The Gatekeeper and the knowledge environment—
who they are, how they work Empirical evidences
from High-tech Manufacturing and R&D Firms

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Abstract

Purpose of the Study: The purpose of this study was to critically study the role of the Knowledge Gatekeeper within the manufacturing and high tech selected case studies and by explaining who they are, how they work and identify and analyse the barriers to knowledge creation and knowledge sharing.

Methodology: The research was guided by an inductive approach with a multiple case study strategy. Research instruments included a questionnaire and interviews from respectively 105 and 40 respondents.

Findings: In the African Manufacturing context, and in absence of sophisticated technologies and highly qualified personnel, technical knowledge can be obtained from organizational informal network. Four forms of knowledge gatekeepers are operating in between a formal and informal organisation network. They include Tecknow-logical Knowledge Gatekeepers (TKIG); Communities of Practices (CoPs), Key Persons (KP) referred to sometimes as Key Man all collect information, they vet and contextualise it before they can share or transfer to their professional networks.

TKIG people are predominantly operating within the boundaries of an informal network. They are not fulfilling an administrative role or any contractual obligation. They are inclined to share information and knowledge with only a few technological experts within their network from whom they expect some level of peer recognition by citing their contributions in meetings, financial rewards, in findings reporting, and Intellectual property rights.

Key Persons and CKO are acting as key people because this is part of their daily routine jobs and they have been appointed by the organisation. They are not necessarily the experts. They are considered as “key people” for the daily operations and are operating within a formalised network of the organisation.

Communities of Practice (CoPs) constitute a form of KM with a collective relationship with an element of TKIG as a sub-set. CoP is perceived to be a source of transformational power and a way through which knowledge is accessed from organisational informal network that is available within.

Key barriers to successful knowledge management are trust, the relational context, and the identity between the source and recipient of knowledge. These factors are reflected in the form of formal and informal procedures that are put in place for members to abide with.

Originality: This study demonstrates the complexity of knowledge management using knowledge gatekeepers. We defined who they are, and discussed the barriers that firms need to consider as part of their knowledge management strategies.

Key Words: Knowledge Gatekeepers, Knowledge Management Strategy, Organisation Knowledge, CoPs, Manufacturing, R&D, Rwanda, Uganda.

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Literature Review

High-tech manufacturing and R&D work requires generous amounts of diverse technical knowledge and non-technical knowledge. The most critical requirement for these industries is the technical knowledge. As Cronin and Taylor (1994) shows, manufacturing and R&D and expert persons spend about 95% of their time gathering and processing technical knowledge. DiBella, (1995) who conclude that successful high-tech manufacturing and R&D work requires much technical communication between high-tech manufacturing and R&D.

Allen and Cohen (1969); Allen (1977), DiBella (1995) observed that successful high-tech manufacturing and R&D work involves much task interdependence; a rapidly changing task environment, which results in a rapidly changing technical knowledge needs. The R&D and manufacturing industries are predominantly oriented towards a strong culture of team work, knowledge sharing and continuous learning through what (Wenger 1998) called a peripheral participation.

From where and how a high-tech manufacturing or R&D experts obtains useful expert knowledge is an overriding concern for management. At least for now we know that; according to (Allen, 1977), technical knowledge can be obtained from trusted, well exposed colleagues in one’s network and he calls them “knowledge gatekeepers” ibid pg 144. Other people however add that technological knowledge is most effectively and efficiently obtained from colleagues within the informal organisation Rychen, and Zimmermann, (2008), (Ericcson 2008, 2009). An informal organisation is the network of colleagues and industry associations to which organisational employees talk to without direct control by their employers and participation is a voluntary activity.

It is often claimed that organisations such as Manufacturing or Research and Development (R&D) are experiencing a shortage of research into knowledge management mechanisms and strategies (read here knowledge creation, storage, sharing transfer) and the research into the use of gatekeepers inside and inter-firm networks remain in its infancy. The research into this mechanism of knowledge management using Gatekeeper as well, their role remains somewhat lacking a framework, and the current definition of who they are and how they work has been subjected to question (see for example Morrison, 2008; Harorimana, 2009 and Brazilian, Nahon , 2009). Brazilian-Nahon (2009) review of the research progress thus far shows some of critical shortcomings. For example a field analysis shows that only a handful of Management Science, Management Information Systems and Information systems articles have studied knowledge gate keeping seriously. In Management Studies in particular, there is a far much lower appearance of studies on gatekeepers (Barzilian-Nahon 2009). Barzilian-Nahon identifies challenges in this research amongst others: an inappropriate framework and adds that only a few vertical researches all converging on towards Allen’s (1977) definition of gatekeepers of knowledge-which is in its present form questionable. For the purpose of clarity, it seems that since Allen’s (1977) and earlier work by Allen and Cohen (1969), every other researcher has followed vertically Allen’s model and his definition. The implications of this is that, argues Brazilian-Nahon; the concept has mainly been used for the purpose of articulating ideas or to serve as

