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Knowledge Management Issues and Practices:

A Case Study of a Professional Services Firm

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Abstract

An exploratory and descriptive case study was conducted to discover knowledge management issues and practices in the Australian branch of an international professional services provider referred to as IPSF. Though the study has an operational emphasis, both macro and micro issues of knowledge management are considered; macro issues pertain to the creation of knowledge assets, while micro issues pertain to access, transfer and reuse of knowledge within the firm, and between the firm and its clients. The study takes a professional services provider-centric view. The data was gathered from interviews with IPSF staff. Interpretation focuses on gaps between the literature and observed practice.

Keywords

Knowledge management, professional services, case study

1 INTRODUCTION

The case study examines the processes by which a large multinational professional services firm captures learnings from client projects, and how they facilitate knowledge transfer between their professional staff and their clients. The professional services firm studied will be referred to throughout this report as IPSF. This case study was intended to provide contextual understanding of IPSF's knowledge management practices in relation to the firm's competitiveness as a provider of professional services. The study focused on IPSF's operations in the Asia-Pacific region.

1.1 Research Context

Knowledge intensive firms, or knowledge-based organisations, rely on trading the knowledge and expertise of their staff (Blackler, 1995; Morris & Empson, 1998). The professional service firm is considered a knowledge intensive firm and includes traditional professions such as the legal, accounting, architecture and engineering practices as well as consulting firms (Empson, 1999b). Knowledge can provide these organisations with sustainable competitive advantage where it cannot be easily replicated by competitors (Barney, 1991; Bertels & Savage, 1998, p.22; Davenport & Prusak, 1998, p.16; Teece, 1998). Organisations must be able to understand their knowledge requirements and how to meet these requirements and constantly seek to increase and renew their knowledge assets where knowledge gaps exist (Davenport & Prusak, 1998; Grant, 1996; Zack, 1999). Consultants often serve as important mediators of client knowledge sourcing strategy (Timbrell and Gable, 2002).

2 LITERATURE REVIEW

A recurrent theme in the literature is the distinction of knowledge from data and information. As suggested by Grover and Davenport (2000), knowledge is derived from classified data that becomes valued as information

when placed in a specific context to contribute to decisions or actions (Empson, 1999a; Saint-Onge, 1996, p.12). Another definition is that information is the flow of data that allows knowledge to be created or modified (Davenport & Prusak, 1998; De Long, 2000). While the definitions for knowledge vary within the literature, it appears there is general agreement that knowledge has the highest value, incorporating both data and information, and leads to action when applied to individual experience.

Research also suggests that knowledge is a product of the human intellect (De Long, 2000; Grover & Davenport, 2000; Nonaka, 1994; Sunassee & Sewry, 2002) and can be classified as either explicit or tacit. Explicit knowledge can be codified into words while tacit knowledge must be externalised from the individual experience in order to be shared (Davenport, Jarvenpaa, & Beers, 1996; De Long, 2000; Grant, 1996; Grover & Davenport, 2000; Nonaka, 1994; Sunassee & Sewry, 2002).

It is widely agreed that the success of knowledge management systems relies on technology combined with social interaction and organisational culture to encourage knowledge capture, reuse and transfer between individuals (Birkinshaw, 2001; Coles, 1999; Davenport & Prusak, 1998; Dawson, 2000; Manchester, 1999; Min & Yoon, 2002; O'Dell & Grayson, 1998; Roberston & Hammersley, 2000; Sunassee & Sewry, 2002).

Culture must be based on trust, for individuals to share their knowledge; while incentives, such as financial rewards, respect among colleagues, or a mutual exchange of knowledge, must be present to motivate knowledge contribution (Bertels & Savage, 1998, p.18; Birkinshaw, 2001; Gibbons & Wright, 1999; Grover & Davenport, 2000; Markus, 2001; Min & Yoon, 2002; Nonaka, 1994). Knowledge is considered as power and when knowledge is shared there is a fear that this power may be relinquished. Therefore, incentives provide encouragement for employees to share knowledge, and not to hoard it (Min & Yoon, 2002).

