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Malaysian Practitioner's Perception on Knowledge Management in Construction Consulting Companies

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Abstract

Construction consulting companies of today are a part of what has been called the knowledge society. The reason behind this name is the increasing importance of intangible assets as the major source of wealth creation in construction industry. As such, Knowledge Management (KM) has become a critical concern for construction consulting companies to improve project performance. The purpose of this paper is to analyse Malaysian practitioner's perception on KM in the construction consulting companies. The finding of this study was based on an analysis of transcribed data from semi-structured interviews conducted on Malaysian practitioners in the construction consulting companies to identify pattern and themes accordingly. The findings of the study indicate that all participants have expressed the significant contributions of KM to their success as a professional construction consultant in Malaysia. These participants shared a common characteristic of being professional in construction industry such as they agreed that manage database (data record) and filing system is perceived as important and also the professionals must build extensive social and business networks both locally and overseas that were relevant and have impact on their business success. The professionals have a personal desire to learn and they preferred to learn informally from a variety of people that they can access usually through discussion, seminar/conference and media. Learning from personal experience and experiences from others through learn on job and mentoring were a common characteristics among all the professionals and all of them strongly prescribed that such transfer of learning's will enable one to shortcut learning and improve their knowledge. However, both internal and external environmental factors have equal impact on the transfer of knowledge in construction consulting companies. Internally, personal interest has the biggest impact followed by culture, commitment from management, incentive or reward for the staff and openness or willingness (more on trust) to share and listen.

Externally, business factor/competition has the biggest impact on transfer of knowledge in construction consulting companies.

Keywords: Knowledge management, Construction consulting companies

1. Introduction

The potential importance of sustainable competitive advantage in business community has received a phenomenal amount of attention in recent years. Sustainable competitive advantage allows the maintenance and improvement of a company's performance in the global market. It is an advantage that enables businesses to survive against its competitors over a long period of time. Sustainable competitive advantage is achieved by continuously developing existing and creating new resources and capabilities in response to rapidly changing market. Among these resources and capabilities, Knowledge Management (KM) is recognised as an important business consideration to gain competitive advantage. If properly managed, KM can be converted into strategic intellectual assets of any knowledge-intensive organisation, especially construction consulting companies. It has been argued that new skills, mind-sets, models and commitment as well as new ways of interpreting the concept of effective management are needed to improve construction project performance (Rasli et al., 2004). The findings of this study was based on an analysis of transcribed data from a semi-structured interview conducted on eleven Malaysian construction industry consultants. Significant patterns and themes will be identified and presented in this study.

2. Knowledge Management

Knowledge is increasingly being recognised as a vital organisation resource that provides competitive advantage (Nonaka and Takeuchi, 1995). Thus, KM is a critical concern for creating and sustaining the organisation's core business in the construction industries. But knowledge is not always easily captured or effectively shared among industry players especially in construction industries. It is generally recognised that there is much "knowledge wastage" and difficulties in accessing important information. The industry is also large and complex, the many different players in the industry do not share a common education base, as a result, cognitive frameworks are not always easily shared. Furthermore, the project nature of the industry with a frequently reconfigured set of supply chain partners, non-repetitive nature of work, pressure to complete, and lack of incentive to appraise performance, means that information flow is often restricted.

However, the construction industry is a project-based industry which utilises a variety of separate entities in a temporary multidisciplinary organisation to produce investment goods (e.g., bridges, buildings and roads) which are custom built to unique specifications (Kamara et al., 2002). Figure 1 shows a simplified model of the construction process. During project conception, the client establishes the need for a project and develops a set of requirements which are converted into an appropriate design. At the construction stage, the design is transformed into a facility for the use of the client.

3. Methodology

Interviews are one of the most commonly recognised forms of qualitative research method that have been used to solicit opinions based on different background (Mason, 1996). The interview is a technique in which a set of questions are addressed verbally to the respondent, who in turn gives replies verbally. Thus an interview involves personal interaction between the interviewer and the respondent. The interview technique permits the interviewer to elaborate questions and to probe the respondent for further information (Mayer, 1980). They provide in depth understanding of the interviewee's point of view and furnish the requested details within short time. Burgess (1984) calls them "conversation with a purpose".

