

Knowledge Management Governance: A Multifaceted Approach to Organisational Decision and Innovation Support

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Abstract

Knowledge management is a strategy to support enhanced decision making through effective control of organizational knowledge. This paper presents a preliminary investigation into the governance of strategies to manage knowledge and the relationship between such strategies and organizational structures. It finds that the federated information transfer model is the 'best fit' with a stakeholder model of governance which ensures accountability and responsibility for tasks meeting the needs of all organizational stakeholders. Further, the governance structure established may predicate the ability of the organization to effectively establish a strategy to manage their knowledge.

Keywords

Knowledge management, decision support, innovation, governance, leadership, research-in-progress

1. INTRODUCTION

Knowledge management (KM) is a strategy to manage an organization's knowledge assets to support organizational decision making and to enhance the capacity for creativity and innovation in order to realize the aims and objectives of that organization. KM is a broad concept that addresses the full range of processes by which the organisation deploys knowledge. These involve the acquisition, distribution and use of knowledge in the organisation. This research-in-progress examines the role of governance in the effective delivery of a KM strategy. Governance is the centre of the decision-making authority, an executive framework to deliver the expected benefits of investments in a controlled manner, through the establishment of checks and balances in the mode of service delivery. This paper draws on the preliminary results of research-in progress into the governance of KM strategies in Australia. It investigates whether the application of the processes of governance on these practices may enable an effective and coordinated organization-wide approach, and that implementation of authority through such a framework works to ensure the delivery of anticipated benefits in an authorized and regulated manner. This supports enhanced decision making through effective control of organizational knowledge.

It is an heuristic that organizational governance models and strategies are patterned similarly to the organizational model of the entity concerned. This model impacts on and directs the nature of the knowledge management (KM) strategy and of its governance. There is little evidence of any systematic evaluation of the governance of such strategies. We propose that evaluation must take into account research into governance models, organizational structures and models of organizational information transfer for a full understanding of the efficacy of the KM governance process. This paper draws on empirical evidence to investigate the nature of KM governance and its relation to organizational structure to leverage information sharing for innovation and decision support.

2. ORGANIZATIONAL ENVIRONMENT

The organizational structure refers to the way in which the organization is arranged for the implementation of authority. Generally this is either an hierarchical structure, a flat structure or a management matrix. An hierarchical structure typically shaped like a pyramid with power or control centralized in a CEO who has managers reporting back. These managers have subordinates who also exercise delegated authority over their

subordinates. There may be several layers of authority and delegation depending on the size and complexity of the organization. Ultimately power and control lies in the CEO. A management matrix has a series of control mechanisms where the workforce may report to their direct superior, and additionally to one of a series of team leaders. This requires a sequence of devolved authorities and responsibilities. A flat organizational structure has devolved power and responsibilities without a cascading series of reporting structures.

2.1 Organizational Information Environment

The problem of the identification of information / knowledge resources is that in order to do so, the organization must also ascertain all its processes and business practices that generate the information and variant aspects of it. Organisations are artificial constructs that are established and function for a specific purpose. Compare for example the difference between the knowledge of a random crowd and that of the knowledge of an organisation. Each is a collection of individuals but they differ in the way that they respond to stimuli, acquire information and act on it to create new knowledge, modify behaviours and innovate. The crowd may comprise a series of disconnected or spontaneous activity while the organization is purposeful and coordinated (Spender, 1996). The organization may not always operate in a consistent manner but always functions towards achieving the objectives of the organisation. Organizational hierarchy defines relationships between employees, and their position, rights and responsibilities in the organization. Ouchi (1978) describes the process of organizational control in an hierarchical organization as policies, aims and objectives that are formulated and set by those in high level positions in the organization. These are then communicated to high level managers who are charged with the implementation of these functions and tasks. It is the responsibility of the high level managers to ensure that these functions and tasks are effected. The high level managers then communicate the functions and tasks to lower participants or employees. It is then the responsibility of the higher level managers to determine whether the objectives are being met and if so in how complete a manner that this is being achieved. If the functions and tasks are not being met then it is again the responsibility of the higher level managers to take appropriate actions. This is seen as an organizationally legitimate process in an hierarchy because power is ascribed to higher level managers over their subordinates however "[I]n a hierarchical organization, the top level managers must not only arrange a mechanism for controlling their immediate subordinates, they must also arrange a mechanism whereby their subordinates are sure to maintain control over the level below them and so on to successively lower levels." (Ouchi, 1978,174).

