

# Evaluating the Study of College Teachers and Employee on Knowledge Management Applications

Mei-Luan Huang, Instructor , Nan-Jeon Institute of Technology, Taiwan

Yaw-Yih Wang, Assistant Professor, Central Taiwan University of Science and Technology, Taiwan

## ABSTRACT

*This Paper has its aim on establishing a scale for Knowledge Management in Universities and explores the current use of Knowledge Management within each school. Previous research was looked into and the Delphi method was used to create a questionnaire, forming its structure and a series of questions. By running through preview tests, question analysis, and credit examining, the researchers have completed the "Knowledge Management Scale for Universities". The researchers then put this scale to use through delimitate sampling, test it on staff members covering 173 universities in hope view the current situation of Knowledge Management in Taiwan. The result of research is the following as: 1. Knowledge Management in Universities can be discussed in eight dimensions: Explicit Knowledge, Tacit Knowledge, Central Knowledge, Leadership, Culture, Procedure, Staff, and Tech-Equipment. 2. Staff members with a bachelor's degree show better performance in Knowledge Management than those with a junior college degree, and a Ph.D. Those with a master's degree also show higher performances in Knowledge Management than those with Ph.D.s'. 3. Staff members at a higher age show better performance than those at a younger age. 4. Staff members in service for a longer span of time show better performance than those in service for a shorter span of time. 5. Staff members from different fields show noticeable differences only in the Explicit Knowledge and leadership dimensions. Staff members with lecture and law backgrounds show better performance than those of business and management backgrounds. 6. Difference in time of foundation of school show no noticeable differences in performance in Knowledge Management. 7. Universities with student numbers 5000~10000 show the best performance in Knowledge Management.*

*With this research outcome, we address our suggestions to administrators in universities and also to future researchers for the use of reference.*

**Keywords:** Knowledge, Knowledge Management, Knowledge Management Scale for Universities

## INTRODUCTION

### Motivations and Background

Peter Drucker(1909): In today's economy, the most important resource is no longer labour, capital or land; it is knowledge. With the advance in information technology, the 21st century will be a time when knowledge dominates our world. Peter Drucker(1994) also pointed out that knowledge's part in creating richness for the society runs through three revolutions:

First, there was the industrial revolution, when knowledge was put to use on tools, procedure and producing; second, there was the manufacturing revolution, when knowledge was put to use on laboring; third, there was the management revolution, when knowledge was put to use on knowledge itself. This shows us that knowledge can be transformed into value, profit or labor through the right media. Alvin Toffler ( 1995 ) believed that after the third industrial revolution, it has become the time of Knowledge Management.

The concept of "Knowledge " was first given by the great Greek philosopher Plato, he believed knowledge was reasonable and acceptable belief. Dewey ( 1978 ) pointed out that knowledge was a tool for solving problems in the early stage of human history. It slowly developed into: knowledge as an ability, a potential ability that effects organizational behavior.

Each experience upgrades a person's ability to explain things. Later on, man distinguishes which knowledge and information should be used in solving problems. In recent years, however, confronted by the impact of information technology, a great gap in the obtaining and the control knowledge and information have occurred. How can we use information to become more competitive? and how can we change challenge into opportunity? This is when Knowledge Management kicks in.

Information technology has had leap advances through the years, the internet is now a part of everyday life. This however is causing an informational flood. Modern people are dipped in a great pool of information, but yet hollow in the heart. Teachers or mentors nowadays shouldn't just play the traditional role of passing on wisdom, teaching text book, and solving questions; they should now play the role of a navigator in this ocean of information, or as an information filter. Schools should be conscientious, not just an expensive window to the world of information. School education has long been a passive way of learning while obtaining knowledge has always to be an initiative behavior. Thoreau and Drucker both used "knowledge and education" as the key factors to wealth in the twenty - first century. Knowing how to put use to knowledge has become the main topic of today. The OECD Center for Research and Innovation(2000) pointed out in their report "Knowledge management in the learning society" that unlike fields such High-Tech, or Medicine, school education has been put to very little use in the field of Knowledge Management.

