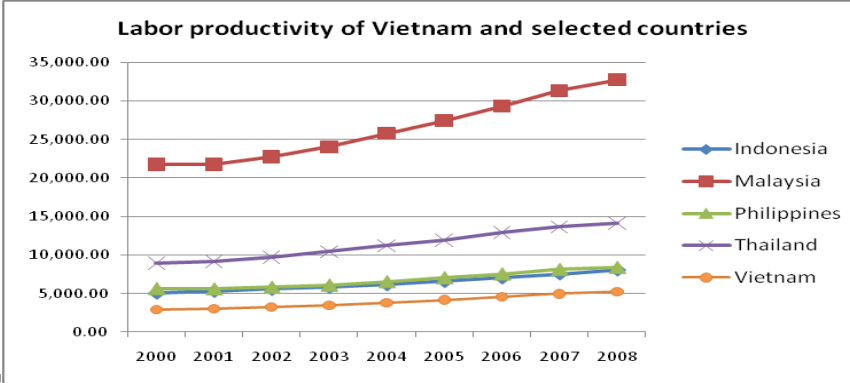




KM Approach for Improving the Labor Productivity of Vietnamese Enterprise

Quoc Trung Pham and Yoshinori Hara
Kyoto University, Japan

Introduction 1



- After global financial crisis, Vietnamese enterprises meet a lot of difficulties in the struggle to survive and develop in a changeable and competitive environment. They can no longer compete based on low labor costs and are trying to find other solutions for improving the labor productivity.
- In comparison with other countries in Southeast Asia region, the labor productivity of Vietnam is at a very low level.
- Other statistics in Vietnam also show that skilled laborers are insufficient.

=> How to improve the labor productivity of Vietnamese enterprise?



Introduction ²

- Today, KM is considered the best strategy for improving the performance and the productivity of any enterprise. However, the effectiveness of KM on labor productivity is not known exactly.
- The purpose of this paper is **to find a solution based on KM approach for improving labor productivity of Vietnamese enterprise.**



Problems to be solved

- A **new model** is needed to measure the effectiveness of KM on labor productivity more exactly.
- A **practical data collection** is needed **to test the model** and to know about the real effectiveness of KM on the labor productivity of Vietnamese enterprises.
- Some **practical suggestions** for improving the labor productivity of Vietnamese enterprises based on KM approach are also required.

Research plan: KM-oriented model => hypotheses => data collection => data analysis => final model => suggestions



Definition & related works ¹

- Knowledge capability includes Core knowledge resource (both explicit and tacit knowledge) and Knowledge operating capabilities (learning capability, culture capability, communication capability and innovation capability) → Enterprise performance (Ning, 2006)

⇒ **(1) It is not clear enough for a quantitative measure; (2) KM, mutually effecting on knowledge capability, is not mentioned.**

- Labor productivity is defined as output per unit of labor input (OECD). In general, labor productivity can be measured as average real output per hour of labor. Labor productivity can be measured for a firm, a process or a country.

⇒ **(1) Hard to be measured because of intangible values; (2) Staff Satisfaction, which motivate people to work, is not mentioned.**

