

This paper appears in *Managing Modern Organizations Through Information Technology*, Proceedings of the 2005 Information Resources Management Association International Conference, edited by Mehdi Khosrow-Pour. Copyright 2005, Idea Group Inc.

Success Factors on Intra-Organizational Knowledge Transfer

Noornina Dahlan, T. Ramayah, Noorliza Karia, Fun Swee Fong and Muhammad Hasmi Abu Hassan Asaari
 Universiti Sains Malaysia, 11800 Penang, Malaysia, {nina, ramayah, noorliza, hasmi@usm.my}

ABSTRACT

Knowledge transfer has become an important activity for an organization to sustain its effectiveness. By understanding the factors, it will help organizations to use knowledge transfer as a tool to create and distribute knowledge among their employees. Consequently, it will assist managers to implement strategies in boosting organizational success, and to sustain superior performance. This paper was undertaken to study the success factors driving the knowledge transfer within an organization, in terms of its effectiveness. Factors of terms of knowledge characteristics, recipient of knowledge, and transfer context were diligently studied. The results reveal that knowledge embeddedness and recipient's learning culture are positively correlated with knowledge transfer success whereas knowledge distance and norm distance are negatively correlated. However, project size and physical distance have no significant impact on knowledge transfer.

INTRODUCTION

In recent years, many organizations found that knowledge is an essential asset for them to manage and survive on increasingly competitive fast markets. In order to compete in the globalization environment, a company success should not be linked only to tangible assets but they also should concentrate on intangible resources. A good and established organization should not ignore its knowledge usage for company's growth. The knowledge is the key to sustain in business competitive advantage.

In some organizations, participation in knowledge management tools or processes is not mandated. In others, it may be mandated but is not part of their worker's core responsibility. Consequently, this paper seeks to understand what the obstacles are of knowledge transfer and to examine the factors that drive the knowledge transfer in organizations. By understanding the factors, it will help organizations to establish an effective knowledge transfer and also assist managers to implement strategies to boost organizational efficiency through better knowledge management.

Seeing on importance of knowledge, studying on knowledge transfer that is one of the widely used strategies by an organization is essential and cannot be disregarded. Organizations used this strategy to maintain their competitive advantage and sustain its long-term organization effectiveness, in terms of quality, cost and profit. Furthermore, the utilization of knowledge synergizes the company to a higher level especially through productivity growth. The motivation of this paper is to identify success factors that driving intra-organizational knowledge transfer in one organization.

LITERATURE REVIEW

In recent years, knowledge researches have received widespread attention. A lot of people have studied the importance of knowledge management towards the organization. Davenport and Prusak (2000) stated that knowledge is a fluid mix of framed experiences, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information.

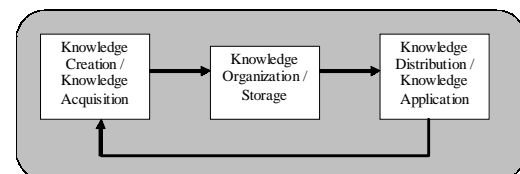
Nonaka (2000) explained on two types of knowledge that are explicit and tacit knowledge. Explicit knowledge represents only the tip of the iceberg of the entire body of knowledge, then that 80% of the iceberg that lies underwater remained largely ignored by a narrow focus on explicit knowledge (Goldblatt, 2000). In the track of history knowledge, Holden (2002) described knowledge management as early as;

- Initiation period where human being shared their brains, emotions, and intuition;
- Roman Empire period where the great written religions, printing, the Renaissance, the Reformation, the Age of Discovery, and the Industrial Revolution;
- 1960s: Knowledge of producing economy (post-industrial economy);
- 1970s: Study on information and technology transfer;
- 1980s: Knowledge is recognized as a competitive asset;
- 1990s: Link is made between knowledge management and organizational learning; and
- End of 1990s and future trend: Social learning, organizational sense-making, system innovation, and change management; and biotechnology.

The Business Process Resource Center (BPRC, 2000) at Warwick sees knowledge management practices as a crucial element of the global business process within organization and a major source of competitive advantage. The task of knowledge management is a continuous process and cannot be said to fully manage. Knowledge management never ends is that the categories of required knowledge management is always changing. New technologies, management approaches, regulatory issues, and customer concerns are always emerging. The key processes associated with knowledge management are illustrated in Figure 1.