3.1 General Understanding

The following questions were posed to the interviewees to better understand their background:

- Firstly, Can you please describe your current business you are in (Quantity surveyor, Civil Engineering, Architecture, Others)?
- What types of products and services do you provide?
- Who are your customers?
- Describe the ownership structure of your company? (100% Malaysian ownership, Joint venture foreign company, 100% foreign ownership)?
- What is your current position in this company?
- How many years of working experience do you have? (Less than 5 years, 5 – 10 years, More than 10 years)?
- What is your highest level of education? (Diploma, Bachelor degree, Master, Professional license, Other please specify)?

3.2 Questions Regarding Knowledge Management

Based on the transcription of the data, the following questions regarding KM were identified among the interviewees:

- How important is Knowledge Management (KM) in construction consulting companies? Why? Please describe?
- What is the Knowledge factors required to achieve success in construction consulting business?
- How do you continue to learn to improve your skill or to acquire new competencies?
- What is your preferred learning style to improve your knowledge?
- How do you transfer your learning experience to others?
- What are the external or internal environmental factors that have impacted on transfer of knowledge in construction consulting companies?
- What do you (and your company) expect from KM initiatives?

4. Findings

4.1 General Understanding

The current business characteristics of the participants in this study are presented in Table 1. The construction consulting companies are involved in diverse business interests ranging from *architecture* (4 counts) to *civil engineering* (3 counts), *valuation management* (1 count), "*Engineering, Procurement, Construction and Commissioning (EPCC)*" (2 counts) and *quantity surveyor* (1 count).

To better understanding the type of products and services that the participants provided for their clients, the question "What type of products and services do you provide?" was posed to the participants. Table 2 shows that most of the participants provided for *design* (9 counts) followed by *project management services* (4 counts) and then *structure analysis* (3 counts). It can be accepted that these products and services are common in the construction consulting companies as the basic products and services. Other products and services are not so popular among the participants such as c*onstruct industrial plant e.g.: petro-chemical, oil and gas, cement and mineral, power plant and infrastructure projects* (2 counts), *valuation services especially for land acquisition, property and construction project* (2 counts), *Landscape architecture* (2 counts).

As shown in Table 3, the customers of the participants mostly are from *private* (8 counts) and *government body* (8 counts). This is can be accepted because the construction project needs a huge of budget and the budget is provided mostly from private and government body.

Table 4 shows the ownership structure of the company from the participants. It can be seen that most of them are *100% Malaysian ownership companies* (9 counts) and the rest are *joint venture companies* (2 counts).

The current position of the participants in this study is presented in Table 5. The participants are involved in diverse position in their company ranging from *principle* (3 counts), *project manager* (2 counts), *program manager* (1 count), *president managing director* (1 count), *owner* (1 count), *managing director* (1 count), *technical manager* (1 count) and *director architecture* (1 count).

As shown in Table 6, it is interesting to note that most of the construction consultants have some form of business experience i.e., *more than 10 years experiences* (10 counts) and only one construction consultant has 5-10 years experience.

The construction consultancy businesses were built from scratch, acquired or resulted from "cases of dispute". One obvious common denominator is that the interviewees all portray strong consultant entrepreneurial orientation and are either well educated (refer Table 7) ranging from *Bachelor degree* (4 counts), *Professional Engineer* (3 counts), *Professional Architecture* (3 counts), *Master degree* (3 word counts) to *PhD degree* (4 counts) and also have a lot of business experience in construction industry in Malaysia.

4.2 Knowledge Management (KM)

4.2.1 How important is Knowledge Management (KM) in construction consulting companies?

Table 8 shows the importance of KM in construction consulting companies to achieve success in the construction business industry. It is interesting to note that *to manage database (data record) and filing system* is perceived as important by interviewees (6 counts). This component is the most critical KM component required in construction consulting companies to survive in the construction business. This statement can be accepted because in the construction consulting companies, the role of the database and filing system is important such as in design process, supervision, administration and claim report. Other important components are *system for transferring and sharing of knowledge and experience* (2 counts) and *to maintain staff and company's knowledge* (2 counts). These components are

also critical component that explain the importance of managing and encouraging staff to share and maintain the knowledge asset in the construction consulting companies.

4.3 What is the Knowledge factors required to achieve success in construction consulting business?

Table 9 shows the knowledge factors required to achieve success in construction consulting business based on the interviewees' opinion. It is apparent that Networking is viewed as the most important attribute to achieve success by all of the interviewee (11 counts). Other important knowledge are Technical skill (8 counts), Partnership (5 counts), Knowledge how to market our services (Marketing) (4 counts), Leadership (4 counts), Teamwork (4 counts), Human resource capability (3 counts), Commitment (3 counts), Communication skill (2 counts) and Facility capability (2 counts).