Running a University, as in running a company, is full of change and challenges. The number of Universities has mounted over the years while the number of students have severely dropped. With the addition of the entering of WTO, when foreign schools are allowed to establish schools in Taiwan, competition between schools become keen. Universities tend to build characteristic, upgrade their education, and create academic value in order to keep up. However, Knowledge Management would a be the key to helping this matter.

### **Objectives**

The objectives of this research are :

- (1) Establish "Scale of Knowledge Management for Universities ", and then to test its credit 。
- (2) To understand the current situation of use of Knowledge Management in Universities.
- (3) Comparing and realizing the differences between Staff members of different age, education level, years in service, background profession, time of foundation of university, and size of school in each dimension.
- (4) Organizing research outcome for the reference of universities.

## **LITERATURE REVIEW**

Dr. Karl Wiig(1986) first brought out the concept of Knowledge Management in 1986. Nonaka & Takeachi then published the first journal article on KM in "Harvard Business Review" in 1991, bringing about much discussion. The book "KM Foundation" was published along with its conference. With the addition of vast development in technology and sequential establishments of commercial service firms, Knowledge Management all of a sudden became a highly discussed issue.

### **Knowledge Management**

The American Productivity & Quality Center (APQC) pointed out that Knowledge Management is something that brings the right knowledge to the right person at the right time, and it is also a strategy that helps people share information and evaluate organizational efficiency(2001). Knowledge Management is the process of receiving, saving, putting use to and the creating of knowledge. It also adds to the value of knowledge, which evaluates the development of individuals and organizations. Nonaka & Takeachi(1995) believe Knowledge Management is the result of interaction between Tacit knowledge and Explicit knowledge. The formality of interaction depend s on the different transformation module of Knowledge.

**Figure 1 : The Model of Knowledge Conversion**

Tacit Knowledge to Explicit Knowledge

socialization (sympathized knowledge)	Externalization (conceptual knowledge)
Internalization (operational knowledge)	Combination (system knowledge)

Source: Nonaka and Takeuchi, 1995, *The knowledge Creating Company*, New York: Oxford University Press.

Arthur Anderson Business Consulting (1999) constructed a formula for Knowledge Management:  $K = (P + I)^S$ . "K" standing for Organization Knowledge, "P" standing for People, which is the staff of workers within the organization; "I" standing for Information, representing the information saved within organization; "+" standing for Technology, which is the technology needed for the organizational information; and "S" standing for Share. What this formula implies is that: "Knowledge accumulated within the organization, need technology to help combine man and information. Under the organizational culture, chemistry reaction happens and will power from the knowledge will double or even triple." Therefore, if companies are to bring Knowledge Management into their operating system, they should start with dimensions cast, technology and culture in improving of there process and strategy thinking.

### Knowledge Management in the field of Education

The definition and discussion of Knowledge Management was first given and put to use in the business world; Educational facilities are non-profitable organizations and can be effect by many factors. The efficiency of education can be long-termed and hard to define, in other words, it would be hard to translate them into numbers. How Knowledge Management put to use in the field education should be done through consideration of educational characteristics.

Hargreaves(1999) believed that educational staff have actually parted in the creating of knowledge; Lee (2001), Chung, Chang (2001), Woodell (2001) deeply believe that education is taking a few paces ahead, moving towards Knowledge Management. Vision, culture, information technology and policy are the important issues of Knowledge Management; Center for Educational Research & Innovation (2000) emphasize the fact that educational facilities should play the role of supplying the power source for Knowledge Economics. At the same time teachers need to look in and discover how to put knowledge to a higher efficiency of use. The thought of putting KM into the creating, transmission and use on practical education is the new alternative.