\[ \text{ibid} \]
metaphors aimed to characterize a certain state rather than for a fully developed theoretical framework, (Brazilian-Nahon; 2009). Until recently, some academics started to question whether the gatekeeper relationship remain an informal one and if indeed the nature as well as the issue of who the knowledge gatekeepers are talking to and whether their work should be seen as part of (Harorimana, 2009). Further suggestions have been made amongst 1) the difficulties associated with attempts to define the knowledge gatekeeper may also be associated with prevailing confusions around the study area where knowledge gatekeeper research belies (Bolisani, 2008), 2) The confusions about the differences between the people and organisation cultures, systems as well as individual dynamics as advocated by Nonaka and Takeuchi (1995), 3) Lack of clarity and agreement on methodologies for those who are researching the concepts of knowledge gatekeeper (Bolisani, 2008) and that allows “unconventional” methods or to say the least, using speculative methods (Petruzeli, 2008) 3) The lack of clarity and agreement on the definition of what constitute Knowledge Management itself, Harorimana (2009), Holden (2009) a further question could be asked: 4) What are the motives which lead to active involvement of a knowledge gatekeeper? And furthermore the need to understand the all under-researched factors that lead to existence of gatekeepers such a monitory value, a lack of expert knowledge, or a sense of professional development, henceforth, professional satisfaction need to be explored and unblocked. Thus far diverse challenges related to knowledge gatekeeper success cannot be far different from those observed in knowledge management initiatives.

Contributors in an edited book (See Harorimana, 2009) have demonstrated that KM is shaped by three important perspectives; namely (a) information-based, (b) technology-based, and (c) culture-based. The last of these perspectives highlights the importance of organisational culture in the KM process. Moreover, what is observed from several studies is that not all KM processes require high investment in technology. More importantly, successful use of the technology is often dependent on the incorporation of KM behaviour into the organisational culture. That is, the organisational culture as defined by Schein (1990:111) where culture is: 

"...a pattern of basic assumptions, (b) invented, discovered, or developed by a given group, (c) as it learns to cope with its problems of external adaptation and internal integration, d) that has worked well enough to be considered valid and, therefore e) is to be taught to new members as the f) correct way to perceive, think, and feel in relation to those problems ", and where Wilkins and Dyer (1988) suggest that culture “is [composed] of the values, competencies, and beliefs of a group of people that strongly influence whether and how organizational strategies are implemented. (p. 522).”

Using current definition as laid down by Allen (1977:144), Harorimana (2008) conducted an empirical study and his findings suggests that knowledge gatekeepers could as well be a communities of practice (CoP) (see Wenger,1998), a firm and or an expert. The basis of that is that CoPs members are collectively qualified to certain degree to meet the definitional requirement as it is, such as being technically competent, and in addition they are collecting information, vets it, and distribute this information to those who may be interested (Allen, 1977:144)-whether the experts constitute a sub-set of a CoP remain a further issue that has not been analyses thus far.

Historically, CoPs were supposed to play an important role in providing a physical, social, and cultural context where the exercise and growth of knowledge takes on meaning and purpose
(Choo, 1996), it is this basic social infrastructure that enables CoPs to externalise both their tacit and codified knowledge through transfer processes.

There seem to be an agreement in recent studies that the basic characteristics of gatekeepers include interactions of people, a shared view of the world, and a certain degree of shared identity, they are thus connected and in certain ways they are coordinated (see Malipiero et al 2005, Petruzelli, 2008; Ganon, 2008, Morrison, 2008, Harorimana, 2008). These properties though have an existing scientific basis in theory of social learning traditionally referred to as Communities of Practice (see Wenger, 1998).

It follows that future studies should really help us to understand who the knowledge gatekeeper is and what is the role in the Knowledge Management Systems (KMS). As a start, this study will attempt to respond to some of those questions using the Manufacturing and High Tech Industries as case studies. Furthermore we will attempt to respond to two key issues:

1) Explaining the role of the Knowledge Gatekeeper within the manufacturing and high tech selected Case studies and
2) An identification and discussion of the barriers to knowledge creation and knowledge sharing.

The Research Strategy, Methods and Philosophical Approach

This research follows a deductive philosophy with a multiple case study strategy. Multiple Case studies are used for several real world examples to obtain knowledge depth of the topic to draw lessons for the entire assessment (Yin, 1994, 2009). The case study aims, in complex situations, to meet questions of How and Why from concrete examples, carefully chosen according to the objectives of the evaluation. This tool provides an empirical and often more credible, in situations such as the one we are investigating and where basic knowledge is lacking (Yin 2009). In this case Rwanda and Uganda lacks any basic research on the use of KG, and in general, KM research is near-to nonexistent.

