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Effects of Informal Networks on Knowledge Management Strategies

Tony Jewels, Helen Partridge, and Alan Underwood
Queensland University of Technology, Australia
t.jewels@qut.edu.au, h.partridge@qut.edu.au, a.underwood@qut.edu.au

ABSTRACT

The application of a knowledge management strategy does not take place in a vacuum. Successfully meeting objectives of a knowledge management strategy may depend not only on the efficacy of the strategy itself or of the team that is responsible for its implementation, but also on the environment into which it is being introduced. Research carried out with an application service provider (ASP) indicates that existing informal communication networks will continue to operate independently of any formal strategy introduced. It is important therefore for management to recognise the existence of such informal networks and to understand how they are likely to affect the success of any formal knowledge management strategy.

INTRODUCTION

In 1998 an application service provider (ASP) with the assistance of a major international consultancy company acting as its implementation partner, had coordinated the simultaneous implementation of SAP R/3 across five government agencies. Three years later, this ASP, like several other organisations following the spate of Enterprise Systems (ES) implementations prior to the turn of the century, was facing its first major upgrade. The ASP General Manager (GM) appreciated the need to recall the lessons and practices from these initial projects as the extent and cost of these major upgrades were likely to match or exceed that of the initial implementation. The GM had long recognised the importance of knowledge capture, access, sharing and reuse, both for the current upgrade process and for future upgrades, and university researchers had already been engaged with the ASP in a number of research projects in the area of knowledge management within an ES environment (Timbrell and Gable, 2001), (Chang et al., 2000), (Chan and Rosemann, 2000).

Based partly on its experiences with the original implementation partner, for its forthcoming upgrade, the ASP had decided to "go it alone", choosing to employ just a few key individual contractors to work with its internal staff. Knowledge of the forthcoming upgrade and the awareness of a newly published paper, *Theory of Knowledge Reuse: Types of Knowledge Reuse Situations and Factors in Reuse Success (Markus, 2001)* provided an opportunity to test the validity of the paper's typology of knowledge reuse and to concurrently provide research data that might assist the ASP in providing conditions under which successful knowledge reuse was likely to occur. In its conclusion, the original study, (Timbrell and Jewels, 2002) supported the *Theory of Knowledge Reuse* whilst also indicating the prevalence of informal knowledge sharing networks operating within the organisation. A cursory examination of the original research provided some preliminary evidence that this informal knowledge sharing activity may somehow relate to the ultimate effectiveness of any formal knowledge management strategies implemented.

The original study tested a published knowledge re-use theory by matching the expected and actual responses to a set of predetermined questions linked to that theory. Responses originally conducted from a knowledge re-use perspective in the original study were carefully re-examined from a perspective of informal network knowledge sharing and findings subsequently compared to the current literature. The purpose of this paper is to examine the effect of informal knowledge sharing networks on formal knowledge management practices of an organization.

RESEARCH PROCESS

Semi-structured interviews were conducted over a period of six days with all twenty-eight employees within the ASP. The interviews were taped for later transcriptions and relevant notes taken to highlight key issues. Interviews, held in an office provided specifically for the purpose by management were planned for 30 minutes duration, commencing at 0830 and finishing at 1700 each working day until completion.

The interview technique used was a combination of the standardized, otherwise known as structured interview (Fontana and Frey, 1998 p.47) and guided interviews. The research team prepared a semi-standardized set of questions that would take about three quarters of the interview time and the remainder of the scheduled time was used to revisit issues that had arisen during the more structured questioning, by referring to the question topic guide. The interviewer's technique was based on the styles described by Fontana and Frey, (1998 pp.52-53) as "balanced rapport" and "interested listening", meaning that a casual yet impersonal attitude that neither evaluated nor judged the interviewees responses was maintained.

An assurance that responses would be kept confidential may have contributed to the candid nature of responses. To ensure that it was not possible for individuals or definable groups to be identified by the published data, identity numbers were allocated to each interviewee, which was used for report analysis rather than names. Names with matching identity numbers were kept in a separate database table and were kept strictly confidential, available only to the researchers.

REVIEW OF THE LITERATURE

Knowledge Requirements

In explaining the knowledge required in a project Frame (1999), suggests a three stage approach by asking,

- What skills should we possess in order to do the job?
- Do we have them?
- How can we acquire them?

According to Chan, (1999), Chan and Rosemann, (2000) ES implementations require a wide range of knowledge including, project knowledge, technical knowledge, product knowledge, business knowledge and company-specific knowledge.

Where an organisation believes that it does not have the requisite expertise, it will seek knowledge-based resources from third-party providers such as consulting firms (knowledge vendors), which act in the capacity of implementation partner (Timbrell and Gable, 2001). The GM believed however that his organisation was already experienced enough in all the identified knowledge areas to execute the upgrade without the assistance of an implementation partner.