### Structure and Scale of Knowledge Management

After years of both academic and practical research, the structure of Knowledge Management has developed:

- (1) Knapp (1998) believed that Knowledge Management consist of content, learning, measurement, technology, culture, and responsibility.
- (2) Auther Anderson co-operated with American Productivity & Quality Center and developed a Knowledge Management Assessment Tool, KMAT(1995). This reason to their development was to help weigh their own options and chances. It consist of five parts : Knowledge Management Procedure, Leadership, Culture, Technology and Measuring.
- (3) Ma (2000) laid out the structure Knowledge Management of Microsoft and categorized it to Organizational Activity, Knowledge, Information, Knowledge Management, and Operating.
- (4) Bukowitz & Williams(1999) came up with a scaling tool for Knowledge Management just for the Knowledge Management Procedure. He categorized them into the 7 dimensions of Obtaining, Use, Learning, Giving, Scaling, Establishing, and Preserving.

- (5) David Skyrme Associates'(2000) "Knowledge Management Dimension " (KMD) scaling can be discussed in the dimensions of Leadership, Culture/Structure, Procedure, Dominant Knowledge, Illustrious Knowledge, Central Knowledge, Market Reaction, Measurement, Staff/Tech, and Basic High-Tech Equipment.

Papers written by local educational institutes relating to KMD are:

- (1) Yiou (2001) after sub-dividing the three elements: Ability Elements, Tools, and Basis according to the KMD done by David Skyrme Associates, the "elementary school KMD" was established and it is divided into the ten dimensions of Leadership, culture/structure, Procedure, Illustrious Knowledge, Inner Knowledge, Central Knowledge, Market Reaction, Measurement, Staff/Tech, and Basic High-Tech Equipment.
- (2) Lai(2002)'s "High School KMD" however, is divided into the eight dimensions of Illustrious Knowledge, Inner Knowledge, Central Knowledge, Leadership, Culture, Procedure, Staff and High-Tech Equipment.

This research investigates the education system through characteristics of Knowledge Management. We put the structure and scaling of Knowledge Management on schools. The additional analysis is shown below :

- (1) Key Factors of Content :

- A. Explicit knowledge is knowledge codified and digitized in books, documents, reports, white papers, spreadsheets, memos, training courses, and the like. Explicit knowledge can be retrieved and transmitted more easily than tacit knowledge
- B. Tacit knowledge is knowledge embedded in the human mind through experience and jobs. Coined by Hungarian medical scientist Michael Polanyi (1891-1976), it includes intuitions, values, and beliefs that stem from years of experience. It is the knowledge used to create explicit knowledge and is best communicated personally through dialogue and scenarios, with use of metaphors.
- C. By knowledge center, we mean areas in the organization where knowledge is available for knowledge capture. For example, a retail organization might have at least four knowledge centers: sales, customer service, human resources, and marketing. These centers become the experts or expert teams in each center who could be candidates for the knowledge capture process.(Elias & Hassan 2004)

- (2) Knowledge Transformation Related Factors :

- A. The goal of technical core is to enhance communication and effective knowledge sharing. Communication is a special area, where technology provides unlimited opportunities for managing tacit knowledge. The phrase technical core is used here to refer to the totality of hardware and software and to the specialized human resources required to enable knowledge. Speed, accuracy, reliability, integrity, and security are all expected attribute of successful technology under the technical core. (Elias & Hassan 2004)
- B. Knowledge management is about people and the way they creatively perform in an environment conducive to knowledge workers, managers, customers, and suppliers. The first step in knowledge architecture is to evaluate the current information and documents people use, the applications they need, the people they contact for solutions, the associates they collaborate with , the e-mail they send and receive, and the database they access. All these sources make up an employee profile, which is later used as the basis for designing a knowledge management system that best serve people's long term needs via technology. (Elias & Hassan 2004)
- C. One of the most critical sets of KM drivers is designed to improve work processes. Implied in this area is the elimination of duplicate mistakes by learning from the past and by transferring the best experiential knowledge from one location or project in the firm to another. Starting from scratch with each project makes no sense in terms of efficiency, productivity, and value-added contribution to company's bottom line.

