Knowledge Management and Innovation Performance in Australian Service Sector Organizations

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Abstract
This study establishes links between knowledge management (KM) and innovation performance (IP) in Australian service sector organizations. Critical success factors in KM practice that lead to IP followed an analysis of six case studies of service-based organizations and a survey of service organizations. A model of KM practices was developed and validated. Statistical analysis tested individual and combined relationships between the KM model and IP, which subsequently revealed specific KM practices that positively affected IP. Several KM practices predict positive outcomes in IP and therefore, managers can improve their KM practices for greater outcomes in IP.

1. Introduction
An extensive literature review on knowledge management and innovation performance (available from the authors), suggests that knowledge intensive organizations [KIOs] create value through innovation, although challenges emerge in developing innovation as a core competency in these organizations [1]. The complex nature of service sector KIOs includes diverse knowledge assets, different organizational types and countless approaches to KM. Furthermore, different markets place different values on knowledge assets. Given the complexity and the interdependence that characterizes global competition, KIOs must acquire and consume knowledge assets in ways that derive competitive advantage through IP [2]. For Hall [3], once maximizing inputs and extracting efficiency via throughputs achieves the limits of productivity, innovation and KM hold the key to performance and competitiveness. Peter Drucker [4] was quick to recognize links between managing knowledge and competitive advantage through innovation, especially if human capital is a KIO’s principal source of competitive advantage. However, the bulk of literature on innovation focuses on the manufacturing sector. Against the stream, Muller and Dolereux [5] refocus on the services given the likelihood that intangible assets contribute to innovation in different ways depending on the setting [6].

This paper focuses on Australian service sector KIOs. Linked closely to the processes of innovation and renewal within organizations, KM is integral to the development and implementation of a business strategy. Nevertheless, many organizations utilize systems and structures that actually work against the capacity they possess to manage effectively the knowledge they control.

In such lopsided environments, many writers see the potential of innovation as being diminished [7]. Moreover, many senior managers fail to appreciate fully the value of KM as a discrete management function and a unique skill in its own right. This gap in management practices is accentuated because of a paucity of empirical research in the specific relationship between KM and innovation.

In a setting where debates about technology and tangible resources frame management decision-making, this research sought to investigate approaches to KM and identify the relationship between the various manifestations of KM practices and their impact on IP. The study used both quantitative and qualitative data derived from service sector settings.

2. Literature review
Since 2000, articles about KM are characterized by diversity and specialized discourses although the area remains an emerging area of study [8]; [9]. As such, the literature is frequently "unconnected" and would benefit from integrated approaches, which recognize influences from an information technology (IT) orientation, a people-centric orientation and the organizational culture on KM [10]. In this context, paradigm orientations in KM offer a framework for drawing this diverse body of KM literature together. The epistemological foundations of this study are the works of Thomas Kuhn in the physical sciences and
George Ritzer in the social sciences concerning the nature of paradigms. Gloet and Berrell [11] described and identified the paradigm nature of KM and drawing on the above literature, identified three generic paradigm orientations that brace the development of the research model for this study.

2.1 Three paradigm orientations in KM

Within an IT paradigm orientation, people are predisposed to accept various extensions of information processing and the management of business information systems as springboards into KM and utilize approaches that focus on the collection, storage and manipulation of essentially objective or explicit data. In this mindset, methodologies that implicitly construct an organization as an information processing system are employed. This diverts attention to how data is processed, collected and stored, and focuses on structured forms of knowledge. Given this implicit focus in the IT paradigm, most KM tools revolve around information systems and software [12], [13].

People operating within a humanist paradigm focus on the role of individuals and groups in the processes of knowledge sharing and manipulation, particularly concerning highly interpretive forms of knowledge. Other themes in the paradigm include the distinctions between tangible and intangible knowledge or explicit versus tacit knowledge [14]. In addition, other studies explore the role of knowledge and learning at the systems, organizational and cultural level of an organization [15].

Circumscribing these two paradigm orientations are complex organizational contexts and elements including firm size, gender, resource allocation, management styles, individual beliefs and organizational culture. However, the literature suggests that in the organizational context, a strong focus on the elements of management and strategy is fundamental for effective KM regardless of the orientation toward KM.

