

eThekwini Municipality's intranet for augmenting knowledge-sharing in the organisation

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Background: The age of technology, where information and knowledge perform important roles in the organisational context, creates an opportunity for local government organisations (such as metropolitan municipalities) in South Africa to support knowledge-sharing. One such technology that supports knowledge-sharing is an intranet. If an intranet is not effectively managed, knowledge-sharing in an organisation shall not be augmented.

Objective: To investigate whether or not an intranet augments knowledge-sharing in the selected organisation of eThekwini Municipality.

Methods: In this study a quantitative research approach was adopted.

Results: The results of this survey suggest that firstly the intranet appears to be at a medium maturity level; secondly, whilst there is information sharing, the intranet does not appear to be effective as a knowledge-sharing structure; and thirdly there appears to be scope for improvement of the content on the intranet. The implication thereof is that eThekwini Municipality's recently formed Municipal Institute of Learning (MILE) may be ideally poised to address the identified shortcomings.

Conclusion: Intranet technology plays an important role in an organisation by enabling the effective acquisition, sharing and presentation of knowledge. Because of this an intranet must be effectively managed to readily augment knowledge-sharing in the organisational context of local government organisations (such as metropolitan municipalities) in South Africa.

Introduction

The age of technology, where information and knowledge perform important roles in the organisational context, creates an opportunity for local government organisations (such as metropolitan municipalities) in South Africa to support these knowledge-sharing technologies. With an increase in the development of systems in organisations that support collaboration and knowledge-sharing, these systems and technologies (such as an intranet) provide access to greater amounts of information within the organisation. These technologies can overwhelm employees in an organisation and thus inhibit their use and therein their value. This inhibition might hamper the productivity of employees (or knowledge workers) and their ability to generate knowledge and requires the provision of requisite 'value-added' decision-making support for an organisation. It also reflects the need for an organisation to shift to an information and knowledge-sharing environment where 'retrieve' (i.e. employees actively search for and retrieve information) and not 'alert' (i.e. broadcasting or alerting of relevant information) is the predominant knowledge gathering technique, and employees are able to shape, to an extent, what is received and how it is received (Patrick & Dotsika 2007:396). The growth in knowledge work and knowledge workers, to support knowledge-sharing, requires the ability to find and access information and knowledge contained in an organisation's intranet.

An intranet is a powerful tool for communication and collaboration, that presents data and information and the means to create and share knowledge, in one easily accessible place (Sayed, Jabeur & Aref 2009:228). Such data and information can, for example, be located in a municipality's reports and documents. Lehaney, Clarke, Coakes and Jack (2004:238) suggest that these documents should be made available electronically and should be easily accessible from a single point of access. An intranet supports such an IT architecture and is therefore well-suited for the distribution of data and information of an organisation. Kord, Yaghoubi and Porbar (2011:95) suggest that an intranet can be used for the 'distribution of different aspects of information across the organization'.

An intranet 'can be regarded both as an information and strategic management tool' (Edenius & Borgerson 2003:124). The intranet, which is based on Web technology, can provide useful and people-inclusive knowledge management (KM) environments (Stenmark 2002). In such

environments, an intranet can be tailored to suit and enhance an organisation's knowledge-sharing processes. Knowledge-sharing is usually a process through which knowledge is exchanged in an organisation.

Research objective

Information technology (IT) plays an important role in organisations to make effective the managing and sharing of knowledge. IT supports KM by facilitating quick searching, access to retrieval of information, which in turn encourages co-operation and communication between the employees in an organisation (Yeh, Lai & Ho 2006:799). If IT, such as an intranet, is not effectively managed, knowledge-sharing in an organisation shall not be augmented. Investigating whether or not an intranet augments knowledge-sharing in a selected organisation in South Africa is the research objective of this paper. The research question is: To what extent does an organisation's existing intranet augment knowledge-sharing? This question is explored by selecting the metropolitan municipality of eThekweni Municipality as the field of application.

Background to the research

There is a call for the adoption of new processes in South African municipalities which will improve their effective functionality (Gaffoor & Cloete 2010:1). Practices in the workplace will need to enable managers to promote managing knowledge and knowledge-sharing to enable the municipal organisation to adopt the role of a knowledge-based organisation. For example, one of eThekweni Municipality's programs is to create 'an environment to enable knowledge acquisition, sharing and preservation ...' (EM 2008:301). Knowledge is the primary element of any business process because a tangible deliverable cannot be developed without adequate knowledge (Taylor 2007:20). There is thus a related need to evaluate existing processes (e.g. benefits and content areas of an intranet) to ensure that they enable knowledge-sharing in the organisation.

