out he was not being renewed essentially. [Instructor 1, Department A]

In the case of *Implementation Two*, there were more formal structures composed by the departments involved; formal meetings, committees and different hierarchical roles (i.e. head of the department, associate dean, vice dean, AoL coordinator and curriculum committee). However, this formal structure seemed to be distant from members. Moreover, there was a lack of knowledge about the direct command structure under which the AoL practice fell. This included ambiguity as to whom to address to raise any comment or concern regarding AoL. This lack of knowledge was partially due to the fact that in the time span of the year after accreditation was granted, there had been considerable changes in the central coordinator of AoL. In the post-accreditation period, it becomes more apparent that individuals within *Implementation Two* were not aware of the person or unit in charge of centralizing AoL. The structure the departments associated with *Implementation Two* was perhaps more stiff and tended to constrain

praxis more than providing stability. In this case, we find that this stiffness and lack of knowledge may have prevented members from being more involved in the implementation of the standards. The different activities performed by them tended to be more isolated and individualistic.

The team dynamics that accompanied *Implementation One* played a significant role in creating a platform where members felt secure discussing different practices and actions to perform their job – the improvement of students' skills. This structure was a mixture of physical layouts, categorizations ascribed by themselves and/or by the rest of the non-researcher faculty members (i.e. *we are not full faculty members*) and also a common history of previous work related experiences. Therefore, a complex web of different structural patterns was in place that allowed and supported the interactions and coordination of different activities among the members of *Implementation One*. As discussed before by Weick (1993), a sense of structure might be crucial for support when trying to make sense of organizational life. Instructors in *Implementation One* had purposefully, but at the same time serendipitously, built a secure structure through which to navigate the different hurdles of implementing the desired practice. Once an essential piece of that structure was removed, when the chair of *Implementation One* left, the praxis of the rest of the members also changed, as it was difficult to continue the coordination and activities previously done as a team.

5.2.2 Physical objects and spaces. We also found that the physical structure supported knowledge sharing. Although relationships can develop from single encounters, most relationships develop from activities organized around social, psychological, legal or physical objects (Feld, 1982). In this case, the sharing of the space by two of the key members of the department, plus the fact that all of these instructors were working around similar classes, dealing with similar problems, made it possible for constant and strong interactions and exchanges of information among members in *Implementation One*. However, once that structure was removed, when the chair of the department left and the instructors were re-assigned to other classes, these social dynamics were also lost. As Instructor 2, Department A stated:

> That was the neat thing about [Chair of Department A], because we were sharing offices, we were always talking about this. And I think, we lost something very important. It was [Instructor 1, Department A] and [department's chair] and [Instructor 4, Department A] talking and we were always talking about stuff. For example, what did you do in class today? What did you teach? In the other class, did it work, didn't work? We were constantly changing as we were going along. [Instructor 2, Department A].

One of the elements that provided an additional sense of structure for *Implementation One* was that it conceptually and practically conceived rubrics in a different manner when compared to *Implementation Two*. As a result, we see a significantly disparate praxis related to the use of rubrics as a means to assess students. Since the beginning, there was a stark difference between what the rubric represented for *Implementation One* and what it represented for *Implementation Two*. First, members of *Implementation One* developed the characteristics and traits of the rubric on their own. They accordingly did not use it in isolation for AoL only. Rather, they integrated the rubric fully into their courses and utilized the rubric as an essential part of instructional content and as a regular assessment tool in the class:

> We came up with the current rubric for [course name] [. . .] So, in the past it was not doable, [for] instructors and students [. . .]. See the thing about the [AOL]rubric is that we want edit to be something that was the same as the rubric we were using to evaluate our students, [when that happened] I felt that AoL was a better assessment of their skills [. . .] because, we used the same [rubric throughout the] class. [Instructor 4, Department A].

In contrast, there is more variation in the perceptions of rubrics from the members of *Implementation Two*. Instructor 5 notes that "I just assume[d] that it was something that a professor did long time ago [. . .] we have to keep the same rubrics". Members from

Implementation Two did constantly question the validity of many of the aspects of these rubrics. Several members raised their concerns about the rubrics in departmental meetings, but most of the time, the answer was "let's get more comfortable with the AoL process before we start changing stuff" [Instructor 6, *Implementation Two*]. Another member of a different department and the chair of that department pointed out a similar situation trying to change a different aspect related to rubrics "[. . .] and I raised this point actually in the meeting and the thing was the AACSB accreditation process was on-going at that time [so] it [was] not possible to change the objective" [Instructor 7 and Department Chair, *Implementation Two*].

