

Knowledge Sharing Perception: Multiple Case Studies in Indonesian IT Consulting Companies

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Abstract— In this globalization era, companies are required to keep learning and changing. In the process of changing, companies need to be adaptive and innovative. Therefore, a company needs to cultivate and maintain its knowledge. Among other ways, it can be achieved by encouraging the process of knowledge sharing within the company. Hence, this study aims to know the perception of the employee regarding knowledge sharing. An assessment of employee perceptions toward knowledge sharing was conducted by using questionnaires for employees in three consulting companies in Indonesia, namely Pusilkom UI, Altrovis and Usmart. This study concludes that the factors that encourage knowledge sharing are the intrinsic factors rather than the extrinsic factors. Organization can drive the success of knowledge sharing by providing supporting facilities.

Index Terms— Knowledge, knowledge sharing, employees, perception, consulting companies.

I. INTRODUCTION

Knowledge management is a significant competitive advantage for a company [1]. According to Eid [2], knowledge is important in the long-term sustainability of an organization. Good knowledge management also delivers a successful and timely outcome [3].

One of the most important processes of knowledge management is knowledge sharing [1]. According to Aulawi et al. [4], the most important part of knowledge management within the company is to encourage employees to share their knowledge. A knowledge sharing process also increases the knowledge accumulation within the company. In addition, the success of knowledge sharing will enhance the workers' ability, thus making the organization's performance better [5]. According to AlMa'aitah [6], an organization will find difficulties to maximize their value if they do not understand about knowledge sharing.

Although many organizations have realized the importance of knowledge sharing, they often get the challenges to implement knowledge sharing. Sometimes the members of the organization are reluctant to share their knowledge [1]. Another problem for implementing knowledge sharing is the employees are reluctant to

accept the knowledge from the others [4]. From the management side, sometimes they do not know how to encourage their employees to share their knowledge.

In order to make knowledge sharing can run successfully, organizations need to consider the perception of their employees about knowledge sharing in order to alleviate the gap between the companies' management and the employees. Therefore, this study aims to determine the employees' perception of IT consulting company on knowledge sharing. We expect that we can improve the process of knowledge sharing in IT consulting companies in Indonesia.

II. THEORETICAL BACKGROUND

A. Knowledge Sharing Definition

Knowledge sharing is one of the essential knowledge management processes. All companies who want success need to encourage its members and partners to share their strategic knowledge, such as consumers, competitors, markets, and the various aspects related to its business environment [7]. According to [8], knowledge sharing is the exchange of information, skills, ideas, and opinions through collecting and donating process. Collecting knowledge can be defined if someone consults to their colleagues to obtain the intellectual property of others. While donating is defined as a communication process that involved their intellectual property. According to [9], knowledge sharing is an interaction between people through the framework, institutions, laws, norms, ethics, behavior, and habits that voluntarily in the form of knowledge interaction. Knowledge sharing can be divided into four types, namely knowledge sharing in individual context, knowledge sharing in team context, knowledge sharing in organizational context and knowledge sharing in inter-organizational context.

B. The Benefits of Knowledge Sharing

Knowledge Sharing is implemented in various fields. In a project-based organization (PBO), knowledge sharing is necessary to avoid unnecessary reinvention. Since the experience that has been gained in one project can be used in other projects [9]. According to [10], a company that incapable to manage their knowledge will have a tendency to repeat the same mistakes. The lack of knowledge sharing in an organization also leads to waste cost and time.

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According to [11], project-based organizations work on standards mechanisms. They must be competent to respond the changing of environment to achieve economies of scale, perform organizational development, and promote the organization. To address these challenges, project-based organizations need to carry out the knowledge sharing. However, the most challenge faced by project-based organizations is how to maintain the knowledge of each project

C. *Employees Perceptions of Knowledge Sharing*

Employee perceptions can influence the success factors of knowledge sharing because it affects the trust among employees [10]. According to [12], there are six perceptions of employees that important to be measured related to knowledge sharing. These perceptions are the current state of knowledge sharing practice, the activities, the technologies used, the benefits, the motivation factors, and the hindering factors perceived by the employees.

