

MEASURING INTELLECTUAL CAPITAL: WEB SITES ANALYSIS OF THAI SMEs

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Abstract

An enterprise is categorized as an SME if it has employees fewer than 200 and fixed capital less than 200 million baht, excluding land and building. It was reported that there are more than 80,000 SMEs in Thailand. Thus, SMEs are the main blood vessels of the Thai economy. Since the Thai economic collapse in 1997, large numbers of Thai SMEs went bankrupt and wiped out of the industries. This resulted in SMEs which are tolerant to the changing economy and new environment. The objectives of this study are to investigate the status of intellectual capital (IC) of SMEs in Thailand and to enhance awareness of SME entrepreneurs regarding the value of IC in their companies. The findings from this study report recent status of IC in Thai SMEs. It should be helpful for enterprises that want to improve their management and maximize their IC assets.

Keywords: Intellectual Capital model, knowledge management, SME, measurement.

Measuring Intellectual Capital: Web Sites Analysis of Thai SMEs

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1. Introduction

Small and medium sized enterprises play key roles in the world economy since they are the grassroots which cover almost all the business activities around the country. There are various definitions of SME in different regions. They are as follows.

1.1 SME Definition by EC

The definition of small and medium enterprise (SME) was introduced by the European Commission on April 1996. SME is classified in three groups including medium, small and micro enterprises. Its definition is based on the number of paid employees, turnover, balance sheet total, and independence. Independence is the ultimate criterion to justify enterprises to be an SME. Further, independence means less than a quarter is owned by one large company or several companies. The EC defines an SME based on the following criteria in Table 1:

Table 1. The definition of SME provided by the European Commission

<http://europa.eu.int/ISPO/ecommerce/sme/definition.html>

| Types | Medium | Small | Micro |
|----------------------------------------------|--------|-------|-------|
| Maximum number of employees | 250 | 250 | 10 |
| Maximum turnover (in million ECU) | 40 | 7 | - |
| Maximum balance-sheet total (in million ECU) | 27 | 5 | - |

1.2 SME Definition by the Thai Government

On September 11, 2002, the Ministry of Industry introduced the definition of Thai small and medium-sized enterprise (SME). This definition is based on the number of salaried workers, and fixed capitals. An enterprise is categorized as an SME if it has employees of less than 200 and fixed capital less than 200 million baht, excluding land and building. SMEs in Thailand are classified in three sections: production, service, and trading.

Table 2. The definition of SME provided by the Ministry of Industry, Thailand

(<http://www.sme.go.th>).

| Type | Small | | Medium | |
|------------|------------------|---------------------------|-----------|---------------------------|
| | Employees | Capital (million baht) | Employees | Capital (million baht) |
| Production | Not more than 50 | Not more than 50 | 51-200 | 51-200 |
| Service | Not more than 50 | Not more than 50 | 51-200 | 51-200 |
| Wholesale | Not more than 25 | Not more than 50 | 26-50 | 51-100 |
| Retail | Not more than 15 | Not more than 50 | 16-30 | 31-60 |

In business practices, the definition of SME can be extended including number of share holdings by parent companies, enterprise structures and independence. The principal criterion for SME is the enterprise's independence. This characteristic indicates that not more than 25% of SME capital should be owned by one large or many large companies. At present, there are many multinational companies in the form of franchise companies and joint-venture between Thai and overseas companies. Some of these companies should not be classified as Thai SMEs.

In this study, Thai SME definitions are as follows: (1) Employee size is not more than 200, (2) Fixed capital is not more than 200 million baht, (3) Less than 25% is owned by one or joint several enterprise(s), and (4) Less than 50% is owned by foreigners.