For instance, recent literature suggests that several organizational or infrastructure elements have the power to influence the outcomes of KM and therefore IP. These factors include a strongly supported and a well-communicated KM strategy [16]. Literature of this type is incorporated into the study as a 'strategic resource-based view (SRBV) of the organization', following Penrose [17] and Wernerfelt [18].

2.2 Dominant views and developments within the IT paradigm

The literature in this field implicitly represents knowledge as easily captured, stored, transferred and disseminated information. In these guises, KM shapes business decision-making. User-friendly IT systems form the backbone of this type of KM. Computerized databases that arrange, store and provide access to an organization’s collective knowledge dominates this area where KM emerges as deterministic and typically includes scanning, monitoring, capturing, measuring and disseminating explicit information. Replete with knowledge repositories, metaphors like the company as computer, intelligent companies and information-age companies succinctly capture the organizational setting. With a practitioner-driven approach to information management, tags like "technology experts", "cataloguers", "archivers", "research analysts" and "debriefers" aptly describe the KM professional in organizations where the terms "information management" and "KM" are interchangeable. Sophisticated IT support with data processing, routing information, query transformation, information sharing, information retrieval and data warehousing systems captures the flavour of the IT paradigm.

In such organizations, KM includes Intranets, data warehousing, implementation systems, decision-support tools and GroupWare. However, a growing recognition that knowledge resides within people accompanies this development. A summary of views above suggests that managers who drive KM from an IT paradigm orientation are predisposed to:

- Deal more readily with explicit knowledge captured and stored in their organization's intranet
- Apply technological rather than people-centric solutions to organizational problems
- View the organizational structure as the primary reference point for decision-making
- View the IT platform as the impetus for knowledge-creation
- Shape HR to fit the organization's IT platform
- Seek and value the opinions of "technology experts", "catalogers", and/or "analysts" in forming management views
- Consider information management and KM as interchangeable.
2.3 Dominant views and developments within the humanist paradigm

In the humanist paradigm, literature highlights the capacity for organizational stakeholders to learn, adapt and reflect on experience, following the direction set by the organizational learning (OL) literature of the 1960s. Approaches focus on conceptualizing and understanding different types of knowledge - for example, individual vs. collective knowledge; tacit vs. explicit knowledge. The first holistic models emerged in the 1970s with new ideas about harnessing knowledge and learning in organizations against certain barriers. Organizational learning focuses on the learning processes in dynamic and changeable settings whereas the "learning organization" is an aspirational term indicating that organizations strive to maximize their capacity to learn and translate the management of learning and knowledge into competitive advantage. While KM has technical aspects, it is primarily concerned with leveraging knowledge in organizations. People are essential to OL, where technical and social approaches combine in interventions that attain maximum organizational effectiveness and competitive advantage through learning resources and knowledge assets.

KM must include concerns for people in the learning processes where people-driven KM generates new knowledge through learning, sharing, collaborating, communicating and building an organization's knowledge assets. Team structures are significant in this process. People-driven KM recognizes importance of sharing tacit knowledge, which enriches narrow and IT-dependent KM. People-focused human resource management (HRM) enriches KM because traditional HRM practices are inappropriate and/or irrelevant to managing knowledge workers. Understanding people and context maximizes return on investment (ROI) from KM, although personality influences how people approach KM. The new HRM links with human capital management and KM within organizations in approaches that articulate the nexus between HRM, human resource development (HRD), quality improvement and KM to surpass conventional HRM functions. KM is an important source of competitive advantage and sustains organizational capabilities through activities that overlap with traditional business functions such as finance, marketing and strategy. A summary of the views above suggests that managers who drive KM from a humanist paradigm orientation are predisposed to:

- Deal more readily with implicit knowledge drawn from sources both within and external to the organization
- Apply people-based rather than technological solutions to organizational problems
- View human capital as the primary reference point for decision-making
- View human capital as the impetus for knowledge creation
- Adapt the IT platform to the needs of HR
- Seek and value the opinions of human resource professional and other stakeholders in forming management views
- Consider KM and "information management" as interdependent ideas