III. METHODOLOGY

This research was conducted by distributing the questionnaires to three consulting companies, namely: Pusilkom UI, Altrovis, and Smart Solution. Considering the small size of employees in these three IT consulting, this research used saturated sampling method, where all the members of the population are used as samples [13].

The knowledge sharing aspects that we investigated in this research adopting the work of [12], which comprises of six categories, namely: current state of knowledge sharing practice, knowledge sharing activities, technology used in knowledge sharing, motivation factors, benefits of knowledge sharing, and hindering factors of knowledge sharing. Table I shows these aspects and their respective number of questions.

TABLE I. QUESTIONNAIRE STRUCTURE

Code	Category	#Questions
A1- A7	Current state of knowledge sharing practice	7
B1- B5	Knowledge sharing activities	5
C1-C5	Technology used in knowledge sharing	5
D1-D5	Motivation factors	5
E1-E10	Benefits of knowledge sharing	10
F1-F9	Hindering factors of knowledge sharing	9
Total		41

The questionnaire is a set of statements that should be filled by respondents. We used 4-points Likert scale as follow: 1 – do not agree, 2 – somewhat agree, 3 – agree, 4 – strongly agree.

IV. ANALYSIS

A. *Respondents*

Total respondent for this study is 59 people. The compositions are 25 people (42%) from Pusilkom UI, 24 people (40%) from Altrovis, and 10 people (17%) from Usmart.

B. *Validity and Reliability Test*

Validity and reliability test of the questionnaire is needed to determine the quality of the data. Validity and reliability in this study are examined using Statistical Package for the Social Sciences (SPSS) version 11.

Validity test conducted to know whether our instrument could measure the concept or not [14]. If the r value (Corrected Item - Total Correlation (CI - CT)) is positive and greater than the value of r table, the question is valid. R table for the total sample of 59 (df = 57) with a significance value 0.05 is 0.2564.

Reliability test is an indication of the stability and consistency of the measurement tool. Reliability can be seen from Cronbach Alpha (CA) value. Based on Sekaran [14], if the Cronbach alpha value is less than 0.6, the reliability is bad; around the range of 0.7, the reliability is acceptable; and if more than 0.8, the reliability is good. The result of validity and reliability test results can be seen in Table II.

TABLE II.

VALIDITY AND RELIABILITY TEST RESULTS

Category	Item	CI - CT	Item	CI - CT	CA
Current state of knowledge sharing practice	a1	0.196	a5	0.334	0.750
	a2	0.410	a6	0.484	
	a3	0.299	a7	0.457	
	a4	0.415			
Knowledge Sharing Activities	b1	0.508	b4	0.471	0.813
	b2	0.539	b5	0.395	
	b3	0.292			
Technology used in knowledge sharing	c1	0.412	c4	0.568	0.806
	c2	0.306	c5	0.450	
	c3	0.550			
Motivation Factors	d1	0.447	d4	0.681	0.764
	d2	0.415	d5	0.569	
	d3	0.621			
Benefits of knowledge sharing	e1	0.397	e6	0.463	0.907
	e2	0.559	e7	0.467	
	e3	0.501	e8	0.414	
	e4	0.506	e9	0.542	
	e5	0.474	e10	0.547	
Hindering factors of knowledge sharing	f1	0.337	f6	0.403	0.878
	f2	0.578	f7	0.381	
	f3	0.477	f8	0.383	
	f4	0.340	f9	0.351	
	f5	0.365			

From Table II, it can be seen that the question with code a1 is not valid. Therefore, items a1 was excluded from further analysis.

C. *Employees Perceptions related to Knowledge Sharing*

In order to analyze our collected data, we used descriptive analysis by calculating mean of each item that will be interpreted with range described as follows: 0 – 0.49 is strongly disagree, 0.5 – 1.49 is disagree, 1.5 – 2.49 is somewhat agree, 2.5 – 3.49 is agree, 3.5 – 4 is strongly agree.