The samples: Two level sampling. The case studies are 8 manufacturing companies with at least 250+full time employees each, they existed for at least five years. Two R&D companies one in Uganda and the Other in Rwanda. The R&D companies have been in this business for at least ten years each and they employ at least 60+ employees. 105 questionnaires were returned by senior and middle and operational floors team leaders in manufacturing and R&D managers. 20 industry senior officials and industry leaders were interviewed.20 employees were interviewed to clarify some of the issues raised in questionnaires and industry leader’s interviews.

Measuring reliability: Cronbach’s Coefficient Alpha was used to measure internal consistency for reliability. This measurement applies to the quantitative instrument questionnaire because the questionnaire will use a Likert-type scale. A Likert scale uses a specific range from strongly agree to strongly disagree. Cronbach’s Coefficient Alpha offers a coefficient that approximates the consistency of scores on a particular instrument (Creswell, 2005).

__________________________
3 See research questionnaire appendix 2
4 See interview questionnaire appendix 1.
Findings and Discussions

The Gatekeeper and the knowledge environment

At the start, we needed to understand respondent’s level of understanding of the KM environment as well as their own understanding of KM systems. Below is the result:

Figure 15 and Figure 16 depicts the percentage of respondents’ evaluation of expertise about their KM systems. (33%) of the respondents describe their employees as having basic understanding of the knowledge management system within their organization. (27%) of the respondents reported having an intermediate knowledge of the knowledge management system within their organization.

Another important aspect was to establish a baseline of how successful Senior Managers would rate the success of their current knowledge management systems presented as they are now.

On the question of how successful they think that their KM systems are. Figure 1: Respondents Understanding of Own Organisation Knowledge Management Systems depicts the frequency distribution of the success of the KMS in the survey respondent's organization. Eighty-two percent of the respondents describe their KMS as a success. Twenty percent of the respondents did not know if the KMS was a success.
Overall result shows that (82.5%) believed that their KMS was a success, as opposed to those who disagree (7%) and do not know (3%). This situation reflects the fact that those interviewed were considered as key people in knowledge sharing process or at least they do have some level of involvement in the KM within the organisation. There was a general expression of concerns from across the respondents in the above categories. For example respondents identified a critical shortage of critical mass of technical people, the lack of technological knowledge, high costs involved in purchasing and maintaining intelligent systems, and KM computer based systems, as key barriers. None of the surveyed companies had any advanced usage of intelligent systems for example, and the internal processes are predominantly manual. The use the knowledge gatekeeper (with some differing degree of use) was highlighted as one of major way they access knowledge.

The Gatekeeper definition can vary according to level of knowledge intervention

The need to clarify this degree is presented. 145 respondents (of these, those interviewed were 40 and those who responded to the questionnaire 105) both asked to distinguish these categories). Responded give categorises gatekeepers according to their level of involvements and to which level

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5 Respondent themselves were selected on the basis that they had to fulfill one or more roles a) a KG, a TKG, a Knowledge Leader (key person), d) a Director of Knowledge Transaction/or CKO.
The gatekeepers belong to at least three distinctive classes:

- The Subject Expert comparable to the Technological knowledge gatekeeper
- The Generalist
- The Knowledge Administrator

The Subject experts include the where TKG. The TKG- external the organization (28.97%), TKG – internal the organization (16.55%), a have access to expert oriented knowledge and they are more interested into high level kind of proven scientific knowledge. In this case we shall introduce the concept of techknow-logical gatekeepers (TKIG). We choose to use this new concept to emphasise on the techne-knowledge which is absolutely context relevant for a particular problem where the expertise is required.

The Generalist includes KG (20%) and key person (13.79%).

The Knowledge Administrators (12 or (8.28%). are all those who are perceived as part of the functional appointments and they include knowledge transaction leaders, Chief Knowledge Officers.

**An Overlapping role**

Whichever the role and at which level of involvement, the gatekeeper is the source of knowledge (with the quality being a distinctive factor), they demonstrate a some degree of “collecting, vetting, searching, and re-packaging” knowledge such a way colleagues, departments and network members can find the knowledge provided useful to them. There is a degree of self-ensuring, self-censuring before one’s commit to share with external members. It is this self-discipline that seems to bring in quality, self-discipline and commitment which is generally found among professionals.