2.4 Dominant views concerning knowledge in a SRBV of organizations

The literature in this orientation highlights organizational competence, which is the ability to sustain coordinated deployments of resources to achieve goals and deliver sustainable competitive advantage through superior knowledge assets. However, organizational strategy depends on dynamic knowledge capabilities and particular KM approaches to deliver sustainable competitive advantage. The ability to implement real-time strategic responses is a core strategic capability, which depends on knowledge capability in an environment where the value of knowledge capabilities dissipates quickly because markets are dynamic and competitive. The ongoing development of knowledge assets and capabilities is essential for organizational success. Unique organizational capabilities based on knowledge and human capital are difficult to copy. Therefore, they provide a source of sustainable competitive advantage - when core competencies and capabilities are integrated, value is created and sustained.

Knowledge capabilities are core capabilities in knowledge-based organizations where KM becomes a meta-capability with the potential to improve lower-order capabilities by leveraging organizational assets to secure competitive advantage. Human capital braces effective organizational cultures that support knowledge workers. New approaches to KM, HRM and HRD deliver competitive advantage through effective practices in areas like selection, training, rewards and incentives. Flexible work environments and empowered employees develop competitive advantage through leadership and teamwork. Although IT and organizational culture initiatives support KM, a significant element in
organizational success is organizational strategy, regardless of industry type. Therefore, connecting strategy and HR is essential for organizational success. HRD and organizational capabilities are linked strategically and in some organizations, this link is the only source of competitive advantage. Managerial abilities as a source of resource value can also be linked strategically.

3. The service sector as a specific case

From the early 2000s, research into KIOs began penetrating the literature. This knowledge helped to address the lack of rigorous research on KM and IP in service sector organizations. Kandampully [1], for example, placed innovation as the core competency of a service organization while Lyons et al. [19] highlighted that different sectors required different approaches. Services innovation must traverse the organization using less formalized approaches to innovation. In manufacturing, innovation is more structured, rigid and formalized, and often unsuited to the service environment. Kuusisto and Meyer [20] situated strategic innovation in services as drivers of new business models with the potential to influence industry-wide activity. Against this background, organizations in the service sector have unassumingly adopted a proactive role in seeking ways to improve IP. Kandampully [1] suggests that the utility of innovation per se in customer driven settings is its role in creating competitive advantage. Therefore, the targets for knowledge assets are customers; while technology facilitates the process, knowledge is the essential element.

Emerging from the new focus on KM and IP in the service sector was a realization that the uniqueness of the sector required different notions about innovation than those previously applied to the manufacturing sector [21]. In this light, innovation in business services presents specific challenges, which include "conceptualizing and defining" innovation and knowing where it occurs within a business and the economic contributions of innovative processes [22]. The literature highlights the variety of approaches to measuring IP. Distinctions include service innovation depending on "knowledge flows", which allows organizations to "leap-frog" directly to best practice and gain comparative advantage [23]. Van Riel et al. [24] highlight the role of inputs in decision-making in ways that systematically reduce the uncertainty frequently associated with "organizational information gathering, diffusion and processing activities". Their study found that innovation success related "positively and directly" to the knowledge assets that resided in the organization's human capital and that "information sharing" mediated very positive effects from intelligence gathering about customers and technology.

4. Methodology

The following research questions [RQs] indicate the scope and depth of the study:

RQ1. To what extent do knowledge management practices contribute to innovation performance?
RQ2. Which critical success factors in KM are significant predictors of innovation performance?

Considering gaps in the literature concerning the relationship between KM and IP in service sector KIOs, this study:

a. Investigated links between KM and IP
b. Identified critical success factors in KM practice that lead to IP
c. Developed and validated a model of KM practices
d. Tested individual and combined relationships between the KM model and IP

The methodology consisted of a literature review followed by both a qualitative and a quantitative component. From the literature three discrete orientations to KM were identified, as well as a range of critical success factors (CSFs) relating to KM practice. The qualitative component, consisting of six intensive case studies, served to develop a theoretical framework based on the literature. A multiple cross-case analysis method was applied to the case studies.

A number of hypotheses concerning the relationship between KM and IP were then developed, as well as a model of KM attempting to explain the relationship between KM and IP. This was followed by a quantitative component consisting of a survey of 122 Australian service sector organizations and testing of the hypotheses using multiple regression analysis. A random sample of managers drawn from Australian service sector organizations participated in the survey.