Consistency in the control process assists the reception and interpretation of reporting between levels of control - between managers and their subordinates and in turn between the subordinates and their managers. Ouchi's approach assumes a unidirectional form of control from the top down. Unidirectional control in a traditional pyramid shaped organization may have multiple levels of management and operation. Problematically we understand that the greater the number of layers of hierarchy, then the greater the possibility of meaning loss and loss of control from the top to the lower or the lowest level of that hierarchy. In this particular organizational environment the outcomes can be more complex to manage as "control based on outputs is relatively less susceptible to hierarchical attenuation than is control based on behaviour." (ibid, 174) That is, control based on measurable and predicted or predictable outputs is easier to implement than the control exercised against the behaviours of staff. One of the challenges therefore in the implementation of a strategy to manage organizational knowledge, is that knowledge sharing is a behaviours associated activity and as such is more difficult to maintain meaning and control in this traditional hierarchical management mode.

2.2 Organizational information transfer models

Five IT management models were identified by Davenport; Eccles and Prusak (1992). These are information Monarchies, information Utopianism, information Anarchy, information Feudalism and information Federalism. Most organizations display at least one of the models, sometimes more than one across departmental divisions.

- Utopianism: is described as a "heavily technical approach to ... management stressing categorization and modelling of an organization's full ... assets, with heavy reliance on emerging technologies". Technocratic models are difficult for the layperson to understand, thus the many functions are effectively disenfranchised and so individuals may abrogate responsibility for participation or activity.
- Anarchy is of course the absence of any overall management policy, leaving individuals to obtain and manage their own environment - where each fends for themselves
- Feudalism manages by individual business units or functions, which define and manage their own needs and report only limited information to the overall corporation.

- Monarchy is the definition of management methods and reporting structures by the firm's leaders, who may or may not share the management power willingly after harnessing it.
- Federalism is an approach to management based on consensus and negotiation on the organization's key management and reporting structures.

Davenport and Prusak (1997) add that federalism has expanded from the concept of being based on consensus and negotiation in the organization's management and reporting structures. It has the additional attributes of being an American style representative democracy with p.69 "weak central government and a high level of local autonomy." This implies that only few elements of the strategy are defined and managed centrally with local autonomy over local concerns. This model offers both information universalism eg in the development of a single taxonomy, but at the same time local usage and interpretation of terms. This also implicitly and sometimes explicitly recognises the politics within an organization. Federal governance allows for differing levels of control of various information types. This includes permissions for security of financial information. In a federalist environment the appearance of information silos or stovepipes can be common therefore the sharing of information across these is problematic and should be a matter of focus. Conflict is inevitable in the federalist model, however overt conflict over knowledge sharing is at least a step on the path to conflict resolution. Therefore "successful information federalism requires trustworthy information managers ... between corporate and local interests. They should facilitate negotiation between true stakeholders for information rather than building their own information empires." (Davenport, 1997, 72) In this article Davenport and Prusak added the Market based model of information transfer.

- Market based model of information transfer is the decentralised management of information resources in which individuals format, update, and dispose of information at will. Information providers and facilitators are self-supporting, but they can charge for any information that their customers are willing to pay for, at market prices.

In the Market based model of information transfer the quandary for the organization lies in the question of who owns the information and what are the sharing obligations and rights for employees. This model is typically seen in an environment where departments charge-back to each other for information and resources. Sometimes these six models are in direct conflict (Sambamurthy, 2002; Weill, 2002) within a single organization.

3. LEADERSHIP

Historically it would seem and management science assumes that leaders could simply order changes and then all that is required of the organization is to implement the plan (Bridges, 2000, 36). The plan may consist of a basic strategy to move from where the organization is now, to where that organization is required to be. Implementation of change means acknowledging and dealing with the dynamics of the human issues, and those of the structural transition within the organization that can and will determine the outcome of any change effort. This is particularly so when the change is not directed at the product or output of the organization but rather at the processes of the organization and the interactions of the employees. Executive management leads and establishes the culture and consequent ability of an organization to capture, share, and to manage its knowledge. The culture of an organization is developed by the structure and by the attitude of management. Krogh et. al. (2000) describe how effective management and support of knowledge creation depends on the physical, virtual and emotional context in which it is manifest. The task of management in the creation of a knowledge management strategy is to create a culture that sees the creation, dissemination and utilisation of knowledge as being a normative function within the organization. Where there is a strong commitment at the level of executive management to change organizational culture an organization is able to begin to create the values that lead to knowledge sharing across boundaries (O'Dell, Grayson and Essaides, 1998; Hackett, 2000).