Here are the findings of our research:

1) *Current state of knowledge sharing practice*

For the question with a2 code, in which employees are given a statement that they support the idea of applying

knowledge management in their company, the average value for this statement was 3.34, which means the average employees agree with the idea for applying knowledge management in their company.

For the question with a3 code, in which employees are given a statement that there are existing knowledge sharing activities in their company, the average value for this statement was 2.58, which means the average employees agree that there are existing knowledge sharing activities in their company.

For the question with a4 code, in which employees are given a statement that there are management support for encourage knowledge sharing in their company, the average value for this statement was 2.93 which means the average employees agree that there are management support for encourage knowledge sharing in their company.

For the question with a5 code, in which employees are given a statement that they feel the culture of knowledge sharing, the average value for this statement was 2.75 which means the average employees agree about the existing culture of knowledge sharing within the company.

For the question with a6 code, in which employees are given a statement that there are awards to individuals who conduct knowledge sharing, the average value for this statement was 2.27 meaning that employees somewhat agree when it is said that there are awards to individuals who conduct knowledge sharing.

For the question with a6 code, in which employees are given a statement that employees want to share knowledge with colleagues, the average value for this statement was 3.27. It means employees want to share their knowledge.

It can be concluded that the employees want their company applying knowledge management. Moreover, they have a great desire to share their knowledge to their colleagues. However, employees still feel lacking of knowledge sharing culture.

2) *Knowledge Sharing Activities*

For the question with b1 code, in which employees are given a statement that the employee share through the portal organization, the average value for this statement was 2.75, which means that the average employee agree that they share through the portal (repository) of the organization.

For the question with b2 code, in which employees are given a statement that the employee save their knowledge to the portal (repository), the average value for this statement was 2.27, which means the average employee somewhat agree they save their knowledge to the portal (repository).

For the question with b3 code, in which employees are given a statement that employees with video conferencing, the average value for this statement was 1.73, which means the average employee somewhat agree that they share with video conferencing.

For the question with b4 code, in which employees are given a statement that employees perform brain storming, the average value for this statement was 2.73, which

means the average employees agree that they did a brain storming.

For the question with b5 code, in which employees are given a statement that employees follow the community of practice within the organization, the average value for this statement was 2.31, which means the average employee somewhat agree that they did the sharing through the community of practice.

From the description of the knowledge sharing activities that have been implemented, the most dominant activity is sharing is done through the portals, while knowledge sharing activities that are rarely followed by the employees are video conferencing and community of practice.

3) *Technology Used in Knowledge Sharing*

For the question with c1 code, in which employees are given a statement that the Internet and Intranet help them to share knowledge, the average value for this statement was 3.49, which means the average employee agree that the average employees agree to this statement.

For the question with c2 code, in which employees are given a statement that video conferencing helps them to share knowledge, the average value for this statement was 2.81, which means the average employees agree to this statement.

For the question with c3 code, in which employees are given a statement that knowledge portal (repository) helps them to share knowledge, the average value for this statement was 3.71, which means the average employees strongly agree to this statement.

For the question with c4 code, in which employees are given a statement that knowledge management software helps them to share knowledge, the average value for this statement was 3.03, which means the average employees agree with this statement.

For the question with c5 code, in which employees are given a statement that collaborative software helps them to share knowledge, the average value for this statement was 3.39, which means the average employees agrees with this statement.

From the description of the technology that helps the employees to share knowledge, the most popular technology used is the portal (repository). While, the rarest technology used is video conference.

4) *Motivation Factors*

For the question with d1 code, in which employees are given a statement that recognition motivates employee to share their knowledge, the average value for this statement was 2.64, which means the average employees agree to this statement.

For the question with d2 code, in which employees are given a statement that the promotion motivates employee to share their knowledge, the average value for this statement was 2.68, which means the average employees agree to this statement.

For the question with d3 code, in which employees are given a statement that the desire to improve the work process motivates employee to share their knowledge, the

average value for this statement was 3.24, which means the average employees agrees with this statement.

For the question with d4 code, in which employees are given a statement that the desire to manage time better motivates employee to share their knowledge, the average value for this statement was 3.08, which means the average employees agree with this statement.

