# KNOWLEDGE MANAGEMENT AND LIFELONG LEARNING: REFLECTING ON SUCCESSES AND FRAMING FUTURES

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## ABSTRACT

This paper explores the implementation of a human resource information system at an Australian university in 2007 as an opportunity for the systematic management of organisational knowledge. Systematic management of personal formal and informal learning is needed if lifelong learning futures for individuals and institutions are to be maximised.

## KEYWORDS

Australia – case study – human resource information system – institutional perspective – knowledge management

## INTRODUCTION

Knowledge management may be considered both a mirror image of and a counterpoint to lifelong learning. While lifelong learning implies an individualistic perspective on maintaining knowledge needs, knowledge management implies an institutional perspective. This paper uses a case study (Stark & Torrance, 2005) approach to assess the extent to which a focus on knowledge management guides and informs practice. The case study consists of the implementation of a human resource information system (HRIS) at an Australian university between June and November 2007. One of the authors was the project manager during this period, and the case study is the result of a subsequent critical appraisal (approximately six weeks later) by both the authors (one of whom was independent of the project). The framework used for the analysis was developed heuristically, as part of the critical analysis.

The implementation of a computerised information system can be conceptualised as managing knowledge in at least two dimensions: Firstly, the mechanistic system captures, manipulates and produces information. Secondly, the implementation exposes to analysis a significant amount of organisational knowledge and offers the opportunity to capture and subsequently to manage this knowledge systematically. The paper explores the second dimension: the types of knowledge that are exposed and the processes used to capture and thereby to manage this knowledge, in the process reflecting on successes and framing futures from an institutional perspective.

The paper is divided into three sections:

- In the first section a conceptual framework focused on the relationship between knowledge management and lifelong learning is presented;
- In the second section an analytical framework and model of knowledge management are outlined;
- In the third section a case study of the implementation of the HRIS using the analytical framework developed and described in Section 2 is discussed.

## CONCEPTUAL FRAMEWORK

Several aspects of the contemporary emphasis on the knowledge society have profound implications for lifelong learning and university learning and teaching. While much of the knowledge management literature pertains to businesses and firms (Lam, 2000; Nonaka, 2005), a steadily growing subset relates to knowledge management in and of universities (see for example Butera, 2000; Ramachandran, Chong & Lin, 2008; Rooney, 2000). Representative themes within that subset of literature range from human–computer interaction in knowledge management (Metaxiotis & Psarras, 2003) to university academics' understandings of knowledge management (Mohayidin, Azirawani, Kamaruddin & Margono, 2007) to knowledge management enabling strategic career planning (Menkhoff, Loh, Chiang & Chay, 2005).

While noting that suggesting a linear or automatic link between knowledge management and lifelong learning carries the risk of an inductive fallacy (Fischer & Otswald, 2001), we suggest that useful parallels may exist – that insights in one may suggest comparable insights in the other. This paper explicitly investigates knowledge management, and by using a framework of four components illustrates the rich, interrelated ways in which knowledge is created, held and utilised in an organisation. Although it is beyond the scope of the paper to prove the parallels, we invite the reader to consider critically whether the rich, integrated elements of knowledge management illustrated

in this paper hold suggestions for framing futures in lifelong learning.

## ANALYTICAL FRAMEWORK

We propose a model of knowledge management that comprises two sub-domains: soft and hard systems, each with two components. The two components of the soft systems domain are networks and culture, while the two components of the hard systems domain are systematic education and storage systems.