Currently interpretations of knowledge management leadership (Dixon, 2000; Davenport, 1998) endow the leader with the responsibility to direct, to conduct or to guide functions in the implementation of a KM strategy. The leader will investigate the knowledge need of the organization, align it with the organizational strategy, plan, and execute a plan that will support the value proposition and mission of the organization. Leadership is acknowledged widely as being instrumental in the effective deployment of a knowledge management strategy in an organization (Davenport, 1998; Nonaka, 1995; O'Dell, 1998; Probst, 2000). Knowledge champions are also seen as essential actors in the development of a knowledge management strategy (Denning, 2001; Earl, 1999; O'Dell, 2000). Championing of ideas is about engagement with the intellect and emotions of the group being engaged. This will result in not only buy-in to the idea being transmitted but also ownership leading to implementation. This may mean that the concept will need to be open to organizational scrutiny as to whether it is good or bad, or whether it suits the group's dynamic, or whether it will lead the group where it wants to be. The terms *knowledge champion* or *knowledge sponsor* are used ambiguously in the knowledge management

literature. They are variously and interchangeably used to indicate a person who initiates a KM strategy, or one who supports the initiation of such a strategy. The question arises, should the person or persons responsible for the implementation of a KM strategy have the sole responsibility for the development and implementation of a KM strategy? Does this ensure buy-in from the organization as a whole or is that person seen as a sole practitioner within the organization. These risks are revealed as found in Australian and international surveys disclosing obstacles to KM strategies

Studies of KM in the Australian found that there were three barriers that were considered most important including: lack of time allocated to share knowledge, lack of skills in KM and a lack of understanding of the philosophy and the benefits of KM. With the greatest obstacle to moving forward with a knowledge use strategy is the management culture of the organization and that many were traditional hierarchical organizations with a few key people, who have the knowledge but will not share, disseminate or delegate (Zyngier, 2002; Johnston, 1999). Additionally Chase (1997) identified the internal obstacles as above but divides them into 'hard' and 'soft' obstacles in the physical and infrastructure issues together with the cultural issues. Murray's (1998) findings were that issues relating to individuals and organizational culture were the key inhibiting factors to the effective sharing of organizational knowledge he additionally found that personal inertia, lack of self-discipline, motivation and staff turnover were problematic. Others (Parlby, 1998, 2000; Hackett, 2000; Davis, 1998; McAdam, 2001) cite similar internal obstacles to the effective management of knowledge. However Parlby (2000) adds that implementation sometimes does not fit into everyday working practice. We suggest these reveal a problem in the implementation of an organizational KM strategy. The problem lies not in the leadership of the strategy itself but in the lack of organizational governance of that strategy.

4. GOVERNANCE

Governance is the process of control or regulation in companies. It is interpreted as the implementation of authority through a framework that ensures delivery of anticipated or predicted benefits (IT Governance Institute, 2001; Korac-Kakabadse, 2001) of a service or process, in an authorised and regulated manner. This forms a context for the analysis of and the management of risk, the ongoing development of strategies to manage organizational knowledge. It is also a means of measuring the effectiveness of those strategies. Governance attributes will be affected by organizational culture of those responsible. These attributes include the composition of the membership of the governing body, the personal characteristics and history of the individuals involved and the visions and principles enshrined in organizational structures and processes.

Governance forms a context for the analysis of and the management of risk, the ongoing development of strategies to manage organizational knowledge. It is also a means of measuring the effectiveness of those strategies. Governance attributes will be affected by organizational culture of those responsible. These attributes include the composition of the membership of the governing body, the personal characteristics and history of the individuals involved and the visions and principles enshrined in organizational structures and processes. There are two main theories in the governance literature of the purpose of the corporation and whose interests it should serve. These are (1) the primacy of shareholder interest and value and (2) the primacy interest of all stakeholders including shareholders, creditors, employees and the communities in which the organization exists (Farrar, 2001).

The shareholder model of governance serves shareholder interest and value as the underlying philosophy or driver of governance. In this model cost minimisation and profit maximisation are paramount. A clearly definable and measurable return on investment (ROI) is essential in guiding decision-making processes. Where ROI is obscure or cannot be measured then a strategy may not be pursued. This Anglo-Saxon model is predicated on the primary goal of the enterprise being that of maximisation of shareholder value. The relationship premised on the mobility of capital and labour markets and is characterized by the temporary nature of relationships between companies, their employees and their shareholders (Van Den Berghe, 1999).

The concept of the stakeholder theory of governance embraces notion that the needs of the spectrum of interests spanning the organization's owners or shareholders, the creditors, employees and the local communities in which the firm exists (Van Den Berghe, 1999) should all be acknowledged in organizational decision making. The stakeholders in an enterprise include customers, business partners, vendors and other constituents. It is worth noting these latter stakeholder groups do not have legally enforceable rights. The non-enforceable area is governed by recognition and acknowledgement of interests and ultimately through self-regulation. This model of corporate governance is also known as the Rhineland model and is characterised by an enterprise whose role is "broader than value maximisation for the shareholder: both in its objectives, performance criteria and its governance structures, a great deal of attention will be paid to the other stakeholders. This model assumes that both labour and capital are necessary and co-operation is important." (Van Den Berghe, 1999: 40). This approach is noted as evident in European companies with a longer-term focus than Anglo-Saxon shareholders.