5.3 Different conceptions of improvement and performance measurement

The last finding we present is related to possible tensions between individual and organizational expectations about improvement and performance measurement of faculty members. One of the objectives when organizations implement KM practices is the improvement of organizational outcomes. Our findings show that members of this KIO had different interpretations about what improvement meant and enacted these interpretations in different ways. In particular, the implementation of AoL was tightly connected with aspects related to claims about who the instructor is and his or her responsibilities and capabilities as an instructor or an educator. As previous studies have shown (Crane, 2012), we also found evidence that the implementation of this KM practice was tightly connected to self-evaluation aspects. This is particularly salient in the type of organization investigated in this paper, a KIO. According to Alvesson (2001), members in KIOs are in a constant struggle to maintain, accomplish and enhance self-identity-related aspects. Nevertheless, one of the goals of adopting these KM practices was an improvement of the functions and processes organizations are involved with.

In our case, most of our participants expressed, in different degrees, connections between their work as educators and the outcome of students. We found this connection to be present in both *Implementation One* and *Implementation Two*:

> What we have learnt this past semester is that the information, the numbers and figures that we give to them actually helps us to be better teachers. As we can see what areas students are weak in and whether we should address this area; how to remedy any areas that we think could improve. So, assurance of learning in not only for the students, but also for professors and also for the institution. [Instructor 4, *Implementation One*]

> So, I as an instructor, I am always improving upon [the skills the students should know]. I take this information very seriously. [Instructor 4, *Implementation One*]

> Watch student by student, objective by objective and at the end it was important to see [. . .] how many passed, [or were in the] poor, good and excellent [range]. And I feel, I don't know the word [. . .] a pressure because I wanted them to do well. At the end, it is my responsibility that the students do well. [Instructor 14, *Implementation Two*]

However, even though most of the members across all departments perceived these connections, there were different reactions regarding members' understandings of how to face possible criticisms when discussing students' learning achievements of particular courses in front of other faculty members. For *Implementation Two*, we observed a clear and direct relationship between individual performances as instructors and the outcomes recorded in AoL. When asked if there was a correspondence between these two aspects, one of the members answered that "How can it not be?" [Instructor 11, *Implementation Two*]. Another instructor talks about feelings of shame when the results of the students are not good enough. He commented that "[. . .] it means your ability has issues as you could not teach your students, so I think this is a problem. [When]this information is shown, some people may think you have some problems to teach students". [Instructor 12, *Implementation Two*]

It is important to note that in theory, AoL is an aggregate endeavor of the entire program; meaning that despite the fact that students are evaluated in a particular course for their performance on a learning objective, it is the accumulation of knowledge throughout the program that results in this score. The location of the AoL examination is not the sole location for instructed content and knowledge toward a learning objective in this area. In many cases, it is not even the most significant location to contribute to the knowledge of students.

Despite this, it was those who hosted the location for the examination in *Implementation Two* that felt it was a personal reflection on their ability as an instructor. Moreover, the fact that these results were discussed in public meetings created a certain level of concern among different members, in particular, the members outside *Implementation One*. For the vice president of the school, the AoL implementation process was a matter of analyzing the classification of students and professors in categories related to their performance. He commented:

> [. . .] [We] compare with previous semesters and look if we are improving or not. And also probably we may need to invite professors [. . .] We need to look at professors and see if there are differences and if then we need to commit a benchmark from good ones [. . .].

Regarding these meetings and the organizational expectations, one of the members involved in *Implementation Two* commented: "At the faculty meeting they like to show a percentage comparison, between the different departments. The first time they showed the percentage comparisons and said [my subject] was very low" [Instructor 13, *Implementation Two*]. Several instructors showed signs of concern for their classes being perceived by others as "low". The comparison between classes and between professors' AoL outcomes provoked some level of anxiety among faculty members, especially among more junior members. For some of the faculty members with more experience, the improvement idea did not generate such high levels of anxiety; they seemed to be more at ease with room for improvement. The recorded minutes of meetings clearly and explicitly mentioned that the exercise to analyze the outcomes did not reflect individual professors' performances, yet, in our interviews with less experienced members, they were preoccupied with the consequences of courses that were discussed in front of the entire faculty body. Instructor 13 then goes on to say that "So the next time I did AoL I was sure to teach the question, but I was also a bit more liberal how I set that. The answers are pretty much open to interpretation, and I said, ah, well, good enough; they got it" [Instructor 13, *Implementation Two*]. The previous quote shows that when discussing knowledge-related outcomes, there is room for interpretation and subjectivity (Alvesson, 2001). In particular, when there are self-evaluation concerns at stake to protect one's position and standing, individuals might be prompted to redefine levels of achievement. This might be particularly salient when individuals are in more junior stages in their career development.