- (3) Knowledge Management Social Environment Factors:

- A. Culture is usually embedded in a company's core values, polices, mission, consistent behavior, treatment of employees, and tradition. Positive culture values include the following: leadership, understanding company mission, culturally internalized management practices, culturally internalized operational practices, culturally driven forces, understanding company priorities, questionable values, questionable beliefs. (Elias & Hassan 2004)
- B. The leader's role in a learning organization is more of a facilitator than a supervisor, a teacher than a order giver, a steward of the collective knowledge of his or her staff than a reporter to top management, and a designer more

than the traditional role of merely seeing things done. A leader also has responsibility for knowledge workers who are continually expanding their capabilities to mold their future. This has human resources management implications, where the leader has a serious commitment to learning. (Elias & Hassan 2004)

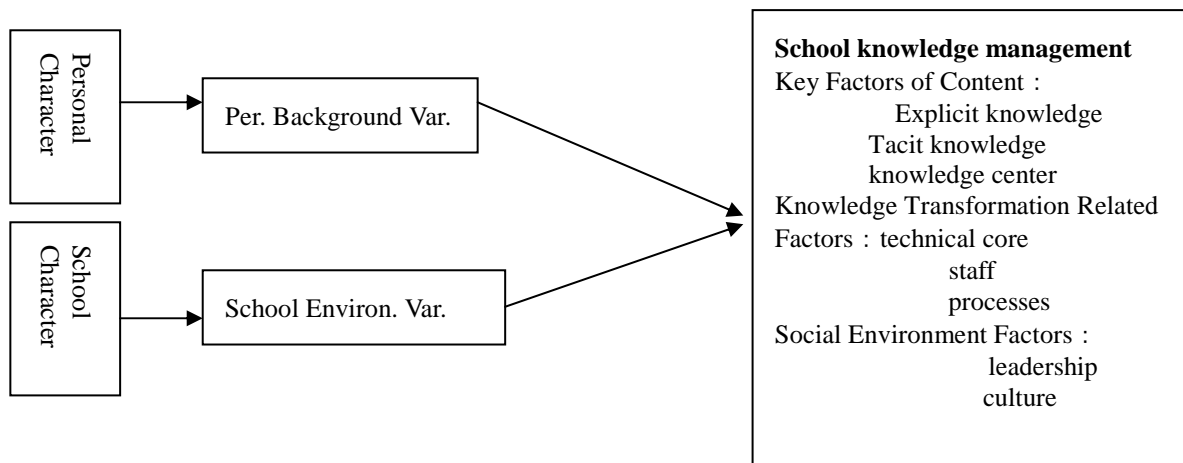
This Research looked through the reference of the "High School scaling tool "by Lai. Adjustments were made to meet the features of Universities. The Delphi Method was also adapted in the making of the "Knowledge Management scale for Universities" which is categorized into eight dimensions: illustrious Knowledge, inner knowledge, Central Knowledge, Technology Facility, Staff, Procedure, Leadership, and Culture.

## METHODOLOGY

### Research Structure

According to research objective mentioned above, we bring out our research structure:

figure 2: Research Structure



### Research Hypothesis

According to our aim and preview research, we've concluded with eight hypothesis:

Hypothesis I, The scaling of Knowledge Management consist of eight dimensions:

Hypothesis II, Difference in gender show difference in performance in Knowledge Management.

Hypothesis III, Difference in education level show difference in performance in Knowledge Management.

Hypothesis IV, Difference in age show difference in performance in Knowledge Management.

Hypothesis V, Difference in years of service show difference in performance in Knowledge Management.

Hypothesis VI, Difference in background fields show difference in performance in Knowledge Management.

Hypothesis VII, Difference in history of foundation in university show difference in performance in Knowledge Management.

Hypothesis VIII, Difference in scale of University show difference in performance in Knowledge Management.