This consultative model must be flexible due to the need to consult and reconcile conflicting interests. However it can also be said that where decisions are made and endorsed by the majority then there is a greater buy in to and action on those decisions. The stakeholder model of governance can be applied to the governance of an organization. In this model, authority and greater contribution decision-making is expected at all levels. Internal stakeholder governance processes are not merely seen as good management processes but can also be viewed in terms of ensuring that a wide range of organizational needs are represented and being met. It also facilitates the provision of feedback mechanisms to serve as a model of continuous improvement within organizational structures. Responsiveness to stakeholder interests enhances the capacity of the organization to identify and analyse a greater range of risks and to better deliver services or products (Baily, 1995).

4.1 Governance of IS/IT

Given the significant investment in IS/IT in most organizations, and the uncertainty about the delivery of benefits from those investments the need for IS/IT governance to deliver sound decision making over time has already been identified. Governance is the centre of the decision-making authority, an executive framework to deliver the expected benefits of investments in a controlled manner, through the establishment of checks and balances in the mode of service delivery. It ensures that evaluation feeds back into the service delivery strategy, and that stakeholder needs and expectations are adequately met. If these cannot be met, then the governance process will be able to justify why or alternatively why not. (Weill, 2002: IT Governance Institute, 2000). In an article that discusses the governance of IS and IT processes, Korac-Kakabadse and Kakabadse (2001) analyse and contrast these processes using both the stakeholder and the shareholder models of governance. There is a duality of the function of IT governance. Using the control model (earlier referred to as the federal or hierarchical model) of IT governance in an organization the CIO is responsible to the shareholders through the board of the organization for the fiduciary and reliability aspects of the IT function. Using the stakeholder model of IT governance in an organization, the CIO and others involved with the management of the IT/IS function are together responsible to the shareholders through the board of the organization for the fiduciary and reliability aspects of the IT function but is also to the needs of various business units and other stakeholders in the operations of the IT/IS function. These other stakeholders may include any or all of the IT employees, and employees in other departments with fluctuating, conflicting or competing needs, suppliers, governments and creditors.

4.2 KM governance

Previous research in KM has examined different understandings of the concept of KM, and with this has derived a multiplicity of approaches to implement strategies. Evidence to date (Zyngier, 2003; Johnston, 1999; Martin, 2000) points to the unanimity of understanding of concepts and purpose in Australian KM strategies. These include the essential role of leadership and the allocation of responsibilities to achieve these ends. The KM strategy in an organization operates through a variety of means, frequently under the auspices of a Chief Knowledge Officer (CKO) or a dedicated department (Zyngier, 2003). The delivery of a KM strategy in an organization provides services to, and exists to meet the needs for the creation, dissemination and utilization of knowledge to fulfil organizational objectives. How this function is fulfilled is reflected in the extent to which organizational knowledge objectives are achieved by elements such as the timeliness of service delivery and the satisfaction levels of the internal and potentially external clients. Wiig (1997) described a structural analysis of four areas of KM focus. These areas were governance functions, staff functions, operational functions and the realisation of the value of knowledge. Wiig (1997) saw two fundamental objectives in the process of KM governance. These were (1) to ensure that KM delivers value to the identified stakeholders. This value will be derived from the value proposition of the organization and the organizational strategies put in place to achieve those ends and (2) to control and to minimise the risk to the KM strategy. It must be noted that this author assumes that the strategy will not be static. The strategy must be a living strategy capable of being but responsive to adjustments required as a response to perceived flaws in the capacity to effectively transfer knowledge. That is a KM strategy cannot be seen as a prescribed formula that can 'fit' all organizations or even to 'fit' organizations within a particular industry segment.

There is little indication of current and detailed research linking the principles of governance with the development and management of strategies to acquire and create knowledge, to organise, distribute it and apply it at the time and in the place that it is required. The processes and principles that act as a framework for examination, regulation, supervision and revision of KM processes are therefore being suggested as KM governance processes and principles. We have found no evidence of any systematic evaluation of the governance of such strategies and propose that these must take into account research into both governance models and models of organizational information politics. Applying the attributes of IT governance (Weill, 2002) to the governance of a KM strategy will determine that KM strategies deliver the anticipated benefits to an organization while risks are managed, including issues of access to knowledge resources, how the quality is

maintained and how decisions are made, how resources are allocated, how problems are resolved, how obstacles are met and how investments in KM will prove beneficial to the organization.

KM governance can meet these above objectives through the development of an effective understanding and implementation of KM within the organization, alignment of KM with the value proposition and strategy of the organization and the regular review, approval and monitoring of KM investments in infrastructure and in human knowledge sharing processes. KM governance centres the decision-making authority, an executive framework to deliver the expected benefits of the strategy. This can then be delivered in a controlled manner, through the establishment of checks and balances in the mode of service delivery. It ensures that evaluation feeds back into the service delivery strategy, and that all stakeholder needs and expectations are being met. If they cannot be met, then the governance process will be able to establish why or why not.