Hahn and Subramani (2000:302) indicate that knowledge-sharing and KM initiatives in organisations are increasingly becoming important as organisations make significant IT investments in deploying KM systems. Such organisations include metropolitan municipalities in South Africa. Furthermore most KM initiatives rely on IT as an important enabler (Alavi & Leidner 2011). Given these investments and their enablement with IT, it therefore seems appropriate to investigate whether or not the intranet in the selected organisation (eThekweni Municipality) augments knowledge-sharing between its employees. In this study the views of employees (knowledge workers or end users of the intranet) will be distilled from the findings of the Ask Africa Report (2006). The 'views of the end users are ... important' (Skok & Kalmanovitch 2005:736).

Intranets

Intranets create a common foundation for communication and information sharing. Sayed *et al.* (2009:229) note that

knowledge-sharing can be significantly augmented by the use of the intranet when dealing with organisational communication (e.g. virtual meetings, chats, email transactions, conferencing, official memoranda, etc.). Examples of official memoranda include reports and documents. Brelade and Harman (2003); suggest intranets can be used on a 'push' basis, where information is presented to employees, and on a 'pull' basis, where employees may seek out and retrieve information for themselves. Nowadays the 'push' and 'pull' terms are more commonly referred to as 'alerting' and 'retrieving' information. These mechanisms are described as follows:

- The 'alerting' basis is when it is important that certain material is presented to employees at their workstation. It ensures that no other function takes place until all the information is correctly accessed.
- The 'retrieving' basis is when employees decide when to pull information from the intranet website they wish to view.

Information contained on the intranet website could, for example, be policy documents. A standard internet browser provides a seamless experience when accessing and viewing information and knowledge pages on an intranet.

The mode of intranet utilisation depends upon the complexities and maturity of the intranet (Masrek, Karim & Hussein 2008:90). Intranet maturity can be identified as low, medium or high (Gartner Group, Inc. 1996; Casselberry *et al.* 1996 cited in Masrek, Karim & Hussein 2008:90). Low maturity signifies that information is published on the intranet and the information flow is uni-directional. Medium maturity signifies that the intranet is used for collaboration purposes, such as for sharing information and for conducting organisational interaction between employees. High maturity signifies that the intranet serves as a common user interface to back-end applications, and five different modes of utilisation are possible: publishing, transacting, interacting, searching and recording (Damsgaard & Scheepers 1999). Whilst this maturity classification is useful, it is noted that this is a view of information dissemination only, and does not concern (tacit) knowledge.

Knowledge-sharing

The intranet facilitates internal communication and knowledge-sharing (Zhang & Wang 2008:465). Knowledge-sharing is a key component of KM systems (Alavi & Leidner 2001), however, knowledge-sharing is not well defined in the associated literature partially because this research area has not been very active (Bechina & Bommen 2006). Lee (2001) suggests that knowledge-sharing refers to processes of transferring or disseminating knowledge from one person, group, or organisation to another. Bartol and Srivastava (2002) define knowledge-sharing as individuals sharing organisational-relevant information, ideas, suggestions and expertise with one another. Knowledge-sharing is understood as the exchange of knowledge between and amongst individuals, and within

and amongst teams, organisational units and organisations (King 2006). Employees are a key source of knowledge that is owned and managed by an organisation, as the employees create, acquire and share knowledge. IT is a fundamental enabler in the implementation of KM to store, organise and disseminate knowledge and aid in externalising and socialising knowledge. KM offers local government organisations the benefit of decision-making and efficiency (Gaffoor & Cloete 2010:6).

With the advent of Web 2.0 technologies (e.g. social networks, blogs, wikis, tagging 'folksonomy', etc.), these can bring change to organisational communication, and information and knowledge processes. One difference between a traditional knowledge-sharing approach and that of Web 2.0 technologies is that, as transactional costs to information sharing with the advent of Web 2.0 have dropped, new ways of knowledge-sharing have become more prevalent and practical on a larger scale (Tapscott & Williams 2006; Shirky 2008). However, when adopting this in a municipal environment, one's assumption is that knowledge-sharing, using Web 2.0 technologies, is an effective means of collaboration (Paroutis & Al Saleh 2009). Another assumption is that a knowledge-sharing culture is part of an organisation's culture.