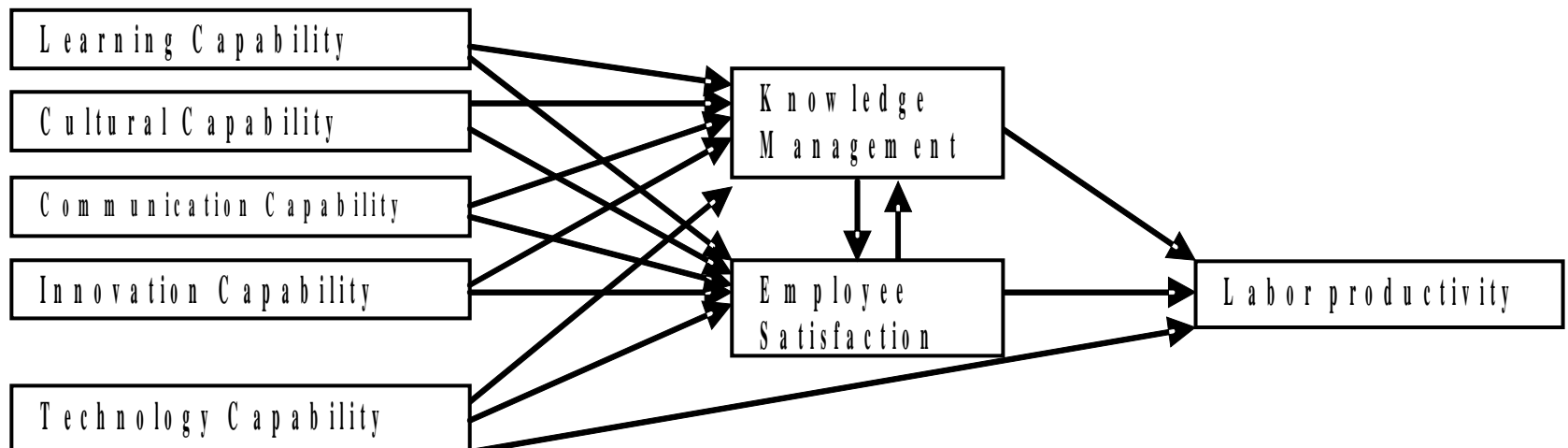


Definition & related works ²

- According to Maslow [5], developing level → employee need → employee satisfaction → willing to work. **Therefore, at different level, organization should focus on different ways to increase employee satisfaction and labor productivity.**
- According to Heskett et al. [3], internal service quality → employee satisfaction → labor productivity. **So, internal capability could play an important role on employee satisfaction and labor productivity.**
- Based on our previous study of the ICT maturity of Vietnamese enterprises [7], enterprises with higher ICT maturity → higher KM level → higher employee satisfaction. **Therefore, KM level and employee satisfaction must have a correlation.**

KM-oriented model

- From analysis, some assumptions are: (1) Knowledge capability, Technology capability → KM → Labor productivity; (2) Knowledge capability, Technology capability → Employee satisfaction → Labor productivity; (3) KM ↔ Employee satisfaction; (4) Technology capability → Labor productivity.
- KM-oriented model** is proposed as follow:





Research hypotheses

- To use this model in practice, following hypotheses need to be tested:
 - H1: KM activity determines the Employee satisfaction.
 - H2: Learning, Culture, Communication, Innovation, Technology capability and Employee satisfaction have positive effect on KM.
 - H3: Learning, Culture, Communication, Innovation, Technology capability & KM have positive effect on the Employee satisfaction
 - H4: KM, Employee satisfaction and Technology capability have positive effect on Labor productivity.



Data collection ¹

- Based on above model, a questionnaire (see appendix) was made to get data about those factors related to knowledge capability, technology capability, KM, employee satisfaction and labor productivity.
- Using this questionnaire, a survey was conducted to collect data from those enterprises located in HCMC of Vietnam in two months (4 Jan, 2010 – 27 Feb, 2010). Responding rate is 71.6% with 287 validated responders.
- Following figures are description statistics of collected data by (1) sex and position of responders, (2) size, field and type of enterprises.