Governance processes can then manage the risks of KM to acknowledge and contend with the cultural issues, structural obstacles and other relevant issues as they arise. The management of these risks will assist in the resolution of such issues and in turn strengthen the strategies to manage knowledge that are employed within the organization. Acknowledging knowledge as the organization's strategic asset and differentiator, is it not the ultimate responsibility of the governance process. The effective governance of KM may be a means of pursuing success. Governance in KM implies more than this. It implies and demands strategic thinking about the strategies in place - both in the long term and in the medium term. Such strategies should not be regarded as linear in direction but incorporate feedback both in the positive and negative aspects of the KM strategy. These will in turn modify and seek to progress and develop existing practices. Governance mechanisms in KM would therefore seek to maintain a collective knowledge of trends in industry, technology, and the corporate structural and social environment. It would examine the company's structure, adaptability, intellectual assets, and potential and explore frameworks and methodologies. KM strategic policy should identify and work within and towards the purpose, vision and values of the company. Governance based in the stakeholder approach to governance will result in a representative or cross functional design team that should work to ensure that all areas the stakeholders in an organization are adequately represented and involved in the project. This in a context where the business aims of the organization will dictate its emphasis. Interaction within the design team will also imply a lateral approach rather than a linear approach to the implementation and ongoing functioning of the strategy/system. The importance of the lateral approach of governance to leveraging knowledge for decision support and innovation lies in the regulated approach and management of risk for the strategies of that organization.

5. RESEARCH DESIGN

Case study research has been selected as the initial an empirical research method as it examines an event or circumstance within its particular context. It is a method that can use many sources of data in a single environment and may include observation, questionnaires, interviews and analysis of documents and databases. Case study research is a qualitative research tool that can be used in deep analysis of a single environment or of several environments. The research has collected data focussed on understanding how governance processes in organisations understand and utilise KM as a management tool. Theories described in the review of literature have provided the basis for focussed observation and for the recording of the observations.

5.1 Research methodology

The research to date has comprised a preliminary case study at the Defence Science and Technology Organisation (DSTO) to establish and refine a possible model of the governance of knowledge management strategies and the collection of interview data using structured interviews of stakeholders. This case study analysis has taken place over a period of several months collecting, examining and analysing data in its original context as a technique often used in an environment where theoretical constructs are unclear or not developed.

Further data will be collected in stages of iterative data collection for model development and validation. Currently it is anticipated that this will be achieved either by additional case studies or by survey to enable triangulation of data collected, and to establish the internal validity of that data. Survey research is divided into descriptive and analytic techniques. Analytic surveys are concerned with statistical analysis of concepts that will prove or refute theoretical constructs. While descriptive surveys are used to describe an aspect or aspects of an environment or circumstance. Facts are gathered and described with less emphasis on detailed statistical analysis and may include a proportion of qualitative data in the form of verbal or textual material within the survey.

It is intended to explore the issues in the category of dispersed national research organisations that have implemented a KM strategy. In this research stakeholder approach to governance is being applied to the

organization/s being investigated. The research has and will establish a purposive sample of the stakeholders in each entity being examined. The sample sought to include both users and those who are implementing the strategy as stakeholders and collect data from them. The case study organization is a government research organization of approximately 3000 employees, over 600 of whom are active researchers with at least PhD qualifications.

5.2 Research instrument

Research has comprised the interpretation of qualitative data collected in eight one hour in depth interviews one-on-one interviews of respondents within the organization. The sample has been derived from this single dispersed national organisation and was purposively selected according to size and its reputation as being known for the pursuit of knowledge management strategies. These interviews have been transcribed and analysed using QSR5 software as a tool for thematic analysis.

Because the interviewees were selected by the Information Management and Knowledge Management Governance Board (IMKMGB) Secretariat, there could have been some sample bias, however the sample was established according to parameters that were established by the researchers and these were implemented in conjunction with staff. It was a purposive sample of both members of the IMKMGB and of those responsible for the implementation of the KM strategy. The interviews were semi-structured; in-depth interviews each lasting approximately one hour. These questions canvassed:

- The organizational philosophy of KM;
- The history and implementation of the KM strategy;
- The process and allocation of responsibility KM and
- The organisational structures that support and govern the initiative.

6. PRELIMINARY RESEARCH FINDINGS

This organization is a research and development organization. It sees its output as producer of knowledge. This knowledge is produced in explicit forms as documented research in its raw form, research papers and knowledge embedded in technology that is produced. The concept of knowledge that underpins their KM strategy incorporates both explicit and tacit knowledge. Some representations of knowledge can be made explicit through the codification of that knowledge into a written form but not all knowledge can be transmitted in codified form. Tacit forms of knowledge include abstract forms of human understanding, and awareness, intelligence, comprehension and wisdom. Knowledge can grow from the interaction between two or more individuals sharing what they know – the outcome being new knowledge.

