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## **The Wiki: an environment to revolutionise employees' interaction with corporate knowledge**

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## Abstract

Some corporations have adopted a Wiki on their Intranets for employees to collectively store, edit and access workrelated material such as reports, best-practice features, and documents. As such collaborative software moves from the social to the corporate arena, it is bound to challenge management authority, engaging the knowledge worker in a more participatory knowledge capability and environment. This paper explores the implication that this revolution has for the interaction of corporate users with technology that will lead to a profound change in organisational culture.

## Keywords

Wiki, environment, revolutionise, employees, interaction, corporate, knowledge

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# The Wiki: an environment to revolutionise employees' interaction with corporate knowledge

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## ABSTRACT

Some corporations have adopted a Wiki on their Intranets for employees to collectively store, edit and access work-related material such as reports, best-practice features, and documents. As such collaborative software moves from the social to the corporate arena, it is bound to challenge management authority, engaging the knowledge worker in a more participatory knowledge capability and environment. This paper explores the implication that this revolution has for the interaction of corporate users with technology that will lead to a profound change in organisational culture.

## Author Keywords

Wiki technology, knowledge management, organisational learning, conversational software

## ACM Classification Keywords

H.1.1 [Systems and Information Theory], H.5.3 [Groups and Organizational Interfaces]: *Organizational design*, K.4.3 [Organizational Impacts]

## INTRODUCTION

The Wiki, together with Weblogs (blogs), online forums and other similar 'conversational' applications, have had a great uptake in civil society. Many versions of the Wiki software can be downloaded free of charge and are hosted by myriads of individuals worldwide. More robust systems can be purchased and are a more viable option for organisational use.

The work of this paper came about as some corporations are investigating the possibility of, including a Wiki on their Intranet where employees can store, edit and access work-related material such as reports, best-practice features, and documents. This is viewed as an organisational Knowledge Management (KM) initiative and some of the more successful of these are described in the paper. In other organisations, the notion of hosting a Wiki to support collaborative KM is rejected and one such case is described here. The paper critically examines the prospect that Wiki technology can be a tool to support this contemporary yet challenging view of KM that is holistic, collective and contextual. As collaborative software, such as a Wiki, moves from the social to the

corporate arena it is bound to challenge management authority by attempting to engage the knowledge worker in a more participatory KM capability and environment. Management needs to encourage workers to use and contribute to the Wiki while employees need to appreciate why and how they should do so.

The paper will begin with an overview of changing perceptions of KM, creating receptive environments for conversational technologies in some organisations.

## EMERGING TRENDS IN KNOWLEDGE MANAGEMENT

The Australian Standard (AS 5037 2005) defines KM as:

"A trans-disciplinary approach to improving organisational outcomes and learning, through maximising the use of knowledge. KM is concerned with innovation and sharing behaviours, managing complexity and ambiguity through knowledge networks and connections, exploring smart processes, and deploying people-centric technologies."

This definition is a considerable departure from the concept of KM that was current a decade ago. Snowden (2002) identifies three generations of KM. The first generation, clearly associated with increased ICT capabilities, focussed on timely information provision for decision support. The second generation, triggered by the SECI model (Nonaka 1994), focussed on the tacit-explicit knowledge conversion in organisations. The emerging third generation uses complex adaptive systems theory to create a sense-making model of collective knowledge creation, disruption and utilisation that allows a pragmatic and conceptual alternative to scientific management.

The Australian Standard (AS5037 2005) takes a more integrated approach, using the concept of a knowledge eco-system to assist organisations to understand the environment best suited for enabling their KM activities. It offers a more scalable and flexible framework for planning, implementing and assessing KM strategies that respond to an organisation's state of readiness and topography. In addition the focus of KM is on group learning and development, as opposed to the individual.

Publicity surrounding the Australian KM Standard suggests the emerging areas of increasing importance are: complexity, innovation, the creative economy, sustainability, working in a global culture and technology. The Standards recognises KM as an interactive and iterative process, highly dependent on each organisation's strategic intent, environmental context, social networks and flow of stories and

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understanding of risk. The Standard is about transforming performance rather than conforming to a process.

We now live in a world where an information commons can be easily created and efficiently sustained using new tools for collectively creating, modifying and sharing knowledge. These new tools need to be taken seriously as a highly efficient and creative force in production (von Hippel, 2005). It is in this environment that one such tool, the Wiki, is joining the ranks of Knowledge Management Systems (KMS).

#### **WHAT IS A WIKI?**

A Wiki is a web-based application for a collaborative KM. It is named after the Hawaiian term 'Wiki' meaning 'quick', 'fast', or 'to hasten' which is symbolic of the quick changes in the editing processes (Leuf & Cunningham, 2005). A Wiki is a collection of interlinked HTML web pages and has crosslinks between internal pages where each page can be edited, keeping a complete record of such changes. Any change can be easily reverted to any of its previous states. A Wiki can be accessed from any web browser and no other special tools are needed to create and edit existing pages. A Wiki is an evolving knowledge repository where users are encouraged to make additions to this repository by adding new documents or working on existing ones.