Nonaka and Tekuichi's (1995) SECI process, there are four modes of knowledge conversions: socialization (from tacit to tacit), externalization (from tacit to explicit), combination (from explicit to explicit), and internalization (from explicit to tacit). Socialization is where sharing experiences and thereby creating tacit knowledge. The key to acquiring tacit knowledge is shared experience. Externalization is where articulating tacit knowledge into explicit concepts (documenting knowledge). Further combination will systemize concepts into a knowledge system; new knowledge can be created by combining different forms of explicit knowledge and reconfiguring existing information through sorting, adding, combining, and categorizing. Finally internalizations is embodying knowledge into tacit knowledge; it is closely

Figure 1. Knowledge Management Process



related to learning by doing, when socialized, externalized and combined knowledge is internalized into employees tacit knowledge bases, it becomes a valuable asset.

Knowledge transfer in organization is the process through which one unit is affected by the experience of another. Gupta and Govindarajan (2000) have conceptualized knowledge transfer into five elements: perceived value of the source unit's knowledge, motivational disposition of the source, existence and richness of transmission channels, motivational disposition of the receiving unit, and the absorptive capacity of the receiving unit. Meanwhile, Szulanski (1996) defined four-staged process to describe the transfer of best practice inside the organization: initiation, implementation, ramp-up, and integration. Further, overall knowledge transfer can be described into five steps: idea creation, sharing, evaluation, dissemination, and adoption. These stages often overlap, are combined, or are skipped; they also have important feedbacks (Levine, David & Gilbert, 2001).

From the literature, it was understood that in today's highly competitive environment, knowledge management will be the key to organizational success in this millennium. In order to keep competitive, an organization needs to manage its intellectual capacity effectively.

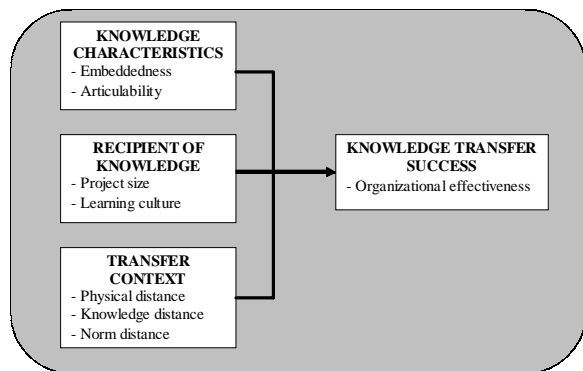
METHODOLOGY

This paper is primarily concerned with the factors that drive the success of knowledge transfer within an organization. It is intended that the proposition and the framework develop are useful in sustaining its long-term organizational effectiveness. Based on the review, the theoretical framework was adapted on the work of Jeffrey and Bing-Sheng (2003) as in Figure 2. The framework proposes that the success of knowledge transfer can bring its organizational effectiveness.

The dependent variable is knowledge transfer success that can be viewed from organizational effectiveness. On the other hand, success driving factors are the independent variables, which can be viewed from knowledge characteristics, recipient of knowledge, and transfer context. Various hypotheses are developed:

- H₁:** The higher the degree of knowledge embeddedness, then the less likely it will possess transfer success
- H₂:** The higher the degree of knowledge articulability, then the higher it will possess transfer success.
- H₃:** The bigger the project size, then the less likely it will possess transfer success.
- H₄:** The higher the recipient's learning culture, then the higher it will possess transfer success.
- H₅:** The higher the physical distance between source and recipient, then the less likely it will possess transfer success.
- H₆:** The higher the knowledge distance between source and recipient, then the less likely it will possess transfer success.
- H₇:** The higher the norm distance between source and recipient, then the less likely it will possess transfer success.

Figure 2. Theoretical Framework (adapted from Jeffrey & Bing-Sheng, 2003)



Unit of analysis will be companies located in the Northern Region of Peninsular Malaysia, particularly Penang (Bayan Lepas Free Trade Zone), and Seberang Perai Free Trade Zone as well as Kuala Lumpur. Target respondents are individuals who are engineers, executives, section heads, and managers. The sample list is obtained from Penang Development Corporation (PDC), Federation of Malaysian Manufacturers (FMM), and Small Medium Industries Development Corporation (SMIDEC). A total of 200 questionnaires were mailed and distributed; 169 of them responded which constitutes 84.5% of the sampling.

RESULTS

Of these respondents, 1.2% was top management, 11.2% middle management, 14.8% lower management, and 72.8% comprised of executives, engineers, and other levels. By gender, 56.8% was female, and 43.2% male. Based on length of service, 20.1% of them work less than 1 year, 17.8% between 1 to 2 years, 30.2% between 3 to 5 years, 24.3% between 6 to 10 years, 7.1% between 11 to 20 years, and only 0.6% worked more than 20 years.

