Barriers to Sharing and Creating Knowledge in Higher Education[1]

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ABSTRACT

Since the mid 1990s there have been many studies of Knowledge Management (KM) in the corporate sector yet little research on how knowledge is managed in higher education. This article explores the barriers to sharing and creating knowledge in higher education through a case study of a technology-related faculty at an Australian university. The study confirmed the findings of researchers in the corporate sector that lack of time, reluctance to share and lack of a common culture were common barriers. In addition some barriers were identified which were peculiar to the higher education environment. Perhaps the greatest barrier was a lack of awareness of the benefits of managing knowledge in a more systematic way.

INTRODUCTION

Since the mid 1990s there has been an increasing focus on Knowledge Management (KM) in the corporate sector. Many KM projects have been implemented to support the sharing and creation of knowledge as well as the utilization of knowledge assets for financial leverage. 'Knowing about knowledge' has become critical to business success (Davenport & Prusak 2000, p. xviii).

In any organization there are several socially defined knowledge processes at work, any or all of which can be the focus of a KM strategy. Alavi and Leidner (2001) define these as knowledge creation, storage/retrieval, transfer (or sharing), and application (or use). Of these, Sveiby (1997, p. 40-50) gives precedence to knowledge transfer, which he sees as the 'key activity' in knowledge organizations: meaningful transfer focuses on the direct sharing of expert knowledge from person to person, rather than the often meaningless transfer of articulated knowledge in the form of information . Nonaka and Takeuchi (1995, p. 59) stress the importance of knowledge creation: they focus on how the organization 'supports creative individuals or provides contexts for them to create knowledge', and then how this individual creativity is crystallized into organizational knowledge to form new products, processes and organizational forms. Organizational knowledge creation, therefore, also involves person-to-person sharing of knowledge as a way of placing individual knowledge at the disposal of the organization.

Despite many studies of KM in corporate organizations there has been relatively little interest in how knowledge is managed in higher education. At least in part, this is due to the few complete KM solutions that have been implemented in universities and colleges ((Kidwell, Vander Linde, & Johnson 2000; Petrides & Nodine 2003). Yet universities have always managed knowledge, whether they have called it KM or not: 'They have employed researchers and teachers to create and disseminate knowledge, sponsored libraries to store and codify knowledge, and enculturated students into the ways of knowing valued by disciplines' (Reid 2000). For example, a study of KM within an IT services group at Texas A & M University's Mays College of Business found that both managerial influences and the availability of resources helped create the conditions in which staff could apply and access knowledge when required as well as contribute their own knowledge to the working of the organization, despite the absence of a documented KM strategy (Koch, Paradice, Chae & Guo 2002).

The faculty-based case study presented here was undertaken to investigate the two primary knowledge processes of sharing and creation. Specifically the study focused on the barriers which inhibit these processes, an aspect of KM in the higher education context which is much under-researched. These barriers need to be identified if knowledge is to be effectively managed in universities, whether there is an official KM strategy or not. Answers to a number of important questions were sought in the study: What barriers to sharing and creating knowledge exist in higher education? Are these barriers the same as those identified in the corporate sector? Are the barriers entrenched in the university system?

This paper begins with a discussion of what the literature says about knowledge barriers both in the corporate context and in higher education. Next, the methodology of the case study is presented followed by the findings of the research.

WHAT THE LITERATURE SAYS ABOUT BARRIERS TO SHARING AND CREATING KNOWLEDGE

A number of barriers have been described, mainly in relation to knowledge sharing. The most common according to Davenport and Prusak (2000) are:

- Lack of trust and therefore reluctance to share
- Lack of a common culture, language or frame of reference
- Lack of time, places and opportunities to meet
- Rewarding knowledge *owners* rather than knowledge *sharers*
- Lack of capacity to absorb new knowledge and act on it
- Hierarchical view of knowledge where the source is viewed as more important than the quality of the knowledge
- Intolerance of mistakes or cries for help.