### Research Method

This research takes on the (1) Delphi Technique to create a scale (2) use the interview method for practical data in investigation. (3) Literature Review Technique: analysis, generalizing, and organizing conclusions and suggestions given by previous papers published on a certain topic. In hope to find a clear statement and a issue in the topic suitable for further research.(4) Interviewing: using the structural interview method, in which each question is standardized. After obtaining answers from the interviews, the results are generalized.

## Research Sample

This research used the stratified sampling method, viewing Taiwan as the matrix, thus splitting the country into four regions: east, west, south and north and then sum up the number of universities. Splitting and categorizing them into National Universities , Private Universities, National Institutes, Private Institutes, National Junior Colleges and Private Junior Colleges, calculating the number of each and it 's posing percentage in the country, 500 surveys will be given out accordingly through probability sampling.

## Research tools

Several Researchers pointed out that the key factor to success in Knowledge Management is to establish a Knowledge Management norm ; High education in our country should imitate that of a fully developed country, a measurement for Knowledge Management should be established. This research takes reference from some of the successes in the business world. David Skyrme Associates, Knowledge Management Scale of Arthur Andersen and American Productivity & Quality Center, Knowledge Management Assessment Tool developed by the Arthur Andersen Consulting Corporation, KMAT, the Bukowitz & Williams Knowledge Management Scale Diagnostic Scale, Elementary School Knowledge Management Scale, Senior High School Knowledge Management Scale along with gathered suggestions from scholars of the Delphi Team are referred to form a Knowledge Management Scale for Universities based on the Knowledge Management Scale from this research to help administrators in educational facilities understand current situation of the use of Knowledge Management.

The survey consist of two main parts: basic personal data and current situation of Knowledge Management in colleges. The Scale of Knowledge Management for Universities is established according to the important specs of Knowledge Management, using the Likert-type Scale, dividing the scale to "agree very much", "agree", "normal", "disagree", "disagree very much" and giving each 5, 4, 3, 2, 1 points for each. The higher the score, the higher level of Knowledge Management.

## Data analysis

In this research, we organize the questionnaires handed out, exclude the non-useable, code each one and then input each into the computer for further statistic analysis with the SPSS10.0 statistic software. To gain obvious standard in this research, we look to a  $p < .05$  value.

## Data analysis at prelim stage

Data analysis in prelim stage will take on methods as average, standard deviation, Cronbach 's  $\alpha$  coefficient interior consistence and factor analysis, to understand the situation of survey and questionnaire structure of the scale.

**Table 1 Each Dimension Cronbach 's  $\alpha$  Cefficient Interior Consistence Analysis**

Dimensions	items	Cronbach's $\alpha$
Explicit knowledge	1~4	0.8414
Tacit knowledge	5~7	0.8475
central knowledge	8~10	0.8280
leadership	11~14	0.9155
culture	15~18	0.8419
procedore	19~25	0.9255
staff	26~29	0.9423
tech-equipment	30~34	0.7898

Source: This Research

### **Data Analysis in Official Procedure**

With the use of statistic methods such as exam analysis, One-Way ANOVA, the questionnaire help test to see if they meet with the hypothesis, helping us to understand the current situation of Knowledge Management within colleges in Taiwan.

## **CONCLUSION AND DISCUSSION**

### **Descriptive statistic analysis**

This research takes on the survey method for investigation. The main subject was cast members of universities. 491 surveys were handed out and 276 were handed back. With 26 surveys invalid, there are a total of 250 effective surveys with the retrieving rate of 50.91%.

### **Variation coefficient analysis of different variables in Knowledge Management**

In order to understand how key factors such as field of profession, which individual school, types of school, time of foundation, or scale or size of school might effect Knowledge Management, we go through statistic analysis, viewing how each factor separately and seeing how it has and effect on the on the overall performance. The analysis is shown below:

#### **Gender**

In this research, we view factors with the value  $p < 0.5$  as an obvious standard,  $p < 0.01$  as a highly obvious standard, and  $p < 0.001$  as a enormously obvious standard. We can see from graph 5 that dimensions reaching the obvious standard is the leadership dimension, the one reaching the highly obvious standard  $p < 0.01$  is dominate knowledge dimension, the one reaching the enormously obvious standard  $p < 0.001$  is high-tech equipment dimension. This show that difference in gender show difference in performance in the three dimensions: leadership, dominate knowledge, and high-tech equipment.