To describe how an intranet can facilitate knowledge-sharing, Stenmark (2002) developed a model that described intranet utilisation to support KM. Stenmark's model suggests that the intranet as a knowledge-sharing environment should be seen from three perspectives: information, awareness and communication (Masrek *et al.* 2008:92). Masrek *et al.* (2008) indicates that of these three the information perspective explains that the intranet gives employees access to both structured and unstructured information in the form of databases and documents. For the awareness perspective, users of the intranet are kept well-informed and connected to information and fellow employees in the organisation. The communication perspective enables employees to collectively interpret available information by supporting a variety of channels for negotiations and conversation. When an employee collaborates with fellow employees, who share their objectives, the common context for knowledge-sharing will then exist.

eThekwini Municipality

Environment

eThekwini Municipality, a metropolitan municipality in the City of Durban, South Africa, comprises six clusters or service units (Office of the City Manager, Treasury, Governance, Sustainable Development and City Enterprises, Corporate and Human Resources and Health, Safety and Social Services) and employs approximately 18 000 employees. eThekwini Municipality has some 6000 networked desktops (personal computers, thin clients and laptops), and electronic communication (i.e. email) takes place via Novell's GroupWise (Client version 7.0.3). A total of 6654¹ GroupWise account holders exist in eThekwini Municipality. However,

1. From a count taken during survey period in 2006.

the maximum number of concurrent users (i.e. employees using GroupWise) who can access eThekwini Municipality's intranet is 6000. Currently (as at 05 July 2011) there are 3534 Internet account holders utilising either Microsoft Internet Explorer or Netscape Navigator Web browsers.

Municipal Institute of Learning (MILE)

In a study of KM in a selected South African municipality (Stellenbosch), Gaffoor and Cloete (2010:6) recommend a separate KM division which will result in the municipality's ability to better utilise and disseminate knowledge – this is a basic condition for other local government organisations. During 2009, eThekwini Municipality initiated the formation of the first municipal-driven Institute of Learning. During the 2009 to 2010 financial year, the setup for the Municipal Institute of Learning (MILE) was completed (EM 2010:225). MILE's function forms part of eThekwini Municipality's KM strategy to position the City of Durban as a Centre of Learning (www.MILE.org.za). From this website, one of the strategic objectives of MILE is to 'co-ordinate the internal knowledge management agenda within the eThekwini Municipality'.

From the www.MILE.org.za website, the approach to the KM agenda in the eThekwini Municipality is comprised of four key elements that:

1. build systems to improve internal access to information – to allow employees easy access to information;
2. co-ordinate policy – all new policies must agree with existing policies and all approved policies must be accessible to all employees;
3. create an enabling KM organisational culture – institute mechanisms that assist in moving from tacit to explicit knowledge and focus on projects that allow effective knowledge transfer to facilitate succession planning; and
4. document and share innovations and good practice – encourage clusters or service units to document lessons learnt.

Research methodology

Every major organisational process should be regularly evaluated and the evaluation should be purposeful and completed (Debowski 2006:274). One method of data collection is a survey. In a survey, email is useful for data collection purposes. Debowski (2006:277) suggests that survey 'evaluations take a number of forms ... and may be conducted via telephone, email our mailouts' and '... data should be gathered by electronic means ...' and this '... is an increasingly useful quantitative data collection strategy, as it is non-invasive and low cost'. In this study, the means used to distribute the survey was email because it is non-invasive and the purpose and benefits of an email survey justified the cost.

Data collection

The data, selected to evaluate eThekwini Municipality's intranet, were collected by an independent research

company, Ask Africa, thus, secondary data were used in the author's survey. The rationale for using secondary data was that:

- it was considered relevant to the author's study
- there were savings of time and money by using available data rather than collecting original data.

Whilst there are benefits to using secondary data, their general shortcomings are acknowledged:

- the author ensured that terms used in the Ask Africa Report (2006) were not compromised when used in the author's research;
- whilst it is possible that there may have been measurement errors with the Ask Africa data collection, it was decided that a 'good' level of accuracy existed with these collected (secondary) data – the raw and data scores were made available to the author for verification purposes;
- the author acknowledges that he has 'vested interests' in consulting Ask Africa's collected data but considered that these interests were not significant (or biased) for his research purposes; and
- the data collection by Ask Africa coincided with the timescale of the author's research so these collected data were not out-of-date for the author's research purposes.