Data collection ²

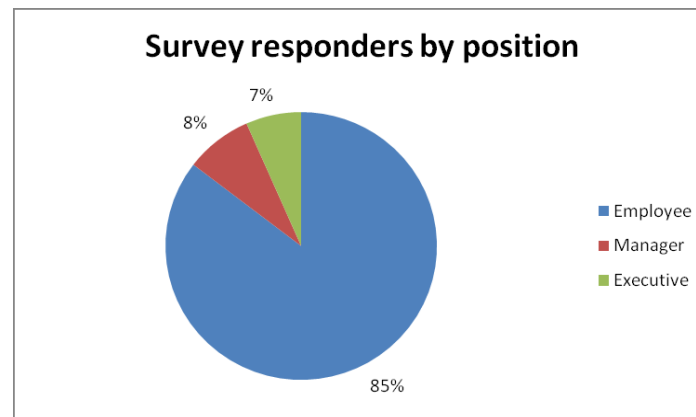
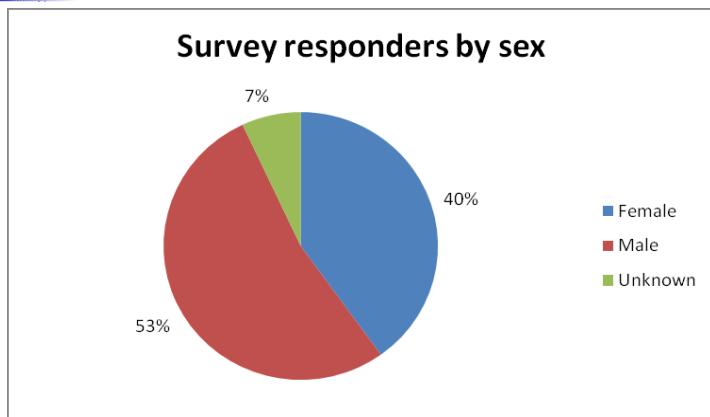
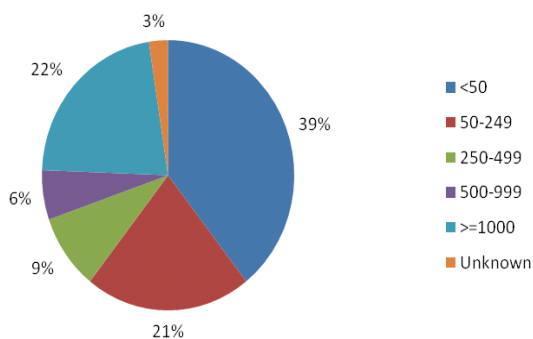
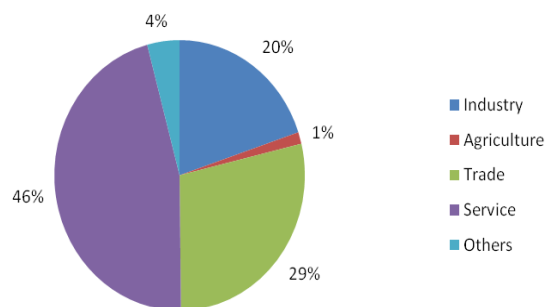


Figure 1. Collected data description statistic by sex and position of responders

Survey responder by size of business



Survey responder by field of business



Survey responder by type of business

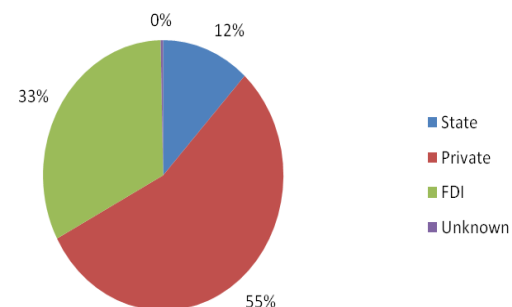


Figure 2. Collected data description statistic by size, field and type of business

Data analysis & result ¹

One-way ANOVA comparison result

- To test the hypothesis 1, collected data is divided into three groups by KM variable ($KM \leq 2.5$, $2.5 < KM < 4$ and $KM \geq 4$) to compare the difference in employee satisfaction (ES) by one-way ANOVA analysis.
- At the significant level 0.05, the satisfaction of employees is different clearly between 3 groups of knowledge management level (0-low, 1-medium, 2-high). This proved that KM activities of an enterprise determine the satisfaction of its employees.