The means of managing and leveraging knowledge in the organization operates within the scientific tradition of building on what is known in order to create and innovate. Scientific knowledge is based on building evidence based on prior knowledge. The tradition of publishing new knowledge in scientific journals and reports has created a ready supply of explicated knowledge that can be leveraged through the management of knowledge resources. This was acknowledged by staff who told us “unless we’ve got access to what’s happened before you can’t have scientific excellence. Unless people are reinforced, you know innovation, once again taking on ideas, standing by, changing our transfer mode and teamwork - we work together”. (*Informant 2*). This demonstrates several attributes. These are:

- an acknowledgement of the importance of excellence in research practice,
- an understanding that knowledge and innovation are substantially built on what was known before, and
- an understanding that without proper record, an organization will risk recreating work already done

Tacit knowledge is also implied through this statement in the importance the DSTO’s attitude to cooperation and teamwork in knowledge creation and innovation. This underlies their approach to the transfer of tacit forms of knowledge based on experience and the capacity to extrapolate from prior knowledge to reach a new and different conclusion. Teams and cooperative work practices facilitate knowledge production from the interaction between individuals sharing what they know.

The Chief Scientist is ultimately responsible to and for the entire organization. There are three silos of research operations. Each has several operating divisions. There is a chief officer or research leader in charge of each operating division. Each of these divisions conducts independent research activity. Each division reports to the director of their silo of research operations. Each research activity is a separate entity contributing to the aims

and objectives of the organization as a whole, but without duplication of activity between divisions. Within the head office the Policy Division and the Corporate Management division provide policy advice and support and corporate management services to the whole organization. This includes operations like human resources and IT planning which are centralized. Local independence of IT purchasing and policy must conform to the 'related organization' information architecture. The current structure of the organization is a federated structure where each division operates as a self sufficient entity reporting to head office. This is evident in figure 1 below. The federal model appeared to provide no mechanisms for sharing knowledge between organizational silos, creating an observed situation where the organisation had become aware of the deficiencies in potential for corporate knowledge growth and innovation in addition to problems of knowledge loss associated with succession planning.

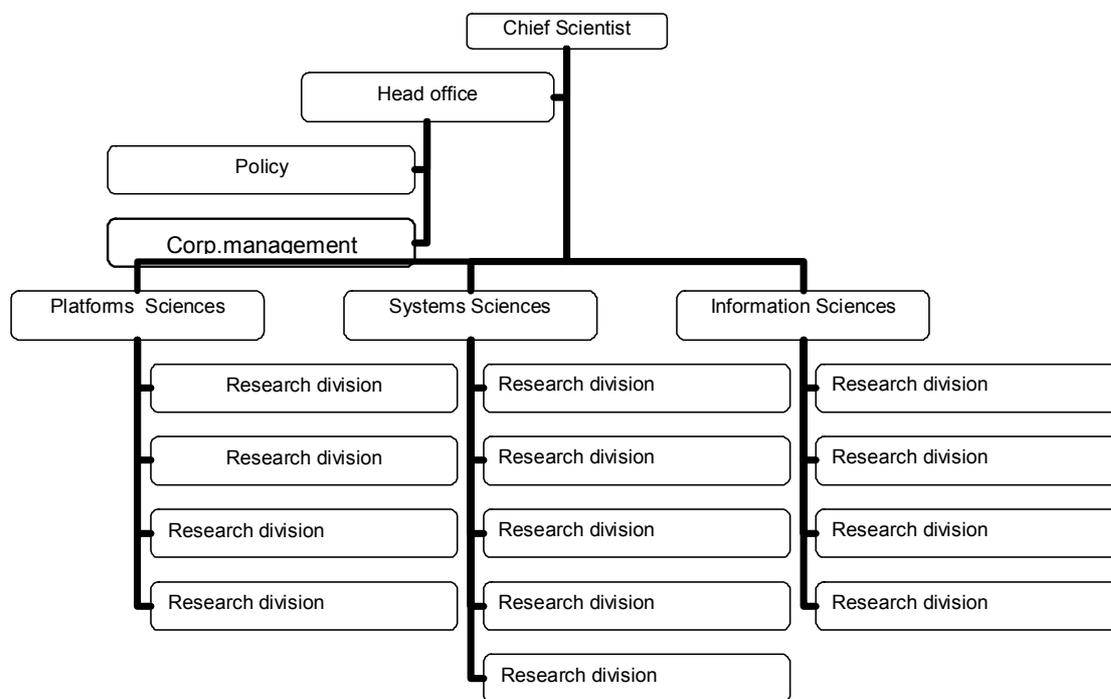


Figure 1 Organizational structure

The KM strategy was developed over a period of years as follows: “it actually started in [a related organization] with the appointment of a chief knowledge officer” (Informant 1) The researchers found that the chief knowledge officer at the parent organization was not a successful appointment, this lesson was learned in the research site and consequently the same appointment was not made at that site. The appointment of knowledge strategist was made. This appears to specifically be the appointment of a strategist rather than a leader. The role of the strategist is that of developing and monitoring strategy to achieve the goal of KM implementation.

