

# Intranet Supported Knowledge Sharing Behavior: A Case Study at Selected Malaysian Companies

Mohamad Noorman Masrek

*Faculty of Information Management,  
Universiti Teknologi MARA, Puncak Perdana Campus,  
Section U10, 40150 Shah Alam,  
Selangor, MALAYSIA  
mnoorman@salam.uitm.edu.my*

## ABSTRACT

*The conduct of this study has been to investigate whether intranet users at selected Malaysian companies utilize intranet for knowledge sharing. In addition, it also investigates whether there is a significant difference in terms of intranet utilization for knowledge sharing across companies. Based on the analysis of data collected through survey involving 359 intranet users from four selected companies, it was found that intranet is being used for knowledge sharing purposes. Further analysis has also shown that there is no significant difference in terms of knowledge sharing behavior across the four participating companies.*

## Keywords

*Corporate intranet, Intranet users, Knowledge sharing behavior*

## 1.0 INTRODUCTION

The term “intranet” was first coined by Dr. Steven Telleen in 1994, of the Amdahl Corporation in a paper entitled IntraNet Methodology (Telleen, 1995). At present, intranet technologies have significantly mature and they exist in various sizes, shapes, and forms. In fact, more sophisticated terms like intranet portal, enterprise portal, enterprise information portal or EIP (Shilakes and Tylman, 1998). Intranet, unlike any other application systems, is usually implemented for company-wide utilization. In others words, almost everyone in the organization has access and rights in utilizing the intranet. In a typical intranet computing environment, individual utilization can be divided into mode of utilization or purpose of utilization. Damsgaard and Scheepers (2001) identified the mode of intranet utilization as being publishing, transacting, interacting, searching and recording. On the other hand, the literature indicates that the purposes of utilization are mainly centered upon decision support (Ba, Lang and Whinston, 1997; Sridhar, 1998; Denton, 2005) and knowledge sharing (Ruppel and Harrington, 2001; Stoddart,

2001; Lichtenstein, Hunter and Mustard, 2004; Panteli, Tsiourva and Modelly, 2005; Stenmark, 2005c). Considering that the proliferation of intranet into Malaysian companies has been very aggressive, not much is really known as to how Malaysian intranets users utilize intranet for knowledge sharing purpose. To this effect, this study has been conducted with the purpose of achieving the following objectives: (i) to investigate whether intranet users at selected Malaysian companies utilize intranet for knowledge sharing and (ii) to investigate whether there is a significant difference in terms of intranet utilization for knowledge sharing across companies.

## 2.0 INTRANET SUPPORT FOR KNOWLEDGE SHARING

Realizing the importance of knowledge sharing, many organizations have deployed or exploited the intranet as part of their knowledge management initiative programs. The literature indicates that there exist diverse studies that specifically address the role of intranet in facilitating knowledge sharing (Newell et al., 1999; Ruppel and Harrington, 2001; Stoddart, 2001; Holden, 2003; Lichtenstein et al., 2004; Hall, 2004; Panteli et al., 2005; Stenmark, 2005c; Stenmark, 2005e). Other studies such as Scott (1998); Stenmark (1999a); Damsgaard and Scheepers (2001); Stenmark (2002); Sarkar and Bandyopadhyay (2002); Dingsoyr and Conradi (2003); and Skok and Kamanovitch (2005) not only addressed primarily the role of the intranet in supporting knowledge management initiatives but also stressed equal emphasis on knowledge sharing. To best describe how the intranet can facilitate knowledge sharing, Stenmark (2002) and Lichtenstein et al., (2004) developed a model that describes intranet utilization for supporting knowledge management. Stenmark’s model as suggests that the intranet as a knowledge sharing environment is seen from three perspectives: information, awareness and communication. The information perspective relates that the intranet gives the organizational members access to both structured and unstructured information in the form

of databases and documents. Access to rich and diverse information is imperative for knowledge creation. The awareness perspective suggests that the intranet is used to keep users well-informed and constantly connected to information and people in the organization. Such a networking practice promotes community building and increases the likelihood for successful communication and collaboration. The communication perspective enables organizational members to collectively interpret the available information by supporting various forms of channels for conversation and negotiations. When users engaged in collaborative work with peers that share their objectives and understand their vocabulary, the common context for knowledge sharing would then exist. Lichtenstein et al., (2004) conceptualization of knowledge sharing mediated by the intranet is depicted in Figure 1.