The Contributors

For the purposes of examining knowledge dynamics within an organisation it is important to understand the roles played by each of the types referred to by Frame (1999), in contributing to competence

- The individual
- The team
- The organisation

The traditional and popular view is that it is the individuals within organizations, and not the organizations themselves that learn, (Weick, 1978), (Simon, 1976). Although new knowledge is developed by individuals, organizations do play a critical role in articulating and amplifying that knowledge. (Nonaka, 1994). The literature is increasingly discussing the use of "teams" and "communities" according to Ferrán-Urdaneta (1999), whose work discusses the differences between these two types of group. From an organisational learning perspective Andrews and Delahaye (2000) also adds the group level to that of the individual and the organization. We may, (for the purpose of this study), define a team (or community) simply as more than one individual collaborating together. It might be more controversial to suggest that for knowledge sharing purposes a team need not necessarily be part of the same organization.

Informal Networks

Whereas formal organizational structures are able to handle easily anticipated problems, when unexpected problems arise, (Krackhardt and Hanson, 1993) suggests that an informal organization kicks in. The phenomenon is discussed by Bhatt (2002), who states that employees often form their own informal communities of expertise from where they can get necessary pieces of knowledge.

It should be emphasised that the informal structures that are being referred to in this paper do not directly relate to the informal transfers of tacit knowledge described by Nonaka, (1994) occurring between employees, (although this type of informal transfer might still occur within an informal structure). Informal networks are relationships developed between individuals independently of any formal structure (although an informal structure might occur within a formal structure), and are not the chance meetings at the water cooler or cafeteria that Davenport and Prusak (1998), discusses, but carefully conceived personal "networks of knowing", built up over time and used as complementary knowledge sharing alternatives to an organization's formal strategy. They are described by Krackhardt and Hanson (1993), as being highly adaptive, moving diagonally and elliptically, skipping entire functions to get work done. In much of the type of work that 'symbolic analysts' perform, frequent and informal conversations are used as neither problem nor solutions can be defined in advance, (Reich, 1991). The development and prominence of informal networks could be related to the culture state within an organization.

Organisational Culture

Culture, according to McDermott and O'Dell (2001), is often seen as a key inhibitor of effective knowledge sharing. A wide body of evidence exists to indicate that organizational or corporate culture is critical to the success of most, if not all ES implementations. There are four hypothesized categories of organisational obstacles in information systems development, according to Jin (1993) namely,

- Bureaucratic complexity
- Personality conflict
- Technical complexity
- Acute resource scarcity

The effect that organisational culture has on knowledge management strategies is being increasingly recognised as a major barrier to leveraging intellectual assets according to De Long and Fahey (2000), who consider four ways in which culture influences the behaviour central to knowledge creation, sharing and use,

- Culture, and particularly subcultures, shape assumptions about what knowledge is and which knowledge is worth managing.
- Culture defines the relationships between individual and organisational knowledge, determining who is expected to control specific knowledge, as well as who must share it and who can hoard it.
- Culture creates the context for social interaction that determines how knowledge will be used in particular situations.
- Culture shapes the processes by which new knowledge, with its accompanying uncertainties, is created, legitimated and distributed in organisations

Certain types of identifiable culture have the potential to affect an ERP environment, (Stewart et al., 2000). Although these culture states can affect different types of organizations in different ways and each can be more prevalent in certain types of organization, they may best be identified by comparing how closely the organization meets the following principles,

- Genuine user empowerment that produces internal as well as external commitment.
- Acceptance of "risk-taking" as a necessary factor in planning, which does not punish failure, and the move away from non-competitive or even anti-competitive cultures to true market competitive cultures.

Formal organization charts have little relevance to the true sources of power in the high-value enterprise, according to Reich (1991), "Power depends not on formal authority or rank (as it did in the high-volume enterprise), but on the capacity to add value to enterprise webs" (p99).

Knowledge Sharing Choices

The role that individual-level processes play in organisational learning is examined by Andrews and Delahaye (2000), in terms of how knowledge inputs and outputs are mediated by individuals. Knowledge inputs are discussed in terms of the individuals' social confidence and their perception of the credibility of the knowledge source. Knowledge outputs are discussed in terms of what knowledge would be shared with whom, determined by the perceived trustworthiness of the recipient. The term "psychosocial filter" is used to describe the cluster of factors that influence knowledge sharing processes, and is described as working at the 'micro-level'.

OBJECTIVES

The purpose of this study is to investigate the nature of informal knowledge sharing within the organization, a rationale for its existence and its possible affect on the operation of the organisation's formal knowledge management policy. In seeking to better understand the dynamics of informal knowledge sharing, our objective is to inform academe and practitioners on ways of improving the effectiveness of knowledge management strategy.