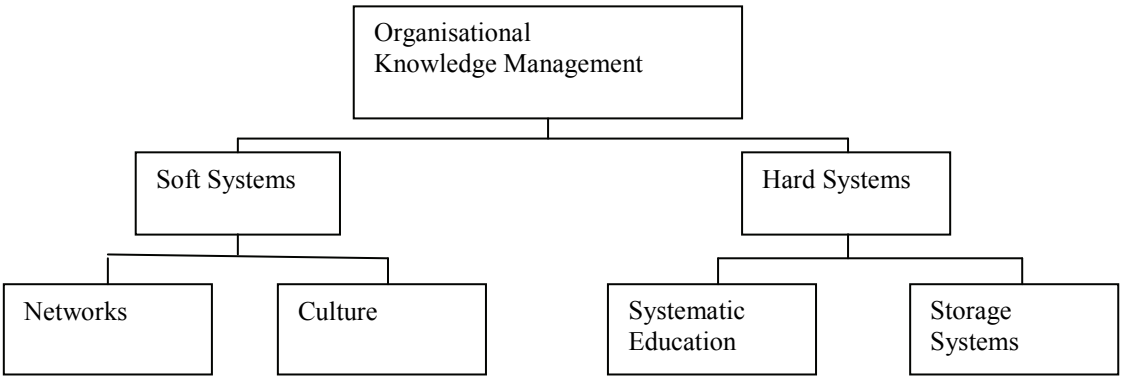


*Figure 1 Model of knowledge management*

Each of the components of the knowledge management analytical framework presented in Figure 1 above is described below.

**For the soft systems domain:**

***Networks*** are conceptualised as including social networks (Cross & Parker, 2004) and communities of practice (Wenger, 2000). Different knowledge is held by different individuals. Network management requires knowing who has what information, as well as maintaining a relationship whereby all parties willingly fulfil one another's knowledge needs. Individuals need to maintain networks within and across their business units as well as outside the organisation. Email lists, conferences and divisional morning teas are all networking devices.

***Culture*** is deemed to apply to/incorporate both organisational and personal dimensions; both these dimensions affect the practice of knowledge management. The word "culture" is an amorphous term, with multiple meanings for different people. We use the term to include the skills, attitudes and motivations that promote learning and knowledge management, ranging from the ability and willingness to form networks with strangers and openness to new ideas and to sharing information to the perception of knowledge as an important and useful commodity in its own right.

**For the hard systems domain:**

***Systematic education*** is seen as including formal educational initiatives, such as training and courses. We use the term "systematic education" to emphasise the elements of designed instruction: content specification; design of delivery; delivery; assessment; and accreditation and maintenance (Somasundaram, Bowser & Danaher, 2006).

***Storage systems*** are the systems used to store organisational knowledge physically: policy documents, process manuals, shared directories and archives. Of importance are the integration, searchability and maintainability of these databases. An economical hybrid is learning management systems that act as both the principal store of knowledge and a systematic education mechanism.

## CASE STUDY

The case study used to test this model is the implementation of elements of the HRIS between June and November 2007. A project was initiated in February 2006 to upgrade an existing human resources computer package to the latest version and implement additional functionality not previously implemented. Prior to the period of the case study, the HRIS was operated and used only by staff in the human resources division. Staff received paper payslips and applied for leave on paper. During the period of the case study, the project moved personal information and leave management to the user.

From the project's perspective, there are two knowledge management components: firstly managing the knowledge of the project group itself; and secondly subsequently meeting the

knowledge management needs of those who will support (i.e., the information technology and human resources divisions) and use (i.e., the rest of the university) the HRIS.

### Networks

An important strategy in formulating the project team was to second staff from both the information technology and the human resources divisions, who would return to those divisions at the completion of the project. The strategy delivered a number of knowledge management benefits: firstly, the staff had an inherent expertise; secondly, these staff helped establish strong networks between the project and the two key divisions; thirdly, the two groups of project staff interacted, integrating the business and the technology; fourthly, when the staff returned, they carried back the system expertise that they had gained; and finally the secondments helped establish a culture of ownership, not only among those seconded but also with those whose colleagues and subordinates were developing the system.

Networks were also established outside the organisation with the software vendor and other organisations using the application. A senior member of the supplier organisation was invited to sit on the project board (a voluntary role that was gladly accepted). This provided him with an understanding of the issues being faced by the project, and allowed the project to mobilise both his and his colleagues' expertise more easily.

The project tapped into two product-specific networks of users, one supported by the vendor and the other of universities that used the application. Email lists were regularly used. Three common uses were: for specific problem solving; to canvass options (it was quite easy to carry out a quantitative and qualitative survey on how an issue was being addressed); and to obtain documentation and presentations for plagiarism.