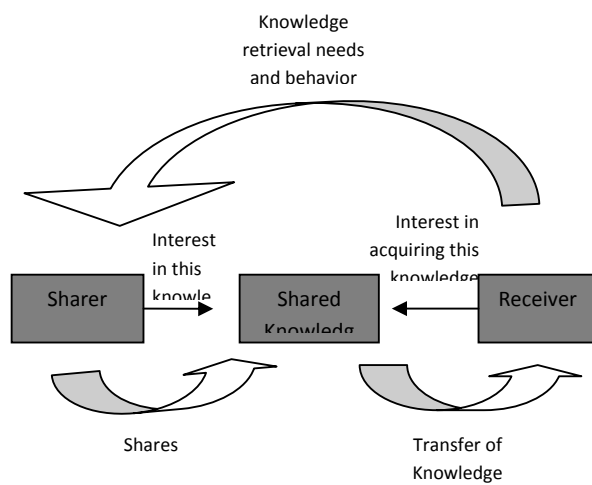


Figure 1. Model of knowledge sharing in intranet computing (Lichtenstein et al., 2004)

The model displays a sharer who chooses to provide knowledge to be published, and provides that knowledge which is then published on the intranet (shown by the box 'shared knowledge'). A potential receiver will search and find the required knowledge, retrieve it then relate it to his/her existing knowledge. The knowledge is then assimilated before it can be applied as required.

### 3.0 RESEARCH METHODS

The conduct of the study involved survey research method. Several companies with high intranet maturity (i.e. the intranet are being integrated with organizational information systems) were contacted to participate in the survey. However, only four companies were willing to participate in the study. After a lengthy discussion with the contact person of these companies, it was decided that the respondents of the study should be the executives in

the headquarters only. The rationale being that, compared with the support staffs, the executives are the heavy users of the intranet. Accordingly, 700 questionnaires were administered to these participating companies using stratified random sampling. An instrument comprising of six-item measures adapted from De Vries et al. (2006) was used to gauge knowledge sharing behavior. Data were analyzed using SPSS version 14.0. Non-response biases were analyzed by comparing early responders and late responders using independent sample t-test. The results revealed that the responses were free from non-response biases. Factor analysis was then executed on the items measuring knowledge sharing and the findings showed that all items were cleanly loaded into one single factor. The reliability analysis performed also showed that items measuring knowledge sharing recorded Cronbach alpha value of 0.907 suggesting that the instrument used in the study was highly reliable.

### 4.0 FINDINGS

Based on 700 questionnaires distributed to the four companies, a total of 423 or 60.43% were returned. The response rate was considered high compared to other studies involving users in an organizational setting such as Mohamed et al., (2006) and Hussein et al., (2007). This could be attributed to the following reasons: (i) all targeted respondents would definitely utilize intranets in their day-to-day work, (ii) the strong support and cooperation from the companies' management in ensuring the successful distribution and collection of the questionnaire manifested by assigning contact persons in related departments or units, (iii) the nature of the corporate culture that is geared towards serving customers as the first priority, (iv) four-week duration period given was considered 'very ample' for the respondents to response.