In the case of *Implementation One*, the concept of AoL was embraced from a continuous improvement perspective, as it is described below:

> From the point of hiring, I made it known to [my department] why I wanted them, what I was looking for them to do and then once they got there I laid out what the expectations were at least at that time. The expectations shifted quite often during the first year. We kept clarifying what those expectations were and what I was expecting for each person to do to fulfill those obligations. I then trusted them to do it, and we have a culture of them reporting the problems they were having and me taking on solving those problems or helping them solve those problems. And me reporting to them changes in expectation, or refinements, or improvements of what they were actually doing. [Chair, *Implementation One*]

When the results from the objectives related to *Implementation One* were discussed, the general perceptions of its instructors tended to be more objectified and not directly associated with the individuals' performances. They had the constant opportunity to redefine these thresholds of criteria. Accordingly, there was a shared consensus of achievement, as well as

a shared support mechanism. Without a team or another micro-structure, as in the case of *Implementation Two*, the member is left hanging with little support, except his or her own judgment. When reflecting on the quantitative results from the AoL in *Implementation One*, the chair of the department and another instructor commented:

> I have to say that not every student should have been allowed in. From that point of view not every student is going to demonstrate a measurable increase in his skills at the end of the program simply because they were not able to benefit from the program in the first place. But other students, I felt that they were able to internalize what we were trying to do there, or at least doing so in their own way. [Chair, Department A]

> We were not surprised by the numbers. We knew because we knew the students who came in there. Some were good, some, it was because of [admissions testing]. [Instructor 2, *Implementation One*]

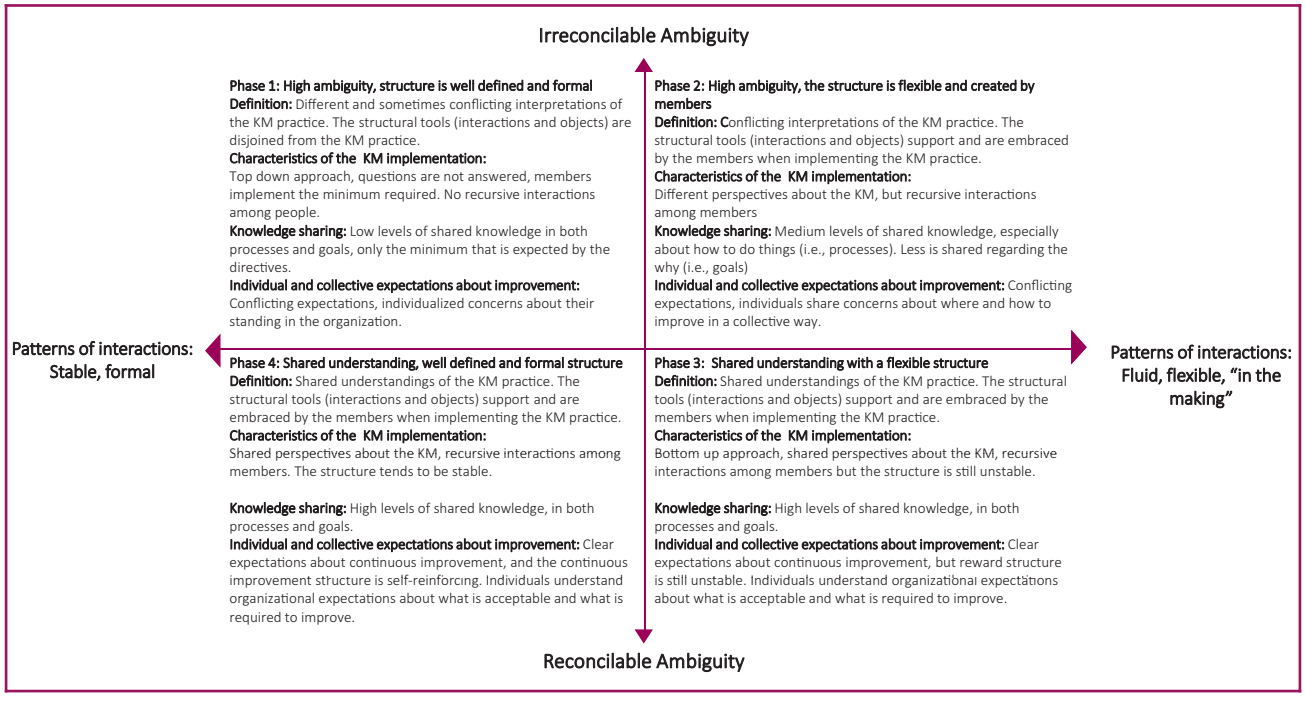
We, therefore, found that the implementation of KM practices in this organization generated preoccupations for some members regarding capabilities, performance and image presentation. Other members with more experience were more used to the idea of showing performance assessments in front of others in meetings. The members within *Implementation One*, with a higher team work identity, tended to perceive the outcomes of these practices not as a one-to-one reflection but as their duties and performances as a group. However, this does not mean that their duties as instructors and the responsibilities toward the students were felt less by these members. Rather, these members seemed to be more conscious of the bigger picture behind the specific outcome of individual students.

6. Discussion

This article set out to answer the aforementioned *RQ2* within the setting of a KIO.

We now incorporate these findings into a conceptual framework, shown in Figure 2. This figure is based on two dimensions, level of ambiguity (from irreconcilable to reconcilable)

Figure 2 Conceptual framework of the interplay between ambiguity and patterns of interaction in the implementation of KM practices



and type of pattern of interactions (from stable and formal to flexible and informal). We used general guidelines based on Jarzabkowski *et al.* (2010). The superimposition of these two dimensions produces four stages that have a lot of synergies with Szulanski's framework on sticky knowledge (Szulanski, 2002).