Research has identified a need to measure the economic value of knowledge, as measurement provides a way to assess an organisation's ability to manage its knowledge effectively (Allee, 1997). It is suggested that there is a need for standardised measurement between organisations for comparisons of knowledge value (Bertels & Savage, 1998, p.21; Sveiby, 1998; Teece, 1998). While there is consensus that there is value in measuring knowledge, no agreed measurement model exists at present.

The literature indicates that consultant engagements with clients can be ongoing, and often entail repeat engagements. Repeat engagements allow benefits to be realised in terms of economies of scale and re-establishing the relationship (Gottschalk, 2002). In these repeat situations, managing knowledge that exists within the relationship is more critical as it can enable greater leveraging of consultant knowledge during the engagement. This may lead to long term partnerships between the client and consultant as trust is built through repeat engagements (Gottschalk, 2002; Scott & Gable, 1999). It is also suggested that through the management of knowledge within the relationship, a higher quality of client service delivery is possible. This results from the consultant having a deeper understanding of the relationship with the client, which also provides competitive advantages to the consultant (Gottschalk, 2002).

Key issues that remain a challenge for knowledge management include concerns with promoting a knowledge sharing culture in organisations, not just between individuals but between business units, as well as defining a standardised system of measurement to enable the value of knowledge management to be determined (Alavi & Leidner, 1999). Another concern that has been identified is the difficulty of ensuring that the most current information is available and that obsolete information is eliminated (Alavi & Leidner, 1999). Also, it is a challenge to avoid information overload for users and to ensure knowledge contributed is of good quality (Greengard, 1998).

3 THE CASE STUDY APPROACH

The research method used for the study is the case study, a method well suited to an exploratory study such as this (Yin, 2003). The case and the unit of analysis for this study is the professional services firm, IPSF (Australia), and the embedded unit of analysis is the knowledge management role.

The research approach used multiple sources of data. While interviews were the major source of evidence, IPSF web sites, internal IPSF documents, and the professional management services press were used to corroborate and cross-check data gathered. Yin (2003) points to the value of using multiple sources of data as a means of increasing the reliability of a research study.

A case study protocol was developed to guide the case study processes. The use of such a protocol can further strengthen study reliability (Rowley, 2002; Yin, 2003). The protocol derives from review of the literature relating to knowledge management practices in knowledge-intensive organisations. The case study protocol includes the following main sections:

- Theory to Be Tested (in this instance, the study is exploratory and descriptive, guided by a range of literature rather than a single theory)
- Research Questions and Objectives
- Reliability Provision
- Methods of Data Collection
- People to be Interviewed and Other Sources of Data
- Data Analysis Approach
- Project Timeline
- Interview Questions (based on points from the literature related to the study objectives and the enunciated research questions).

3.1 Data Gathering

As mentioned above, the interview was the primary source of data for this study. The interview guide from the case study protocol was used to give focus and to ensure that major issues were not overlooked. The use of such an interview guide brings many potential advantages to the case study (Kvale, 1996; Maykut & Morehouse, 1994; Patton, 1990), while giving the interviewer the freedom to pursue points raised by interviewees but not foreseen in the study protocol. The structure of the guide assists study reliability while the freedom to pursue unexpected themes capitalizes on the strength of the case study method for an exploratory study.

The interview guide for this study contains questions on four themes, relating to the study objectives. Firstly, there are questions that relate to what knowledge is created and harnessed in IPSF. Secondly, questions seek to understand why knowledge management is important to IPSF. A third group of questions relate to how knowledge management practices and processes are carried out in IPSF. The final set of questions considers how knowledge management is measured. The questions posed were open ended to enable interviewees the opportunity to provide insights into their experiences.

There are three sets of interviewees in the study, each set representing one or more knowledge management roles in IPSF. The first set of interviewees consists of the following roles: a Program Manager (an IPSF consultant manager), a Project Manager (an IPSF consultant) and a Knowledge Champion/ Functional Analyst (an IPSF business analyst). These three were interviewed together on the site of a client project to gain a perspective on how knowledge from a specific project is marshalled and submitted to a central repository for subsequent sharing with IPSF staff world-wide. Further, data was gathered from this group on how the central knowledge repository and other knowledge resources are accessed by IPSF personnel in connection with a specific project.

Another interview sought the perspective on IPSF knowledge management strategies and practices of an IPSF Partner. This interview was conducted at the Brisbane office of IPSF(Australia).