The project also used a set of networks to promote learning during implementation. The project identified "Champions" spread across the different parts of the university, and they were provided with early and more intensive exposure to the new system. While training was provided directly to all staff, the champions provided informal one-to-one support to staff the first time that they used the system.

Of interest was what could be termed "contrast networks" – the use of those who could disagree with or oppose the project. This strategy explicitly identified those who could be negatively impacted on by the project and developed a dialogue with them. They provided the knowledge necessary for a more inclusive product. Two informal groups were gardeners and visually handicapped staff.

The project could have avoided contact with two formal groups, the Staff Consultative Committee (which included the unions) and the senior management group, the Vice Chancellor's Executive. Both those formal networks are rich in knowledge, but have their own busy agenda, and were used as confirmatory knowledge sources: the project documented its understanding of issues and likely solutions and used their expertise to critique that understanding. Their examination assessed and their approval accredited the project's knowledge.

Networks can also include relationships of mentoring, coaching and supervision. The institution had a formal performance management framework, and the project did some initial work in computerising this activity. Within the project itself, formally acknowledged relationships of coaching and mentoring did not exist, although there was recognition of whom to go to for specific types of information.

Universities have a significantly untapped potential for integrating the knowledge of theory and best practice of the academic community with the situated and practical knowledge of the operational staff. The project earmarked a small portion of its budget for a research activity that would benefit the project. Some attempt was made to locate a suitable and interested staff member, but this task was recognised as low priority and was not progressed. A more successful use was made of academic expertise in computer-based training: academic staff in this discipline tested and criticised the online training material that the project had developed. This paper is also a product of the successful partnership between the academic and the operational communities.

### Culture

One would expect a university's culture to embrace knowledge management (with perhaps a philosophical difference that a university embraces knowledge for its own sake, while organisational knowledge management is a means to an end). The university explicitly defined its values in its strategic plan (Central Queensland University, 2006, pp. 1-2). Its eight values (Developing Relationships; Integrity; Creativity and Innovation; Academic Freedom; Accountability; Life Balance; Lifelong Learning;

and Practice [*sic*] What We Teach) are what one would likely expect to see in a specification of the values necessary in a culture that promotes knowledge management. These values were formally discussed several times at project meetings, and were posted on a wall. The further question, of the extent to which these values were embraced by the university in general and the project in particular, while clearly relevant, is beyond the scope of this paper.

The appointment of a senior manager of the vendor's organisation to the project board raised concerns of independence and confidentiality. On the other hand, it communicated the values of partnership and openness.

A source of significant tension in the project was the somewhat conflicting needs of rapid project delivery on the one hand and the time consuming tasks of knowledge consolidation and sharing and the maintenance of networks on the other. These cultural differences are often evident between external contract staff and in-house staff in a project, and mixing the two cultures often provides a reasonable balance. The project had previously used external contract staff, but they were not present during the period of the study.

The use of contrast networks could be viewed as the social equivalent of critical thinking. As could be expected of an attempt to introduce conflicting views, it had a degree of initial resistance, both within the project team and from others.

**Systematic education**

The immediate systematic education needs of the project staff can be broadly grouped into two elements: an understanding of the application; and the generic skills required for their role. During the early parts of the project, a consultant from the vendor was brought in to provide just-in-time training of three to four days to cover the needs of work for the next there to four weeks. The training had an extremely brief content specification (captured in the assignment specification with the vendor). The design of delivery consisted of mapping the business needs to the relevant configuration screens of the application, and to the vendor documentation for that configuration. Delivery consisted of hands-on walk throughs of the relevant material by the trainer, using a test application and vendor documentation. There was no assessment or accreditation. Substantial learning and consolidation (arguably a maintenance period) took place in the subsequent few weeks, as the project staff applied their new knowledge to deliver the project. The trainer was freely available (through telephone or email) to provide assistance and support. The use of the consultant was dispensed with about halfway through the study, partly owing to the staff becoming more familiar with the product but mainly because the university was able to recruit a staff member with substantial human resource systems expertise, who was knowledgeable and confident enough for independent learning.