At the same time, [a parent organization] was going through a major change management program and likewise this cascaded down to [us] and during it's strategic planning process, this is going back to 2001, [our] managers designed a change management program with a number of strategies and one of those strategies related to knowledge management. The change management plan that had the seven strategies and one of them was to explore “corporate knowledge growth” and very specifically to do with succession planning.

(Informant 1)

They then employed a consultant who conducted the knowledge strategy study:

We came up with a number of recommendations ... but it was always made clear that there was too much to do all at once, so it would be staged. Now along the way some other things have happened. The knowledge management strategist formed what is known as a knowledge management steering committee and it's now called the information governance board.

(Informant 1)

and came to the conclusion:

Governance emerged as a common, underlying factor in most of the cultural and infrastructure management inhibitors identified. This is identifying the obstacles to knowledge management in DSTO. In particular, divided management responsibility and an attitude of "it's someone else's problem" were a common theme.

(Informant 1)

The researchers found that the information governance board was developed quite deliberately:

we were sitting down trying work out who should be on the information governance board and how should we sort of split it up because I like to split things up so I know who to blame for various things, you know, go away and do it. Clear governance and accountability. [It was] suggested ... why don't we look at getting these business processes architects as the key members of the Information Governments Board.

However it was the belief of Informant 2 that

this is not fundamentality a problem about information's it's a problem about process and information ... and we've ended up essentially picking people who have an information responsibility in various parts of the [organization], but can also be close enough to being a business process architect or a deputy of the person and got them on the ball, so essentially our board consists of a number of people who have a specific information role and a number of people who represent or are the business process architect.

In the context of the strong independent federated model of management within research groups, the development of a stakeholder model of governance was not expected by these researchers. However our indicative findings are that the given federated information transfer model is the 'best fit' with a stakeholder model of governance. There would appear to be an easy or corresponding relationship between stakeholder governance and a federalist model of management and of information transfer. The federal model is based on consensus and negotiation with a high level of local autonomy over local concerns that is responsible and reports a centralized authority who define and manage the central elements of the strategy. It is the consensus and negotiation attributes that are called on to support the interests of stakeholders. Similarly the need for negotiation is paramount in order to marshal support for an organization wide KM strategy. This gathering of support applies in two directions.

1. The organization must have the support of the members recruited to a governance role in KM. In this case the governance group comprises representatives of the executive, of the IS/IT department, of the information management department and those responsible for staff development and learning. The members of the governance group have a stake in the implementation of the strategy in as much as their own departmental interests are being met as well as those of the organization.
2. The group must also have the support of representative of users of the KM strategy. In the case of the DSTO this is true of the research interests of stakeholders.

This capacity to be responsive to stakeholder interests improves the capacity of the governance board to identify and analyse a greater range of risks to the KM strategy and to better deliver services to constituents. It is revealed that the organization has specifically chosen and developed a stakeholder model of governance for their KM strategy in order to represent the interests of their constituents both in process and information needs. This ensures accountability and responsibility for tasks. The governance structure established may predicate the ability of the organization to effectively establish a strategy to manage their knowledge. As yet we have not established any evidence to indicate what impact these mechanisms have on perceptions of the effectiveness of KM in the research site.

7. CONCLUSIONS AND FUTURE RESEARCH

The paper has outlined an exploratory case study that investigates the governance of strategies to manage knowledge and the relationship between such strategies and organizational structures. Our investigation of whether the application of the processes of governance on these practices may enable an effective and coordinated organization-wide approach, that implementation of authority through such a framework works to ensure the delivery of anticipated benefits in an authorized and regulated manner. It further finds that the federated information transfer model is the 'best fit' with a stakeholder model of governance

Final results of this research will be compared against other similar knowledge intensive research organizations to study the governance mechanisms invoked to guide the implementation and ongoing management of KM

strategies. It will also seek to establish the impact that these mechanisms have on perceptions of the effectiveness of KM in those organizations.