Teleconferencing facilities were used for an interview with Knowledge Management Professionals at IPSF's central repository site, offshore from Australia. The interviewees were the Manager - Knowledge Network for Asia-Pacific and the Operating Unit Area Coordinator for Asia-Pacific.

All interviews conducted were recorded with the use of a mini-disc recorder, all interviewees having agreed to the recording at the time each interview was being arranged. While there are differing views on the desirability of recording interviews (Patton, 1990; Maykut & Morehouse, 1994, p. 98), it was decided to record the interviews, as an accurate record of the interviewees' transcribed responses was required for the intended data analysis. However, notes were also taken to allow the interviewer to formulate additional questions as new ideas surfaced and to note points that needed following up (Patton, 1990, p. 348). There was no indication to the researchers that the use of recording equipment may have inhibited the interviewees in their responses.

3.2 Case Validity and Reliability

The integrity of case study research can be evaluated in terms of validity and reliability. Reliability refers to the likelihood that the research procedures would yield the same outcomes if repeated (Kirk & Miller, 1986; Rudestam & Newton, 2001). Validity relates to the correctness of responses (e.g. lack of bias) and their correspondence (are the researchers measuring what they intended measuring?) with the phenomenon of interest (Kirk & Miller, 1986). Tests can be used to ensure the rigour or integrity of case study research (see Table 1, based on Yin (2003). The tactics listed in Table 1 have each been applied in this project during data collection, in pursuit of Construct Validity and Reliability. Attention to internal validity is limited due to the absence of an a priori theory against which the data collected could be matched. External validity has not been sought in this study, consisting of a single exploratory and descriptive case study.

Table 1: Case Study Tactics for Design Tests

TESTS	CASE STUDY TACTIC
Construct validity	<ul style="list-style-type: none"> - use multiple sources of evidence - establish chain of evidence - have key informants review draft case study report
Reliability	<ul style="list-style-type: none"> - use case study protocol - develop case study data base

3.3 Data Gathered

The main points deriving from the interview evidence, and confirmed where possible from documentary sources, are summarized in Table 2. Table 2 shows the main points that emerged and the principal sources of each of these points of interest. It can be seen that in most instances the same point arose from two or more interviewees, contributing to the construct validity of the study.

Table 2 - Points of Interest from the Evidence

POINTS	CONSULTANT	KNOWLEDGE CHAMPION	PARTNER	KNOWLEDGE MANAGEMENT PROFESSIONAL
Culture is ingrained into organisation	X	X	X	
Technology enables knowledge management	X	X	X	X
Time was a challenge	X	X	X	X
Culture was a challenge	X	X	X	
Measurement of knowledge was a challenge	X			X
Importance of experience and judgment in knowledge capture	X	X	X	X
Incentives to motivate knowledge sharing	X	X	X	
Knowledge was ingrained into IPSF	X	X	X	
Support networks (communities of practice, expert forums)	X		X	X
Innovation of Knowledge	X		X	X
Correct knowledge reuse			X	X
Volume of data in repository too large			X	
Not from first principles	X		X	
Costs of knowledge translation				X
Client demand drives knowledge transfer	X			
Consider internal knowledge needs				X
Stewardship to knowledge contribution – core value			X	
Capture of knowledge from projects into documents for repository	X	X	X	X
Creation and innovation of knowledge from reuse of knowledge			X	
Identifying knowledge gaps				X
Appropriate reuse of knowledge	X		X	
Reviewing shelf-life of knowledge				X

3.4 Analysis of the Data

Data analysis entailed development of a descriptive framework, as the study commenced without any specific theory base. The research is descriptive and exploratory in nature. The analysis relies on concepts identified from the literature pertaining to knowledge management in knowledge intensive organisations, and seeks to determine if IPSF’s practices and issues align with these.

An examination of the data gathered shows that the points identified, and summarised in Table 2, can be clustered meaningfully into four groups, matching four key themes identified in the literature. Firstly, there are factors that influence or enable knowledge management, such as culture, technology, and incentives for knowledge sharing. Secondly, there are knowledge management activities associated with each of the roles represented by the interviewees. Third, several knowledge management challenges faced by IPSF personnel are identified. Finally, several pieces of data can be seen to be specific to an ‘internal focus’ of knowledge management in IPSF. The four themes and groupings of data by theme are shown in Table 3.