Base on profile of organization, electronics/electrical based has the highest percentage of return (44.4%), followed by services (32%), food processing (8.9%), and metal products (6.5%). The size of firms ranges to all full-time employees; majority of the firms (56.8%) are in the range of more than 1,000 employees. Second largest group (23.1%) has less than 50 employees; followed by 51 to 150 employees (11.2%), 151 to 500 employees (4.7%), and 501 to 1,000 employees (4.1%). Based on organization's ownership: 54 firms (32%) are locally owned, 12 firms (7.1%) are joint venture, 16 firms (9.5%) are European, 62 firms (36.7%) are American, and 3 firms (1.8%) are Japanese. The remainders are equally divided by Taiwanese and German (0.6%).

From the Malaysian-based operations, 23 firms (13.6%) have been operating less than 5 years, 44 firms (26%) from 5 to 10 years, 10 firms (5.9%) from 11 to 15 years, 3 firms (1.8%) from 16 to 20 years, and 89 firms (52.7%) have been operating more than 20 years. Based on firm's knowledge management unit to conduct knowledge management in their organization, only 20 firms (11.8%) have this knowledge management (KM) group. The KM is divided quite equally by 49 firms (29%) and managed by Human Resources, 30 firms (17.8%) by Information Technology, 36 firms (21.3%) do not have KM group, and 34 firms (20.1%) are managed by others.

Reliability analysis was performed to test the reliability of the measures in the questionnaire. The variables submitted for reliability test are knowledge embeddedness, knowledge articulability, knowledge distance, norm distance, and organizational effectiveness; and result of Cronbach Alpha test are indicated as .80, .38, .58, .75, and .76, respectively. The closer the reliability coefficient gets to 1.0, the better the consistency. In general, reliabilities less than .6 are considered to be poor, those in the .7 range is acceptable .8 is considered good (Sekaran, 2000). On the other hand, knowledge articulability shows alpha value of .38 means the inconsistency in this factor, it might be due to the possibility of ambiguous response. As such, the variable knowledge articulability is taken out in this hypothesis testing.

Pearson correlation analysis was carried out for all the interval scales variables. Some correlations were discovered between variables. Knowledge transfer success on organization's is negatively correlated with knowledge embeddedness ($-.34, p < .01$), but positively correlated with learning culture, knowledge distance, and norm distance at .31, .28, and .21 ($p < .01$), respectively.

Multiple regression analysis was employed to explain the relationship between independent variable toward organization effectiveness. The summary of the result is depicted in Table 1. The F test for existence of the model shows as significant result. Model fit is at R^2 of .19. That means 19% of the variation is explained by the combination of independent variables. Durbin-Watson statistics with the value of 1.76 indicated that the regression model shown no significant. At 5% significant level, knowledge embeddedness and learning culture are variables that have significant impact on organization effectiveness

Table 1. Regression Among Variables

Factor	Beta	T	Sig.
Knowledge embeddedness	-.20	-2.47	.12**
Project size	-.06	-0.84	.40
Learning culture	.17	2.15	.03**
Physical distance	.01	0.12	.09
Knowledge distance	.14	1.81	.07*
Norm distance	.10	1.36	.18
F value	6.05***		
Sig. F	.00		
R ²	.19		
Adjusted R ²	.16		
Durbin-Watson	1.76		

- * Significant at 90% level of confidence
- ** Significant at 95% level of confidence
- *** Significant at 99% level of confidence

Table 2. Summary of Hypothesis and Statistical Results

Hypothesis	Result	Sig. t
H ₁ The higher the degree of knowledge embeddedness, the less likely it will possess transfer success	Significant	.02**
H ₂ The higher the degree of knowledge articulability, the higher it will possess transfer success	Not tested as the data collected are not reliable	
H ₃ The bigger the project size, the less likely it will possess transfer success	Not significant	.04
H ₄ The higher the recipient's learning culture, the higher it will possess transfer success	Significant	.03**
H ₅ The higher the physical distance, the less likely it will possess transfer success	Not significant	.90
H ₆ The higher the knowledge distance, the less likely it will possess transfer success	Significant	.07*
H ₇ The higher the norm distance, the less likely it will possess transfer success	Not significant	.18

- * Significant at 90% level of confidence
- ** Significant at 95% level of confidence

perspective. At 10% significant level, knowledge distance has significant impact. The other variables do not show significant influence organization effectiveness.

