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ITP4161

Outsourcing As An IT Management Strategy For Knowledge Management In Sub-Saharan Africa

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ABSTRACT

Knowledge management (KM) could be defined as the ability to create and retain greater value from core business competencies. IT is one of the enablers of knowledge management. Its availability, management, and right application could increase the success rate of knowledge management efforts of organisations. Due to lack of human resources with required skills and lack of adequate IT infrastructure (ITI) in sub-Saharan Africa, IT outsourcing could be a better approach to IT management for an organisation considering KM. In this paper, we present part of the outcome of an empirical research and an in-depth analysis of a case organisation where IT outsourcing seems to contribute to a high performance in knowledge management efforts. We suggest that organisations in sub-Saharan Africa that are considering knowledge management could look at the possibility of outsourcing the management of the information technology component in order to have more focus on the other enablers of KM.

INTRODUCTION

Information technology is one of the enablers of knowledge management and its management could have a great effect on the knowledge management efforts of organisations. IT management in sub-Saharan Africa is posing problems to some organisational activities in the face of low resources and expertise (Odedra et al. 1993; Moyo 1996). Outsourcing IT has attracted a lot of attention in the literatures (e.g. Lacity and Hirschheim 1993; McFarlan and Nolan, 1995; Hirschheim and Lacity 2000). It could allow organisation to focus more on development efforts such as reengineering process, just-in-time, total quality management, benchmarking etc. For these reasons, IT outsourcing has become very popular. There is much evidence of its success after the understanding of the problems associated with earlier agreements (Shepherd 1999). Knowledge management could be defined as the ability to create and retain greater value from core business competencies (Duffy 2000; Bhatt 2001; CIO 2000). Firms focus on their core capabilities to have competitive advantage especially in today's dynamic, volatile business environment. When a firm focuses on core businesses that add unique value to its customers, it may outsource activities for which it does not have core capabilities (Quinn and Hilmer, 1994).

In our empirical study of six research organisations on ITI and KM in sub-Saharan Africa, two organisations presented exceptions to our assumption that organisations with high ITI capability are also likely to have effective knowledge management. In one organisation, high level of IT infrastructure capability was not accompanied by high KM efforts while in another research institute, there were high KM efforts at instance of low IT infrastructure capability. Upon closer inspection of the later, the IT outsourcing strategy of the organisations with low ITI seems to be responsible for the high performance in knowledge management activities. Could the IT outsourcing strategy directly have something to do with the performance in KM efforts? We examine KM from core competence perspective and argue about the difference between the strategic and operational view of organisational IT. We illustrated this with a case organisation upon which we will draw our conclusions and suggestions for further studies.

IT OUTSOURCING

Outsourcing is the transfer or delegation of the operation and day-to-day management of a business process to an external service provider. IT outsourcing can be regarded as the practice of transferring IT assets, leases, staff, and management responsibility for delivery of services from internal IT functions to third-party (Hirschheim & Lacity, 2000). The motivation for IT outsourcing is widely discussed in the literature. Shepherd (1999) provides a summary where he included financial restructuring, reduction or stabilisation of costs, overcoming cultural and organisational problems, concentrating on core competencies, access to world class expertise, concern with economies of scale and scope, and possibly growth expectation.

IT outsourcing evolved from early 1960's data processing service bureau to the contract programming approach of 1970's. The 1980's witnessed more focused efforts on vertical integration and internal control and a slowdown in outsourcing (Ketler and Willems 1999). The 1990's are characterised by a renewed interest in outsourcing following the much written about outsourcing deal of Eastman Kodak in 1989. At turn of the century, with various IT related problems (e.g. Y2K, skill demands, etc) and developments (e.g. e-commerce) and the need for organisations to be more competitive and responsive, IT outsourcing has become a generally acceptable practice in various forms and scopes. Both small and large-sized organisations are taking advantage of outsourcing opportunities.

IT outsourcing enables an organisation to focus on their core competence and it provides possibility to make a right strategic decision that directly affects the work. It enables access to new technology and keeping up with the trends in ever changing world of IT (Ketler and Willems 1999; Goo et al. 2000). In a situation where there is low availability of human resources, it relieves the organisation of the burden of continuous recruiting due to the high turnover rate in the sector (Slaughter and Ang 1996). Thus, we also agree that IT outsourcing could be a good decision for an organisation which does not use IT for strategic purposes but mostly for operational functions (Currie and Pouloudi, 2000), especially in a region where there is lack of adequate expertise to support in-house IT management. Although outsourcing IT to India and other developing countries has attracted attention, the outsourcing arrangements within developing countries are less written about.