Table 3 Themes from the Data

THEMES	POINTS RAISED FROM DATA
Organisational factors influencing effective knowledge management	Culture is ingrained into organisation
	Technology enables knowledge management
	Importance of experience and judgment in knowledge capture
	Incentives to motivate knowledge sharing
	Knowledge was ingrained into IPSF
	Innovation of Knowledge
	Not from first principles
	Support networks (communities of practices, expert forums)
Operational knowledge management processes	Stewardship to knowledge contribution – core value
	Capture of knowledge from projects into documents for repository
	Creation and innovation of knowledge from reuse of knowledge
	Identifying knowledge gaps
	Appropriate reuse of knowledge
Challenges	Reviewing shelf-life of knowledge
	Time was a challenge
	Culture was a challenge
	Definitive measurement for knowledge
	Correct knowledge reuse
	Volume of data in repository too large
Internal focus	Costs of knowledge translation
	Client demand drives knowledge transfer
	Consider internal knowledge needs

4 STUDY FINDINGS

The main study findings relate to the four themes proposed from data analysis: Organisational factors influencing effective knowledge management; operational knowledge management processes and roles; challenges to effective knowledge management; the internal focus on knowledge management.

4.1 Organisational Factors Influencing Effective Knowledge Management

Positive influencing factors for knowledge management found in the IPSF data were consistent with those in a framework proposed by Lai and Chu (2002). Three main influencing factors emerge from the project data: strong information technology systems; positive incentives for sharing knowledge; strong support systems for participating in knowledge sharing.

It is evident that strong information technology systems provides the essential infrastructure for effective knowledge management practices at IPSF and facilitates the global sharing of knowledge within the organisation. Sound technology is recognised as a facilitator for knowledge sharing and transfer in knowledge-intensive organisations. IPSF has many systems and technology offerings that support its knowledge management: There are knowledge repositories which store the documents from projects; email requests; instant messaging services; an intranet; discussion forums; online ordering of documents and articles; and a helpdesk facility for knowledge management support. The knowledge repositories in IPSF store the documents that are produced at the conclusion of projects as well as other miscellaneous relevant material such as conference presentations by IPSF staff. These repositories are maintained by knowledge management professionals, who are able to index contributed material in the repository so that the contribution has maximum exposure when searched by other people in the organisation.

At IPSF, a Lotus Notes document database had been central to effective storage and sharing of knowledge world-wide. The Lotus Notes installed repository had, in turn, been replaced effectively by an equivalent web-based system. As one interviewee commented, “there’s a huge technology component ..”.

While it is acknowledged that technology plays a vital role in enabling effective knowledge management, it was emphasised many times by the interviewees that it was organisational culture that drives the environment to foster sharing between people in the organisation for knowledge management success. This culture of sharing and contributing to the organisational knowledge base was evident not just from the words of the interviewees in the various roles within IPSF but was apparent in the observed practices within the company. It appears that the

establishment and maintenance of this organisational culture is strongly encouraged by company policy, supported by a range of incentives for compliance. However, it is apparent also that positive attitudes to knowledge sharing can become self-reinforcing as IPSF staff derive individual benefit. As one interviewee comments, “I don’t hesitate to give priority to a message requesting information because I know how many times I’ve been helped in a difficult situation by someone else supplying information I needed”.

The formal incentives to contribute and participate in the company’s knowledge management practices include measurement in employee performance reviews of knowledge participation. This factor is recognised by manager and employee as one indicator of successful performance for determination of salary and promotion on the basis that good knowledge management is a core value of the organisation. The performance reviews at IPSF usually consider, for instance, how many “communities of practice” the individual has been a member of. Performance reviews also consider how effectively employees have contributed to the knowledge repository. Hence, employee contribution to the organisational knowledge store may be directly rewarded financially. Time to contribute to knowledge tasks is also included in timesheets to ensure knowledge work is accounted for. In addition to the formal incentives that exist to encourage knowledge sharing, there is evidence that emotional incentives exist where employees are empathic to others needing help, as indicated earlier.