A survey of UK firms by Swan, Newell and Robertson (2000) showed that 70% of respondents saw the main barrier was lack of time, while 31% identified reluctance to share as the most important factor. Their study went further to show that two significant predictors of lack of sharing were people's reluctance to share and the extent to which they were rewarded for knowledge sharing.

An online survey conducted by Dyer and McDonough (2001) confirmed that the greatest challenge was lack of time (41% of respondents), followed by the absence of a culture which encourages sharing (37%).

Barriers in Higher Education

In higher education, Rowley (2000, p. 331) sees individualism and the academic rewards associated with it as a barrier to the establishment of an environment in which knowledge sharing and creation can occur:

'In higher education, the embedded and international reward structure places a high value on evidence of individual achievement in research and scholarship. … Reputation, salary and opportunities to participate in further creation and dissemination of knowledge depend significantly upon individual performance.'

Knowledge is linked to individual academics, who are often reluctant to put this knowledge at the service of the university. However, Rowley also notes that the situation is very complex because dissemination is necessary for individual recognition. Moreover, teaching and learning are collaborative acts marked by knowledge sharing and creation, and team approaches to research are common in certain fields, such as big scientific projects.

Cronin and Davenport (2001, p. 26) note that, where academics have allegiances, it is often to a global community of scholars within their field of specialization rather than to their university and departmental colleagues. Between the different university departments or faculties there is often little communication or understanding because of 'incommensurability of methods' and different world views (Cronin & Davenport 2001, p. 36). However, they also note that higher education operates on a collegial rather than competitive approach to knowledge: the university norm is 'free exchange of ideas, unfettered access to information and knowledge, and widespread dissemination of new findings' (Cronin & Davenport 2001, p. 29).

A small number of studies have identified barriers in specific areas of higher education. For example, in a case study of online learning communities, lack of trust was identified as a significant obstacle to knowledge sharing and collaboration where people had never met face-to-face (Na Ubon & Kimble 2002). A study of knowledge transfer in university-industry partnerships found that poorly defined objectives and poor communication acted as barriers (Alvarez Merino & Maculan 2000). Another university-industry study identified barriers mainly in terms of industry perceptions of universities as driven by theoretical research, wanting to maintain academic freedom and unable to provide cost-effective results (Wilson Head 1999).

CASE STUDY METHODOLOGY

The case study consisted of a review of knowledge sharing and creation in an Australian technology-related Faculty which had no official KM policy. The Faculty consisted of about 80 academic staff plus support staff. The author was enrolled in the Faculty as a postgraduate student at the time and also working in the Faculty as a junior academic, hence having the role of participant-observer, able to view the knowledge processes of the Faculty in part from an insider perspective.

The study consisted of twenty-five interviews of staff and students as well as an evaluation of the Faculty's documentation, collaborative technologies and the physical spaces where knowledge was shared and created. Interviews were semi-structured, with questions adapted to the role of the interviewee and following the direction suggested by the responses rather than being constrained to a strict format. Most interviews were recorded and lasted up to 45 minutes in duration. Nineteen staff interviews were conducted representing a broad cross-section from upper management (Associate Deans, Heads of Department) down to Associate Lecturers and part-time tutors spread across departments, with a few interviews of administrative and technical support staff. In contrast to the staff, the six student interviewees were selected on an ad-hoc basis, depending on their availability and willingness to participate.

BARRIERS TO SHARING AND CREATING KNOWLEDGE

The study identified a number of barriers in the Faculty. How these were perceived by different individuals depended on their position in the Faculty and their particular knowledge needs. Hence more senior academics focused on knowledge of organizational procedures and the barriers to accessing this knowledge, whereas junior academics were more interested in the acquisition of research and teaching skills. Students, instead, focused on breakdowns in communication and problems with learning.