In the case of non-profit research organisation, IT could be viewed basically as a set of operational tools. The scientists are mainly interested in getting their work done and they may have little interest in the state of the art IT. Their core competence is far from IT, though in the modern world where they operate, IT use appears essential. In as much as they are able to carry out their primary duties with IT, the kind of IT installed or the style of its management might not in any direct way provide competitive advantages to them. As a matter of fact, these non-profit organisations do not consider others organisations as competitors but rather collaborators. They need IT to support the process of their work, communication, collaboration and coordination. For these reasons, it could be convenient for the research organisations to outsource their entire IT management functions.

This paper appears in *Issues and Trends of Information Technology Management in Contemporary Organizations,* the proceedings of the Information Resources Management Association International Conference.

INFORMATION TECHNOLOGY INFRASTRUCTURE (ITI)

IT infrastructure, according to Broadbent and Weill (1997) is the base foundation of information technology capability, delivered as reliable services shared throughout the firm. ITI is coordinated centrally, usually by the information systems group or external people when outsourced. They also identified four views of IT infrastructure with different benefits and investments: none, utility, dependent, and enabling. *None view* implies that an organisation does not invest in IT infrastructure at firmwide level. The *utility view* primarily considers investment in IT infrastructure as a way to reduce costs through economies of scale. The *dependent view* ties the investment in IT infrastructure to the current organisational strategies and the *enabling view* is dependent view with extra investment to cater for long-term goals and developments (Broadbent and Weill 1997). Organisations that consider IT as part of their core strategies are likely to take the dependent and/or enabling views while organisations that considered IT as operational tools are likely to take the none and /or utility view, thus they are likely to outsource their IT without fear of loosing any knowledge and have more time to concentrate on their core capabilities.

KNOWLEDGE MANAGEMENT (KM)

Several authors acknowledge that the ultimate goal of KM is to improve organisations efficiency and productivity, hence profitability (APQC 1996; Davenport and Prusak 1998). For the purpose of this paper, we lean towards the definition that KM is the ability to create and retain greater value from core business competencies (CIO 2000). This could be achieved by various strategies to provide the right knowledge for the right people at the right time (APQC, 1996). Organisations are using various approaches to achieve these goals. Some are focusing on management of people and others on the management of information (Sveiby 1996).

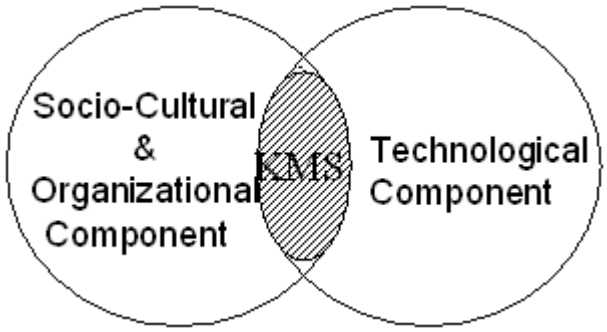
Tyndale (2000) further explained Sveiby's view, using the terms codification and personalisation. He used codification to explain KM that is IT focused. This strategy includes attempts to codify knowledge and carefully store it in a database where it can be accessed and used easily by anyone in the company. This approach considers knowledge as objects that can be identified and handled in information systems. Personalisation was used to explain KM that is people-focused. This approach regards knowledge as a process that is closely tied to the person who developed it. This kind of knowledge is shared mainly through direct person-to-person contacts. In this approach, technology is only used as the infrastructure that enables the capture, storage, and delivery of contents to those who need it when they need it. Bhatt (2001) also suggested that exclusive focus on codification or personalisation does not enable the firm to sustain its competitive advantages but rather it is the interaction between technology, techniques and people that allow an organisation to manage its knowledge effectively.