#### **A Wiki as Conversational technology**

The most well known example of a Wiki is the popular English language version of Wikipedia, which was started in 2001 and now has nearly 900,000 articles. It has since spawned off Wikipedias in dozens of other languages. Wagner and Bolloju (2005) portrayed the Wiki as a type of conversational technology where knowledge creation and storage is carried out through collaborative writing. Constructivist learning theorists (Vygotsky, 1978; Leidner & Jarvenpaa, 1995) explained that the process of expressing knowledge aids its creation and conversations benefits the refinement of knowledge. Cheung et al, (2005) maintains that conversational KM fulfils this purpose because conversations, e.g. questions and answers, become the source of relevant knowledge.

#### **THE MERITS OF USING A WIKI**

##### **An Ideal Collaboration Environment**

Online collaborative technologies have proliferated with mixed success. Central to the concept of a Wiki is that a Wiki user does not need to have any technical (computing or web-related) expertise to add, edit or delete a page. This means that even a novice user can contribute to the knowledge acquisition process in an organisation.

##### **Easy to customise**

The original Wiki developed by Ward Cunningham in 1994 was written in HyperPerl. Many clones have been written in other languages e.g. Python, Java, and Visual Basic. Blake (2001) states that the open platform makes it versatile to create clones to support corporate intranets.

##### **Promotion of Organisational Learning**

Argyris and Schoen (1978) pioneered the concept of organisational learning where the organisation is seen to learn like an independent learning organism. An organisation that wants to survive and grow in the global

competitive marketplace needs to familiarise itself with 'organisational learning' (Friedman et al., 2005). The Wiki takes advantage of the collaborative efforts of all members of the organisation to create an effective library of knowledge.

#### **WIKI TECHNOLOGY IN THE CORPORATE WORLD**

The Wiki has succeeded in helping employees collaborate and communicate better electronically by transforming fragmented knowledge in corporations into usable and easily accessible data. For example, IBM has implemented a Wiki to manage their customer support site for IBM's Component Broker product. It takes advantage of the dynamic content of the pages, with automatic links updating and the most current version of the file is always being served (Blake 2001). Other companies reported to have been using a Wiki are the Disney Corporation and British Telecommunications.

While some cases of corporate adoption of Wiki technology have been reported here, cases of organisations deciding to disallow the instillation and use of Wikis are rarely reported. The following section of the paper will describe one such case together with the stated issues on which this decision was based

#### **A CASE OF WIKI REJECTION**

In this section of the paper the authors examine the case of an organisation where management has opposed the use of Wiki technology as a KMS. This research project was planned as a piece of action research where the researchers would participate in the setting up a Wiki in the case organisation and observe its contribution to KM in the organisation. When it became apparent that management support would not be forthcoming, the research plan was altered to one which would use the limited literature on Wikis to identify and examine the reasons for the organisation's reluctance to proceed with the Wiki project.

#### **The objectives of the Wiki to redeem a knowledge acquisition bottleneck**

There was an obvious bottleneck in the case organisation in the acquisition of knowledge. Wagner (2006) identified several factors that cause the knowledge acquisition bottleneck effect. The first factor is the narrow bandwidth. Conversion of organisational knowledge from its source is limited. The second factor refers to the acquisition latency. There is a lag in time between when the knowledge was created and when it can be shared. The third factor involves knowledge inaccuracy. Incorrect data can be entered into the knowledge base or incorrect maintenance procedures can change correct data into incorrect data. Lastly, the maintenance trap suggests that maintenance needs will grow correspondingly with the growth of the knowledge base.

Although these KM issues were widely recognised in the organisation, management was not prepared to go ahead and trial a solution based on a Wiki. The reasons given by the organisation for not proceeding with the Wiki project will be discussed in the following sections.

## **Management concerns**

### *Limit to power sharing*

The merits of promoting an open democratic approach to knowledge sharing has been ignored by the case organisation who favours a traditional organisational structure. The use of a Wiki may flatten the organisational hierarchy, changing traditional and hierarchical communication channels (Stenmark, 2003). If knowledge is power, then senior executives may be reluctant to share this power with their subordinates.

### *Centralised IS control*

The case organisation maintains that it offers better quality control in its existing approach to documentation management with formal editing opportunities, review and verification stages. However, a centralised and highly structured environment will make it difficult to adopt a 'community approach' towards knowledge acquisition. KM priorities are linked to organisational structure and as Santoro and Gopalakrishnan (2000) argue, KM priorities are affected by environmental structures.

### **Social concerns against the use of the Wiki**

If the Wiki can be described as a 'social software' (Swisher, 2004), then there are social factors that must undergo some changes before the Wiki will be accepted to improve the organisation's KM.

### *Open to vandalism*

Wiki vandalism is another reason cited by the case organisation for its reluctance to implement a Wiki. Since the Wiki would have no organisational or social boundaries, the case for vandalism might be overwhelming. Wiki vandalism involves editing a Wiki in a wilful and destructive manner to deface the website or change the content to include irrelevant information.