As exhibited in Table 1, the highest response rate was from Company A (65.33% of 150), followed by Company B (61.50% of 200) and Company D (59.00% of 200). In terms of usable responses, Company A (53.50% of 150) was also the highest followed by Company C (48.67% of 150). Altogether, they were 359 usable questionnaires yielding 51.29% of the total questionnaires being distributed, thus, exceeds the required sample size of 209 as recommended by Bartlett et al., (2001). In contrast, 64 or 9.14% questionnaires were found unusable. In determining whether the completed questionnaires were usable or not, several criteria were set forth. First and foremost would be the completeness factor. Returned questionnaires that were found to be incomplete were excluded. The second reason would be checking on the responses

on utilization mode, decision support and knowledge sharing measures. Both the utilization mode and decision support measures have explicitly highlighted communication elements via the utilization of e-mails. Therefore, any respondent who indicated 'almost never' for the interacting mode questions but responded at the scale of 4 or above for the decision support and knowledge sharing measures would be regarded as invalid, due to the contradicting answers. Due to time constraints, all completed questionnaires that were returned after the due dates were also excluded.

Table 1: Response rate

	Total Distributed	Total Returned		Total Usable	
	No	No	%	No	%
Comp A	150	98	65.33	82	54.67
Comp B	200	123	61.50	107	53.50
Comp C	150	84	56.00	73	48.67
Comp D	200	118	59.00	97	48.50
Total	700	423	60.43	359	51.29

#### 4.1 Demographic Profiles

Table 2 presents the profiles of respondents' gender. The total number of male respondents was 197 or 54.9 % of the entire sample. In contrast, the female respondents contributed 45.1% of the whole research sample. Across companies, the male respondents were found to outnumber female respondents.

Table 2: Profiles of respondents' gender

	Comp A	Comp B	Comp C	Comp D	Total
Gender	%	%	%	%	%
Male	13.1	16.2	10.0	15.6	54.9
Female	9.7	13.6	10.3	11.4	45.1
Total	11.8	29.8	20.3	27.0	100.0

With regard to respondents' age, the pattern of age distribution looked almost identical across companies. As shown in Table 3, the majority of the respondents (29.5%) were between 31 and 35, followed by those between 26 and 30 (25.3%) and between 36 and 40 (23.7%). The least number of respondents came from the age group greater than 50 (1.4%).

Table 3: Profiles of respondents' age

	Comp A	Comp B	Comp C	Comp D	Total
Age	%	%	%	%	%
20 – 25	2.2	2.5	2.2	2.2	9.2
26 – 30	6.4	6.1	4.5	8.4	25.3
31 – 35	5.3	9.5	7.0	7.8	29.5
36 – 40	5.3	8.1	4.5	5.8	23.7

41 – 45	3.1	2.8	1.4	1.9	9.2
46 – 50	0.3	0.6	0.3	0.6	1.7
> 50	0.3	0.3	0.6	0.3	1.4
Total	22.8	29.8	20.3	27.0	100.0

As shown in Table 4, the compositions of the highest educational attainment are as follows: 79.1% possessed Bachelor's degree, 7.8% obtained Master's degree, 6.7% owned other qualifications and 6.4% held a diploma. Respondents who indicated that they possessed other qualifications also noted that they were professional qualifications mainly from the accounting discipline such ACCA and CIMA. Surprisingly, a total of 28 or 7.8% respondents indicated that their highest qualification was diploma. The expected practice is that to hold an executive post, one should have at least a Bachelor's degree. However, upon further analysis, it was found that these respondents were from those above 40. Perhaps, due to their vast experience and seniority, they were promoted to the executive or managerial post.

Table 4: Profiles of respondents' education

	Comp A	Comp B	Comp C	Comp D	Total
Education	%	%	%	%	%
Master	1.1	0.8	1.1	3.3	6.4
Degree	19.8	23.4	15.9	20.1	79.1
Diploma	1.4	2.8	1.4	2.2	7.8
Others	0.6	2.8	1.9	1.4	6.7
Total	22.8	29.8	20.3	27.0	100.0

Table 5 presents respondents' job level. 85.2% respondents indicated that they were holding executive posts while 53 or 14.8% responded that they were holding middle management jobs. None of the respondent came from the top management post. The highest number of middle managers who responded to the questionnaire was from Company D (18 or 5.0%), followed by Company C (13 or 3.6%) and Company B (12 or 3.3%).