1.3 IC definitions

Intellectual Capital may be used interchangeably with intangibles, knowledge or knowledge resources (Guthrie et al. 2003). There are various definitions of Intellectual Capital (IC) since IC characteristics are invisible and dynamic. Different researchers have defined IC in different definitions. Wig (1997) defines IC as "assets created through intellectual activities ranging from acquiring new knowledge (learning) and inventions to creating valuable relationships" and IC is defined as "the difference between a company's

market value and its book value” (Guthrie, 2001). The most famous IC definition has been proposed by Edvinsson (1997) which states that “The Intellectual Capital of a firm is its possession of the knowledge, applied experience, organizational technology, customer relationships and professional skill that provides it with a competitive edge in the market”. Edvinsson (1997) proposed the Skandia Intellectual Model (Figure 1) which is extensively referred to in IC measurement and research. In this model, IC is comprised of human capital and structural capital. Human capital includes knowledge, know-how, skills and personnel expertise of an enterprise. Structural Capital is a composite element that includes organizational capital and customer capital. Organizational capital consists of innovation capital (intellectual property and intangible assets) and process capital (databases and information systems). Customer capital is the external capital which include the organizational relationships with external actors including customers, suppliers, partners and/or other stakeholders.

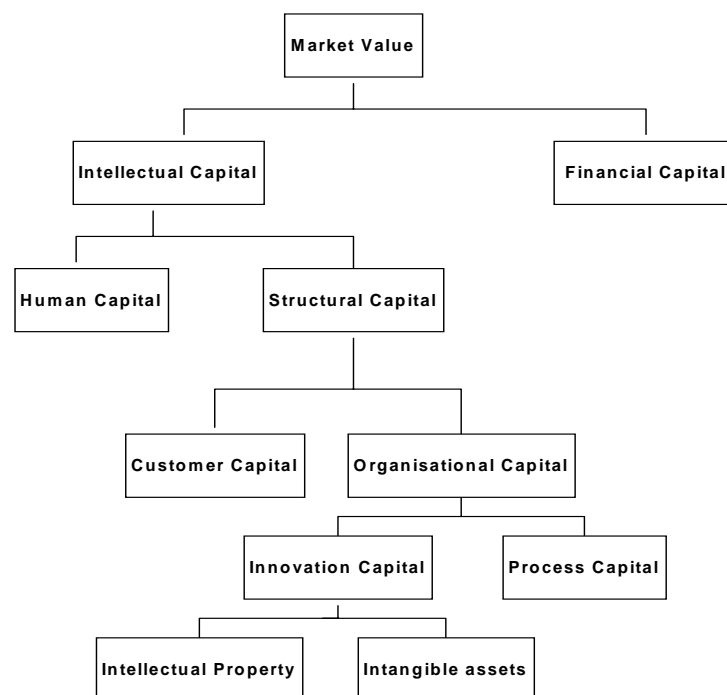


Fig. 1. Skandia Intellectual Capital Model by Edvinsson (1997).

2. Model of IC Measurements

The proposed IC measurement model originated from the Skandia Intellectual Model (Edvinsson, 1997). Many components are adapted to fit the Thai SMEs. It consists of three main clusters: human capital, structural capital and relational capital (Figure2).

Human capital refers to the employee knowledge of a firm and capacity to generate this knowledge. Value has been created by employees through using their skills, applying their knowledge and initiating innovative ideas. The utilization of employee knowledge and skills are performed if the employees are willing to do so. Thus the human capital management should be concerned about knowledge management of employees including maintenance of knowledge base, encouragement, innovation and motivation of employees to transform their tacit knowledge to explicit knowledge (Zhou and Fink 2003). As well, there is a direct cause effect relationship between knowledge *reuse* and *invention* of new knowledge. Then knowledge is turned into value by commercialization which is called *exploitation*. The summary of the above two factors (knowledge *reuse* and *invention*) multiply exploitation is *innovation* (Edvinsson et. Al 2004). In addition, human capital is the fundamental knowledge to generate the other two Intellectual Capital components. The human capital does not belong to a company but it is “hired” by the company for a period of time. This capital will be removed when staff resign or is retired from the company.