Phase 1 illustrates the initial stage of implementation in which members of the organization face irreconcilable ambiguity, but well defined, and stable patterns of interactions among members. In our case, the initial interpretations of the standard showed disjunctive conceptualizations that were a product of not only a lack of experience with the standard but also different individual approaches to educational practices. In this initial stage, the patterns of interactions among different members are rather well defined, and there are stable routines because people address problems drawing on past experiences. The activities related to the KM practice follow a more top-down approach in which questions are raised but no clear answers are provided. The interactions among members are disjoined from the KM practice, and, therefore, there is a lack of routine connected with the KM practice. The high levels of irreconcilable ambiguity do not allow for a shared understanding of improvement expectations. Some members (e.g. less experienced and newly hired) fear their individual standing in the organization, whereas the more experienced ones may exhibit scepticism and lack of trust in the practice. As our case illustrates, in *Implementation Two*, some faculty members expressed feelings of distress when presenting their results in public. As one of the interviewees pointed out, when he shared his questions about a specific subject, he was left with no explanation whatsoever and instead with feelings of shame because he should have known that already.

Phase 2 illustrates the stage in which patterns of interaction among members start to emerge around the implementation of the KM practice. These interactions are not formalized yet, but at this point, they are more spontaneous and flexible. There are still high levels of sometimes conflicting interpretations of the KM practice. Nevertheless, these interactions allow for higher levels of knowledge shared among the members participating, especially regarding how to do things. In this phase, old routines start to change. Moreover, there are conflicting expectations about organizational improvement, yet, individuals share concerns and perspectives about where and how to improve in a collective way. Regarding our case, in later stages in the pre-accreditation phase, *Implementation One* was able to reach this stage, whereas it is less clear for *Implementation Two*. For *Implementation Two,* the principles to act were more focused on getting the job done rather than a shared sense of responsibility. Although they discussed improvement expectations, individual members were left alone to sort out these expectations. In *Implementation One*, leadership was highly relevant for the creation and encouragement of flexible yet recursive interactions. This suggests that motivation and credibility of sources were critical facilitators for higher levels of knowledge sharing in *Implementation One* (Szulanski, 2002). There was flexible usage of different objects such as rubrics and meetings spaces that encouraged more shared knowledge among *Implementation One*.

Phase 3 illustrates the stage in which patterns of interaction are still flexible and rather informal, but there are higher levels of shared understandings about what the standard or KM practice represents. These higher levels of shared understandings among members in the KIO suggests that individuals agree on how to do certain parts of the processes and also on the expected goals behind the implementation of the KM practice. In this stage, implementation of the knowledge practice is therefore conceived more as a bottom-up rather than a top-down approach in which a sort of "quasi-routines" starts taking shape; yet, they are not stable and highly embedded in the organization. There are higher levels of shared knowledge regarding both how to do things and the reasons for why things are done in those specific ways. In this phase, there are shared expectations about continuous organizational improvement, but reward or incentive structures are still "in the making". In our case, *Implementation One* created a micro-structure that provided them with a sense

of discipline and shared responsibility. However, when they wanted to take their initiatives to the academic leadership, as a means of adaptive change, the organization did not answer. This suggests the importance of a final phase.

Phase 4 illustrates the last stage in which there are shared understandings about the KM practice and a well-defined structure around the practice. In this phase, the organization has developed and incorporated into its organizational DNA new routines that support the continuous implementation of the KM practice. There are high levels of knowledge shared among members in more explicit ways (i.e. codification). There are clear expectations about continuous improvement, and there are structures and incentives that support and encourage these expectations. Individuals understand and embrace organizational expectations about what is acceptable and what requires improvement. Even though in our empirical case none of the implementation types reached this phase, our model is well grounded to the extent that it is possible to theorize about the existence of this phase. In Szulanski's terms, he refers to this stage as the integration stage. According to our case, key decision makers in the organization have to embrace and create favorable conditions for the initiative to take root. Especially, in academic institutions in which there are relatively higher levels of autonomy among faculty members, leaders in these organizations have to create spaces to formalize initiatives that provide coordination mechanisms for the KM practices to be integrated into the DNA.

7. Limitations and implications for future research

By uncovering the four stages in our theoretical model, we are able to offer possible practical implications for KIOs that seek to implement standardized KM practices. We first address overall implications, followed by specific suggestions that in our case could have enabled progression to phase four.