Lack of Time

Insufficient time to share knowledge was the issue most commonly reported by staff at all levels of the organizational hierarchy. This agrees with studies noted earlier which put lack of time as the number one barrier

in organizations generally (Swan, Newell & Robertson 2000; Dyer & McDonough 2001). Time was also a barrier when it came to creating new knowledge to improve procedures and translating this into an accessible form. As one academic stated:

'To create knowledge you've got to have the time to sit down and talk about these things. And everybody is under such time constraints that all they're trying to do is get what's on their table done right now. Therefore they don't have the time to consider what's wrong with the system ... because as soon as they start doing that their work is piling up.'

Ironically, improving processes would have freed up time for other work, but time was needed in the first place for this to happen.

Individual Ownership of Knowledge and Academic Independence

A barrier to knowledge sharing and collaborative knowledge creation identified by some interviewees was the ownership of knowledge by individual academics. As one junior academic remarked, 'giving information for free doesn't happen as much as you think it would'. He believed that sharing of knowledge happened most often when the situation was 'win win', when there was a benefit to both participants. The reluctance to share was reinforced by the Faculty's reward structure whereby promotions, a salary supplementation scheme, Faculty research funding and financing of conference participation were largely based on individual performance. One academic noted that:

'People will always react to the way they're measured, and we are measured as individuals. If we are measured as individuals, we are immediately putting a huge limitation on the creation of knowledge.'

This individualism contributed to problems in the development of new KM systems within the Faculty, despite the presence of a highly skilled Technical Support Unit. As one of the technical support staff commented:

'The technical staff operate as a collective group, if you like. From the tech staff point of view the academics don't operate as a collective group: they operate as 70 or 80 individuals and you have a mode of operation with one that's different from the mode of operation with another which is different to another one.'

This made gaining consensus about system requirements difficult and time consuming, leading to excessive delays in creating new systems which would have supported knowledge sharing.
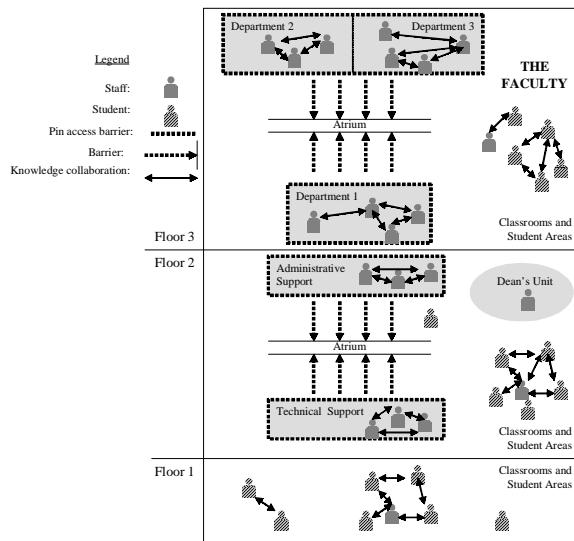
However, as noted earlier by Rowley (2000), the situation was highly complex. Within the Faculty there were a remarkable number of collaborations in research, teaching, administrative committees and community service projects. Teaching was always collaborative, because courses were in high demand and subject enrolments were therefore too large for one teacher. Collaborations also existed, although to a lesser extent, with other faculties, other universities, industry and other external groups. Though academics were rewarded on an individual basis they were also rewarded for their personal contributions to collaborative projects. Furthermore, it was becoming increasingly difficult for academics to access Federal Government and University research funds without formally joining a research group.

Organizational Divisions and Lack of a Common Culture

A major barrier identified by the study was the Faculty's division into three academic departments and the Administrative and Technical Support Units (Figure 1).

The barrier between the departments and support units was found to have a major detrimental impact on the creation of new administrative knowledge and the sharing of technical know-how. This barrier was exacerbated by differences in the nature of academic and support work, a consequent lack of common language and culture, different pay awards, few Faculty-wide get-togethers, and the physical separation of each

Figure 1:   *Organizational and Physical Barriers in the Faculty*

phrases such as 'the other side' to refer to the departments opposite them.

Irregular Time Tables

In the Faculty, academics worked a flexible timetable anywhere between 8 am and 9 pm, had no fixed lunch hour, and sometimes worked from home or in industry. This meant that it was sometimes difficult for people to get together. Part-time staff had a worse problem in participating in the full range of knowledge sharing and collaborative interactions.