Structural capital is a composite item which is mainly organizational capital. It comprises information and communication systems, management systems, patents and everything that systemizes knowledge of the company and makes it internal and explicit. This capital consists of seven main indicators: business philosophy, organization structure, intellectual property (e.g. research and development), research and development (R&D), process technology, product technology and IT penetration /investment [e.g. key word and directory search engine, EDI (Electronic Data Interchange), and database]. The structural capital belongs to and still remains within an organization even though employees have resigned.

Relational capital refers to external relations with customers, suppliers, partners, networks, and regulators. The quality of the relationships, the ability to keep present customers and creating new customers are key factors for the success of a company.

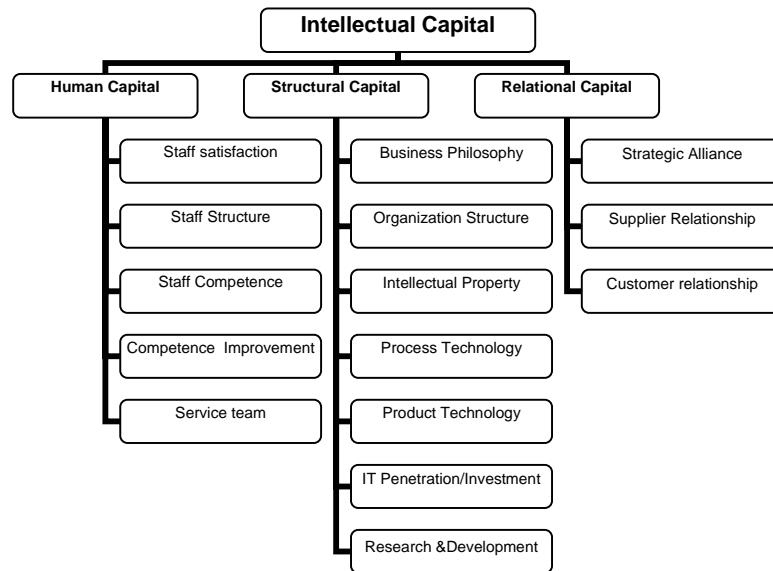


Fig. 2. The proposed Intellectual Capital Model (adapted from Skandia Intellectual Capital model).

2. Methodology

E-commerce websites of Thai SMEs have been investigated in June 2003. Fifty-five web sites of Thai SMEs had been selected for the survey. SME industries includes manufacturing, food service, software house, and agriculture products. The smallest SME had six employees with 0.5 million baht fixed assets. While the largest SME had 200 employees with 132 million baht fixed assets. The descriptive statistics was used in data analysis.

3. Results and Discussions

Human capital of SMEs was measured by using indicators from the proposed model. Results show that one third of the sample provided a service team (31%). Twenty-five percent had employment structures, while 20% showed staff competence. The lowest two

indicators include staff development (7%), and staff satisfaction (2%). It shows that some Thai SMEs have habits of working in groups to provide the services. The above results imply that majority of SMEs did not have investments in staff development nor improved staff satisfaction.

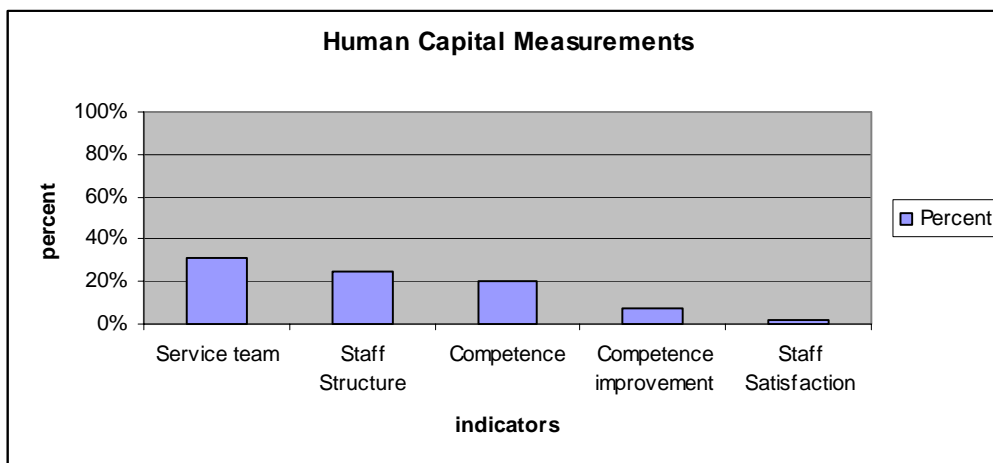


Fig. 3. Human Capital Measurement from 55 SME websites.