**To whom does the gatekeeper talk to?**

The question to who do they talk to has been raised as a concern before. We put this question to all those identified in **Figure 3: Distribution of roles in different categories of knowledge gatekeepers in companies**. Below are the answers:

<table>
<thead>
<tr>
<th>Description</th>
<th>Count</th>
<th>Cumulative count</th>
<th>Percent</th>
<th>Cumulative percent</th>
<th>Firms with at least 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>TKG (outside own organization)</td>
<td>42</td>
<td>42</td>
<td>28.97</td>
<td>28.97</td>
<td>10</td>
</tr>
<tr>
<td>TKG (inside own organization)</td>
<td>24</td>
<td>66</td>
<td>16.55</td>
<td>45.52</td>
<td>10</td>
</tr>
<tr>
<td>KG</td>
<td>29</td>
<td>95</td>
<td>20</td>
<td>65.52</td>
<td>10</td>
</tr>
<tr>
<td>Key Person</td>
<td>20</td>
<td>115</td>
<td>13.79</td>
<td>79.31</td>
<td>10</td>
</tr>
<tr>
<td>Knowledge Transaction, CKO.</td>
<td>12</td>
<td>127</td>
<td>8.28</td>
<td>87.59</td>
<td>3</td>
</tr>
<tr>
<td>Don’t know</td>
<td>18</td>
<td>145</td>
<td>12.41</td>
<td>100</td>
<td>-</td>
</tr>
</tbody>
</table>

Figure 3: Distribution of roles in different categories of knowledge gatekeepers in companies.
<table>
<thead>
<tr>
<th></th>
<th>Country</th>
<th>RWANDA</th>
<th>UGANDA</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>With my colleague (KG) in this company. I would trust my colleague with knowledge and information I share with them.</td>
<td>STRONGLY AGREED</td>
<td>Count</td>
<td>19</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td></td>
<td>% within Country</td>
<td>42.2%</td>
<td>20.0%</td>
</tr>
<tr>
<td></td>
<td>AGREED</td>
<td>Count</td>
<td>16</td>
<td>26</td>
</tr>
<tr>
<td></td>
<td>% within Country</td>
<td>35.6%</td>
<td>43.3%</td>
<td>40.0%</td>
</tr>
<tr>
<td></td>
<td>SOMEWHAT DISAGREED</td>
<td>Count</td>
<td>5</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>% within Country</td>
<td>11.1%</td>
<td>23.3%</td>
<td>18.1%</td>
</tr>
<tr>
<td></td>
<td>FULLY DISAGREED</td>
<td>Count</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>% within Country</td>
<td>2.2%</td>
<td>11.7%</td>
<td>7.6%</td>
</tr>
<tr>
<td></td>
<td>STATEMENT NOT APPLIED</td>
<td>Count</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>% within Country</td>
<td>8.9%</td>
<td>1.7%</td>
<td>4.8%</td>
</tr>
<tr>
<td>Total</td>
<td>Count</td>
<td>45</td>
<td>60</td>
<td>105</td>
</tr>
<tr>
<td></td>
<td>% within Country</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Figure 4: who do they talk to?

<table>
<thead>
<tr>
<th></th>
<th>Country</th>
<th>RWANDA</th>
<th>UGANDA</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>I prefer to call a colleague outside the company</td>
<td>STRONGLY AGREED</td>
<td>Count</td>
<td>13</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td></td>
<td>% within Country</td>
<td>28.9%</td>
<td>23.3%</td>
</tr>
<tr>
<td></td>
<td>AGREED</td>
<td>Count</td>
<td>8</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>% within Country</td>
<td>17.8%</td>
<td>26.7%</td>
<td>22.9%</td>
</tr>
<tr>
<td></td>
<td>SOMEWHAT DISAGREED</td>
<td>Count</td>
<td>12</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>% within Country</td>
<td>26.7%</td>
<td>31.7%</td>
<td>29.5%</td>
</tr>
<tr>
<td></td>
<td>FULLY DISAGREED</td>
<td>Count</td>
<td>7</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>% within Country</td>
<td>15.6%</td>
<td>16.7%</td>
<td>16.2%</td>
</tr>
<tr>
<td></td>
<td>STATEMENT NOT APPLIED</td>
<td>Count</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>% within Country</td>
<td>11.1%</td>
<td>1.7%</td>
<td>5.7%</td>
</tr>
<tr>
<td>Total</td>
<td>Count</td>
<td>45</td>
<td>60</td>
<td>105</td>
</tr>
<tr>
<td></td>
<td>% within Country</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Figure 5: who do they talk to?

KG prefers to speak to other KG colleague. Which colleague is this- we asked. The proportion of those who speak to colleagues in their network is was 70% in Uganda and Rwanda 60%. In the same time however, some have ruled out the possibility to speak to a colleague from outside their company including when they have technical problems. (Rwanda has 42%; Uganda 48%). This number has come from those companies that do not promote knowledge sharing, and are rewarding individual performances rather than team-based efforts. Another observation was that those respondents are working in companies with strong top down management culture, with
policies and procedures which forbid people from sharing information even across organizational networks without management approval.