User training could be viewed as having six components. First is what could be viewed as parallel to a readiness to learn stage, of advising the community of the project and its broad implications. The project used formal mechanisms – staff emails, the online newspaper and a website – as well as networks to deliver this awareness. The second component was the training of champions. While the same training material was used for the champions and for regular staff, the training for the champions was earlier and more intense (for example, smaller groups). They were also used in acceptance testing, where user staff spent hands-on time on the system, systematically testing all the procedures, as well as some 'free' time doing *ad hoc* processes and testing whether it was 'idiot proof'.

**Storage systems**

Documentation of organisational rules lends itself to being characterised as a three-level hierarchy. At the highest level are the databases containing the laws and standards that the organisation must know and conform to. Next come the organisational policies and finally the procedures: the step-by-step processes for getting things done.

Legislation and standards are typically used by only a few specialists. Legislation is currently publicly available on the Internet, but identifying which legislation is relevant to an issue and interpreting the legislation require specialist skills. For example, when exploring the legal requirements in relation to electronic paysheets, the project initially approached the organisation's lawyer – that is, the information was primarily accessed through networks rather than storage systems.

The organisation stores its policies and procedures in a web application available to all staff. The organisation has a standard format and protocol for maintaining policies and procedures, specified in a policy. A policy and its associated procedures are captured in a single document. The organisation has approximately 450 such documents, and a recognised goal is to streamline and reduce the number of these

documents. For example, the organisation had six different policies that covered different types of leave, and the project consolidated these into a single overarching leave policy.

The Law–Policy–Procedure framework describes only partially the knowledge storage systems. A principal piece of human resources knowledge is the legal agreement between the organisation and employees, captured in the Employment Bargaining Agreements (EBAs). The EBAs are stored documents available through the human resources division website.

There is also a need to have available more detailed procedural information than is captured by the procedure documentation – detailed 'how to' information of step-by-step screenshots and what data to enter where. These process flows are used during training, and the university had learning management software systems, one for academic teaching and the other for administrative applications. There were learning and administrative overheads with using these systems, and the project decided to create relatively simple video and sound streams using a low cost Adobe product. Separate streams were created for each task that a user may wish to perform and these were linked to the HRIS webpages for direct and easy access.

There are two other stores of more technical information. One is the technical manuals provided by the application vendor, presented in electronic format and stored on the project's directories. The other is documentation explaining the configuration adopted by the project. These two stores are related, the first being generic and the second specific.

Two other knowledge stores contain data on organisational transactions. Completed forms and other paper documents were stored in paper files, with plans to move them to a document imaging system know as TRIM. The other knowledge store is the HRIS itself, which represents a significant knowledge store for the organisation. An early objective of the project was to improve the human resources information available to the organisation. However, during the study, this objective was not considered a priority, and relatively little progress was made towards it.

## DISCUSSION AND CONCLUSION

This case study demonstrates that, in practice, organisations manage knowledge in rich, interconnected and diverse ways. The proposed framework of four components appears to provide one simple and clear but reasonably widely applicable model for framing knowledge management practice.

In the area examined by the case study, knowledge management was by no means explicitly labelled and systematically managed in an holistic, integrated manner. Nevertheless, its elements are identified and promoted with (in the opinion of the authors) reasonable success.

At the beginning of the study, the authors suspected that the soft systems would be less developed than the hard systems. It is therefore interesting to note that the soft systems are recognised and nurtured by the organisation as well as being quite sophisticated. The authors therefore suspect that it is likely that in practice in communities and among individuals who embrace lifelong learning not only systematic education but also networks, culture and storage systems have an important place in their management of their learning and knowledge.

This conference seeks to reflect on our successes and frame our futures in and for lifelong learning. This case study demonstrates that the principles of lifelong learning are applied in practical and diverse ways in organisations, and in framing futures we should appreciate the complex and interrelated ways in which that learning is nurtured through effective and potentially empowering knowledge management.

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