4.4 How do you continue to learn to improve your skill or to acquire new competencies?

The knowledge improvement for the construction players in construction industry is often viewed as important in the development of the skill competencies. Within the context of this research, it is apparent that all of the interviewees believed that discussion (11 counts) contributes a lot to the development of their knowledge (refer Table 10) as an informal method to improve their knowledge. On the other hand as shown in Table 6.4, attending seminar and conference (10 counts) are also another way to improve their knowledge as a formal method. The media application is also has vital role to improve the construction player's knowledge which is in this research, reading (i.e., Books, magazines, Newspaper etc) (7 counts) and internet application (5 counts) as viewed the important attribute to improve the knowledge.

4.5 What is your preferred learning style to improve your knowledge?

To better understanding the preferred of learning style of the interviewees, Table 11 presents the perceptions of the interviewees.

Based on Table 11, it can be seen that the informal method is the most source of learning, which is represented mainly by Discussion (7 counts). Secondly, meeting (2 counts), seminar (2 counts) and short course (2 counts) are viewed as the next most important source of learning for construction consulting players.

4.6 Transfer of learning experience

The following question was posed to the interviewees to better understand their transfer of learning experience:

- How do you transfer your learning experience to others?

Based on Table 12, lean on job (7 counts) is the most frequently cited method for the transfer of learning experience, followed by as a tutor/mentoring (3 counts) and then discussion (2 counts) and presentation (2 counts). Other not so popular methods comprise make a new work instruction (in writing) or procedures (1 count), write some articles/papers and books (1 count) and meeting (1 count).

4.7 What are the external or internal environmental factors that have impacted on transfer of knowledge in construction consulting companies?

Based on Table 13, both internal and external environmental factors have equal impact on the transfer of knowledge in construction consulting companies. Internally, personal interest (5 counts) has the biggest impact followed by culture (3 counts), commitment from management (2 counts), incentive or reward for the staff (2 counts) and openness or willingness (more on trust) to share and listen (2 counts). Externally, Business factor/ competition (4 counts) has the biggest impact on transfer of knowledge in construction consulting companies.

4.8 What do you (and your company) expect from KM initiatives?

Table 14 shows the expectation of the interviewees from the KM initiatives. It has been seen that *quality in service* (5 counts) and *efficiency* (5 counts) are the most popular by all of the interviewees. However, world *class company (more professional company)* (4 counts) is the second priority of expectation from the KM initiatives followed by *good performance of the staff* (2 counts). Other expectations are not mentioned frequently and to be considered not really preferred by the interviewees such as: *maintain the knowledge and competitiveness* (1 count), *client satisfaction* (1 count), *personal satisfaction* (1 count), *documentation or filing data system more advance* (1 count).

5. Conclusion

The findings indicate that all eleven participants have expressed the significant contributions of KM to their success as a professional construction consultant in Malaysia. These participants shared a common characteristic of being professional in construction industry but aside from this similarity there were differences in areas such as education background and type of business stared. The participants have been involved in more than one business products and services and therefore are considered to be serial professionals with experience stretching over a period from 6 to 20 years in running a construction consulting business. The main themes that this research uncovered are as follows:

1) The professionals agreed that KM is important in construction consulting companies whereby *manage database (data record) and filing system* is perceived as important by interviewees. This component is the most critical KM required in construction consulting companies to survive in the construction business.
2) The professionals must build extensive social and business networks both locally and overseas that were relevant and have impact on their business success. Other important knowledges are *Technical skill, Partnership, Knowledge how to market our services (Marketing), Leadership, Teamwork, Human resource capability, Commitment, Communication skill and Facility capability*.
3) The professionals have a personal desire to learn and they preferred to learn informally from a variety of people that they can access usually through *discussion, seminar/conference and media (i.e., reading and internet*).
4) Learning from personal experience and experiences from others through *learn on job* and *mentoring* were a common characteristics among all the professionals and all of them strongly prescribed that such transfer of learning's will enable one to shortcut learning and improve their knowledge.
5) Both internal and external environmental factors have equal impact on the transfer of knowledge in construction consulting companies. Internally, *personal interest* has the biggest impact followed by *culture, commitment from management, incentive or reward for the staff* and openness *or willingness (more on trust) to share and listen*. Externally, *Business factor/ competition* has the biggest impact on transfer of knowledge in construction consulting companies.
6) The professionals agreed that the expectation from KM initiative have to achieve *quality in service, efficiency, world class company (more professional company)* and followed by good performance of the staff.
7) While all these professionals have attain higher level of formal education, however these formal education formed a basic foundational knowledge and skills which when combined with some prior work experience enabled these professional competencies to start up their business in construction consulting. From this research it is clear that the formal education were insufficient to guarantee the professionals success in construction consulting companies, the professionals had to acquire and manage knowledge competencies to succeed in a global economy.