**Can leading firms be knowledge gate keepers?**

It seems that in Rwanda and Uganda exist firms with a leading role in Knowledge Gate keeping. We have named those firms as R1, R2, R3, R4, and R5 for all those firms manufacturing whose regional head office is located in Rwanda and U1, U2, U3, U4 and U5 for all those knowledge gatekeepers whose regional head office is located in Uganda.

**Activities of firms**

It should be highlighted here that these firms are all engaged in product development and in some instances crossing the boundaries into the informal organisation including outreach to communities where IK perceived as a useful source of knowledge on potential products. The informal organisation here should be understood as the entire supply chain network which does not figure on the formal organisational chart of those institutions under study. In this we have a few responses from managers of these companies

…Most SMEs come to us to seek for advice and support and this included knowledge and leadership. R4

…We decided to encourage the creation of synergies with local companies and other potential people… We brought them together and integrated them into our supply chain and network. The result was therefore a birth of an independent manufacturing company.

These companies do promote a culture of Knowledge Sharing and Management using CoPs. Managers of those companies do believe that CoP represent a transformational power as they indicated in **Figure 6: List of CoP benefits.**

**The CoP as Knowledge Gatekeepers**

In their activities, it appeared to the researchers that CoP members are acting and behaving in a way that suggest that they represent a collective effort of KGs and TKIGs at the same time. For example this one respondent’s description of the CoP:

“….It is possible to have knowledge gatekeepers first, thereafter however people with similar interest discover each other. This is especially when people discover that they have shared interests, values and aspirations of advancing their professions and the industry they work in, they will (knowingly or not) evolve to become (to form) a knowledge group. From that time of discovery, they cease to work informally as individuals. They form and respect the CoP, its objectives, vision and membership values” Respondent at U5

**Figure 6: List of CoP benefits** reports assumed benefits of the reported CoP to the leading firms:
The above CoP benefits can be summed up in three points:

(a) Reduced time spent required on reaching decisions and accelerated inter-organisation collaboration
(b) Improved organisational learning and knowledge management processes
(c) Leveraging available resources
(d) Improving /increasing performance, capacity and ability

**Figure 6: List of CoP benefits**

<table>
<thead>
<tr>
<th>WHAT THEY SAY</th>
<th>COMMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Cop has reduced time in decision making and accelerated inter-organisation collaboration</td>
<td>“Facilitates fast cross-organisation collaboration on major issues. Some of the staff know each other and can negotiate at personal level.” (Respondent’s view)</td>
</tr>
<tr>
<td>Improved organisational learning and knowledge management processes</td>
<td>“Improved ascendance to the organisational ladder. Many employees now share improved experiences on processes. Recent changes in processes were initiated by someone who happened to ask know how we did things and then suggested to us how to implement changes. We did not have to recruit or pay her!” (Respondent’s view)</td>
</tr>
</tbody>
</table>
| Leveraging available resources (human capital, knowledge management) | “This CoP helped our employees with skills in the field of audit. We can now design training priorities, and we now know who is better connected and who is not. This allows us to allocate tasks accordingly (although people do assist one another now).”

“People used to accept tasks even if they knew they would not cope up with them.” (Respondents’ views)

| Improving /increasing performance, capacity and ability | As CoP members became active in networking, senior managers within the three organisations expressed satisfaction in “the improvements made in the capacity to manage complex problems and reaching decisions in minimum time, a thing they never experienced before” (Respondent Y).

“Many employees are now able to tell you what (and when) they wish to see done to improve their duties. They have developed the ability to “foresee” their future as competitive employees.” (Respondent Y1). |
The CoP member experience is typified by sharing experiences and challenges they encounter, before they draw up an action plan. An agreed action plan represents a set of definitions, with each member from the organisation articulating clearly how they identified and recognised each unique set of issues and problems. The nature of these issues depends on the type of business or organisation, its disciplinary context and its areas of priority. More importantly, however, is that CoP members agree to develop strategies to assist one another’s findings in an appropriate way.

Although the benefits from CoPs to people and organisations were significant, they could not overcome organisational absorptive capacity barriers such as a lack of high level coordination, direct and indirect funding from corporate initiatives. In some cases, CoP reports the continued need to abide with employer’s values and antitrust laws and policies of the organisation and the industry as a whole.

**Barrier identified with regards to fulfilling KG roles**

The research, using fetched several answers on a question of what are different barriers associated with fulfilling the role of knowledge gatekeepers:

- **The Ambiguity of the role itself**

First, there exists some level of *ambiguity* with regards to the role of knowledge gatekeepers inside organisations analysed.