Knowledge embeddedness has negative coefficient, indicates negative impact to organization effectiveness. In other words, the higher of knowledge embeddedness, the lower its success of knowledge transfer. Learning culture and knowledge distance have positive coefficient, indicates positive impact to success of knowledge transfer. The means of the higher of learning culture and knowledge distance, the higher its success of knowledge transfer. Accessing the magnitude of the standardized coefficient, knowledge embeddedness has the most impact on the success of knowledge transfer.

Further, Table 2 provides the summary of the statistical results.

In general, Hypotheses 1 and 4 received support from the data and were true for the factors at 5% significant level where Hypothesis 6 at 10% significant level. Result indicated that knowledge embeddedness, learning culture, and knowledge distance have the significance impact on knowledge transfer.

DISCUSSION AND CONCLUSION

The main objective of this paper is to seek success factors driving intra-organizational knowledge transfer. It was discovered that most of the firms (79.9%) do have their department to be responsible for knowledge management practice. Furthermore, 11.8% of them even have particular knowledge management unit to manage it. This shows that almost all organizations are aware of the importance of knowledge to their organization and knowledge transfer activity is the key to its growth.

Benefits gained through knowledge transfer include creating competitive advantage and also less cost alternative to knowledge creation and acquisition. With well documented transfer, employees have a central

reference where it prevents them from repeating the same mistake. This indirectly saves time and speed up decision making process. Knowledge transfer also can create team cohesiveness because via the transfer activity, it encourages ideas creation and collaboration among team members. The trust of team is very critical in creating good atmosphere in daily jobs. Subsequently, better trust among team members definitely provided a higher performance and productivity that help organization effectiveness.

The study from that the form of knowledge to be transferred, in terms of its embeddedness, could play a critical role in its ultimate transferability. Knowledge embeddedness, which refers to extend which knowledge is held within an organization's routines, systems, and social network. This study found that knowledge that is more deeply embedded within these repositories is more difficult to transfer than less deeply embedded knowledge.

From recipient of knowledge factor, it is noticed that project size was found to be not significant but recipient's learning culture has significant impact. Regarding project size, one possibility is recipient may not have their management supported in doing the big project but the concentration will be on the return of project investment. Normally, management has more interest in the project that could produce highest outcome regardless its size matter.

Venturing new business opportunities means organizational has the potential to gain more profit and return. Due to this reason, management will provide a good learning culture among their employees. With the good environment in one organization, it will cultivate them (the recipient) to have willingness of learning, absorbing and using the new knowledge. Indirectly, they are motivated to spend more effort in valuing and applying knowledge and it help the knowledge transfer. Nevertheless, learning culture does not guarantee its knowledge transfer in improving the existing business. The recipient may reject the new knowledge because they perceive it is not applicable in their current work. Besides, the recipient might have sufficient knowledge in improving their existing business; learning habit seems not necessary for them to perform daily task. Hence, learning culture was not found significant in this context.

From the transfer context factor, it is noticed that knowledge distance, that refers to the degree of overlap of knowledge between the source and recipient could play a critical role in its ultimate transferability. Lacking an appropriate similarity and overlap knowledge, it is obvious that the teacher-student relationship will be made more difficult, hence causes the knowledge transfer hard to succeed.

Nevertheless, physical distance does not show significance factors in knowledge transfer success. A possible explanation for physical distance is with the advance of communication tool, the team is not required to have face-to-face for their knowledge transfer. Both parties can use other tool like email or teleconference to transfer the knowledge.

Lastly, for norm distance, it was found significant in improving existing business but not in venturing the new product, business and market. The possible explanation is for existing business, the team member has worked in long period and the working relationship has been established. Hence, there might be disagreement and norm distance among them to perform daily task. When some conflicts occur among them, the knowledge transfer is hard to succeed. Anyway, in order to venture the new product, business and market that provide high possible of good return, knowledge transfer success from norm distance perspective is disregarded.

The findings from these empirical analyses reveal that knowledge characteristic does play its role in the success of knowledge transfer. If the knowledge is embedded, it makes the transfer more difficult. From practical standpoint, it suggests management should develop a knowledge evaluation scheme or internal knowledge scanning process. Through this process, they can assess the degree of embeddedness of certain knowledge within the organization, and then use this information to guide their development of both pre-transfer knowledge preparation as well as overall knowledge transfer plans.