Table 5: Profiles of respondents' job level

	Comp A	Comp B	Comp C	Comp D	Total
Job Level	%	%	%	%	%
Executive	20.1	26.5	16.7	22.0	85.2
Mid. Mgt.	2.8	3.3	3.6	5.0	14.8
Total	22.8	29.8	20.3	27.0	100.0

#### 4.2 Intranet Utilization for Knowledge Sharing

An analysis was conducted to investigate the situation of intranet utilization for knowledge-sharing purposes across companies. By employing the ANOVA test, the exercise unveiled that there are no significant differences across companies (p-value > 0.05). Table 6 exhibits results of the test while Table 7 displays the mean score for each

items measuring knowledge sharing across companies.

Table 6: Results of ANOVA test

Items	F(3,355)	p-value
I use the intranet to share information that I have with my colleague	1.665	0.174
I use the intranet to ask my colleagues about certain knowledge that I need	0.335	0.786
I use the Intranet to enquire of what my colleagues know	0.707	0.549
I use the intranet to regularly inform my colleagues what I am doing	0.209	0.890
I use the Intranet to tell my colleagues about something new that I've learned	0.656	0.580
Average knowledge sharing score	0.557	0.644

Table 7 displays the mean score for each items measuring knowledge sharing across companies. Except for Company C which has the mean score of 4.99, all other companies recorded mean values well above 5.00. Nevertheless, all these values are still considered high and that indicates the intranet utilization for knowledge-sharing purposes among Malaysian intranet users such as those in this study is quite excessive.

Table 7: Comparative analysis of the mean of knowledge sharing variable across companies

Items	Comp A	Comp B	Comp C	Comp D
I use the intranet to share information that I have with my colleague	5.30	5.31	5.18	5.15
I use the intranet to ask my colleagues about certain knowledge that I need	5.18	5.29	5.19	5.15
I use the Intranet to enquire of what my colleagues know	5.01	5.20	4.93	5.07
I use the intranet to regularly inform my colleagues what I am	5.12	4.96	4.82	4.91

doing				
I use the Intranet to tell my colleagues about something new that I've learned	5.15	5.02	4.81	4.76
Average knowledge sharing score	5.15	5.16	4.99	5.01

## 5.0 CONCLUSION

As intranet are being installed and used by companies to support knowledge management activities, studies focusing on how users exploit the technology for knowledge sharing purposes will surely capture the interest of many researchers. While this study has successfully achieved its objectives, there are several limitations worth mentioning. Firstly, the scope of the study is only focusing to four companies. Secondly, the participants who involved in the study were those of the executive levels only. Thirdly, the study employed the use of survey for collecting the data. Hence, future researchers who are interested in the topic should consider adopting all levels of users. In addition, qualitative research paradigm should also be considered as that will provide more richer data.

## REFERENCES

- Ba, S., Lang, K.R., & Whinston, A.B. (1997b). Enterprise decision support using intranet technology. *Decision Support System*, 20, 99–134.
- Bartlett, J.E., Kotrlík, J.W., & Higgins, C.C. (2001). Organizational research: determining appropriate sample size in survey research. *Information Technology, Learning and Performance*, 19 (1), 43–50.
- Damsgaard, J., & Scheepers, R. (2001). Using intranet technology to foster organizational knowledge creation. Global co-operation in the new millennium. *Proceedings of the 9<sup>th</sup> European Conference on Information Systems (ECIS2001)*, Bled, Slovenia.
- De Vries, R.E., Den Hooff, B.V. & De Ridder, J.A. (2006). Explaining knowledge sharing: the role of team communication styles, job satisfactions and communication beliefs. *Communications Research*, 33 (2), 115–135.