7.1 General implications

- A core implication of our research is that organizations would be better served if senior leadership developed mechanisms to understand varied levels of ambiguity (reconcilable vs irreconcilable) within different departments during implementation. This would likely better allow managers to estimate what phase of the model various departments are in and accordingly manage the frequency and levels of variation across the institution to achieve a reconcilable environment. However, as we found, leadership cannot fully gage the levels of ambiguity through public forums such as faculty or department meetings. People often felt reluctance to show their lack of understanding in such settings (Sveningsson and Alvesson, 2003). To uncover any lack of understanding, or different perspectives about the merit of the standard, leaders should create trust in the system. For instance, in smaller organizations, leadership should seek to interact with individuals to obtain a true assessment of the levels and type of ambiguity, whereas in larger organizations, leadership should rely more on team-based interactions.
- Variations of creative change witnessed during sense-making (Stensaker and Falkenberg, 2007) are to be expected and even encouraged by knowledge workers. However, valuable resources can be consumed if this adaptive change of knowledge sharing practices occurs too early and too often. In our case for example, knowledge acquisition from outside the institutions was first needed before effective adaptations could commence. As knowledge-related practices can range from specific to more general and abstract (Vallacher and Wegner, 1987), these different levels of abstraction can also influence the type of variations about the understandings of the standard.

Our model suggests that different types of variations according to the level of knowledge abstraction (i.e. detailed to more general) can be managed across the four phases in different ways. In the first stages, leaders might want to encourage variations of

implementation at a more detailed level but keep an overall common understanding (less variation) of the final goal of the standard. However, in the final stages of the implementation process, leaders should be able to reduce variations to incorporate key findings and lessons learned from the development of practices into more enduring organizational rules and structures:

- The progression through the three phases of implementation to reach Phase 4 is not linear. We found that different departments were in different phases at similar times. However, moving to the last phase could be a challenge that requires significant synchronization between different departments or teams. As there are different departments in different stages (Phases 2 and 3), there should be managerial recognition of those variations and intervention for successful reconciliation.

7.2 Implications for each phase

7.2.1 Phase 1. At this stage, knowledge is at its highest level of stickiness. Thus, leaders in KIOs should create an environment that encourages discussion and questions among employees about the KM practice. It is important that leaders emphasize on and communicate the potential value of the practice. Official and centralized information can be used, but there should also be face-to-face group and private meetings. Because knowledge workers will have opinions and questions about the merit of the practice, leaders should communicate a unifying message that talks about why the KM is important for the organization and also that the process will be built upon the insights provided by the members of the organization. Employees should perceive that questions are welcome and that their autonomy and insights about the practice are respected and included.

Our results show that early team-based interaction positively affected knowledge sharing. Thus, leaders should encourage the development of spontaneous teams if possible or allow for inputs from individuals when forming teams. In this stage, leaders should consider prioritizing the management of people over the process of the KM practice itself (Gardiner, 2016). The more communication and interactions are encouraged among members, the faster information about the practice can be shared, likely reducing the duration required to move to Phase 2.

7.2.2 Phase 2. At this stage, we believe that the key organizational application is flexibility and shared experimentation between members. Physical spaces that encourage informal communication are highly relevant here, as well as shared documentation that keeps track of the implementation of the standard. The key aspect here is to allow for an adaptation of the KM according to what the employee considers relevant. Although at this stage the level of common understandings is still low, the important aspect is that knowledge workers discuss the nuts and bolts of the practice and make the respective changes according to their individual needs. Leaders can promote success stories of these spontaneous interactions across different departments to establish role models to follow. When organizations engage in a proactive cycle of questions asked, solved and information discussed and then recorded, the organization would likely move to the next stage.

7.2.3 Phase 3. We believe that the stickiness of knowledge is at the lowest level at this stage. Therefore, it is highly relevant that members of KIOs synthesize and communicate key milestones achieved in the implementation of the KM. Here, the focus needs to be strongly placed on inter-department and meso-level coordination to bring all the parts together as a whole. This information will facilitate the development of shared understanding of how the KM has affected the organization. Moreover, when the process of KM allows for a high level of participation and adaptation to individual's needs, knowledge workers will contribute and discuss realistic improvement expectations about what is acceptable and what is required to improve. Once this common knowledge starts to be engrained in formal structures such as job titles and

incentive structures, the organization has started the last phase of the implementation process. The danger here, as our case showed, is that if leaders do not incorporate new knowledge into formalized routines, knowledge workers will be discouraged, because no "real" change happened.

7.3 Future research and conclusion

Our model has extended the work of Szulanski (2002), while providing a finer grained understanding of how knowledge workers within universities implement standards. On this front, we believe that our contribution may help universities navigate knowledge-related operational issues when implementing external standards. Similar to the wider organizational field, education settings are "increasingly characterized by standard-setting agencies". This domain expansion has resulted in legitimizing pressures to adopt standards being placed on universities and proliferation of educations standards such as AACSB (Durand and McGuire, 2005, p. 165). As such, focusing on the university setting has resulted in a framework that can help universities deal with KM elements of accreditation implementation as they face ongoing pressures to adopt standards.

Beyond the education domain, we also believe that our contributions may have applicability. We, however, urge caution in positioning such inferences. Although arguments have been presented that business schools are divorced from the problems of the real world because of their focus on research (Mintzberg, 2004), we see our case sharing some characteristics with KIOs outside of higher education. Next, we discuss two such characteristics.