The hypotheses [H] below were developed from the literature and articulated through deductive reasoning. The eight hypotheses about KM and IP are:

H1. A model of KM based on elements of IT, people and the organizational culture is a reliable and valid instrument for measuring and predicting the relationship between KM practices and IP.
H2. Within organizations, there is a significant and positive relationship between an integrated approach to KM (incorporating elements of IT, people and organizational culture) and IP.
H3. Within organizations, the 'softer' dimensions of people and organizational culture are better predictors of IP than the 'harder' dimensions related to IT.

H4. A strong focus on IT, heavy investment in IT and IT department responsibility for KM are significantly positive predictors of IP.

H5. A focus on people, tacit knowledge, investment in HRD and rewards for knowledge work are significantly positive predictors of IP.

H6. Senior management support for KM and innovation are significantly positive predictors of IP.

H7. Effective communication, collaboration and a shared language regarding KM in an organization are significantly positive predictors of IP.

H8. A knowledge focused business strategy and a clearly communicated KM strategy are significantly positive predictors of IP.

H1 derives from the literature, which suggests that KM approaches can be based on elements of IT, people and organizational culture for successful KM. However, given the growing body of literature that recommends integrated models of KM, H2 conjectures that a model which integrates these three elements would be a better predictor of IP in organizations as opposed to models based predominantly on single elements. The third hypothesis (H3) is based on the literature, which suggests that people-centric KM approaches and elements of organizational culture drive IP to a greater extent than IT approaches. These hypotheses were tested using the data collected from the research survey instrument.

H4 to H8 were derived not only from the literature but also from the application of the theoretical framework to the case studies in this research. The qualitative analysis of six service sector organizations who had all won an Australian Business Excellence Award (ABEF) yielded a number of critical areas relating to management and leadership where KM contributes to IP. From the case study analysis, it was hypothesized that certain KM practices are better predictors of IP than others. Although derived from the literature and the six case study organizations, H4 to H8 were tested using the data collected through the responses (n=122) to the survey. In testing the hypotheses through regression analysis, the purpose was to establish empirically whether particular management practices relating to KM are better predictors of IP than others. The following figure contains a link diagram, showing the hypothesized relationships in this study.

The results of this research may also shed light on the means by which to manage knowledge to achieve sustainable innovation, rather than aiming for haphazard forms of innovation that lack long-term benefits and which may not be easily replicated. Sustainable innovation has human, social and management dimensions, and modern organizations face significant challenges on all these levels in order to gain and maintain competitive advantage. For managers, this involves exploring ways in which to develop new forms of knowledge, of embedding this new knowledge within an organization, as well as managing flows of information, knowledge and experience.

Figure 1. The hypothesized relationships

Leading researchers acknowledge the strong links between managing knowledge strategically to develop particular organizational capabilities and positive outcomes in IP and competitive advantage [25]. Carneiro [26] proposes that innovation and competitiveness are functions of KM but only when an organization values intellectual capital, considers knowledge as a strategic resource and values HRD.

5. Major Findings

The literature review indicated that KM is a multidimensional construct and that various orientations toward KM exist. However, much of the literature is anecdotal and descriptive in nature, which creates a significant gap in empirical research concerning the relationship between KM and IP. This is particularly evident in service sector industries. Using a theoretical framework derived from the literature, the case studies identify several key areas in which KM contributes to IP. The responses of the participants suggest that the contributions came from the specific areas of strategy, communication, management and leadership, IT, HRM and learning. These insights generated a model of KM practices (the KMA model). The KMA model had validity and reliability in predicting the relationship between KM and IP. The model accounted for the influences of an IT orientation, a humanist (or people-centric) orientation and the organizational culture on approaches to KM resulting in IP. In this study, all
approaches to KM contributed positively to IP although the 'softer' people-centric and organizational culture elements had a higher predictive capacity compared to the 'harder' aspects of IT.