#### **Education Level**

Staff members with different education level show different performance in Knowledge Management. In the eight dimensions Explicit knowledge and central knowledge show results  $P < 0.5$  while leadership show results  $P < 0.1$ . After considerable comparison through analysis of the Scheffe' Method, we've found out that staff members with bachelors degrees show higher performance in Knowledge Management than those with junior college degrees and also higher than those with PhDs. Staff members with Master's degrees also show higher performance than those with PhDs, as seen on graph 6. The outcome turned out to be quite different from what was expected, which leaves us to do further investigation.

#### **Age**

Staff members of different ages show different performance in Knowledge Management in all eight dimensions. Through analysis with the Scheffe' Method, 31~45 year-olds and 46 years or above generally show higher performance than those of 30 year-olds or under. 31~45 year-olds also show greater performance than those of 46 year-olds or above in explicit knowledge. For the other dimensions, 46 year-olds or above show greater performance than 30 year-olds or under and then 31~45 year olds. Hypothesis proven. Generally speaking the higher the age the better they perform in Knowledge Management.

#### **Years in service**

Difference in years in service show noticeable differences in each of the eight dimensions. Through analysis with the Scheffe' Method, it is shown that staff members with 21 years or above in service show greater performance than those with only 5 years or less experience, and also those with 6-10 years of experience.

### Difference in background fields of staff

Staff members from different fields show noticeable differences in dimensions explicit knowledge, tacit Knowledge, Leadership, Procedure, but according to the Scheffe' method, only explicit knowledge and Leadership show noticeable differences. Staff members from lecture and law fields show better performance those from business and management fields.

### Difference in history of school

Difference in foundation time of university show different performances in explicit knowledge, Tacit knowledge, central knowledge, procedure, and staff. But after analysis from the Scheffe' method, none reached noticeable difference.

### Number of students

Difference in number of students show differences in all of the eight dimensions with the exception of culture. Through analysis with the Scheffe' method, scale of school show differences in the performance of Knowledge Management. Other than explicit Knowledge and culture, all of the dimensions show differences in performance. Universities with students numbers 5001~10000 show better performance than those with student numbers 10001~15000. In dimensions: Central Knowledge and Leadership, universities with student numbers 15001~20000 show better performance than those with 10001~15000.

### Suggestions from professionals and scholars

In order to understand professors and scholars in the educational fields of today, and to discuss how they would propose new strategies to emerge policies for universities, the 2003 Aletheia University Knowledge Economics Forum was held. In the conference Principal Yen from National Chung Hsing University, Principal Yang from National Chiayi University, Principal Chen from National NanHua University, Principal Tai from National Kaohsiung Normal University, Principal Fu from Shou University、Principal Chuang from National Open University, Principal Chen from National Chang Jung University, Principal Yang from Kun Shan University, and Principal Chu from Shu-Te University all gave their great opinions on the topic that day. In the field of Knowledge Management, obtaining, storing, transferring and creating knowledge is nothing new. It's only due to the advances in IT technology did people begin to feel the pressure of learning. When researching on this field, there should be statistic and theories for reference. As for the use of Knowledge Management, it is suggested that education play as the main origin of resource for Knowledge Economics. Members of the educational field should put knowledge resources to better use and create a unique Intelligence Capital System for each school. Universities should 1) establish a common vision of Knowledge Management 2) establish Knowledge Management systems and Knowledge platforms, advancing creative use in knowledge and transporting knowledge 3) the relative program on cultivated intelligence property management, technology transfer, investment evaluation, technology appraisal and so on. 4) upgrade competitiveness for creativity in knowledge 5) take reference in successful Knowledge Management cases from the business world, scale it and then review its outcome, to meet the concussion brought from the Knowledge Economics.