Support networks exist in IPSF, providing an environment to facilitate knowledge sharing. These networks include communities of practice, discussion forums and expert networks. The constant contact between employees in these global communities allows knowledge to flow, be shared and absorbed. The Knowledge Exchange database provides expert information from IPSF staff on a wide range of topics. The discussion forums provide a network connecting all IPSF staff around the globe with experts from specialised areas to share knowledge. Communities of practice are organisational structures related to discipline specialisations in IPSF that enable members to participate in conferences, be emailed with latest questions being asked in the practice area and be aware of best practices in the specialisation. The support networks play an important role in knowledge sharing out of recognition that some relevant knowledge will fail to be stored in IPSF’s knowledge repository, particularly elements of tacit knowledge. The support network is a safeguard that catches a good deal of such knowledge through the communities of practice, discussion forums and expert groups.

4.2 Operational Knowledge Management Processes and Roles

IPSF has in place a number of knowledge management processes and practices that are consistent with the literature’s portrayal of best practice for knowledge-intensive organisations. The organisational processes and practices discussed here relate to: development and use of project templates and methodologies, controls on quality of knowledge stored, and adherence to confidentiality obligations.

IPSF seeks competitive advantage, both in winning business and in completing projects efficiently, through the use of project templates and standard project methodologies. IPSF’s internal portal provides access to the “Methodology Finder” used by IPSF employees to access a range of functions, most importantly access to templates for projects of all types and standard project methodologies. The standard templates, based on previous successful projects, and stored as company exemplars, are used wherever possible to provide the basic structure and documentation for projects. Feeding knowledge back into communities of practice allows templates and company methodologies to be refined for subsequent reuse.

It is important to have quality control processes to ensure the quality of knowledge that is being captured. This is achieved through a Quality Process Improvement program, overseen by the global knowledge management professionals. All submitted documents are reviewed against corporate quality standards. Before making new documents available, they are classified according to the extent of verification and validation of their content. Potential users of this knowledge are thus given an indicator of the level of reliance they can place on the material available. Some material available may be current, potentially useful but not fully validated. The classification will make this clear so that the potential user can take account of this.

A confidentiality classification is also provided for potential users of IPSF knowledge. These classifications include “full usage” (everyone can use; even clients can be shown full usage documents), through to the highest classification for posting (only internal usage). Beyond this is the highest restriction level (not posted on the database, but, if needed, a nominated person can be contacted for more information). The use of these confidentiality classifications ensures the knowledge captured can contribute to IPSF competitiveness while preserving the intellectual property and confidentiality of clients.

The first of the knowledge management roles identified at IPSF is that of knowledge contributor. Knowledge contributors can be seen to be responsible for the creation, capture and sharing of knowledge with others in the organisation. This is distinct from the role of knowledge management professionals, who are specifically responsible for the management of knowledge, including how it is stored, classified and made accessible for reuse. Staff at all levels in IPSF are expected to be knowledge contributors.

The role of knowledge champion is assigned to an individual on each IPSF project. The knowledge champion is responsible for producing an inventory of deliverables from the project to capture the relevant knowledge. The knowledge champion is also responsible for reviewing all the project outputs to ascertain what is reusable, and for the classification of documents for the repository.

Knowledge management professionals at IPSF are responsible for the management of the knowledge repositories and defining new areas for seeking knowledge where there are perceived gaps. Knowledge management professionals also guide the knowledge champion and maintain close contact throughout a project. Knowledge management professionals will provide training for the knowledge champion, if required. The knowledge management professional also helps the knowledge champion focus on certain areas to capture what has been identified as high priority knowledge from projects.

4.3 Challenges to Effective Knowledge Management

The data from the study reveals several areas where the tasks of knowledge management at IPSF provide difficulties. Various aspects associated with time pose challenges for IPSF. Measuring the value of knowledge management relative to the costs is a challenge yet to be conquered at IPSF. Effective selection from the knowledge base is seen to be a problem for less experienced IPSF staff. Finally, a tendency to an unduly internal focus may constrain some benefits of knowledge management at IPSF.

Each interview revealed a different aspect of time that was a challenge. Firstly, the knowledge champion, project manager and program manager reveal that it is a challenge to determine the right time to post documents from projects to the repository. The competing priorities are to have the associated knowledge available for use by others at the earliest possible time yet without the posted documents being materially different from the final versions.

