CHAPTER 2

THEORITICAL FOUNDATION

Based on the introduction about intellectual capital in the previous chapter, it is obvious that the definition intellectual capital is still in haze. It is difficult to provide precise definitions for intangible assets and intellectual capital (Blair & Wallman, 2001, p. 9; Lev, 2001a, p. 5). Every scientist has his or her own opinion and understanding about treating intellectual capital. The range of views and the number of terms used to describe and define intellectual capital are broad, without a clear focus, and often confusing (Sullivan 2000). In this chapter, the writer would like to give the most common understanding about intellectual capital clearly and make the readers know the current development and understand the further discussion of intellectual capital in this thesis.

2.1 Development of Intellectual Capital

According to Sullivan (2000, p.3-4) in his book Value-Driven Intellectual Capital, intellectual capital became an important term in the business world in the 1990s. This was a result of the publishing of Tom Stewart's article "Brainpower" by Fortune Magazines in 1991. Intellectual capital appeared on the business world surface because Tom Stewart's article was the first to appear in a national business magazine. However, the first concept of intellectual capital was developed far before the Tom Stewart's article is published.

Intellectual capital history actually began in the early 1980s when managers, academics, and business consultants around the world started to become aware of

the existence of firm's intangible assets and intellectual capital. In 1980, Hiroyuki Itami, a Japanese researcher, concluded that intangible assets are "unattainable with money alone, are capable of multiple, simultaneous use, and yield multiple, simultaneous benefits." Itami's work had not been published in English until 1987 and it did not get adequate attention from people interested in actual capital. However, readers of Itami's work regularly comment on its prudence and clear insights of intangible assets and their importance to the companies.

The further research for intellectual capital came from David Teece, professor from University of California Berkeley, in 1986. He wrote "Profiting from Technological Innovation," an article that pulled together much of the then-current thinking of members of the resources-based strategy schools. In his research, he successfully identified necessary steps for the extraction of value from innovation that for the first time managers could learn and teach their staffs about how to maximize the value of their firm's innovations.

Also in 1986, the very early "Swedish Movement" in knowledge management and intellectual capital started. Karl-Erik Sveiby, the manager and owner of a Sweden-based publishing company, published a book that gave an idea to manage intangible assets, which was the first book in the world, that deal with that particular subject. Sveiby's book provided a rich and exciting view of the potential for valuing the enterprise based upon the competences and knowledge of its employees.

Following their works, Tom Stewart, a feature writer at *Fortune* magazine, was the first to mention intellectual capital in his brief article in 1991 about new ideas in business. He continued and developed that article and published on "brainpower" that discussed the idea that the company's intellectual capital, employee in particular, had much to do with its profitability or success.

Furthermore in 1991, [1]Skandia AFS organized the first company that concentrate on intellectual capital. They appointed Leif Edvinsson as its Vice President for intellectual capital. His mission was to learn on how others were managing intellectual capital and using it to maximize profits.

There were two separate paths of thinking about intellectual capital in the mid of 1990s, first is the knowledge and brainpower. The idea focused on creating and expanding the firm's knowledge (as supported by Stewart, Edvinsson, Sveiby, etc). And second, the resource-based perspective was focused on how to create profits from the intangible resources and intellectual capital that firm's owned. These two had different ways of thinking, however there is still a relation between them that is development of intellectual capital.

In conclusion, those people that were previously mentioned gave valuable contribution in the development of intellectual capital that is still being developed today. Their works were an important foundation and step stone for

[1] Skandia is a multinational insurance and financial services company in Sweden. The company has a division called Assurance and Financial Services. This division is focused on developing and applying a systematic approach to hidden values and even has a director of intellectual capital to build an "intelligent organization". The AFS definition of intellectual capital is the knowledge, skill and technologies used to create a competitive edge for Skandia. However, a more managerial definition of intellectual capital is the sum of structural capital and human capital (Bucklew & Edvinssion 1999).

the later intellectual capital development. Below is the timeline of intellectual capital related events:

Table 2.1

Timeline of IC-Related Events

Years	Descriptions
1980	Itami publishes “Mobilizing Invisible Assets” in Japanese
1981	Hall establishes company to commercialize research on human values
1986	Sveiby publishes “The Know-How Company” on managing intangible assets
April 1986	Teece publishes seminal paper on extracting value from innovation
1988	Sveiby publishes “The New Annual Report” introducing “knowledge capital”
1989	Sveiby publishes “The Invisible Balance Sheet”
Summer 1989	Sullivan begins research into “commercializing innovation”
Fall 1990	Sveiby publishes “Knowledge Management”
Fall 1990	Term “Intellectual Capital” coined in Stewart’s presence
Jan. 1991	Stewart publishes first “Brainpower” article in *Fortune*
Sept. 1991	Skandia organizes first corporate IC function, names Edvinsson VP
Spring 1992	Stewart publishes “Brainpower” article in Fortune
1993	St. Onge establishes concept of Customer Capital
July 1994	First meeting of Mill Valley Group
Oct. 1994	Stewart authors “Intellecual Capital” cover article in *Fortune*
Nov. 1994	Sullivan, Petrash, Edvinsson decide to host a gathering of IC managers
Jan. 1995	Second meeting Mill Valley Group
May 1995	First Skandia public report on IC
April 1996	SEC Symposium on measuring intellectual/intangibles assets
Sept. 1996	Sullivan and Parr book, *Licensing Strategies*, published
Oct. 1996	Lev found Intangibles Research Project at New York University
Mar. 1997	Sveiby publishes “The New Organizational Wealth”
April 1997	Stewart book, *Intellectual Capital*, published
June 1997	Hoover Institution conference on measuring intellectual capital
March 1998	Sullivan book, Profiting from Intellectual Capital, published

Source: Sullivan (2000)

2.2 Definition of Intellectual Capital

Generally, business organization consists of three kinds of capital inside it. Those three capitals are: Physical, Financial, and Intellectual Capitals. Physical capital refers to the traditional inputs of land, labor and capital, whereas, intellectual

capital refers to knowledge, creativity, skills, and corporate culture (Goh 2005, p. 386). On the other hand, financial capital refers to the funds provided by lenders (and investors) to businesses to purchase real capital like equipment for producing goods/services.

The easiest way to define intellectual capital is by taking the result from the difference between company's market capitalization and book value. Several scientists doubted this method because they think it was too one-dimensional perspective without considering other factors that are quite complex to measure. Gu & Lev (2001) found that this was based on two incorrect assumptions (as cited in Berglund, Grönvall, & Johnson, 2002). The first assumption is that the financial markets are efficient, i.e. there exist no mispricing. The second assumption is that the assets on the balance sheet reflect their current values. Furthermore, Leif Edvinsson (1997) in an interview with Leading Lights said that Intellectual Capital is something that is larger than human capital. It is future earnings capabilities of an enterprise and is sometimes measured as the gap between the market value and the book value, which is a kind of simplification but it gives you a rough estimate.

Edvinsson and Sullivan (1996) define intellectual capital as knowledge, which can be converted to value. Stewart (1997) defines intellectual capital as the intellectual material – knowledge, information, intellectual property, experience – that can be put to use to create wealth. According to Stewart (1997) intellectual capital is a collective brainpower or packaged useful knowledge. Roos and Roos (1997) define intellectual capital as the sum of the "hidden assets" of the

company not fully captured on the balanced sheet, and thus it includes both what is in the heads of organizational members, and what is left in the company when they leave.

2.2.1 The Importance of Intellectual Capital

"The biggest accomplishment (in the field of intellectual capital) is the simple fact that any board today will listen if you bring up the subject". (Stewart, 1997)

The importance of intellectual capital needs to be discussed in this chapter since many people choose intellectual capital as their business and research topic, this phenomena creates a conclusion that in today's knowledge economy intellectual capital is more and more important than before. The [1]Organization for Economic Cooperation and Development (OECD) initiated various activities in the 1980s when observations were made that intangible investments in member countries appeared to increase more rapidly than tangible investments. In the 1990s, a number of OECD conferences were held to encourage attention to the question of how to account for intangibles. According to Guthrie (2001), there are four arguments which emphasizes the importance of intellectual capital:

- The revolution in information technology and the information society
- The rising importance of knowledge and the knowledge-based economy

[2] Organization for Economic Cooperation and Development (OECD) is an organization located in France, that focus on brings togetherness among the governments of countries committed to democracy and the market economy from around the world to Support sustainable economic growth, Boost employment, Raise living standards, Maintain financial stability, Assist other countries' economic development, and Contribute to growth in world trade. They were established in 1961 and currently have 30 members of countries.