The commonly utilised Internet browser in eThekweni Municipality is Microsoft Internet Explorer. On 13 June 2006 eThekweni Municipality employees were selected by email invitation from the Communications Department – to participate in an online intranet survey. The survey instrument comprised questions where respondents could give feedback in a Likert-scale format. The aim of this survey was 'to identify areas where the intranet may need improvements' and 'to allow positive user experiences to be obtained'. eThekweni Municipality employees who expressed an interest in participating in this survey received questions online. This survey was emailed by Ask Africa's research partner (MicroIces) to each eThekweni Municipality employee. The data collation process was handled by Ask Africa. The data used in this research were sourced and distilled from the eThekweni Municipality Intranet Research Report, (July 2006) compiled by Ask Africa. The reported findings inform this study.

One hundred and fifty email invitations were sent to eThekweni Municipality employees and 39 responses were received. This represents 26% of the total number of employees who originally expressed interest in participating in the survey. Whilst this is a relatively small sample, Debowski (2006:274) suggests that response 'rates as low as 20% may still provide some sense of the issues'.

Data analysis

Extracted from the eThekweni Municipality Intranet Research Report (Ask Africa 2006), the results were analysed and presented. From the 39 responses received during the survey, the intranet user experience classification is reflected in Table 1.

From Table 1, it is seen that the majority of respondents (34) were non-beginner intranet users. This is important because Intermediate and Advanced users comprised 87% of the survey sample and they could therefore give meaningful perspectives during the survey period.

In Table 2, the ranking in ascending order of Strongly Agree or Agree responses to 'benefits the intranet holds' are reflected.

From Table 2, the greatest perceived benefit that the intranet holds is for employees to use it as a platform to share and access inter-departmental (i.e. clusters or service units) information. This suggests that information sharing (explicit knowledge) as opposed to 'knowledge' sharing is taking place and this sharing implies that the information flow between employees is multi-directional. From the discussion in Section 2.1, the intranet is therefore no longer at a low maturity stage because the information flow would have been uni-directional. There is evidence of relatively high sharing and accessing of inter-departmental information (87%) and also of employees conducting organisational interaction (81%). This suggests that the intranet is used for collaborative information purposes and the intranet therefore appears to be at a medium maturity stage. Since only 50% of respondents agree that the intranet is necessary to perform daily work functions (which may include back-end applications for daily work functions by employees), this implies that the intranet has not yet reached a high maturity stage.

Information sharing of relevant information, ideas, suggestions and expertise between employees appears to

TABLE 1: Intranet user experience classification.

User classification	Tally and Percentage of Respondents (n = 39)	
	Tally	%
Beginner	5	13
Intermediate	25	64
Advanced	9	23

Adapted from eThekweni Municipality Intranet Research Report compiled by Ask Africa, 2006, *eThekweni Municipality Intranet Research Report*, Unpublished report, 1–72, July.

TABLE 2: Ranking in ascending order of Strongly Agree or Agree responses to 'benefits the intranet holds'.

Statement	Percentage of Respondents (n = 19)		
	Strongly Agree/ Agree	Neutral	Disagree
Useful platform to share and access inter-departmental information	87	9	4
The intranet is an effective way to conduct organisational interaction	81	14	5
Quickest focal point to disseminate and get organisational communication	77	14	9
Enhances departmental communication	72	5	24
Helps the organisation improve its service to customers	65	15	20
Helps with productivity	63	14	23
Using the intranet is necessary for employees to perform daily work functions	50	5	45

Adapted from eThekweni Municipality Intranet Research Report compiled by Ask Africa, 2006, *eThekweni Municipality Intranet Research Report*, Unpublished report, 1–72, July.

be evident in eThekweni Municipality's intranet but there is limited evidence to support that the intranet is effective towards knowledge-sharing. For example, Gaffoor and Cloete (2010:6) suggest that there is a need to extract information (such as lessons learned and best practices to follow) from reports and documents. Such tacit knowledge contained in reports and documents will augment knowledge-sharing, and this process will be beneficial to the eThekweni Municipality. However, from the author's survey, it should be noted that the perceived benefit does not explicitly indicate whether or not there is a sharing of tacit knowledge in eThekweni Municipality or if eThekweni Municipality's intranet is effective towards knowledge-sharing. Nevertheless it is argued that this perceived benefit will serve to augment key element 1 and element 4 discussed in Section 3.2.