Another challenge faced with time is the global nature of the organisation, making it difficult to communicate across markedly different time zones. The Lotus Notes document database, replaced by the web-based document repository, enables effective document sharing in spite of the differences in time zone. Again, there is potential conflict in time priorities when pressure to meet project deadlines competes with the desirability of posting material to a knowledge repository. The billable hours model used by consulting firms such as IPSF is identified in the literature (Parsons, 2002) as a potential threat to knowledge contributions when time pressures are great. However, knowledge management contributions are regarded as billable project time in IPSF timesheets, while the contributions are also included in individual performance assessment at IPSF. These factors may redress any inclination to defer contributions to the knowledge repository when under pressure to meet project deadlines.

IPSF has attempted standardising systems of metrics for knowledge across the company but has not yet succeeded. This may be attributable, in part, to the tacit nature of much knowledge. It is also inherently difficult to segregate knowledge management benefits and costs in IPSF because of the very extent to which knowledge management is embedded into the organisation. Yet sound metrics is important to allow accurate evaluation of whether existing practices in knowledge management are cost effective. Attempts to attain a standard knowledge management metric across IPSF were abandoned in 2001 when a company restructure took place. Since then, each support unit has been responsible for providing its own metrics for knowledge management. Within the Manila knowledge management centre, balanced scorecards are used to provide measurement on content quality and customer satisfaction. The content quality measures consider the age of documents, the number of times documents or web pages are accessed and the active number of projects contributing knowledge. Customer satisfaction measures consider how satisfied clients are with using the repositories and the number of contributions for knowledge sharing practices, data being gathered through discussion forums and expert networks. Efforts are made at the centre to gauge the number of hours saved by reusing knowledge on new projects and the number of new projects won by tender relying on stored company knowledge. However, without clear definitive measures for the benefits of knowledge management it is not possible to make objective assessment of any net benefit to IPSF. Nonetheless, senior management, and all the interviewees, are convinced that it provides competitive advantage for the company. While the literature argues the need for good knowledge management metrics, there is little agreement on specific measures that should be used (Alavi & Leidner, 1999).

Interviewees speak of the challenge for beginning IPSF staff to select appropriately from the very large knowledge repositories. There is a belief that new staff are inclined to apply the most readily available knowledge rather than the most relevant. These problems are associated with the difficulty of capturing and storing knowledge in forms most readily understood and most easily retrieved in relation to a particular need. IPSF staff address this challenge through ongoing education of beginning staff members in how to most effectively tap the knowledge resources of the firm.

The literature on knowledge management in large knowledge-intensive organisations deals with the storage and use of knowledge from within the firm and from outside for the benefit of the firm. The literature deals at length, also, with the transfer of knowledge from service providers to their clients (e.g. Karantinou & Hogg, 2001).

From this research study, it appears that IPSF's major knowledge management concerns are with storage and use of internally generated knowledge. While IPSF staff are conscious of contractual obligations to transfer knowledge from them to client employees, this knowledge transfer aspect of knowledge management does not appear of highest priority for IPSF. Since knowledge is the stock-in-trade of IPSF project staff, care needs to be observed in giving this intellectual property to people outside the firm. However, the IPSF policy of seeking long-term relationships with clients argues for the development of trust and a consequential greater sharing of goals and knowledge with clients.

5. CONCLUSION

This case study provides insights into the knowledge management issues and practices of a large professional service provider. It can be seen from this study that IPSF is able to justify a strong strategic emphasis on knowledge management, and a concomitant heavy investment of resources, in the pursuit of competitive advantage. That IPSF is not yet able to measure accurately the benefits of its knowledge management practices, relative to the costs, has been no deterrent to the continuation of its knowledge management focus. The management practices at IPSF that create a **culture of knowledge management** are salutary for knowledge management practitioners and researchers concerned at the challenge of translating the theory of sound knowledge management into effective business operation.

The issues identified at IPSF in relation to its knowledge management practices, most notably difficulties with knowledge management metrics, can be seen from the literature to be typical of those faced by knowledge-intensive organisations. The scale of the investment in knowledge management at IPSF points to the importance of a continuing effort by researchers and practitioners to address these outstanding knowledge management issues.

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