Table 1. Mean comparison of ES by KM flag using One-way ANOVA (Tukey HSD)

(I) KM_flag	(J) KM_flag	Mean Difference (I- J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
0	1	-.589 [*]	.098	.000	-.82	-.36
	2	-1.209 [*]	.101	.000	-1.45	-.97
1	0	.589 [*]	.098	.000	.36	.82
	2	-.620 [*]	.072	.000	-.79	-.45
2	0	1.209 [*]	.101	.000	.97	1.45
	1	.620 [*]	.072	.000	.45	.79

*. The mean difference is significant at the 0.05 level.

Data analysis & result ²

- Correlation analysis result:** through table below, some correlations in the model are proven, such as: (1) KM has strong relationship with LC, CC, MC, IC, TC, ES; (2) ES has relationship with LC, CC, MC, IC, TC, KM, LP; and (3) LP has relationship with TC, ES.

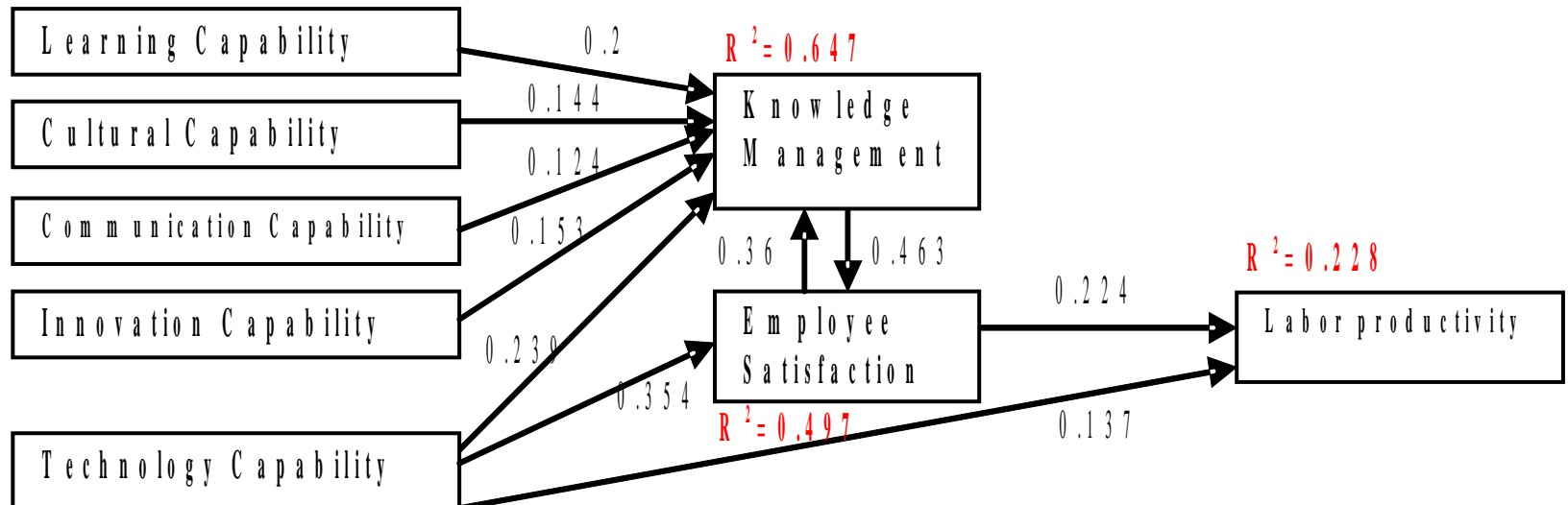
Table 1. Correlation between internal capabilities, KM, satisfaction and labor productivity