- Denton, K. (2005). Strategic intranet: the next big things. *Corporate Communications: An International Journal*, 11(1), 5–12.
- Dingsoyr, T., & Conradi, E. (2003). An empirical study of an informal knowledge repository in a medium-sized software consulting company. *Proceedings of the 25<sup>th</sup> International Conference on Software Engineering (ICSE2003)*, Portland, Oregon, USA.
- Hall, H. (2004). The intranet as actor: the role of the intranet in knowledge sharing. *Proceedings of the International Workshop on Understanding Sociotechnical Action (USTA2004)*, Edinburgh, Scotland, 109–111.
- Holden, T. (2003). Understanding the dimensions of knowledge sharing: designing an intranet to improve operational performance in a multinational corporation. *International Journal of Electronic Business*, 1(2), 118–139.
- Hussein, R., Selamat, M.H., & Karim, N.S.A (2007). The impact of technological factors on information systems success in the electronic government context. *Business Process Management Journal*, 13 (5), 613–617.
- Lichtenstein, S., Hunter, A., & Mustard, J. (2004). Utilization of intranets for knowledge sharing: a socio-technical study. *Proceedings of the 15<sup>th</sup> Australasian Conference on Information Systems (ACIS2004)*, Tasmania, Australia.
- Mohamed, N., Hussin, H. & Hussein, R. (2006). Enabling change factors and its success in the Malaysian e-government implementation. *Proceedings of the 10<sup>th</sup> Pacific-Asia Conference on Information Systems (PACIS2006)*, Kuala Lumpur, Malaysia.
- Newell, S., Scarbrough, H., Swan, J. & Hislop, D. (1999). Intranets and knowledge management: complex processes and ironic outcomes. *Proceedings of the 32<sup>nd</sup> Hawaii International Conference on System Sciences (HICSS1999)*, Hawaii, USA.,
- Panteli, N., Tsiourva, I., & Modelley, S. (2005). *Intra-organizational connectivity and interactivity with intranets: the case of pharmaceutical company*. Working paper, University of Bath, UK.
- Ruppel, C. P. & Harrington, S. J. (2001). Spreading knowledge through intranets: an analysis of the organizational culture leading to intranet adoption and use. *IEEE Transactions on Professional Communications*, 44 (1), 37.
- Sarkar, R.J. & Bandyopadhyay, S. (2002). Developing an intranet-based knowledge management framework in a consulting firm: a conceptual model and its implementation. *Workshop on Knowledge Management and Organizational Memories (ECAI02)*, Lyon, France.
- Scott, J.E. (1998). Organizational knowledge and intranet. *Decision Support Systems*, 23, 3–17.
- Shilakes, C., & Tylman, J. (1998). *Enterprise information portals*. New York: Merrill Lynch, Inc.
- Skok, W. & Kamanovitch, C. (2005). Evaluating the role and effectiveness of an intranet in facilitating knowledge management: a case study at Surrey County Council. *Information & Management*, 42, 731–744.
- Sridhar, S. (1998). Decision support using intranet. *Decision Support System*, 23, 19–28.
- Stenmark, D. (1999a) Using intranet agents to capture tacit knowledge. *Proceedings of World Conference on the WWW and Internet, (WebNet99)*, Honolulu, Hawaii, USA, 1000–1005.
- Stenmark, D. (2002). Information vs. knowledge: the role of intranets in knowledge management. *Proceedings of the 35<sup>th</sup> Hawaii International Conference on System Sciences (HICSS2002)*, Hawaii, USA.
- Stenmark, D. (2005c). Knowledge sharing on a corporate intranet: effects of re-instating web authoring capabilities. *Proceedings of the 13<sup>th</sup> European Conference on Information Systems (ECIS 2005)*, Regensburg, Germany.
- Stoddart, L. (2001). Managing intranets to encourage knowledge sharing: opportunities and constraints. *Online Information Review*, 25 (1).
- Telleen, S.L. (1995). IntraNet methodology: concepts and rationales. *IntraNet Solutions, Amdahl Corporations*. Retrieved 23 August 2005, from <http://www.iorg.com/papers/amdahl/intranet-concepts.pdf>