- The changing patterns of interpersonal activities and the network society
- The emergence of innovation and creativity as the principal determinant of competitiveness

Another reason that make the issue of intellectual capital is rising would have been the impact of intellectual capital on the stock market and valuations of firms. The increase of intangible investments amount and the high volatility of shares in capital market make people give more attention to intellectual capital. The lacks of study about the output of intangible investment published in the last 10 years also create curiosity regarding the intellectual capital. Nowadays a large number of studies have recently been published with interesting findings (Guthrie, 2001).

Furthermore, Guthrie, Petty & Johanson (2001) also said that “The genesis of the modern organization and the rise of an information economy created what are termed the new knowledge-based intangibles: organizational structures and processes, know-how, and intellectual and problem-solving capacity”. They agree that the new knowledge-based intangibles are not “new” in the way that it did not exist within organizations and in the economy before. The essential of those intangibles in an organizational world were increasing in line with the global competition among companies, which need for constant strategic adaptation, ever-increasing customer demands, and a sudden increase of service-based industries. As part of this trend, a new breed of internal and external management and accounting statements within organizations has emerged (e.g. Johanson et al., 2001). Another support for this argument comes

from Edvinsson that said: “We now live in the intangible economy. Knowledge economics is the new reality. Minds matter” (Edvinsson, 2002, p. 34).

2.2.2 Challenge in Measuring Intellectual Capital

The fact that today’s economy is becoming “knowledge economy” and intangible assets play more important role in the companies’ business operation triggered a different measurement of the performance measurement. The current accounting model is concentrated on companies that depended strongly on tangible assets to create value. This current model is not relevant to all companies in the business world today, many of the companies use intangible assets for their value creation. Moreover, according to Guthrie (2001) “a key debate from the extent literature concerns the need for financial and management practice to adapt to new performance measurement systems that focus on intellectual capital in an effort to re-engineer the traditional accounting and management reporting process.” Mouritsen (2000) also asked about the role of the current accounting model. “What efforts can be made to value intangibles initially as an adjunct part of the traditional reporting frameworks?”

Furthermore, the study conducted by Baruch Lev and Paul Zarowin also supports the substance to develop the intangibles measurement model. The recent study from them shows that the usefulness of the traditional financial reports and its measurement, i.e. reported earnings, cash flows and book values has declined over the last 20 years. The reason for this condition is because today’s companies face different competition than 20 years ago. This happened because of deregulation, etc. Moreover, Lev & Zarowin (2001) concluded,

“This change is not, however adequately reflected by the current reporting system, which further enhances the need for new measuring systems.”

OECD initiated various activities in the 1980s when observations were made that intangible investments in member countries appeared to enhance more rapidly than tangible investments. In the 1990s, a number of OECD conferences were held to encourage attention to the question of how to account for intangibles. In 1999, the OECD hosted an International Symposium that discussed two issues that are relevant to disclose when discussing intellectual capital measurement. The first issue was about the companies’ motives to assess intellectual capital. Those issues were:

- to assist with competitive benchmarking exercises
- to create a consciousness within the organization that intellectual capital (and human resources in particular) does matter
- To provide structured information to capital and labor markets that may enhance perception of the company

The second issue was about the potential effects that the measurement and reporting of intellectual capital are expected to have. Those effects were:

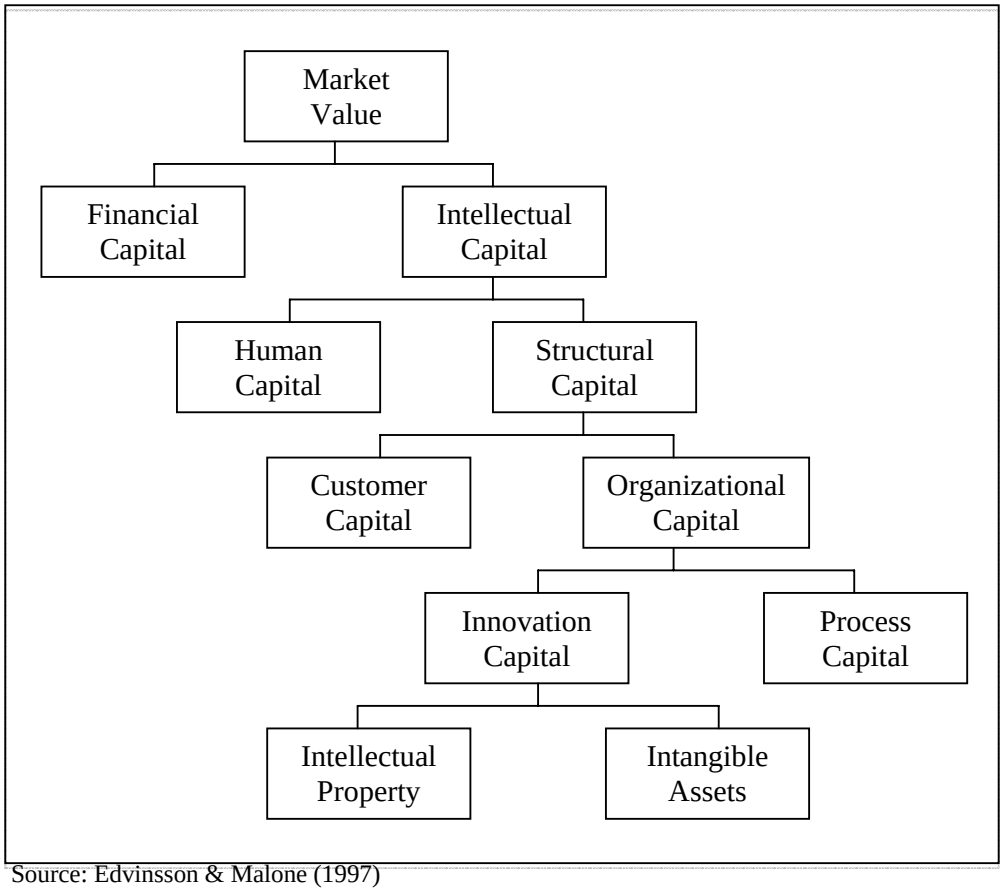
- improved employees morale
- a higher value being attributed to a company’s intellectual capital by senior corporate officers than previously
- lower staff turnover
- an improved understanding of what specific factors are crucial to continues growth and development (Guthrie, 2001)

Currently, there are many researchers that wrote about the need to measure and report on companies' intellectual capital and to disclose intellectual capital with companies' financial statement. However, there are several critics for those measurements and reporting of intellectual capital. The measurement and reporting have been criticized that it reduces knowledge into numbers and furthermore that it has been a bit naïve (Berglund, Grönvall, & Johnson, 2002). Forsberg (2001) also added that it needs to be more complex and integrated into the company's accounting so that it is easier to see the relationship between intellectual and financial capital (as cited in Berglund, Grönvall, & Johnson, 2002). According to the arguments above, it is clear that intellectual capital measurement is complex and it needs extra efforts to develop a perfect measurement model that will integrate successfully on every company in different industries and satisfy all users.

2.3 Classification of Intellectual Capital

The classification of intellectual capital according to Skandia, a pioneer in the area of defining, measuring, and working with intellectual capital, defined intellectual capital as "the possession of knowledge, applied experience, organizational technology, customer relationship and professional skills". This definition is later being simplified by Edvinsson & Malone (1997) into Human Capital plus Structural Capital equals Intellectual Capital. Hence, the equation that can be engraved is:

Human Capital + Structural Capital = Intellectual Capital



Source: Edvinsson & Malone (1997)

Figure 2.1

Skandia Market Value Scheme

The equation by Edvinsson and Malone above has later being expanded by adding the third category of intellectual capital, Brinker (1997) and Stewart (1997) added Relational (Customer) Capital into the equation. Furthermore, Timothy Draper, founder of venture capital company Draper Fisher Jurvetson, provided one of the broadest classification schemes. He argued that the major components of intellectual capital consisted of six categories, which were human capital, structural capital, customer capital, organizational capital, innovation capital and process capital (Williams, 2000). However, Roos et al (1997) also believes that the intellectual capital can be simplified by classifying it into three

distinctive parts; Human Capital, Organizational Capital, and Relational Capital. Hence, the equation is:

Human Capital + Structural Capital + Relational Capital = Intellectual Capital

2.3.1 Human Capital

The human capital component of the model is defined as "the knowledge, skills, experience and abilities of the employees" of the firm ([3]Meritum Project, 2002, p. 63). It includes innovation capacity, creativity, problem-solving ability, know-how, expertise, leadership, entrepreneurial and managerial skills, previous experience, teamwork capacity, flexibility, tolerance for ambiguity, motivation, learning capacity, loyalty, formal training, and education of the organization's employees (Brooking, 1996; Meritum Project, 2002). It also includes the accumulated value of investments in employee training, education and competence (Kannan & Aulbur, 2004, as cited in Abdolmohammadi, 2005). Human capital is the inventory of knowledge of the employees of an organization used to create value for the business.This knowledge stock is lost by the organization when the employees leave the firm (Meritum Project, 2002). A few decades ago, human resource managers tried to measure the financial contribution and strategic importance of employees using a narrow approach called human resource accounting. Today, human capital reflects a broader approach in attempting to measure this source of competitive advantage.

[3] The MERITUM Project are based on best practices observed among eighty European firms and were validated through a Dephi study.

2.3.2 Structural Capital

The structural or organizational capital component of the model includes the organizational routines, procedures, systems, cultures, databases, organizational flexibility, information technologies, organizational learning capacity, organizational charts, process manuals, strategies, and legally protected intellectual property rights of a firm (Meritum Project, 2002, Ordonez de Pablos, 2002). Structural capital has been referred to as "the knowledge that remains at the firm when the employees go home" (Ordonez de Pablos, 2002, p. 637). Brooking (1996) viewed structural capital as the technologies, methodologies and processes that enable the organization to function.

2.3.3 Relational Capital

Relational capital is defined as the associations with internal and external stakeholders of the firm, including with customers, suppliers, industry associations, stakeholders, and strategic alliance partners. Relational capital includes company image, customer loyalty, customer satisfaction, interaction with suppliers, negotiating capacity, distribution channels, supplier channels, licensing agreements, and franchising agreements (Starovic & Marr, 2003). Relational capital is the knowledge accumulated by the firm as a result of its exchanges with third parties and the potential for future knowledge accumulation as a result of such exchanges. Its value to the firm is directly related to the length of the relationship with third parties.

Table 2.2

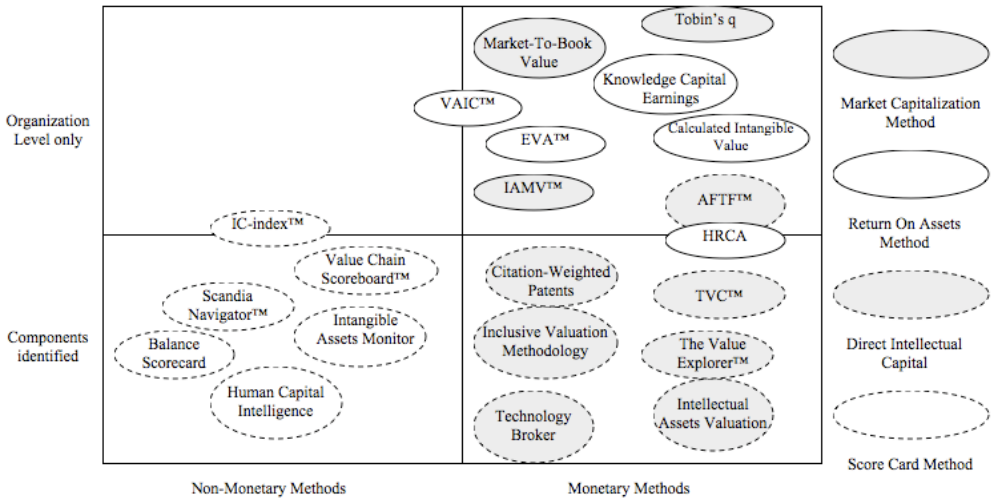
Comparison of IC conceptualizations among authors