The second highest reported perceived benefit was as 'an effective way to conduct organisational interaction'. This includes virtual maps, chats and email transactions. When employees engage in collaborative work with fellow employees in different clusters or service units and between different hierarchical levels that share their objectives, the context of knowledge-sharing exists. Mechanisms may need to be instituted to assist in moving from tacit to explicit knowledge in different clusters or service units and between different hierarchical levels. This second highest reported perceived benefit will then serve to augment key element 3 discussed in Section 3.2.

The ranking, in ascending order, of Strongly Agree or Agree responses to the content of the intranet is reflected in Table 3.

From Tables 2 and Table 3, it appears that the surveyed respondents generally considered the intranet to hold benefits but that the contents of the intranet requires improvement for information seeking. This will enable an employee to search for and find the required explicit knowledge, retrieve it and then relate it to his existing knowledge. This suggests that whilst the information on the intranet website is generally seen to be reliable, the regular updating of content

TABLE 3: Ranking, in ascending order, of Strongly Agree or Agree responses to the content of the intranet.

Statement	Percentage of Respondents (n = 18)		
	Strongly Agree/ Agree	Neutral	Disagree
The information and content on the website is relevant	63	11	26
The information on the website is reliable	61	17	22
Overall I am happy with the quality of content on the website	57	14	29
I am happy with the quality of the search process	57	14	33
The content on the site is regularly updated	53	11	38
There is a high likelihood of finding information I am looking for even though I do not know where to find it	52	10	38

Adapted from the eThekweni Municipality Intranet Research Report compiled by Ask Africa, 2006, *eThekweni Municipality Intranet Research Report*, Unpublished report, 1-72, July.

and finding information that an employee is looking for needs to be improved (Ask Africa 2006:45). For an intranet to be of 'real value' to employees, the contents should be relevant, reliable, accurate, informative and up to date. In order to augment knowledge-sharing, employees need the ability to share organisationally relevant information with one another. An important use of most intranets is to find reports and documents (e.g. policy documents) that 'point' to employees who have knowledge and expertise. By finding the information, this may result in the creation of knowledge and move it from tacit to explicit knowledge. This will serve to augment key element 2 discussed in Section 3.2. Furthermore there will be a common context that allows a growth spiral as knowledge moves amongst fellow employees (and also in communities of practice [CoP]), and between groups of employees in different organisational levels in eThekweni Municipality.

- The summary of the survey results is as follows:
- the eThekweni Municipality's intranet appears to be at a medium maturity level;
- whilst there is information sharing using the intranet, the intranet does not appear to be effective towards knowledge-sharing
- there appears to be scope for improvement to the intranet content areas.

One initiative which may serve to address the shortcomings in facilitating knowledge-sharing utilising eThekweni Municipality's intranet, is the recently formed MILE which was established subsequent to the intranet online survey. MILE may be ideally poised to address the identified intranet shortcomings. Gaffoor and Cloete (2010:6) recommend that a KM division (i.e. in the case of eThekweni Municipality – MILE) should not only be responsible for the technological aspects of KM but in order 'to take advantage of opportunities for innovation' should establish CoP within the municipality. Such CoP can be established on eThekweni Municipality's intranet. Whilst the survey results suggest that the intranet augments four key elements (1-4 in Section 3.2), further investigation is required. This may be one avenue for future research. A second avenue for future research may be to gauge whether or not Web 2.0 technologies are likely to influence collaboration and knowledge-sharing processes (and activities) in eThekweni Municipality's intranet.

Conclusion

An intranet should be tailored to suit and enhance an organisation's knowledge-sharing processes through its 'alerting' and 'retrieving' mechanisms. Because IT plays an important role enabling the effective acquisition, sharing and presentation of knowledge, an intranet must be effectively managed to readily augment knowledge-sharing. In the case of eThekweni Municipality's intranet, whilst there is information sharing, the intranet appears to augment limited knowledge-sharing. With the recent formation of MILE to create an enabling KM organisational culture, mechanisms may soon be instituted to assist it to move from tacit to explicit knowledge. This will generate knowledge to support

knowledge-sharing, and employees will thereby utilise eThekweni Municipality's intranet more effectively.

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Competing interests

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