For the question with d4 code, in which employees are given a statement that the existing of effective communication channels motivates employee to share their knowledge, the average value for this statement was 3.07, which means the average employees agree with this statement.

From the description above, the factor that motivates employees the most to perform knowledge sharing is the willingness to improve the work processes.

5) *Benefits of Knowledge Sharing*

For the question with e1 code, in which employees are given a statement that knowledge sharing helps for making better decisions, the average value for this statement was 3.22, which means the average employees agree to this statement.

For the question with e2 code, in which employees are given a statement that knowledge sharing helps for enhancing capabilities (skills) and competence, the average value for this statement was 3.41, which means the average employees agree to this statement.

For the question with e3 code, in which employees are given a statement that knowledge sharing helps for increasing individual productivity, the average value for this statement was 3.39, which means the average employees agree with this statement.

For the question with e4 code, in which employees are given a statement that knowledge sharing helps for increasing group productivity, the average value for this statement was 3.41, which means the average employees agree with this statement.

For the question with e5 code, in which employees are given a statement that knowledge sharing helps for cultivating creativity and innovation, the average value for this statement was 3.15, which means the average employees agree with this statement.

For the question with e6 code, in which employees are given a statement that knowledge sharing helps for increasing work motivation, the average value for this statement was 3.20, which means the average employees agree to this statement.

For the question with e7 code, in which employees are given a statement that knowledge sharing helps for increasing job satisfaction, the average value for this statement was 3.10, which means the average employees agree to this statement.

For the question with e8 code, in which employees are given a statement that knowledge sharing helps for facilitating the best practice, the average value for this statement was 3.24, which means the average employees agree with this statement.

For the question with e9 code, in which employees are given a statement that knowledge sharing helps for promoting the organization as a learning organization, the

average value for this statement was 3.10, which means the average employee agrees with this statement.

For the question with e10 code, in which employees are given a statement that knowledge sharing helps for maintaining knowledge within the organization, the average value for this statement was 3.37, which means the average employee agrees with this statement.

In short, it can be seen that almost all of the benefits are perceived by the employees.

6) *Hindering Factor for Knowledge Sharing*

For the question with f1 code, in which are given a statement that the lack of trust in the management hinder knowledge sharing, the average value for this statement was 2.42, which means the average employee somewhat agree to this statement.

For the question with f2 code, in which are given a statement that the lack of trust in co-workers, hinder knowledge sharing, the average value for this statement was 2.17, which means the average employee somewhat agree to this statement.

For the question with f3 code, in which are given a statement that the lack of teamwork hinder knowledge sharing, the average value for this statement was 2.64, which means the average employee agrees with this statement.

For the question with f4 code, in which are given a statement that the lack of training hinder knowledge sharing, the average value for this statement was 2.40, which means the average employees somewhat agree with this statement.

For the question with f5 code, in which are given a statement that lack of reward schemes hinder knowledge sharing, the average value for this statement was 2.37, which means the average employee somewhat agree with this statement.

For the question with f6 code, in which are given a statement that the lack of communication channels hinder knowledge sharing, the average value for this statement was 2.81, which means the average employee to agree to this statement.

For the question with f7 code, in which are given a statement that the lack of encouragement hinders knowledge sharing, the average value for this statement was 2.63, which means the average employee to agree to this statement.

For the question with f8 code, in which are given a statement that the lack of guidelines and rules hinder knowledge sharing, the average value for this statement was 2.63, which means the average employee agrees with this statement.

For the question with f9 code, in which are given a statement that lack of understanding about the system hinder knowledge sharing, the average value for this statement was 2.80, which means the average employees agree with this statement.

From this discussion, it is considered that the factors that hinder knowledge sharing the most are the lack of communication channels and the lack of understanding to use the system.