Correlations		LC	CC	MC	IC	TC	KM	ES	LP
LC	Pearson Correlation	1	.616**	.607**	.447**	.363**	.617**	.480**	.204**
CC	Pearson Correlation	.616**	1	.668**	.530**	.300**	.616**	.485**	.246**
MC	Pearson Correlation	.607**	.668**	1	.529**	.339**	.604**	.467**	.194**
IC	Pearson Correlation	.447**	.530**	.529**	1	.350**	.557**	.414**	.150*
TC	Pearson Correlation	.363**	.300**	.339**	.350**	1	.522**	.537**	.362**
KM	Pearson Correlation	.617**	.616**	.604**	.557**	.522**	1	.670**	.223**
ES	Pearson Correlation	.480**	.485**	.467**	.414**	.537**	.670**	1	.457**
LP	Pearson Correlation	.204**	.246**	.194**	.150*	.362**	.223**	.457**	1

** . Correlation is significant at the 0.01 level (2-tailed). * . Correlation is significant at the 0.05 level (2-tailed).

Data analysis & result ³

- Regression analysis result:** After running regression analysis using SPSS to test hypotheses 2, 3, and 4, the final model could be summarized in figure below (numbers on arrows are factors' weights). According to this result, hypothesis 1 and 2 are proven completely, and part of hypothesis 3 and 4 are proven.



Suggestion for improving the labor productivity

Type	Characteristic	KM approach	Other managerial aspects
FDI	<p>KM level: highest</p> <p>Weakest: cultural cap</p> <p>Strongest: technology cap.</p>	<ul style="list-style-type: none"> - Organizing social events and frequent meetings to shorten the cultural gap and to increase understanding between managers and employees - Reallocating employees periodically for sharing knowledge between branches and divisions. 	<ul style="list-style-type: none"> - Creating open discussions or connections with private or public companies for the employees to realize the strong points of the enterprises where they are working.
Private	<p>KM level: lowest</p> <p>Weakest: technology cap.</p> <p>Strongest: communication cap.</p>	<ul style="list-style-type: none"> - Replacing old manufacturing machines and improving their ICT infrastructure gradually. - Making principles for improving employee skill from: recruiting, training, encouraging - Training employees self-learning skill and encouraging them to join evening classes 	<ul style="list-style-type: none"> - Being a member of supply chain with other partners from FDI sectors - The family-controlled style of management should be avoided as it tends to create interest groups inside the company.
State owned	<p>KM level: medium</p> <p>Weakest: innovation cap.</p> <p>Strongest: learning cap.</p>	<ul style="list-style-type: none"> - Creating an open culture, which accepts new ideas, to stimulate communication and innovation. - Outsourcing some functions to private companies to simplify organizational structure. - Applying SCM, ERP... will help standardizing operation and creating an equal assessment system. 	<ul style="list-style-type: none"> - Using internal social network to encourage employees to voice their opinion on any problem. - Innovation of management should be focused to replace current acquaintance-based recruitment.



Conclusion ¹

- Based on previous works, this paper proposed a new model for measuring the affection of KM on labor productivity (LP), with the contribution of KC, TC and employee satisfaction (ES).
- By analyzing data from Vietnamese enterprises, two hypotheses confirmed completely are: (1) KM activity determines the satisfaction of employees; (2) Learning, culture, communication, innovation, technology capability, and employee satisfaction have a strong effect on KM activity.
- Other hypotheses are partly confirmed and could be revised as follows: (3) KM and technology capability have positive effect on satisfaction of employees; (4) Employee satisfaction and technology capability positively affect on labor productivity of an organization.



Conclusion ²

- Through this research, TC is realized to be an important factor affecting on KM, employee satisfaction and labor productivity. Using TC as a momentum, enterprise will be turned toward a knowledge-oriented one, and finally its labor productivity will be improved.
- Based on data analysis and interviews, some suggestions for improving labor productivity of Vietnamese enterprises are also provided.
- Some implications for future works are:
 - Revising measurement variables for employee satisfaction and KM;
 - Testing this model for various countries with different KM levels.