Table 1. Multiple regression analysis H1, H2 and H3

<table>
<thead>
<tr>
<th>Factor</th>
<th>Variables</th>
<th>Beta</th>
<th>T</th>
<th>Sig T</th>
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<tr>
<td>F1</td>
<td>KM-IT</td>
<td>.108</td>
<td>1.87</td>
<td>.003</td>
</tr>
<tr>
<td>F2</td>
<td>KM-People &amp; Org Culture</td>
<td>.155</td>
<td>3.52</td>
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While the R square values may not be as high as desired, they are still considered to be of statistical significance in business and social science research. VIF and tolerance checks were made to ensure that multicollinearity were not an issue, Durbin-Watson values were also within acceptable limits, and the normality assumption was tested and met. Residual plots displayed normal patterns.

The statistical analysis identified specific predictors of IP. The contributions of the quantitative section of this study included the identification of particular KM practices that positively influence IP in Australian service sector organizations. These particular KM practices were positive and significant predictors of IP and include:

- Senior management support for KM
- Clearly communicating a KM strategy
- Promoting a shared language of KM
- Rewarding knowledge work
- Investing heavily in IT
- Making the IT department responsible for KM
- Investing heavily in HRD
- Linking KM to the business strategy
- Making business people-centered
- Decentralizing power structure
- Linking IT, HR, strategy and learning

Table 2. Multiple regression analysis H4

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<th>Sig T</th>
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<tr>
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<tr>
<td>hum10</td>
<td>Investmt HRD</td>
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Table 3. Multiple regression analysis H5

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<tbody>
<tr>
<td>org1</td>
<td>Snr mgt support KM</td>
<td>.345</td>
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Table 4. Multiple regression analysis H6

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<th>Sig T</th>
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<tr>
<td>org3</td>
<td>Shared language KM</td>
<td>.313</td>
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Table 5. Multiple regression analysis H7

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<th>Sig T</th>
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<tr>
<td>org8</td>
<td>Comm flows freely</td>
<td>.006</td>
<td>0.069</td>
<td>.945</td>
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Table 6. Multiple regression analysis H8

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<tr>
<td>Multiple R</td>
<td>.526</td>
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5.1 Implications for Managers

This study suggests that managers and KM champions need a thorough understanding of the factors that lead to success in KM activities and how to direct KM initiatives that engender IP. The following section discusses the implications for managers of organizations engaged in KM initiatives.

The development of common understandings about KM is essential for effective KM practices that lead to IP: Given that the literature indicates that no shared language or universally accepted definition of KM exists, multiple understandings within a broad approach often drive KM activities. Managers can address the confusion that often arises from a lack of shared understanding of KM by defining precisely what KM means for their organization. A common definition of KM should be created in line with the business strategy and based on an understanding of the context and environment in which the organization operates. Managers should constantly seek to articulate the linkages between KM and innovation. Once articulated, the manager's role includes an education program to ensure employees and other stakeholders become cognizant of these common understandings. With this understanding, KM supports IP. Effective communication practices are essential in this context.

Integrated approaches to KM are more likely to support IP: A growing opinion in the literature is that KM initiatives should reflect a balance between elements of technology on the one hand, and people and organizational culture on the other. Approaches too heavily skewed in one direction are less likely to be successful. Managers and KM champions, therefore, can address this balance by ensuring that they possess a sound understanding of operations across the gambit of business functions, which include IT, HRM, OD and OL.

Successful approaches to KM require significant investment in IT and a sound IT infrastructure: Sophisticated information systems and a sound IT infrastructure form the backbone of successful KM, and providing these tools actually supports KM initiatives.

Training and HRD are necessary for innovation and IP: Managers must ensure that significant resources are directed toward training and development (T&D) to support KM efforts. Ongoing training and HRD is expensive, so managers need to view these activities more as an investment in KM and innovation rather than a cost. Managers also need to ensure that these activities are closely aligned with the overall business strategy in order to maximize the benefits of training and HRD. However, the timing of these activities is crucial - employees need to be able to practise and develop their skills immediately after training interventions or the benefits may dissipate. While training supports the ongoing development of a skills base, HRD activities with a longer-term development focus supports learning within an organization.

Relationship management is important because relationships support KM, knowledge sharing, teamwork and collaboration: Good relationship management within an organization can lead to a variety of forms of collaboration that support knowledge sharing. Smart managers recognize the important role of relationship management to foster employee engagement, provide motivation and gain loyalty. Outside the organization, strong customer relationship management provides avenues for valuable feedback, engenders customer loyalty and builds a firm's reputation.