First, external standards require workable practices that offer documented outcomes. Achieving this occurs within a time-constrained environment where outcomes need to be aligned to the normative expectations of the wider field. Pressures from this dynamic may move business schools closer to "real-world problems" of KIOs. Second, successfully navigating standards implementation forces coordination and interaction to facilitate knowledge sharing where it may not otherwise occur. The meshing of individuals who have powerful professional norms in environments where autonomy is valued and ambiguity is high also occur in other sectors such as health care (Edmondson *et al.*, 2016). As such, we believe that the investigation of our model is warranted within these domains.

As this was a single case, however, we make no claim to this work representing a generalizable result. We accept the largely unique nature of the university setting. Our research was strengthened by deep access to rich data over a prolonged period, albeit in a very specific setting where unique actor and structural characteristics are not generally representative of the wider business and organizational environment. Although we have provided possible links to other mentioned fields which share some specific similarities with our case setting, it is important to acknowledge the contextual limitations of our work. Accordingly, we present our model as a basis for future enquiry when investigating implementation. We encourage other scholars to continue activity-based research within KIOs (Perrin, 2012), as we feel that the dynamics captured in our model may manifest themselves in other implementation settings but contingent on actor identity elements and organizational structure. The interplay of these dynamics would be of value to understand through future work. Particularly, the field would be served with a better understanding of whether our theoretical model applies in cases in which organizations implement a KM practice developed in-house. In these cases, the level of organizational and employee commitment with the KM practice might be higher.

Further research is also needed to test whether our model applies – in part or as a whole – to other types of KIOs such as those organizations based on projects such as engineering (Gardiner, 2016) and R&D centers or where there is a higher level of

connection required with customers such as legal and consultancy services. We would encourage future researchers to pay close attention to identity elements of actors in such research. Finally, although clear variations of divergent action were presented, we did not focus on which path resulted in a superior performance outcome. By incorporating the resource-based view as done by Ambrosini *et al*. (2007), future work could make contributions to understanding how tacit elements influence performance outcomes and better our understanding of how the actions of knowledge workers actually contribute to competitive advantage in real and practical terms.

Note

1. The Association to Advance Collegiate Schools of Business (AACSB International) is a business school accreditation that was founded in the USA. It now has evolved into a body that advances quality management education worldwide through accreditation in accounting programs and business school degree programs. It is largely seen as a significant undertaking to achieve AACSB accreditation, often taking significant time and resources. The Accreditation consists of multiple standards that must be met (as judged by a peer-review visitation team of other deans from accredited schools).

References

Alvesson, M. (1993), "Organizations as rhetoric: knowledge-intensive firms and the struggle with ambiguity", *Journal of Management Studies*, Vol. 30 No. 6, pp. 997-1015.

Alvesson, M. (2001), "Knowledge work: ambiguity, image and identity", *Human Relations*, Vol. 54 No. 7, pp. 863-886.

Alvesson, M. and Sveningsson, S. (2003), "Good visions, bad micro-management and ugly ambiguity: contradictions of (non-) leadership in a knowledge-intensive organization", *Organization Studies*, Vol. 24 No. 6, pp. 961-988.

Ambrosini, V., Bowman, C. and Burton-Taylor, S. (2007), "Inter-team coordination activities as a source of customer satisfaction", *Human Relations*, Vol. 60 No. 1, pp. 59-98.

Anand, N., Gardner, H.K. and Morris, T. (2007), "Knowledge-based innovation: emergence and embedding of new practice areas in management consulting firms", *Academy of Management Journal*, Vol. 50 No. 2, pp. 406-428.

Ataseven, C., Prajogo, D. and Nair, A. (2014), "ISO 9000 internalization and organizational commitment: implications for process improvement and operational performance", *IEEE Transactions on Engineering Management*, Vol. 61 No. 1, pp. 5-17.

Barley, S.R. and Kunda, G. (2001), "Bringing work back in", *Organization Science*, Vol. 12 No. 1, pp. 76-95.

Beck, J. and Young, M.F. (2005), "The assault on the professions and the restructuring of academic and professional identities: a Bernsteinian analysis", *British Journal of Sociology of Education*, Vol. 26 No. 2, pp. 183-197.

Brown, A.D. (2015), "Identities and identity work in organizations", *International Journal of Management Reviews*, Vol. 17 No. 1, pp. 20-40.

Brunsson, N., Rasche, A. and Seidl, D. (2012), "The dynamics of standardization: three perspectives on standards in organization studies", *Organization Studies*, Vol. 33 Nos 5/6, pp. 613-632.

Corbett-Etchevers, I. and Mounoud, E. (2011), "A narrative framework for management ideas: disclosing the plots of knowledge management in a multinational company", *Management Learning*, Vol. 42 No. 2, pp. 165-181.

Crane, L. (2012), "Trust me, I'm an expert: identity construction and knowledge sharing", *Journal of Knowledge Management*, Vol. 16 No. 3, pp. 448-460.

Durand, R. and McGuire, J. (2005), "Legitimating agencies in the face of selection: the case of AACSB", *Organization Studies*, Vol. 26 No. 2, pp. 165-196.