In analysing findings from within case reports, some positives and negatives of the knowledge gatekeeper were raised. Among others, the issue of trusting the source and the issue of reliability of the screening process was raised by respondent. The followings answers were recorded with focal firms with knowledge gate keeping roles:

• While gatekeepers have been a good mechanism and affordable way to create and share knowledge within my network, there have been concerns with regards to whose responsible when things go wrong and a decision is reached on the basis of falsified or inaccurate information”

• The screening of information does not allow us to have full understanding of the solution....at some point they omit an important linkage and the context through which our business operate..... RPI

• We do encounter challenges when the end-user cannot find the solution from the information we have supplied. They genuinely cannot know whether the missing information could have been available prior to him screening process.... (R1, R2, R3, R4, and U3, U1, U4, U5)

• If I do not know the circumstances and the context in which the problem occurred, then, it is possible that I do give partial answers to a much complex problem (Gatekeeper U1, U5, R2, and R4).

These findings are a reflection of the wider concerns with regards to a culture of knowledge sharing that maybe low in some organisations and high in the others. The results also are revealing some aspects of concerns with regards to the role of knowledge gatekeepers-
whether to avail knowledge to others or indeed to screen and restrict access to vital piece of information, the balance of the two remain a critical aspect of the work and the perceived value of the gatekeeper in a given organisation comments obtained on this point are ambiguous. It was, for example difficult to distinguish what is believed to be the organisational concerns, the local culture and practice or whether this was temporary problem specific to the individuals. In any case, the findings indicate that it could be both, meaning that employees believed in screening information before passing it on to the end-user. It can be argued that this should be considered as the negative side of the gatekeeper’s role.

- **The Institutional regulations and Policies**

In addition to those identified in the appendix, below are some few selected concerns which relate to

“...Lack of networking among complementary departments”
“...we do not trust each other “
“...Complete weakness in our Knowledge Management Systems”
“....the structure of the organisation which has a top down management
“....The need for senior management support (buy-in) and the concept of continuous professional development”
“...different educational systems means we see things differently”

Further analysis of selected questionnaire responses do agree with the above findings from interviews. Below are few examples:

<table>
<thead>
<tr>
<th>Crosstab</th>
<th>Country</th>
<th>RWANDA</th>
<th>UGANDA</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>In this company, we have regulations forbidding us from sharing knowledge with outsiders</td>
<td>STRONGLY AGREED</td>
<td>Count</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>% within Country</td>
<td>11.1%</td>
<td>16.7%</td>
<td>14.3%</td>
</tr>
<tr>
<td></td>
<td>AGREED</td>
<td>Count</td>
<td>8</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>% within Country</td>
<td>17.8%</td>
<td>21.7%</td>
<td>20.0%</td>
</tr>
<tr>
<td></td>
<td>SOMEWHAT DISAGREED</td>
<td>Count</td>
<td>12</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>% within Country</td>
<td>26.7%</td>
<td>26.7%</td>
<td>26.7%</td>
</tr>
<tr>
<td></td>
<td>FULLY DISAGREED</td>
<td>Count</td>
<td>17</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>% within Country</td>
<td>37.8%</td>
<td>33.3%</td>
<td>35.2%</td>
</tr>
<tr>
<td></td>
<td>STATEMENT NOT APPLIED</td>
<td>Count</td>
<td>3</td>
<td>1</td>
</tr>
</tbody>
</table>
The researcher requested employees to rank how they agree or disagree with the statements related to KMS systems, barriers, challenges and opportunities that make their knowledge sharing, creation, and dissemination possible. Among other challenges, the question of external environment is perceived as an essential aspect likely to influence knowledge sharing behaviours.

29% of the Rwandans respondents have been restricted by their respective companies to share their knowledge with the outsiders as opposed to 65% of the Rwandans who did not have restrictions from sharing their knowledge with outsiders. In Uganda 60% have been restricted and about the same (30%) for not being restricted. This means that both the countries have the practice of sharing their knowledge which is a good practice but also the level of restrictions is dominant—a factor that could as well inhibit TKIG functions.

| crosstab |
|-----------------|-----------------|---|---|---|
| Our company has internal procedures, routines and policies to restrict the sharing of process know-how |
| | RWANDA | UGANDA | Total |
| STRONGLY AGREED | Count | 9 | 8 | 17 |
| | % within Country | 20.0% | 13.3% | 16.2% |
| AGREED |
| Count | 10 | 16 | 26 |
| % within Country | 22.2% | 26.7% | 24.8% |
| SOMEWHAT DISAGREED | Count | 5 | 22 | 27 |
| | % within Country | 11.1% | 36.7% | 25.7% |
| FULLY DISAGREED | Count | 12 | 11 | 23 |
| | % within Country | 26.7% | 18.3% | 21.9% |
| STATEMENT NOT APPLIED | Count | 9 | 3 | 12 |
| | % within Country | 20.0% | 5.0% | 11.4% |
| Total | Count | 45 | 60 | 105 |
| % within Country | 100.0% | 100.0% | 100.0% |