Organizational structure matters because structures like bureaucracy create a silo mentality, which works against KM, innovation and IP: Managers should be acutely aware of their own organizational structure to ensure the structure does not impede KM initiatives. For example, hierarchical and bureaucratic structures create barriers to communication, knowledge flows and spontaneous activity, which are characteristic of healthy KM within an organization.

KM and innovation initiatives require the overt support of senior managers: In order to foster KM and innovation within organizations, support from senior management must be ongoing. There is a clear need for middle management and KM champions at any level of the organization to 'sell' KM to senior management. It is unlikely that KM will be prolonged in any organization without senior management support, which ensures that KM maintains its strategic imperative with a continued commitment of resources.

KM strategy must be clearly communicated across the organization and directly linked to the overall business strategy: Managers should align KM
strategy with the overall business strategy and communicate this thrust across the organization. Managers responsible for KM should also ensure that KM strategy is aligned with other functional areas such as HRM, marketing and finance. If IP is an organizational goal of KM, linking KM to functional areas elevates KM to a key organizational priority. As such, it is likely to be supported over the longer term. Knowledge management requires time to achieve its objectives and reap the associated benefits. Strategic links and embeddedness are characteristic of successful KM.

A strategic focus on innovation supports and strengthens the links between KM and IP: Managers must link strategic innovation and intellectual capital as a core organizational asset. If managers want innovation to take root, the development of a strategic plan highlighting innovation as a priority through the organization and across business functions is essential. This process ties KM to the organization’s plans for strategic innovation.

Successful KM for IP requires a champion: If someone assumes responsibility for KM, the greater is the likelihood that KM will be supported across the organization. Divided responsibility for KM generally results in confusion, turf wars and split loyalties. Managers with KM foremost in their priorities should nurture KM across the organization. However, since KM crosscuts all business functions, KM champions must be comfortable and competent to work across business areas to maximize KM success.

Organizational culture needs to be open in order to encourage KM initiatives for IP with knowledge and information flowing up, down and across the organization: Organizational culture can either nurture or hinder KM and IP. Managers with this level of understanding are more likely to promote sound and effective communication processes within their organizations. An open culture supports effective communication up, down and across an organization and this openness in turn supports KM initiatives. This requires good feedback loops through employee surveys, suggestions for improvement, forums for discussion, and generally keeping a finger on the pulse within the organization.

A learning culture supports KM and innovation: Managers must work to foster a culture of learning, which includes valuing learning as an activity and supporting structures that promote learning. Small teamwork groups, face-to-face meetings and a range of other opportunities promote knowledge sharing. However, while some managers are uncomfortable with various aspects of knowledge-sharing activities such as developing trust and the notion of learning from mistakes, a strong learning culture ensures that organizations can learn from unsuccessful projects.

KM and innovation flourish in organizations that reward knowledge work: While KM requires clear communication, managers must also embed knowledge work in the organization’s performance management system. However, measuring performance requires clearly defined indicators. Managers actively engaged in the process of setting clear expectations around performance should highlight the need for continuous improvement through measuring KM functions. In this context, rewarding outcomes related to knowledge creation, knowledge sharing and innovative solutions reaps significant benefits for both KM and IP.

When change is managed effectively, opportunities are created for KM and IP: Managers responsible for KM should be aware that the continual reinvigoration of intellectual capital through KM is a source of innovation. In this process, opportunities for innovation can be found in the interface between an organization and its environment. By understanding and working across such interfaces and boundaries, KM facilitates change within organizations.

There is no ‘one-size-fits-all’ recipe for successful KM or innovation: KM is a highly contextualized endeavour. Managers need to understand that while there may be a range of factors that are likely to positively impact KM and innovation initiatives; these must be contextualized for individual organizations. Those responsible for KM need a sound understanding of the business goals and objectives, as well as a thorough understanding of the internal and external environments in which the organization is operating.