Edmondson, A.C., Higgins, M., Singer, S. and Weiner, J. (2016), "Understanding psychological safety in health care and education organizations: a comparative perspective", *Research in Human Development*, Vol. 13 No. 1, pp. 65-83.

Feld, S.L. (1982), "Social structural determinants of similarity among associates", *American Sociological Review*, Vol. 47 No. 6, pp. 797-801.

Feldman, M.S. and Rafaeli, A. (2002), "Organizational routines as sources of connections and understandings", *Journal of Management Studies*, Vol. 39 No. 3, pp. 309-331.

Gardiner, C.M. (2016), "Knowledge sharing success and resistance in an engineering department: a case study", *Journal of Management & Organization*, Vol. 22 No. 2, pp. 254-271.

Glaser, B.G. and Strauss, A.L. (2009), *The discovery of Grounded Theory: Strategies for Qualitative Research*, Transaction Publishers, New Brunswick, NJ.

Goffman, E. (1961), *Encounters: Two Studies in the Sociology of Interaction*, The Bobbs-Merrill Company, Indianapolis.

Gold, A.H., Malhotra, A. and Segars, A.H. (2001), "Knowledge management: an organizational capabilities perspective", *Journal of Management Information Systems*, Vol. 18 No. 1, pp. 185-214.

Guler, I., Guillén, M.F. and Macpherson, J.M. (2002), "Global competition, institutions, and the diffusion of organizational practices: the international spread of ISO 9000 quality certificates", *Administrative science quarterly*, Vol. 47 No. 2, pp. 207-232.

Helms, W., Oliver, C. and Webb, K. (2012), "Antecedents of settlement on a new institutional practice: Negotiation of the ISO 26000 standard on social responsibility", *Academy of Management Journal*, Vol. 55 No. 5, pp. 1120-1145.

Hislop, D. (2013), *Knowledge Management in Organizations: A Critical Introduction*, Oxford University Press, Oxford.

Holste, J.S. and Fields, D. (2010), "Trust and tacit knowledge sharing and use", *Journal of Knowledge Management*, Vol. 14 No. 1, pp. 128-140.

Jarzabkowski, P. (2002), "Strategy as practice: recursiveness, adaptation and strategic practices-in-use", *Research Paper Series-aston Business School Research Institute* No. 12.

Jarzabkowski, P. (2003), "Strategic practices: an activity theory perspective on continuity and change", *Journal of Management Studies*, Vol. 40 No. 1, pp. 23-55.

Jarzabkowski, P. (2005), *Strategy as Practice: An Activity Based Approach*, Sage Publications, London.

Jarzabkowski, P. and Spee, P.A. (2009), "Strategy-as-practice: a review and future directions for the field", *International Journal of Management Reviews*, Vol. 11 No. 1, pp. 69-95.

Jarzabkowski, P. and Wilson, D.C. (2006), "Actionable strategy knowledge: a practice perspective", *European Management Journal*, Vol. 24 No. 5, pp. 348-367.

Jarzabkowski, P.A., Lê, J.K. and Feldman, M.S. (2012), "Toward a theory of coordinating: creating coordinating mechanisms in practice", *Organization Science*, Vol. 23 No. 4, pp. 907-927.

Jarzabkowski, P.A., Sillince, J.A. and Shaw, D. (2010), "Strategic ambiguity as a rhetorical resource for enabling multiple interests", *Human Relations*, Vol. 63 No. 2, pp. 219-248.

Johnson, G., Melin, L. and Whittington, R. (2003), "Micro strategy and strategizing: towards an activity-based view", *Journal of Management Studies*, Vol. 40 No. 1, pp. 3-22.

Johnson, P., Balogun, J. and Beech, N. (2010), "Researching strategists and their identity in practice: building 'close-with' relationships", *Cambridge Handbook of Strategy as Practice*, Cambridge University Press, Cambridge, MA, pp. 243-257.

Kelloway, E.K. and Barling, J. (2000), "Knowledge work as organizational behavior", *International Journal of Management Reviews*, Vol. 2 No. 3, pp. 287-304.

Kilpatrick, J., Dean, K.L. and Kilpatrick, P. (2008), "Philosophical concerns about interpreting AACSB assurance of learning standards", *Journal of Management Inquiry*, Vol. 17 No. 3, pp. 200-212.

Lampland, M. and Star, S.L. (2009), "Reckoning with standards", in Lampland, M. and Star, S.L. (Eds), *Standards and their Stories: How Quantifying, Classifying, and Formalizing Practices Shape Everyday Life*, Cornell University Press, Ithaca, NY, pp. 3-33.

Lin, C. and Wu, C. (2005), "A knowledge creation model for ISO 9001 2000", *Total Quality Management & Business Excellence*, Vol. 16 No. 5, pp. 657-670.

Massingham, P.R. and Massingham, R.K. (2014), "Does knowledge management produce practical outcomes?", *Journal of Knowledge Management*, Vol. 18 No. 2, pp. 221-254.