KM AND IT OUTSOURCING

The focus of previous studies on the relationship between IT outsourcing and KM has been on the knowledge issues between the contracting parties. For example Currie and Pouloudi (2000) relate the outsourcing decision to the value the organisation attaches to their knowledge-based assets, they conclude that consideration of the value of knowledge-based assets, knowledge creation, growth, and retentions could affect the outsourcing decision. Their conclusion also supports the view that organisations that considered IT as core competence are likely to insource while organisation that think otherwise may likely outsource. However, they did not elaborate further on whether the outsourcing decision allows the organisations to focus more on their core competency.

Although KM is currently being viewed as a combination of the technological component and the social-cultural, organisational component, relatively little attention has been paid to the issue of outsourcing the IT component. It is the balance of these components that could yield effective KM and improve productivity, efficiency, innovation and competence of an organisation. In the knowledge management components described by Alavi (1997), effective KM occurs at the intersection of the technological component and social-cultural and organisation component (Figure 1).

Figure 1: Knowledge management components (Alavi, 1997)



Therefore, for an organisation to have an effective KM practice, there should be a balance between the technological component and the social-cultural, and organisational component. Technology is often considered to be the easier component. Dan Holthouse in his foreward to *Information technology for Knowledge management* (Borghoff and Pareschi, 1998) remarked on this: *"Technology is the easier piece of the problem to solve, it's far more challenging to change people's behaviour and to create a learning environment that fosters the expansion of individual's personal knowledge."* Therefore, organisation could do better if the internal resources are focused on the people aspect and allow an external organisation, that has the adequate know-how, to handle the (*easier piece*) technology.

THE EMPIRICAL STUDY

As part of a study to investigate how information technology infrastructure generally affects knowledge management efforts of research organisations in sub-Saharan Africa, we conducted a multiple case study (Yin, 1994) using six different organisations in two countries in sub-Saharan Africa (Okunoye and Karsten, 2001). Three of the organisations are international: International Institute of Tropical Agriculture (IITA), Nigeria, Medical Research Council (MRC) Laboratories, and International Trypanotolerance Center in The Gambia. Three are national: National Agricultural Research Institute (NARI) in The Gambia, Nigeria Institute of Social Economic Research (NISER) and Nigerian Institute of Medical Research (NIMR) in Nigeria.

The national organisations are primarily dependent on the national government for their basic funding. Usually the international organisations enjoy supports from various sources around the world. They have a substantial number of expatriates working in them and have better support for the IT. The multiple-case study was conducted between January and March 2001. We interviewed, observed and presented questionnaires to research scientists, management staff, librarian, and IT staffs on knowledge management and use of ICTs. We interviewed the head of IT where applicable and the people responsible for IT department. KM was evaluated using the knowledge management diagnostic (KMD) created by Bukowitz and Williams (1999) and ITI was assessed using the approach developed by Broadbent and Weill (1997) where IT infrastructure is linked to the business by maxims, which reflect the company's strategic context. The KM assessment and ITI capability has been fully described in Okunoye and Karsten (2002).

INFLUENCE OF IT ON KNOWLEDGE MANAGEMENT

Four of the organisations appear to correspond to our expectations on the influence of IT on KM: In NARI in The Gambia and in all Nigerian organisations, the ranking in IT is similar to ranking in KM. Two exceptions to this consistency were found. In MRC, a high level of ITI existed with low level of KM. In ITC, a high level of KM existed despite low level of ITI capability.

The ranking of IITA and NISER in both KM process assessment and their IT infrastructure capability tallied and reflects the way they have been able to apply the available IT infrastructure in supporting their knowledge management efforts. IITA had a well-developed IT infrastructure. NISER had a reasonable level of infrastructure, which is put into proper usage. In these two organisations, people have been able to put the IT infrastructure into proper use for the purpose of their work. NIMR and NARI had low IT infrastructure rank and they were also low in their KM assessment, thus showing the relationship between IT infrastructure and KM processes similar to IITA and NISER. MRC needs to be studied further to find out their specific deterrents to efficient KM despite high ITI capability. The performance of ITC in KM efforts could be explained by their strong focus on organizational efficiency and on research, leaving all the IT management of the small organisation to be taken care of by an outside vendor (see Table 1).