6. Directions for future research

Based on the literature review, there is a shortage of rigorous empirical research concerning the relationship between KM and IP. This is likely due to the complex and multifaceted nature of the underlying concepts relating to KM, innovation and IP. Existing literature in the areas of KM and innovation does not extend to examining in detail the nature of IP and the ways in which KM might positively affect IP. Most of the existing research is inconclusive and in many cases, limited by methodology and scope.

Overall, the findings would indicate that organizations with a KM approach involving a combined focus of IT, people and organizational culture based practices are more likely to achieve IP. Future research should involve larger samples to
ensure greater generalizability of results. Longitudinal studies to determine whether the predictors of IP are consistent across economic cycles, in different types of economies and in particular, service sector settings would all contribute to expanding the literature. Since KM and innovation are both ongoing and dynamic processes, the research methodology should consider this aspect; a one-time survey will only yield a snapshot of the situation at that given time. In addition, the transferability of ideas about knowledge management and innovation performance across national cultures should also be investigated.

Additional research of a qualitative nature would allow detailed studies involving KM experts and employees directly engaged in KM practices. It would allow researchers to tap into their experience. Since experience is in the tacit domain, it would allow for greater richness of data. Allowing participants to explain and articulate complex relationships could be a source of reliable evidence, which can be tested by other means and in a more systematic fashion.

Interestingly, the study identified a gap between the KM practices that firms believed were important, and those that actually impacted positively on organizational performance. There is also a lack of consensus regarding metrics purporting to measure organizational performance in general and IP in particular. Even metrics associated with the measurement of knowledge creation within organizations are not agreed upon [22]. Given the general lack of consensus in the academic literature concerning innovation measurement metrics and the often arbitrary selection of IP metrics [28], there is a considerable gap in the literature concerning the selection of measurement metrics appropriate to understanding the linkages between KM and IP.

While no single knowledge structure is appropriate, managers need to understand more comprehensively the knowledge assets they possess, through a process of self-awareness [29]. There is a growing body of literature linking social capital and KM, arguing that social capital, like human capital and intellectual capital can make a significant contribution to the success of KM initiatives. However, as Manning [30] suggests, social capital constructs are complicated and context-dependent.

7. General Conclusions

Knowledge management and IP are amorphous concepts, not clearly defined and contextual in nature. Critical success factors for KM span a broad range of areas including technology, people and organizational culture. Innovation performance measures and KM critical success factors need to be contextualized for individual organizations. The potential to realize IP may be severely limited when KM only operates in one orientation. This research supports the need for an integrated approach that recognizes the nexus between IT, people and organizational culture.

Tacit knowledge leads to innovation, but without finding the links to accessing tacit knowledge through KM, little contribution can be made to innovation generally. Knowledge passes through people, not the systems they develop. Knowledge is shared through human interaction, even if it is mediated by IT. This is why it is important to build trust and confidence, to nurture relationships and to ensure the engagement of employees. Without awareness and interest in KM goals and strategies, employee engagement simply will not occur to foster IP.

It can be argued that people still tend to view and understand KM through its IT side. Much of KM still involves the management of explicit forms of knowledge, which is the domain of IT. The people side of KM remains largely misunderstood. Even though organizational stakeholders recognize the importance of people and organizational culture elements to successful KM, many managers remain unsure about how to develop the people and culture side of KM. Those people working in the people and culture side of KM are often located in areas such as OD, change management or HRM. As the survey canvassed managers only, we can assume that managers as a whole are more comfortable working with explicit forms of knowledge and IT based approaches to KM. For Garvey and Williamson [31], the continual reinvigoration of intellectual capital through KM by organizations is at the core of innovation. In this process, the source of innovation lies on the interface between an organization and its environment in a proactive process that involves constructing a conceptual framework, imposing it on the environment and reflecting on the interaction [32]. Knowledge management facilitates the embracing of change within organizations. Once change is acknowledged and embraced, there is greater capacity for innovation. As Davenport and Prusak [33] suggest, innovation occurs at the boundary of mindsets.

This study has highlighted the role of knowledge in innovation, as well as the ways in which people's knowledge, thinking and behaviour can influence the process of innovation. Given the huge interest in innovation in economic, policy and business contexts, it is important to bear in mind that without
knowledge, there is no potential for innovation. As such, the management of knowledge may hold the key to increasing IP in organizational contexts.

8. References