Mintzberg, H. (2004), *Developing Managers Not MBAs*, FT Prentice Hall, London.

Nonaka, I. (1994), "A dynamic theory of organizational knowledge creation", *Organization Science*, Vol. 5 No. 1, pp. 14-37.

Nonaka, I. and Takeuchi, H. (1995), *The Knowledge Creation Company: How Japanese Companies Create the Dynamics of Innovation*, Oxford University Press, New York, NY.

Nonaka, I. and Teece, D.J. (2001), *Managing Industrial Knowledge: Creation, Transfer and Utilization*, Sage, Thousand Oaks, CA.

Nonaka, I. and Von Krogh, G. (2009), "Perspective-tacit knowledge and knowledge conversion: controversy and advancement in organizational knowledge creation theory", *Organization Science*, Vol. 20 No. 3, pp. 635-652.

Orlikowski, W.J. (2002), "Knowing in practice: enacting a collective capability in distributed organizing", *Organization Science*, Vol. 13 No. 3, pp. 249-273.

Partington, D. (2000), "Building grounded theories of management action", *British Journal of Management*, Vol. 11 No. 2, pp. 91-102.

Patriotta, G. (2003a), *Organizational Knowledge in the Making: How Firms Create, Use, and Institutionalize Knowledge: How Firms Create, Use, and Institutionalize Knowledge*, Oxford University Press, Oxford.

Patriotta, G. (2003b), "Sensemaking on the shop floor: narratives of knowledge in organizations*", *Journal of Management Studies*, Vol. 40 No. 2, pp. 349-375.

Peltokorpi, V. and Vaara, E. (2014), "Knowledge transfer in multinational corporations: productive and counterproductive effects of language-sensitive recruitment", *Journal of International Business Studies*, Vol. 45 No. 5, pp. 600-622.

Perrin, A. (2012), "The practices of knowledge managers in Lafarge", *Journal of Knowledge Management*, Vol. 16 No. 2, pp. 204-214.

Polanyi, M. (1967), *The Tacit Dimension*, Routledge, London.

Power, M. (2007), *Organized Uncertainty: Designing a World of Risk Management*, Oxford University Press, Oxford.

Reckwitz, A. (2002), "Toward a theory of social practices a development in culturalist theorizing", *European Journal of Social Theory*, Vol. 5 No. 2, pp. 243-263.

Saldana, J. (2009), "An introduction to codes and coding", *The Coding Manual for Qualitative Researchers*, Sage, Thousand Oaks, CA.

Sandholtz, K.W. (2012), "Making standards stick: a theory of coupled vs decoupled compliance", *Organization Studies*, Vol. 33 Nos 5/6, pp. 655-679.

Starbuck, W.H. (1992), "Learning by knowledge-intensive firms", *Journal of Management Studies*, Vol. 29 No. 6, pp. 713-740.

Stensaker, I. and Falkenberg, J. (2007), "Making sense of different responses to corporate change", *Human Relations*, Vol. 60 No. 1, pp. 137-177.

Suddaby, R. (2006), "From the editors: what grounded theory is not", *Academy of Management Journal*, Vol. 49 No. 4, pp. 633-642.

Suddaby, R., Seidl, D. and Lê, J.K. (2013), "Strategy-as-practice meets neo-institutional theory", *Strategic Organization*, Vol. 11 No. 3, pp. 329-344.

Sveningsson, S. and Alvesson, M. (2003), "Managing managerial identities: organizational fragmentation, discourse and identity struggle", *Human Relations*, Vol. 56 No. 10, pp. 1163-1193.

Szulanski, G. (2002), *Sticky Knowledge: Barriers to Knowing in the Firm*, Sage, London.

Szulanski, G., Cappetta, R. and Jensen, R.J. (2004), "When and how trustworthiness matters: knowledge transfer and the moderating effect of casual ambiguity", *Organization Science*, Vol. 15 No. 5, pp. 600-613.

Timmermans, S. and Epstein, S. (2010), "A world of standards but not a standard world: toward a sociology of standards and standardization*", *Annual Review of Sociology*, Vol. 36, pp. 69-89.

Vallacher, R.R. and Wegner, D.M. (1987), "What do people think they're doing? Action identification and human behavior", *Psychological Review*, Vol. 94 No. 1, p. 3.

Weick, K.E. (1993), "The collapse of sensemaking in organizations: the mann Gulch disaster", *Administrative Science Quarterly*, Vol. 38 No. 4, pp. 628-652.

Whittington, R. (1996), "Strategy as practice", *Long Range Planning*, Vol. 29 No. 5, pp. 731-735.

Whittington, R. (2007), "Strategy practice and strategy process: family differences and the sociological eye", *Organization Studies*, Vol. 28 No. 10, pp. 1575-1586.

Zander, U. (2011), "Knowledge and strategy creation in multinational companies", *Management International Review*, Vol. 51 No. 6, pp. 821-850.

Corresponding author

Tahir Hameed can be contacted at: tahir@solbridge.ac.kr