Figure 7: Number of companies with knowledge sharing restrictions on employees

Figure 8: Number of company with internal procedures, routines and policies to restrict the sharing of process know-how
The results show that around 40% of the respondents of both countries agree that their respective companies have restricted them to sharing of process know-how through their internal procedures, routines and policies. Ugandans for the above statement have found to be more in proportion as compared to Rwandans in relation to the disagreement of the statement, it can be seen that around 55% of the Ugandans believe that they are free from their companies for sharing of process know-how, while 38% of the Rwandans think that they have barriers from their companies for sharing of process know-how. Sharing of process know-how is a critical matter for any company; this could be the reason that Rwandans might be restricted for sharing their knowledge.

- **Knowledge Leadership and information Sharing Strategy**
  The barrier of poor communication was associated with poor leadership amongst the organisations. One senior official acting as a government advisor argued in favour of absorptive capacity:
  
  Bad leadership is associated with poor absorptive capacity which is reflected as lack of aspiration to get things right, to acquire knowledge they needed to understand some issues of routine work.

  The respondent M1 pointed to the fact that because of lack of leadership skills, no one knew what was actually expected (Director 3). Furthermore, the problem of poor infrastructure or total lack of it was referred to by the respondents.

- **The Relational Context**
  In assessing knowledge sharing and transfer barriers, the relational context was considered to be one of the influential determinant factors of institutional arrangement. Barriers such as the relationships, trust, and regulatory challenges shaped the context referred to as the institutional environment. The institutional environment is largely independent of external factors such as: the people who speak varying languages depending of the system of education they have followed, different cultures particularly for people who lived out of the country before the liberation struggles in the pre-genocide period in Rwanda and the pre-liberation wars in Uganda, and alike.

- **Trust remain a key factor for success**

  Defined by Mayer *et al.*, (1995:712) as the willingness of a party to be vulnerable, trustworthiness is perceived as an essential ingredient in serious firm undertakings. In Kinyarwanda, the closely related concept of perceived trustworthiness is *inyangamugayo*. Below are extracts from the respondents’ views on trust and how this could impact on their engagement in knowledge sharing and learning. They point to the fact that the concept *inyangamugayo* is tacit and therefore, culturally motivated.

  …..We pretty trust one another more than I’d do to others. We swap confidential files via Internet or I simply make a telephone conversation and from there, I can get access to most important data I need to make a decision (TKIG U1).
….We know that it can be difficult to obtain some sensitive data across organisations even though we are literally working on the same thing for one institution. However, we can ignore formal channels and use a contact you know based on trust and then you can get what you want (TKIG R1).

…Trust is very important. I cannot work with someone I do not trust or even I know less (CKO U5).

…I cannot trust anyone unless if I know him personally or he was introduced by someone trustworthy (KP KGR2)

The key point here is that where trust exists among people they become more willing to provide useful knowledge and are therefore more willing to listen to and absorb other people’s knowledge. It seems from these findings that, in order to succeed with knowledge sharing, the basic aspects of trust must be in place in order to solve a variety of problems. Increased trust is likely to generate interest in one another’s knowledge, hence increasing chances for further networking opportunities.

- **The Identity remains a critical success factor**

  The findings of this study show that those who performed the role of knowledge gatekeepers had insufficient time allocated for that task. They required more time to understand and translate knowledge—especially the indigenous ones, in such a way that they could confidently internalise it. They argued that when asked to identify tacit IK practice, they did not have source of information from where they would read about tacit IK practice and processes. Their only source of information was from the persons/(communities) where they were required to organise visits for as many times as possible to ensure first that they were trusted so as to be told later what they wished to know. This problem was expressed by one respondent as follows:

  …The difficulty is that this is IK is undocumented … it is largely tacit; experience is the one that counts. It is about understanding people and experiences of people who use it and that can take you months of work, certainly not hours or days (KG U5).

  In view of the above, these findings on tacit, experience knowledge (read IK) reveal that its stock is too complex to understand, thus justifying the requirement by staff in organisations to have ample time to understand IK so that knowledge sharing and learning from one another’s practice could lead to mutual benefit. The complexities and differences in tacit IK led to significant delays, thus preventing the absorption capacity of the IK processes before being internalised.

- **Culture remain critical to organisations as is for the gatekeeper**

  In all the cases of organisations studied (U2-U5), there existed differences in understanding on the basis of either tribe or geographical backgrounds of employees. Another cause for this was the type of education they received:

  …understanding the best practice and content of knowledge intended to share is one of our reasons we really relate. (Respondent X)

  The respondents in Rwanda expressed significant satisfaction with regard to the homogeneous nature of the workplace. The respondents felt that there was no problem related to
cultural clashes *per se*. But, they noted that the change in language use (French to English) in the educational system and workplace made reporting to be perceived by everyone as an opportunity.