For the *structural capital* measurement, nearly half (44%) of Thai SMEs published their business philosophy on the websites - this can be fruitful for the strategic communication in the company. Results also indicated that they have process technology (36%) and product technology (31%). Research and development for their products and services were not highlighted (12%), which resulted in low percentage of new products and intellectual property (11%). IT used for structural capital was low, search engine including directory search was about 13%, while key word search was about 7%. Few companies kept a customer database (5%). Lastly, very few used EDI (2%) for electronic communication between companies for intertrading such as purchase order. Further, IT related expenses were low including IT investment (18%), and training (2%). It indicates that SMEs did not have high IT usage in their companies.

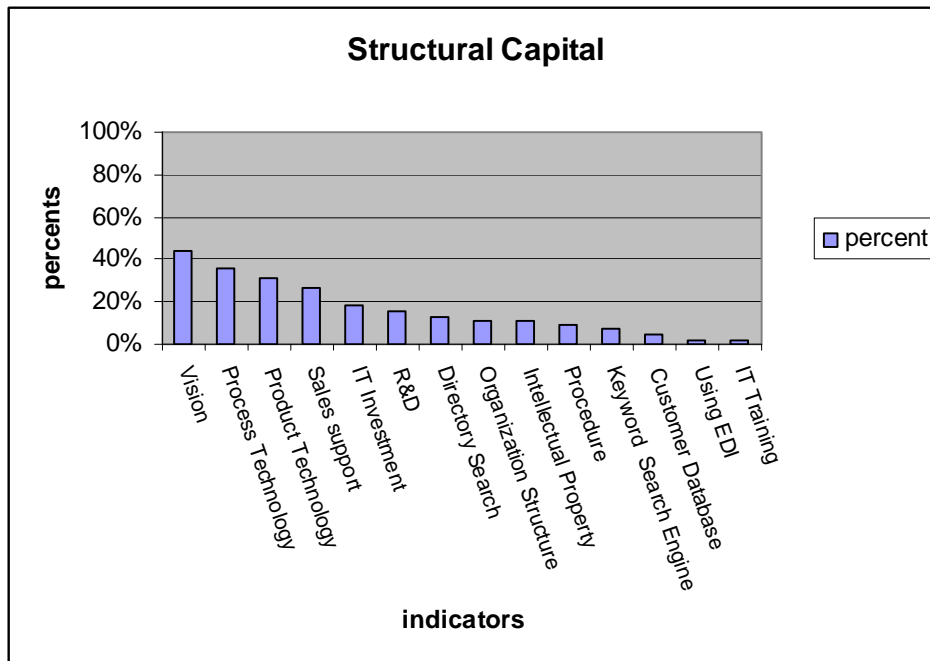


Figure 4. Structural Capital Measurements from 55 Thai SMEs.

Lastly, the results of the relational capital measurements show that high percentages of product and service information were published on SME websites (service information 85% and explanation 76%). While facilities provided for product order and service for online transactions were 40% which was fewer than half of the sample. It implies that the objective of SME websites was information provision rather than transaction processing since developing information websites are simpler and it requires less time, lower expenses, and less experienced experts than transaction processing.

As regards customer relationships including customer contact, help desk, online and offline services, customer relationship activity, call center, FAQ, and CRM. Almost all indicators were not high, they were lower than 30% except for customer contact (56%), and both help desk and email (35%); 31% provided product and service delivery. Offline service was about 29%. The ratio for sale or service support (27%) was about one fourth. Further, customer rating was about 4% which is low. It indicates that SME customer relationships were not emphasized via this communication channel. To expand the relational capital, SME may improve relationships with customers by providing better

quality products and services together with using IT and knowledge management process. (Zhou and Fink 2003).