FINDINGS

Informal Networks

There was evidence from the interviews that knowledge sharing was occurring in at least two identifiable modes. Management had introduced a range of knowledge sharing initiatives that could be considered as a formal top-down approach. It was however clearly evident that employees' were using an alternative method of knowledge sharing to the one created by management. Individuals had formed their own personal networks and had developed their own "communities of interest" in what could be considered as an informal bottom-up approach.

What was interesting in our research was that management, although recognising the existence of informal networks, had had no direct role in either creating or nurturing them and had little idea of their extent and frequency of use.

The following examples were typical of the responses:

"Who I use (as experts) and the people on the formal experts list are different"

"I network with people that I have worked with in the past"

"I use my personal network of contacts if I can't readily find appropriate documentation"

"I have an extensive personal collection of books that I use"

The manner in which the "hidden" teams engaged in knowledge sharing practices was however strictly informal and consequently management would not have been reasonably expected to be aware of how they operated. Interestingly, although the management executives themselves had indicated that they were using their own informal knowledge sharing structures, they still did not fully appreciate that similar practices operated extensively at other levels within their organization.

Organizational Barriers

Although evidence of all four categories of obstacle referred to by Jin was identified in the research, it appeared that when confronted with these obstacles employees would merely find an alternative way to reach their objectives. There was a general feeling that these organizational obstacles, although considered annoying, could be bypassed, if necessary. One of the common methods employees used to circumvent organizational obstacles was to marshal their own informal structures.

However the barriers that De Long refers to are not as easily bypassed. These are the ones that appear able to be controlled only by organizational initiatives. The barriers referred to by Stewart et al are either similarly organizationally controlled or are deeply personalised in the individual, (Stewart et al., 2000).

System security appeared to be an issue that was affecting knowledge sharing activities. One contractor admitted,

"I don't know of any contractors that have had direct access to the Knowledge database"

while one relatively new full time employee commented that,

"I wasn't even told about the existence of the knowledge data base"

There was a policy that employees should only be given access to the specific areas that they were working in, and subsequently lessons learnt from one part of the system were seldom able to be formally shared with those that did not have access to that part. Remarks such as,

"No-one would be interested in what I am doing"

"I only bother formally documenting for myself because I am the only person who would need to use this type of information"

indicated a general under-utilisation of formal knowledge sharing practices.

Formal KM Strategies

The importance of formal team building and creating a sense of shared purpose as described by Senge, (1992) was clearly evident to management as they had embarked on a range of formal initiatives to harness its potential.

By his introduction of such initiatives as a free text knowledge database and the championing of specific knowledge transfer sessions the GM appeared typical of the sort of individual that Skyrme, (1999) and Health Canada, (2000) refer to when they suggest that the appointment of a senior executive responsible for knowledge initiatives appeared to be a prerequisite to a successful KM strategy.

Yet the knowledge transfer sessions were not well regarded with comments such as,

"Skill transfer sessions were not popular, they were seen as a waste of time and irrelevant"

Although it was evident that management understood the rationale for these sessions it was uncertain whether there was an understanding by employees of their raison d'tre.

What was made unambigiously clear in the interviews was that the knowledge sharing that was intended to take place with the original implementation partner (IP) did not occur properly. Comments such as,

"(The IP) knew very little regarding SAP and the Government's business rules".

"(The IP) kept public servants at 'arm's length' or possibly didn't have the required knowledge themselves".

indicated a lack of trust and confidence in the IP.

CONCLUSIONS

There was a clear indication that informal knowledge sharing was taking place throughout the organisation. No pattern was evident to suggest that the knowledge sharing structures were anything but randomly formed. It appeared that many, but not all, of the individuals who were most actively involved in informal knowledge sharing groups were those people who had been with the organization, (or ones similar to it), the longest.

It was evident that individuals within these informal structures maintained their links, after job changes, or even after leaving the organisation in which the original structure was formed. This would suggest that the organization itself may have little impact in how informal knowledge sharing structures are formed and are operated.

There was evidence to suggest that wherever there was a perceived failure to provide a process for adequate individual or organizational learning, although some individuals merely complained, many automatically engaged in alternative strategies to ensure that they would be able to do their work. One of the main strategies used was that of engaging in informal networks.

It is likely that once any appropriate knowledge sharing strategy (formal or informal) is securely in place, the widespread adoption of any alternative strategy (formal or informal) will need not only to prove its own worth but also to prove itself more effective than any existing strategy, in order to take a pre-eminent position. It would appear logical to assume therefore that the prevalence and strength of any informal network would impact the internal acceptance of a newly introduced formal knowledge management strategy. Evidence of robust informal network activity within the subject organization would at least partly explain the relatively unenthusiastic acceptance by staff of formally introduced knowledge management initiatives.

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