ITC is the smallest among the case organisations with about 122 staff members and attracts visitors and researchers from major agricultural research laboratories with interest in tropical agriculture. Due to their small size and their view towards IT, they do not see the need for running in-house IT department, as remarked by one interviewee. Hence they outsource the management of the IT unit to local companies

> "*If your staff strength is not high, the cost benefit is not there…We have IT support from ITS and other ISP, that is better for us, because again of critical mass, there is no point hiring a permanent staff, if no computer breaks down in a month then he sits down idle. If there is a problem, then we call our engineers*."

The Gambia is one of the smallest countries in the sub-region. There is shortage of IT personnel. It also shares the other difficulties facing the countries in the sub-region in the areas of training and low expertise. Nevertheless, there are a few IT companies serving the needs of local businesses. We do not go into detail of the kind of agreements ITC have with the outsourcing partners. From our interview, we are aware that they use at least two different outsourcing partners, the Internet service provision is from one company while the regular IT management services is from another.

> "*Now it is difficult and we have asked for a network and we are hoping, a man was just here from QuantumNet or ITS to make a budget for Network*"

OUTSOURCING – A STRATEGIC CHOICE FOR KM

Even though ITC had a low infrastructure services, they performed well in their knowledge management efforts. Their outsourcing decision is likely to be responsible for it. They were able to concentrate on the particular infrastructure required for their work. In ITC, the Internet is enabling collaboration among the staff and connecting them to external sources of knowledge that used to require travelling abroad in the past.

> "*That used to be quite a difficult thing, it was a problem, the only way you could get access to journals would be either to go to Europe in person and then you do literature search, I normally go to Wageningen every year, that's my alma-mater, but now I can liase with Royal Tropical Institute in Amsterdam. I only send keywords of research topic and they will do the relevant search and send back to me abstracts and I will request for the document I am interested in and they will send it to me…… I get table of content of recent journals and if something is of interest to me I send to them by email and then send it back to me*."

ITC have extended their computing infrastructure by using the Internet to exchange files even to next door.

> "*……we don't want to go into cost of having a LAN so even for me to send things next door, I go through the Internet*."

Technology is seen to a vital role in knowledge management, but that technology on its own cannot make knowledge management happen (Hibbard, 1997). This was evident with ITC: their low ranking in IT infrastructure capability did not affect their KM efforts, because knowledge actually resides in people, technology can only assist in making things work more efficiently. Moreover, there was a presence of a minimum IT infrastructure supported by their outsourcing partner, which they were able to balance with other variables as suggested by Leavitt (1965). While the availability of IT infrastructure is important, support for its applications, usage, and technical components can significantly lower its usefulness.

CONCLUSION

We have discussed how IT outsourcing appeared to be having a positive effects on KM efforts of a research organisation in sub-Saharan Africa. As an exception to a consistency that the availability of IT infrastructure has a direct relationship with KM efforts, we examined the concerned organisation further. The outsourcing of the IT management seems to enable them to put the available IT infrastructure into proper usage and the main success factor in their KM efforts. It would be appropriate to study several organisations that have a similar arrangement to see if a similar pattern could be found before we could make any generalisation. Nevertheless, there is an implication of this finding for the organisations in sub-Saharan Africa considering knowledge management as part of their strategy. This paper implies that they might fare well by focusing on the social, cultural and organisational issues while outsource the technological component. For the researchers with interest in IT outsourcing and knowledge management, this paper raises additional issues to be considered in the IT outsourcing and knowledge management relationship.

ACKNOWLEDGEMENTS

We gratefully acknowledge the financial support given by University of Jyvaskyla for the empirical study. All those giving their time and thoughts to us during the empirical study in Nigeria and The Gambia deserve our heartfelt thanks.

Table 1: Nature of IT management, IT infrastructure capability and KM rankings

Name	IT Unit	Status of the Head	Outsourced services	IT Staff No.	Est. expenditure on IT per year (in US dollars)	Total Staff Strength	ITI capabilities ranking	KM efforts ranking
MRC	Yes	Expatriate	Some	7	$ 142 243[1]	600	2	5
NARI	Yes	Local	Some	2	Not known	211	5	4
ITC	No	N/A	All	N/A	Not known	122	4	2
IITA	Yes	Expatriate	Some	10	$ 200 000	1400	1	1
NISER	Yes	Local	Some	8	$ 8 900	500	3	3
NIMR	Yes	Local	Some	4	Not known	130	5	6

ENDNOTE

1 Exchange rate of $1 = £0.7 from www.oanda.com, 30/05/01

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