	below 5000 (1)			5001~10000 (2)			10001~15000 (3)			15001~20000 (4)			F Value	Scheffe' method
	N	M	SD	N	M	SD	N	M	SD	N	M	SD		
Explicit knowledge	27	3.41	0.64	148	3.68	0.78	28	3.35	0.58	47	3.74	0.49	2.98*	
Tacit knowledge	27	3.30	0.64	148	3.36	0.81	28	2.65	1.01	47	3.05	0.97	6.24***	2>3
central knowledge	27	3.64	0.67	148	3.83	0.69	28	3.02	1.00	47	3.55	0.73	10.05***	1>3,2>3,4>3
leadership	27	3.25	0.71	148	3.51	0.82	28	2.82	0.88	47	3.44	0.84	5.83**	2>3,4>3

culture	27	3.54	0.59	148	3.69	0.68	28	3.38	0.81	47	3.65	0.86	1.67	
procedure	27	3.39	0.66	148	3.40	0.64	28	2.88	0.778	47	3.21	0.89	4.54**	2>3
staff	27	3.11	0.92	148	3.33	0.79	28	2.70	0.97	47	2.98	1.14	5.0**	2>3
tech-equipment	27	3.33	0.62	148	3.65	0.67	28	3.57	0.66	47	3.83	0.43	3.80*	4>1

## CONCLUSION AND SUGGESTION

Education has long existed, holding the responsibility in building the future of a nation. In face with the economic era, universities act as a core in obtaining, storing, sending out, and creating Knowledge. Universities should therefore do well the education organizing revolution, setting rules to educational administration, walking into new road where knowledge dominates.

### Conclusion

The main discoveries of this research are: (1) College Knowledge Management can be scaled in eight dimensions According to paper research and professional group discussion through the Delphi method, we've concluded with eight dimensions: Tacit Knowledge, Explicit Knowledge, Central Knowledge, Leadership, Culture, Procedure, Staff and Tech- Equipment, and thus scale out the current situation on Knowledge Management in School Organizations. The scale of this research, according to analysis, contains high credibility and can be used on practical scaling. (2) A staff member with college diploma has a high capability in Knowledge Management than those with only a junior college diploma and also those with a Ph.D. diploma: an staff member with Master's degree has a high capability in Knowledge Management than those with Ph.D.s '. The expected outcome: higher education level means greater capability in Knowledge Management, do not match. (3) Different ages show different outcomes in the scale of the eight dimensions. With the exception of Explicit Knowledge, staff members with ages 46~55 have higher performance than those with ages 26~35 and of those with ages 36~45 in each of the dimensions. It's obvious that elder people have higher performance in Knowledge Management. (4) Employees with 21 years of work experience have higher performance than those of in other sectors. (5) Different professions show only differences in dimensions Explicit knowledge and leadership. Professions in literature and law show higher performance then those of in business and managing. (6) History in time of founding the Universities don't show any differences in the eight dimensions. (7) Differences in the size of school show no noticeable differences in performance for the two dimensions of Explicit Knowledge and Culture. For all of the other dimensions, schools with student numbers 5001~10000 show greater performance than that of 10001~15000. Does this mean 50001~10000 is a more suitable number for Knowledge Management? Further research need to be done in order to find out.

## SUGGESTION

### Suggestions to Universities

It is a time of Knowledge Economics and universities around the country are to face big changes in operating from the great change of environment. Since universities play such a key role in a country, Knowledge Management would be a good solution in exceeding such expectations. Combining professional suggestions, here is some advice from the researcher to Universities:

#### (1) Establishing a vision for Knowledge Management

As announced from the report "Knowledge Management in a Learning Society" by the OECD, it was clearly pointed out that it would be more meaningful to put knowledge management in educational facilities. Therefore, creating a common vision between staff of the whole school, minimizing doubts and different opinion, establishing Knowledge Management for the whole school would be a good strategy.

#### (2) Each school has its own research develop center and a information library center, but few have been seen with a Knowledge Management Center. It is suggested that facilities be established expanded from current bases in hope to help develop Knowledge Management for the future.