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Table 1. Current business characteristics

Firstly, Can you please describe your current business you are in? **- Quantity surveyor** **- Civil Engineering** **- Architecture** **- Others**	**Count**
1. Architecture	4
2. Civil Engineering	3
3. Other	3
a) Valuation management consultant	1
b) (EPCC) companies: - Engineering - Procurement - Construction - Commissioning	2
4. Quantity Surveyor	1

Table 2. Types of products and services

What type of products and services do you provide?	**Count**
- Design	9
- Project Management Services	4
- Structure analysis	3
- Construct industrial plant e.g.: petro-chemical, oil and gas, cement and mineral, power plant and infrastructure projects	2
- Valuation services especially for land acquisition, property and construction project	2
- Landscape architecture	2
- IT service (2D and 3D animation)	1
- Preparation for Tender document and Contract management	1
- Testing material and design	1
- Interior design	1
- Supervision	1
- Estimating (Quantity surveyor)	1
- Training	1

Table 3. Type of customers for construction consulting companies

Who are your customers?	**Count**
- Private body	8
- Government body	8
- individual	1

Table 4. The ownership structure of company

Describe the ownership structure of your company? **- 100% Malaysian ownership** **- Joint venture foreign company** **- 100% foreign ownership**	**Count**
- 100% Malaysian ownership	9
- Joint venture foreign company	2
- 100% foreign ownership	0

Table 5. Current position in the company

What is your current position in this company?	**Count**
Principle	3
Project Manager	2
Program Manager	1
President managing director	1
Owner	1
Managing Director	1
Technical Manager	1
Director Architecture	1

Table 6. Years of working experience

How many years of working experience do you have? **- Less than 5 years** **- 5 – 10 years** **- More than 10 years**	**Count**
- More than 10 years	10
- 5 – 10 years	1
- Less than 5 years	0

Table 7. Highest level of education

What is your highest level of education? **- Diploma** **- Bachelor degree** **- Master** **- Other. please specify?**	**Count**
Education	
- PhD	4
- Bachelor degree	4
- Master	3
Professional license	
- Professional Engineer (Ir)	3
- Professional Architecture (Ar)	3

Table 8. How important is KM in construction consulting companies

How important is Knowledge Management (KM) in construction consulting companies? **Why? Please describe?**	**Count**
Very Important	11
I. Knowledge for Business	
- For sustainable company	1
- To compete with others	1
- To know our job ability	1
- Our benchmark with others	1
- Efficiency	1
- Multi-skill engineer	1
- To maintain the quality of the products	1
2. Knowledge Creation	
- Provide a system to maintain the knowledge	1
- To know our strength in knowledge	1
- To avoid the same mistakes	1
- For regeneration knowledge system from senior engineer to junior engineer	1
- System for transferring and sharing of knowledge and experience	2
- To avoid the mistakes	
- To maintain staff and company's knowledge	2
3. Knowledge for Documentation	
- To manage database (data record) and filing system	6
- Knowledge information	1
- Provide the basic and fundamental knowledge as a reference how we can do the job (best practice module).	1
- To protect the employee's knowledge	1

Table 9. Knowledge factors required in construction consulting companies

What is the Knowledge factors required to achieve success in construction consulting business?	**Count**
1. Sense of entrepreneur	
- Networking	11
- Communication skill	2
- Knowledge how to market our services (Marketing)	4
- Sense of Business	1
- knowledge/negotiation skills how to deal with the clients	1
- Partnership	5
2. Resource Capability	
- Technical skill	8
- Presentation skill	1
- Human resource capability	3
- Facility capability	2
- Idea / Creativity	1

Table 9. Continued

What is the Knowledge factors required to achieve success in construction consulting business?	**Count**
3. Personal Skill	
- Leadership	4
- Teamwork	4
- Having some experiences	1
- Commitment	3
4. Management	
- Client satisfaction	1
- Time management	1
- Knowledge about the regulation/low provided by the government or board	1
- Knowledge about human resource management/ people management	1
- Good company profile and track record	1
- Quality of the product	1
- Cash flow knowledge/ Financial management	1