Future research, this study can be explained to cover a large sampling population from different states of Malaysia. Organization from different parts of Malaysia will be represent a better picture of the overall areas and hence increase the validity of findings. There are many factors contributing the success of knowledge transfer. Due to the limitation, some of them like source of knowledge, top management support, and motivation factor may be tested to improve understanding of this construct. The impact of knowledge transfer also can be measured from the organization's competitive advantage perspective. Therefore, suggestion in future researches could cover the above items that may give a better accurate result.

REFERENCES

- [BPRC] Business Process Resources Centre (2000). Available online at <http://bprc.warwick.ac.uk/KMweb.html>.
- Davenport, T.H. & Prusak, L. (2000). *Working Knowledge: How Organizations Manage What They Know*. Boston: Harvard Business School Press.
- Ganesh, N. & Sandhya, S. (2001). *Knowledge Management: Enabling Business Growth*. McGraw Hill.
- Goldblatt, D. (2000). "Introduction," in Goldblatt, D., editor. *Knowledge and the Social Sciences: Theory, Method, and Practice*. London: Routledge.
- Gupta, A. & Govindarajan, V. (2000). "Knowledge flows within multinational corporations," *Strategic Management Journal*, 21, 473-496.
- Holden, N.J. (2002). *Cross-Cultural Management: A Knowledge Management Perspective*. Harlow, UK: Financial Times/Prentice Hall.
- Jeffrey, L. & Bing-Sheng, T. (2003). "Transferring of R&D knowledge: The key factors affecting knowledge transfer," *Journal of Engineering and Technology Management*, 20, 39-68.
- Jeniffer, R. (1999). "What is knowledge management?" *Library Management*, 20:8, 417.
- John, D. (2002). "Transformational and transactional leadership enabling (disabling) knowledge acquisition of self-managed teams: The consequences for performance," *Leadership and Organizational Development Journal*, 23: 4, 187.
- Levine, D. & Gilbert, A. (2001). "Managerial practices underlying one piece of the learning organization," *Institute of Industrial Relations*, University of Berkeley.
- Nonaka, I. (2000). "SECI, Ba and leadership: A unifying model of dynamic knowledge creation," *IMPM Seminar*, JAIST.
- Nonaka, I. & Tekuchi, H. (1995). *The Knowledge Creating Company: How Japanese Companies Create the Dynamics of Innovation*. New York: Oxford University Press.
- Parikh, M. (2001). "Knowledge management framework for high-tech research and development," *Engineering Management*, 13:3, 27-33.
- Szulanski, G. (1996). "Exploring internal stickiness: Impediments to the transfer of best practice within the firm," *Strategic Management Journal*, 17, Winter, 27-44.
- Rastogi, P.N. (2000). "Knowledge management and intellectual capital – The new virtuous reality of competitiveness," *Human Systems Management*, 19: 1, 39-48.

0 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

www.igi-global.com/proceeding-paper/success-factors-intra-organizational-knowledge/32687

Related Content

Innovative Formalism for Biological Data Analysis

Calin Ciufudean (2018). *Encyclopedia of Information Science and Technology, Fourth Edition* (pp. 1814-1824).

www.irma-international.org/chapter/innovative-formalism-for-biological-data-analysis/183897

Modeling Uncertainty with Interval Valued Fuzzy Numbers: Case Study in Risk Assessment

Palash Dutta (2018). *International Journal of Information Technologies and Systems Approach* (pp. 1-17).

www.irma-international.org/article/modeling-uncertainty-with-interval-valued-fuzzy-numbers/204600

A New Heuristic Function of Ant Colony System for Retinal Vessel Segmentation

Ahmed Hamza Asad, Ahmad Taher Azarand Aboul Ella Hassanien (2014). *International Journal of Rough Sets and Data Analysis* (pp. 15-30).

www.irma-international.org/article/a-new-heuristic-function-of-ant-colony-system-for-retinal-vessel-segmentation/116044

Semantic Web Platforms for Bioinformatics and Life Sciences

Massimiliano Piconeand Maurizio Lenzerini (2015). *Encyclopedia of Information Science and Technology, Third Edition* (pp. 6668-6676).

www.irma-international.org/chapter/semantic-web-platforms-for-bioinformatics-and-life-sciences/113128

Autonomic Execution of Web Service Composition Using AI Planning Method

Chao-Qun Yuanand Fang-Fang Chua (2015). *International Journal of Information Technologies and Systems Approach* (pp. 28-45).

www.irma-international.org/article/autonomic-execution-of-web-service-composition-using-ai-planning-method/125627