### (3) Establishing professional platform for Knowledge Management

Informational-related institutes are generally seen in most universities. High-Tech equipment and informational talent should be put to good use and expanded into professional platform for the use of the university and co-operations.

### (4) Cross filed on organizations/Cross-school research mechanism

According to the 2004 National Science Council budget report, there is quite a gap between public and private universities (NSTSU NT\$380 million/ Nan-Jeon NT \$5.4 million). Modern academic research depend on more cross-profession team work. We suggest multi-profession and multi-university team work for the better good of Knowledge.

### Suggestions for later researchers

- (1) Research shows that schools with student numbers 5000~10000 have a clearly higher performance in Knowledge Management. It is suggested that future researchers focus on the issue of size of university, and find the most suitable scale for university.
- (2) Employees from the fields lecture and law have obviously better performance than those from management and business fields. This would seem odd to the common eye. It is suggested that future researchers look into this and find the reason.
- (3) We've widely done investigation with staff members from broad fields, but the samples are limited and can only be categorized into limited groups. It is suggested that future researchers look into look members from unique fields and obtain further conclusions.
- (4) Through the process of research, it appears that most tasted are unfamiliar with Knowledge Management. This could effect the outcome. It is suggested that a new survey be made when a further mature environment is developed.

## REFERENCES

- American Productivity & Quality Center (2000) . *What is Knowledge Management.*, <http://www.apqc.org/best/km/whatiskm.htm>.
- Badaracco, J. (1991) . *The Knowledge Link : How Firms Compete through strategic Alliances*, Harvard Business School Press.
- Beckman, T. J. (1999) . *The current state of knowledge management.* In Liebowitz, J. (Eds) . Knowledge management handbook, NY.:CRC Press.,1-1—1-22.
- Brooking, A. (1999) . *Corporate memory: Strategies for knowledge management.* London: International Thomson Business Press.
- Bukowitz, W. R. & Williams, R. L. (1999) .*The Knowledge Management.* Fieldbook. London : Prentice Hall.
- Davenport, T. H. & Prusak, L. (1998) . *Working knowledge: How organizations manage what they know.* Boston: Harvard College Press.
- David Skyrme Associates (2000) .*Knowledge Management Assessment: a Practical Tool from David Skyrme Associates,* <http://www.skyrme.com/tools/index.htm>.
- Duffy, J (1999) . *Harvesting Experience: Reaping the benefits of knowledge.* Prairie Village, Kansas: ARMA International.
- Elias M. Awad & Hassan M. Ghaziri (2004), *Knowledge Management* 1st ed. Pearson Education, Inc.
- Foy P. S. (1999) ,*Knowledge management strategies,* Redmond, Washington: Microsoft Press.
- Gore, C. & E. Gore (1999) , Knowledge management: the way forward, *Total Quality Management*, 10,4 &5, 54-560.
- Hedlund, Gunnar (1994) . A model of Knowledge Management and the N-Form Corporation, *Strategic Management Journal*, Vol.15, p.73-90.
- Howells, Jeremy (1996) . Tacit Knowledge, Innovation and Technology, *Technology Analysis & Strategic Management*, Vol.8, No.2, pp.91-106.
- Kimiz Dalkir (2005), *Knowledge management in theory and practice.* Elsevier, Inc.
- Noanka, I. (1998) . The Knowledge-creating Company. *In Harvard Business Review on Knowledge Management.* Harvard Business School Press.
- Nonaka, I. & Takeuchi H. (1995). *The Knowledge-Creating Company*, Oxford University Press, UK.O'Dell, C. (1996) . A Current Review of Knowledge Management Best Practice. Conference on Knowledge Management and the Transfer of Best Practice. *Business Intelligence.* London. December.
- O'Dell, C. & Grayson, J. (2000) . *Identifying and transferring internal best practices.* <http://www.apqc.org/free/whitepapers/cmifwp/index.htm>