The relationships with suppliers were very low (4%) while the relationships with governments were slightly better (13%). However, the strategic alliance with partners was 29% which is higher than the former two cases. Thai SMEs have preferred horizontal relationships with partners rather than vertical relationships with their suppliers.

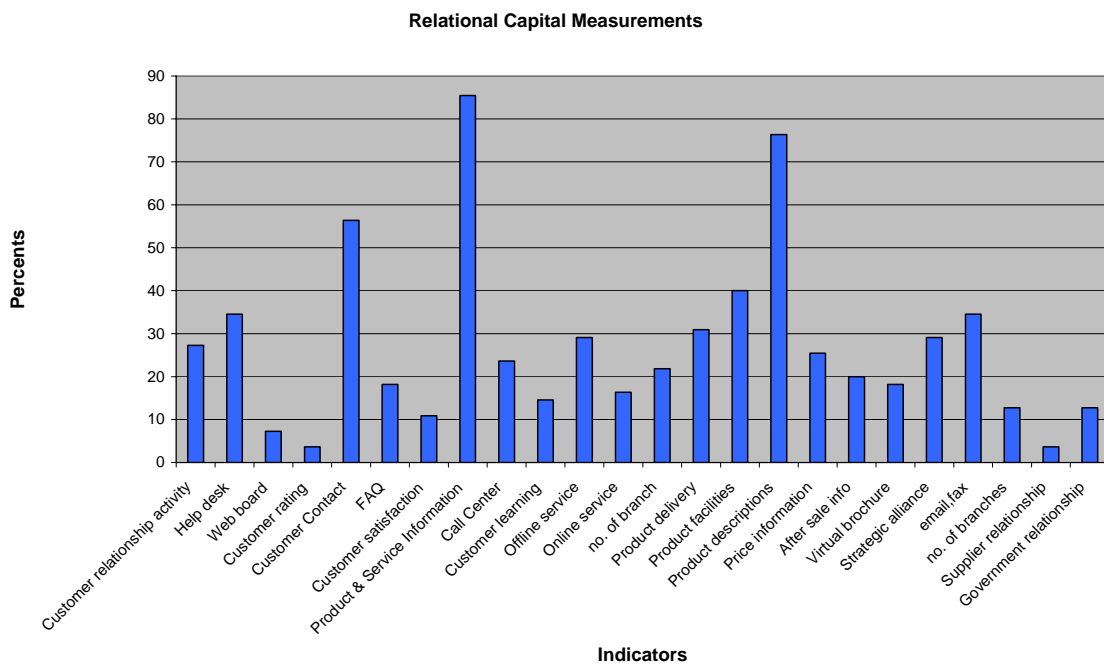


Figure 5. Relational Capital Measurements from Thai SMEs.

4. Conclusions

This study investigated the status of intellectual capital status of 55 Thai SMEs web sites. IC is classified in three categories: human, structural and relational capital. Many interesting IC characteristics of Thai SMEs have been reported. First, majority of them neither invested in staff development nor recognized the significance of IT's impact on their companies. Second, SME websites are information providing rather than transaction processing. Third, customer relationships are not emphasized through web communications. Lastly, Thai SMEs have preferred horizontal relationships with partners rather than vertical relationships with their suppliers. To increase the competitiveness of Thai SMEs in the global environments, SMEs should realize the significance of IC in their business and have abilities to integrate IT and knowledge management in their business effectively and efficiently. This will increase the potential of SMEs in competing with others and develop the sustainability in the knowledgebase economy.

This study suggests the IC status of Thai SME by using web site analysis. However, it lacks of details for qualitative management and company improvement. Thus future research about IC measurement indicators or matrix for Thai SME should be conducted to fulfill the above requirements.

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