With regards to the culture vis-a-vis the working environment respondents have this to say:

... It is not really possible to distinguish my own culture to that of my colleague

...Those who have studied abroad are highly regarded. But I do think it is because they have better modern working practices and attitudes than their counterparts who have never left Rwanda

In a way of concluding this section, the findings paint rather a picture for Rwanda and Uganda—Is Knowledge Management really a new thing in these countries? It seems that the very challenges of defining knowledge management as well as barriers associated with knowledge creation and transfer continue to be the same even when the financial and geographical location changes. The key and probably most interesting finding here is the extent to which the technological gatekeepers, the key persons remain abundant in the industries studied (see Figure 3: Distribution of roles in different categories of knowledge gatekeepers in companies). This situation could be understood from organisational culture perspective where organisation seems to dominate the business culture with focuses on individual and interpersonal relationships that they do for functional relationships. The figure below can be used to illustrate the position and the relationships between the gatekeepers in a knowledge management environment of the organisation.
In an organisation knowledge management system, the culture is shaping the way people interact and how they engage each other including promotion of CoPs. Below figure recaps the properties of the different categories of knowledge gatekeepers as discussed in this paper:

<table>
<thead>
<tr>
<th>Types of KG</th>
<th>Functions</th>
<th>Basis for Membership existence</th>
<th>Cohesion</th>
<th>Lifetime</th>
</tr>
</thead>
<tbody>
<tr>
<td>CoP</td>
<td>They develop the members’ expertise and to define their place or role in the community</td>
<td>Members select themselves</td>
<td>Commitment and identification with the expertise that informs the basis of the practice</td>
<td>As long as members have an interest in improving the practice and maintaining the community</td>
</tr>
<tr>
<td>KEY PERSONS</td>
<td>To perform the ongoing work that has been assigned to that person to produce and deliver a product or</td>
<td>Everyone who had been assigned to the role</td>
<td>Job/performance requirement and continuing, common goals</td>
<td>Until the work or the organization is reorganized</td>
</tr>
<tr>
<td>TKG</td>
<td>To collect and share information and common matters of interest but to a small network of connected colleagues</td>
<td>Reciprocal value and acceptance, that is, members obtain and provide information of value</td>
<td>Perceived value in belonging and participating</td>
<td>Perceived value in belonging and participating</td>
</tr>
<tr>
<td>-----</td>
<td>-------------------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
<td>------------------------------------------------</td>
<td>------------------------------------------------</td>
</tr>
<tr>
<td>FIRM</td>
<td>Typically as a combination of CoPs and TKG roles but with greater focus on commercial value including social value (including Corporate Social Responsibility)</td>
<td>Basis for mission and vision but also as strategy to products development and commercialisation</td>
<td>Typically promote KM initiatives including social relations, CoPs, KGs, internal regulations focus on commitment and loyalty and have regulation around intellectual property rights</td>
<td>As long as organisation mission, vision, and objectives are met and stakeholders satisfied</td>
</tr>
</tbody>
</table>

**Figure 10: Properties of a KG**

The role of a gatekeeper is predominantly in two capacities- a CoP, and as an individual, the third capacity-organisation- has a combination of the other two we have mentioned. As an individual, current research does not show what happens when the KG role is performed by a group of people. Current studies had left several unresolved issues, namely whether a gatekeeper can be a CoP or any other person or organization that can act to create and share knowledge as findings herein seem to suggest.

As a way to conclude this paper, CoPs represent another strategy to KM and a form of knowledge gate keeping. In this study we are saying that CoPs are not only a form of Gatekeepers, but also we suggest that in work environments, CoPs often develop spontaneously from shared passion in a common interest. Although they exist without the management influence, organisation pressures can dampen the free flow of ideas and knowledge that result in knowledge creation. For this not to happen, CoP members have a certain level of knowledge filtering which typically involves a few senior experts who are talking to each other without the knowledge of everyone. We called these “tecknow-logical knowledge gatekeepers: TKlG”. This is an implied concept to mean that they know the logic and context of the new technologies and knowledge. This should not be confused with the concept of TKG which simply imply that technological knowledge gatekeepers: TKG are at the cutting edge of the new knowledge but the element of context and relational context of the source and the recipient is not and does not have a bearing on their work. In African research, the context, the relevance of the knowledge to the new situation has a bearing on design inputs as well as the investment level required in terms of trust building and social relationship to be focussed on. TKlG may be a sub-set of CoP core membership with a purpose to discuss sensitive matters related to know-how, the new
technologies and they trust each other than they would typically trust everyone else in the group. These are the members who form a small network of technological knowledge expert at the cutting edge of the new innovations and new knowledge.

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