### *No rewards for work*

There is no recognition of authorship in a Wiki because pages can be freely written or edited by anybody which goes against the innate need by workers for recognition. The Wiki software uses the 'contributors tag' for general name recognition of 'good' authors or editors. However, this might lead to disputes among the contributors that they have not contributed 'enough' to the article to be considered as one of the authors or editors.

### *Fact or Fiction*

The principal dilemma of a Wiki is that, while its anarchic nature is desirable for fostering open debate without censorship, it also raises questions about the quality of information available, which could inhibit its usefulness. Methods of quality control and evaluation would be extremely difficult to measure. Therefore, measures of process and structure (Donabedian, 1980) could be used as more indirect indicators of quality, for example, reliability of information, provision of context, qualification of authors, use or acceptance of this information by other employees.

## **Legal concerns:**

### *Intellectual property*

It will be difficult to determine the true source of authorship because there are many contributors to the site.

### *Libel Liability*

A false Wikipedia entry listed John Seigenthaler, a former assistant U.S. attorney general, as having been briefly suspected of involvement in the assassinations of both John Kennedy and Robert Kennedy (Seigenthaler, 2005). Legal experts assert that Section 230 of the Federal Communications Act (CDA) 1996 made Wikipedia safe from legal liability for libel, regardless of how long an inaccurate article stays on the site. Wikipedia is a service provider and not a publisher, which makes them immune from liability for libel (Terdiman, 2005).

## **SOLUTIONS FOR OVERCOMING OBSTACLES**

The authors will now present a response to these challenges, with support from the literature. This is inspired by the phenomenal growth of Wikipedia which has spurred many organisations to form Wiki communities and use them as internal documentation for in-house systems and applications.

### **Decentralising IS control**

The path to decentralization of IS control is seen as a pragmatic, step-by-step approach, which can achieve its aim only in the long run. The Wiki is in line with such a pragmatic approach to the incremental evolution of corporate KM. Coordination and corporate learning across product groups and departments will become easier. Quality assurance is done by qualified peers. It is assumed that management hires competent employees, and thus any inaccurate entries will either be corrected voluntarily by the original contributor, or by others.

### **Preventing vandalism**

A Wiki that is used in the work environment generally covers topics that are less emotive and controversial in nature. In addition, revision control will help to prevent abuse and track changes. If a person erases any pages, it will be easy to revise to the previous 'uncorrupted' version. A simple tagging method such as having employees accessing the Wiki using their user name and password would discourage the malicious alteration of documents, as this would be a career limiting move.

### **Collaborative Work**

To counter argue against the assertion that there will be low participation in a Wiki if the author is not recognised for his/her authorship, it has been asserted that group cooperation is driven by interdependence in having work done (Schmidt and Bannon, 1993). Stvilia et al., (2005) go further by saying that Wiki software does include an interdependence mechanism. A Wiki challenges the opponents to build consensus so that the work can get done. The openness of the Wiki invites opportunities for improvement. Corporate incentives must also be given so that employees will be motivated and fully committed to contributing and maintaining a Wiki. A discretionary approach allows employers to reward participation, productivity, quality articles and good ideas.

### **Legal concerns**

Wikipedia uses a grants free access to its content similar to the license used by free software called the GNU Free documentation License. To ensure that the Wiki can be used by all employees, the same license will apply to the content of the Wiki. 'Wikipedia' (2006) maintains that

the content will be subject to modification, and it can be copied and redistributed. One important argument for a more decentralised approach will be that decentralisation will increase the capability of the system for innovation and learning in regard to the development of effective corporate rules for the protection of intellectual property. Organisations can impede contributions by forcing them to undergo a rigid fact checking process. Or users can be allowed to freely contribute, leverage revision history and let the community deal with intellectual property abuse.

## CONCLUSION

Adopting a wiki to manage knowledge can pose new opportunities and significant challenges. This paper has provided evidence that many companies have successfully used Wikis to work collaboratively and shown how the Wiki will 'write itself', depending on the users to contribute and maintain this growing repository of knowledge in the organisation. It also examines the reasons why the case organisation has dismissed using Wiki technology for KM and how Wikis can be useful in KM work. This paper argues that the risk of wiki rejection, as illustrated by this case organization, can be contained through a number of strategies.

Compared with traditional KMS, a Wiki places less emphasis upon centralised control, strict discipline, and extensive monitoring of the systems to manage knowledge in the organisation. Relinquishing this control by using a Wiki to broaden the responsibility for KM in an organisation can be seen as a benefit and not a threat. Further research is required on constructivist learning theories and their effects on conversational technology. By linking collaborative KM priorities to conversational technology, organisations can avoid the knowledge acquisition bottleneck and empower knowledge workers.

In conclusion, learning organisations are likely to become useful knowledge creation environments only in organisations where the management can shed its control and empower its employees to take a more active role in the creation and dissemination of knowledge.

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