V. RESEARCH IMPLICATION

Based on our investigation in the three consulting companies, we concluded that these companies do not feel knowledge sharing culture. Considering this, we propose some actions that the companies can carry out to improve the knowledge sharing culture as follows:

- Organizations need to conduct activities related to knowledge sharing, for example by carrying weekly meeting for sharing among employees.
- Promoting the use of portal to share knowledge by creating a portal that can be used easily, integrated with daily activities, as well as giving the Standard Operating Procedure for the use of the portal.
- Improving employees awareness to knowledge sharing as intrinsic factors within individual are considered having more influence than external factors from the company. This is also consistent with the work of [15].
- Providing adequate communication channels and training to employees to use the system.

VI. CONCLUSIONS

Perception of employees perceived regarding to knowledge sharing is essential to know. From these measurements, it can be seen the condition of knowledge sharing in the company at a particular point of time. From this research, it was found that the factors which encourage knowledge sharing is dominated by the intrinsic factors of the employees, rather than the extrinsic factors. For driving the success of knowledge sharing, companies can provide supporting facilities both physical such as repository or non-physical facilities, such as training for the employees.

REFERENCES

- [1] R. R. A. Issa and J. Haddad, "Perceptions of the impacts of organizational culture and information technology on knowledge sharing in construction," *Construction Innovation: Information, Process, Management*, Vol. 8, Iss. 3, pp.182 – 201, 2008.
- [2] M. Eid, "The impact of learning culture and information technology use on knowledge-sharing: A case of KFUPM," European Conference on Information Systems (ECIS), 2009.
- [3] M. Z. Ngoasong and F. Manfredi, "Knowledge Management in Project-Based Organizations: The Interplay of Time Orientation and Knowledge Interventions," Proceedings of EBRF Conference, Finland, 2007.
- [4] H. Aulawi, I. Sudirman, K. Suryadi, and R. Govindaraju, "Knowledge Sharing Behavior, Antecedent and Their Impact on the Individual Innovation Capability," *Journal of Applied Sciences Research*, Vol. 5, No. 12, pp. 2238-2246, 2009.
- [5] S. Xiong and H. Deng, "Critical Success Factors for Effective Knowledge Sharing in Chinese Joint Ventures," Proceedings of the 19th Australasian Conference on Information Systems (ACIS), 2008.
- [6] M. Al-Ma'aitah, "Using Electronic Collaborative Media in Knowledge Sharing Phases: Case Study in Jordan Hospitals," *International Journal of Education and Information Technologies*, Vol. 2, Iss. 4, pp. 238-247, 2008.
- [7] M. T. Hansen, N. Nohria, and T. Tierney, "What's Your Strategy for Managing Knowledge," *Harvard Business Review*, pp. 106-116, March-April, 1999.
- [8] J. K. Wahlroos, "Social Media As A Form of Organizational Knowledge Sharing," Master thesis, University of Helsinki, Faculty of Social Sciences, Department of Social Studies, December 2010.
- [9] S. J. van Vuuren, "Inter-Organisational Knowledge Sharing in the Public Sector: the Role of Social Capital and Communication Technology," Doctoral thesis, Victoria University of Wellington, School of Information Management, 2011.
- [10] A. Wiewiora, G. Murphy, and B. Trigunaryyah, "The Role of Trust in Inter-Project Knowledge Transfer," ICOMS Asset Management Conference Adelaide 2010 Conference Proceedings, Brisbane, 2010.
- [11] W. F. Boh, "Mechanism for Integrating Knowledge in Project-Based Organizations," *Information and Organization*, Vol. 17, No. 1, pp. 27-58, 2007.
- [12] R. A. Rahman, "Knowledge sharing practices: A case study at Malaysia's healthcare research institutes," *The International Information & Library Review*, Vol. 43, Iss. 4, pp. 207–214, 2011.
- [13] Sugiyono, *Metode Penelitian Kualitatif*. Bandung: Alfabeta, 2005.
- [14] U. Sekaran, *Research Methods For Business*. Jakarta: Salemba Empat, 2006.
- [15] R. K. Ekawati and A. N. Hidayanto. "The Influence of Antecedent Factors of IS/IT Utilization Towards Organizational Performance - A Case Study of IAIN Raden Fatah Palembang." *WSEAS Transactions on Computers*, Vol. 10, Iss. 3, pp. 81– 92, 2011.

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