References

1. Goodridge, P., Clayton, T., E-business and labor productivity in manufacturing and services, *Economic Trends* 609 (2004).
2. Hall, C., Harmon, P., The 2005 Enterprise architecture, Process modeling and Simulation tools Report on BOC' ADONIS, BPT report (2005).
3. Heskett, J.L., Jones, T.O., Loveman, G.W., Sasser, W.E., Schlesinger, L.A., Putting the Service Profit Chain to work, *Havard Business Review* (2008).
4. Khoshsima, G., Ebrahiminejad, M., An empirical study on the correlation between KM level and efficiency, *Proceeding of PAKM, LNAI 5345*, pp.160-172 (2008).
5. Maslow, A.H., A theory of human motivation, *Psychological Review* 50 (1943).
6. Ning, Y., Fan, Z.P., Feng, B., Knowledge Capability: A definition and research model, *Proceeding of KSEM 2006, LNAI 4092*, pp. 330-340 (2006).
7. Pham, Q.T., Measuring the ICT maturity of SMEs, *Proceeding of PAKM Joint Workshop on KM for Service Innovation & Knowledge Networks* (2008).
8. Salleh, Y., Wee-Keat, G., Managing human resources toward achieving KM, *Journal of Knowledge Management, Vol.6, No.5*, pp.457-468 (2002).
9. Schwab, K., Porter, M.E., *Global Competitiveness Report 2008-2009*, World Economic Forum (2008).
10. Tran, K.H., Nguyen, H.T., Improving labor productivity of Vietnamese enterprise to integrate with the world economy, *Vietnam Productivity Center* (2008).



Appendix (Questionnaire) ¹

STATEMENT	<i>Very disagree</i> ←	↔			→ <i>Very agree</i>
Learning capability					
Your enterprise' s explicit knowledge is stored for supporting business work	1	2	3	4	5
Your enterprise has many specialists for supporting various works	1	2	3	4	5
A new problem in your company can be solved quickly with current knowledge	1	2	3	4	5
Your company encourages self learning and has an effective training system	1	2	3	4	5
Cultural capability					
Your company has an open culture, which accepts new ideas and innovation.	1	2	3	4	5
Your company has ability to review itself and see things in a different manner.	1	2	3	4	5
Your company's culture creates trust for cooperation between employees.	1	2	3	4	5
Communication capability					
Your company applies IT & modern IS for facilitating communication.	1	2	3	4	5
Idea exchange methods for creative ideas are encouraged.	1	2	3	4	5
Your company often organizes meetings for employees to share knowledge.	1	2	3	4	5
Innovation capability					
Your company has ability to make change of its management system.	1	2	3	4	5
Your company has a flexible structure, which can be changed if necessary.	1	2	3	4	5
Your company can create adapted products/services for various customers.	1	2	3	4	5
Knowledge management activity					
Your company acquires and stores knowledge in knowledge base for later use	1	2	3	4	5
Your company can share and disseminate knowledge to anyone in need.	1	2	3	4	5
Your company has ability to apply knowledge in solving business problems.	1	2	3	4	5
Your company's research activities can create new knowledge effectively.	1	2	3	4	5



Appendix (Questionnaire) ²

1. Your company name:
2. Your company head office location:
3. Type of your company (owner of the majority capital):
 State owned company FDI company Private company
4. Your company main field of business:
 Industry Agriculture Trade Service Others
5. Your company size (number of full-time employees):
 < 50 50-249 250-499 500-999 > = 1000
6. Technology level of your company within your industry:
 Very low Low Medium High Very high
7. Information and communication technology (ICT) level of your company:
 Inactive Basic Substantial Web-based Knowledge-oriented
8. Your name: Male Female
9. Your department and position:
10. Your average salary/ month (USD):
 < 200 200 - 499 500 - 999 1000-1999 > = 2000
11. Your average working hours/ month:
 < 150 150 - 199 200 - 249 250 - 299 > = 300
12. Your satisfaction about working environment:
 Very unsatisfied Unsatisfied So-so Satisfied Very satisfied
13. If (very) unsatisfied, please give the reasons:
14. Suggestions for improving the labor productivity of your company:



Thank you very much !!!

Questions & Answers