Lack of Awareness

Generally, the study found that staff members had little understanding of KM and the potential benefits to be had from managing knowledge sharing and creation. Even senior staff who knew something about it had a limited view, often seeing it solely in terms of formalizing and capturing procedural knowledge in a database and sharing it on the Faculty website.

CONCLUSION

The study found a number of barriers to sharing and creating knowledge in the Faculty. Some of these have previously been identified in the corporate sector, in particular lack of time, reluctance to share and lack of a common culture and language. However, in the Faculty, these were reinforced by factors peculiar to academia. For example, reluctance to share was associated with academic independence and the individual ownership of knowledge. The lack of a common culture and language was associated in part with academic divisions between departments, faculties and universities. All these barriers represented a serious limitation to the effectiveness of managing knowledge, given the importance of the two knowledge processes being investigated.

A question remains: Are these barriers entrenched in universities? Certainly, increasing pressures on the higher education sector show no signs of abating and it is likely that lack of time will remain the number one barrier. Academic independence is also a tradition of university life, even though the current study found a healthy environment of knowledge sharing and collaborative knowledge creation acting side by side with academic individualism. This finding supports the complexities outlined by both Rowley (2000) and Cronin and Davenport (2001) noted earlier.

Other barriers are a more difficult issue. The divisions between academic and support staff and the physical barriers found in this case study may not be typical of all higher education. However, the divisions between departments, faculties and different universities are the norm and any change to these is likely to be very slow. Barriers with industry require looking for areas of commonality, for example linking industry business questions with fields of academic research expertise.

Perhaps the greatest barrier identified by the study is the lack of awareness of the benefits that come from managing knowledge in a more systematic way. This represents a significant barrier to any systematic improvement to knowledge sharing and creation in higher education. Yet, universities are in the 'knowledge business' (Rowley 2000, p. 332). Their core activities are creating new knowledge and sharing this with students, with fellow academics and with the wider community. How well they manage the environment that allows this to happen and how well they overcome the barriers identified in this study will determine how they survive in an increasingly competitive world.

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group. These factors added to the difficulty that the support units had in dealing with academic individualism, as noted before.

Another issue of organizational structure, which most (but not all) interviewees saw as a problem, was the division of the academic staff into three separate departments, each with different research and teaching interests. A view given by a senior academic was that knowledge hoarding wasn't the problem so much as people having 'different frameworks, different value systems, so that makes it hard to share.' However, some cross-fertilization occurred through interdepartmental collaborative teaching, research and community service, as well as through informal socialization, making this not as great a problem as the division between the academics and support units.

Most barriers operated laterally between distinct organizational groups within the Faculty, with vertical barriers not as entrenched. This was probably because many management positions (e.g., Heads of Department, Associate Deans) were three-year fixed-term positions. The only evidence of a vertical knowledge sharing hierarchy was that more broadcast emails were initiated by senior staff than junior staff.

Senior academics also reported that, despite formal research collaborations with other faculties, other universities and with industry, these were difficult to inaugurate. Many more collaborations operated on an informal basis, established by academics on a one-to-one basis with others in their field of specialization – a university sector phenomenon noted by Cronin and Davenport (2001). Industry collaborations were hard to initiate because of the altruistic way academia operates, with education and research for its own sake.

Physical Barriers

Organizational divisions were aggravated by the physical layout of the workplace, which inhibited knowledge sharing and collaboration between staff and also between students and staff. The following physical barriers were identified (Figure 1):

- Separate offices for academics
- Separation of the academic departments on one floor from the support units on another floor.
- The design of the building with an atrium which formed a 'gulf' between departments.
- Pin access excluding students from staff office areas, creating a sense, as one student stated, that academics weren't interested in talking to them.

The physical layout of the workplace can be a 'pivotal factor' in knowledge sharing and creation (Davenport & Prusak 2000, p. xiv). In the Faculty, these barriers were recognized informally by staff using

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