Table 10. Source of knowledge to improve interviewees' skill

How do you continue to learn to improve your skill or to acquire new competencies?	**Count**
Formal method	
- Training	3
- Short course	3
- Seminar and conference	10
Informal method	
- Learn on job	2
- Observation	4
- Meeting	2
- Open minded	1
- Discussion	11
Media	
- Reading (i.e., Books, magazines, Newspaper etc)	7
- Internet	5
-TV media	1
Other	
- Exhibition	2
- Workshop	2

Table 11. Preferred learning style to improve knowledge

What is your preferred learning style to improve your knowledge?	**Count**
- Reading	1
- Discussion	7
- Observation	1
- Meeting	2
- Seminar	2
- Short course	2
- Workshop	1

Table 12. Transfer of learning experience

How do you transfer your learning experience to others?	**Count**
- Presentation	2
- Make a new work instruction (in writing) or procedures (e.g.: Value Engineering procedure)	1
- Learn on job (involve staff on job)	7
- As a tutor (mentoring)	3
- Write some articles/papers and books	1
- Discussion	2
- Meeting	1

Table 13. The external or internal environmental factors that have impacted on transfer of knowledge in construction consulting companies

What are the external or internal environmental factors that have impacted on transfer of knowledge in construction consulting companies?	**Count**
Internal:	
- Commitment from management	2
- Commitment from employee	1
- Personal interest	5
- Level of IQ capability and education	1
- Communication	1
- Family background	1
- Media / System	1
- Culture	3
- Incentive or reward for the staff	2
- Openness or willingness (more on trust) to share and listen	2
External:	
- Business factor/ competition	4
- Environment	1
- Client	1
- Government/Professional body (must give an encouragement to practitioners)	1
- Clients	1
- Suppliers	1

Table 14. The expectation from KM initiatives

What do you (and your company) expect from KM initiatives?	Count
- Maintain the knowledge and competitiveness	1
- Quality in service	5
- Good performance of the staff	2
- Efficiency	5
- Client satisfaction	1
- Personal satisfaction	1
- World class company (More professional company)	4
- Documentation or filing data system more advance	1

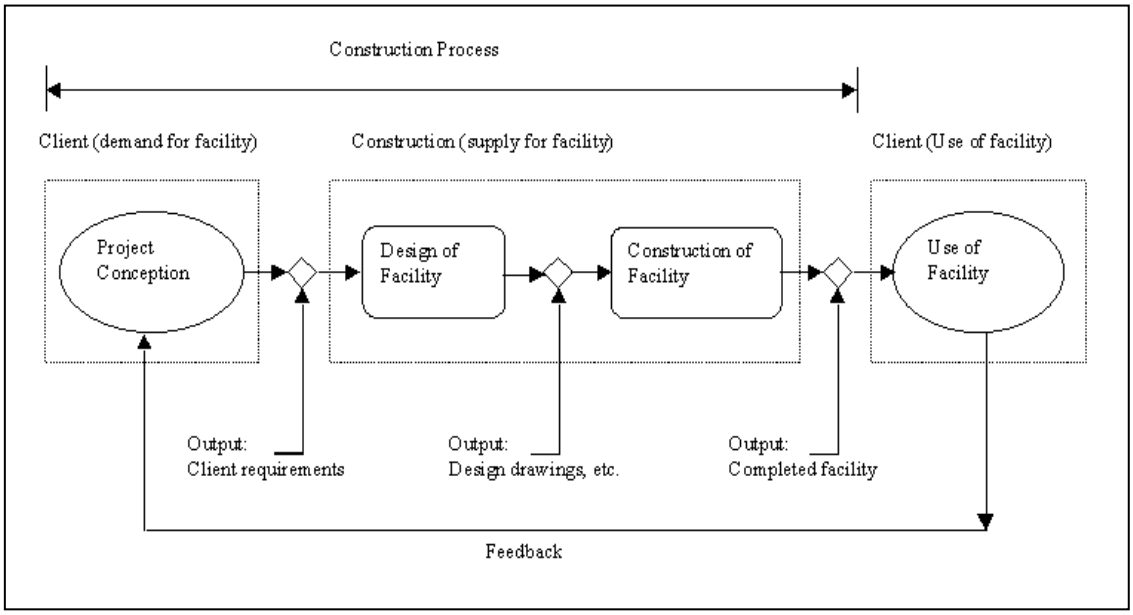

Figure 1. Simplified model of the construction process (Source: Kamara et al. 2002)