REFERENCES

- Bridges, W., & Mitchell, S. (2000). Leading Transition: A New Model for Change. *Leader to Leader*(16).
- Chase, R. L. (1997). The Knowledge-Based Organisation: An International Survey. *Journal of Knowledge Management*, 1(1), 38-49.
- Davenport, T. H., Eccles, R. C., & Prusak, L. (1992). Information Politics. *Sloan Management Review*, 34(1), 53-68.
- Davenport, T. H., & Prusak, L. (1997). *Information ecology : mastering the information and knowledge environment*. New York: Oxford University Press.
- Davenport, T. H., & Prusak, L. (1998). *Working Knowledge How Organizations Manage What They Know*. Boston: Harvard Business School Press.
- Davis, S., McAdams, A., Dixon, N., Orlikowski, W., & Leonard, D. (1998). *Twenty Questions on Knowledge in the Organisation*. <http://web.archive.org/web/20001212102500/www.businessinnovation.ey.com/research/researchf.htm> Business Intelligence and Ernst & Young Center for Business Innovation.
- Denning, S. (2001). *The Springboard; How Storytelling Ignites Action in Knowledge-Era Organisations*. Woburn, MA: Butterworth-Heinemann.
- Dixon, N. M. (2000). *Common Knowledge; How Companies Thrive by Sharing What They Know*. Boston: Harvard Business School Press.
- Earl, M. J., & Scott, I. A. (1999). What is a chief knowledge officer? *Sloan Management Review*, 40(2), 29.
- Hackett, B. (2000). *Beyond Knowledge Management: New Ways to Work and Learn* (Research Report No. 1261-00-RR). New York: The Conference Board.
- IT Governance Institute. (2001). *Board Briefing on IT Governance*. Rolling Meadows, IL: Information Systems Audit and Control Foundation.
- Johnston, R., & Blumentritt, R. (1999). *Knowledge Management: The State of Play in Australian Companies*: Australian Centre for Innovation (ACIIC) University of Sydney.
- Korac-Kakabadse, N., & Kakabadse, A. (2001). IS/IT Governance: Need for an Integrated Model. *Corporate Governance*, 1(4), 9-11.
- Krogh, G. V., Ichijo, K., & Nonaka, I. (2000). *Enabling knowledge creation: How to unlock the mystery of tacit knowledge and release the power of innovation*. Oxford: Oxford University Press.
- Martin, B. (2000). Knowledge Based Organisations: Emerging Trends in Local Government in Australia. *Journal of Knowledge Management Practice*, 2000(October).
- McAdam, R., & Reid, R. (2001). SME and Large Organisation Perceptions of Knowledge Management: Comparison and Contrasts. *Journal of Knowledge Management*, 5(3), 231-241.
- Murray, P. (1998). *The Cranfield/Information Strategy Knowledge Survey; Europe's State of the Art in Knowledge Management*. London: The Economist Group.
- Nonaka, I., & Takeuchi, H. (1995). *The Knowledge-Creating Company : How Japanese Companies Create the Dynamics of Innovation*. New York: Oxford University Press.
- O'Dell, C., Grayson, C. J., & Essaiades, N. (1998). *If Only We Knew What We Know; The Transfer of Internal Knowledge and Best Practice*. New York: The Free Press.
- O'Dell, C., Hasanali, F., Hubert, C., Lopez, K., Odem, P., & Raybourn, C. (2000). Successful KM Implementation: A Study of Best-Practice Organizations. In C. Holsapple (Ed.), *Handbook on Knowledge Management 2 Knowledge Directions* (Vol. 2, pp. 411-443). Berlin: Springer-Verlag.
- Ouchi, W. G. (1978). The transmission of control through organizational hierarchy. *Academy of Management Journal*, 21(2), 173-192.
- Parlby, D. (1998). *Knowledge Management Research Report 1998*. London: KPMG Consulting.

- Parlby, D. (2000). *Knowledge Management Research Report 2000*. London: KPMG Consulting.
- Probst, G., Raub, S., & Romhardt, K. (2000). *Managing Knowledge; Building Blocks for Success*. Chichester: John Wiley & Sons, Ltd.
- Sambamurthy, V., & Zmud, R. W. (2000). Research Commentary: The Organizing Logic for and Enterprise's IT Activities in the Digital Era - A Prognosis of Practice and a Call fo Research. *Information Systems Research*, 11(2), 105-114.
- Spender, J. C. (1996). Organizational knowledge, learning and memory: three concepts in search of a theory. *Journal of Organizational Change*, 9(1), 63-78.
- Van den Berghe, L., & De Ridder, L. (1999). *International Standardisation of Good Corporate Governance: Best Practices for the Board of Directors*. Boston: Kluwer Academic Publishers.
- Walsh, J. P., & Ungson, G. R. (1991). Organizational Memory. *Academy of Management Review*, 16(1), 57-91.
- Weill, P., & Woodham, R. (2002). *Don't Just Lead, Govern: Implementing Effective IT Governance* (White Paper No. 326). Boston: CISR.
- Wiig, K. M. (1997). Knowledge Management: An Introduction and Perspective. *The Journal of Knowledge Management*, 1(1), 6-14.
- Zyngier, S. (2002). *Knowledge Management Obstacles in Australia*. Paper presented at the 10th European Conference on Information Systems, Gdan'sk, Poland.
- Zyngier, S., Burstein, F., McCullough, G., Oliver, G., Symond, J., & Brown, M. (2003). *Leading knowledge management strategies in Australia and New Zealand: a comparative study of public and private sector organisations*. Paper presented at the Australian Conference on Information Systems, Perth.

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