Annie Brooking (UK)	**Goran Roos (UK)**	**Thomas Stewart (UK)**	**Nick Bontis (Canada)**
Human-centred assets Skills, abilities, expertise, problem solving abilities and leadership styles, the embodied knowledge of the workforce.	*Human capital* Competence, attitude, and intellectual agility.	*Human capital* Employees are an organization's most important assets.	*Human capital* The individual-level knowledge that each employee possesses.
Infrastructure assets All technologies, processes, routines, organization structure, internal information networks, management methodologies.	*Organizational capital* All organizational innovation, processes, intellectual property and cultural assets.	*Structural capital* Knowledge embedded in information technology.	*Structural capital* Non-human assets or organizational capabilities used to meet market requirements.
Intellectual property Know-how, trademarks, and patents.	*Renewal and development capital* New patents and training efforts.	*Structural capital* All patents, plans and trademarks.	*Intellectual property* Unlike IC, IP is a protected asset and has legal definition.
Market assets Brands, customers, customer loyalty and distribution channels, relations and networks with stakeholders, and wider social citizenship and environmental health investment.	*Relational capital* Relationships which include internal and external stakeholders.	*Customer capital* Market information used to capture and retain customers.	*Relational capital* Customer capital is only one feature of the knowledge embedded in organizational relationship.

Source: Bontis *et al.* 2000, p.89

2.4 Intellectual Capital Measurement Methods

Researchers that focused on intellectual capital have spent much of their time to conduct some researches regarding the measurement and visualization of intellectual capital and intangible assets within companies. The results of this are several theories, model, and methods regarding intellectual capital and intangible assets. They can be seen on the image below:



Source: Sveiby (2001)

Figure 2.2

Intangible Asset Measurement Models

Furthermore, there were only at least four categories of measurement approaches for intangibles that usually used. Those four categories are an extension of the classification suggested by Luthy (1998) and Williams (2000). Those categories were then classified into two parts, the Monetary Valuation Method and Non-monetary Valuation Method.

2.4.1 Monetary Valuation Methods

Monetary valuation methods consist of Direct Intellectual Capital (DIC) methods, Market Capitalization Methods (MCM), and Return on Assets (ROA) methods, these four methods are located on the right side of the table by Sveiby above. The monetary valuation methods are very useful for company's financial valuation and measuring the value of overall stock market.

2.4.1.1 Direct Intellectual Capital (DIC) Method

Direct Intellectual Capital method estimates the Dollar-value of intangible assets by identifying its various components. Once these components are identified, they can be directly evaluated, either individually or as an aggregated coefficient.

2.4.1.2 Market Capitalization Method (MCM)

The Market Capitalization Method calculates the difference between a company's market capitalization and its stockholders' equity as the value of its intellectual capital or intangible assets.

2.4.1.3 Return on Assets (ROA) Method

Average pre-tax earnings of a company for a period of time are divided by the average tangible assets of the company. The result is a company ROA that is further compared with its industry average. The difference is multiplied by the company's average tangible assets to calculate an average annual earning from the Intangibles. Dividing the above-average earnings by the company's average cost of capital or an interest rate, one can derive an estimate of the value of its intangible assets or intellectual capital.

These are three ROA methods that are commonly used by researchers:

1. Human Resource Costing and Accounting (HRCA), calculates the hidden impact of HR related costs, which reduce a firm’s profits. Adjustments are made to the P&L. Intellectual capital is measured by calculation of the contribution of human assets held by the company divided by capitalized salary expenditures. (Johansson, 1996)

2. Economic Value Added (EVA), calculated by adjusting the firm's disclosed profit with charges related to intangibles. Changes in EVA provide an indication of whether the firm's intellectual capital is productive or not. (Stewart, 1997)
3. Value Added Intellectual Coefficient (VAIC), Pulic (1998, 2000) developed the Value Added Intellectual Coefficient (VAIC) to measure the IC of companies. It measures how much and how efficiently intellectual capital and capital employed create value based on the relationship to three major components: (1) capital employed; (2) human capital; and (3) structural capital. (Pulic, 1997)

2.4.2 Non-Monetary Valuation Methods

The Scorecard Methods is the only Non-Monetary Methods that is usually used in measuring intangibles or intellectual capitals. This method gives more detailed information on company's performance and condition than the monetary methods. However, this method can be difficult to use because the scorecard methods is difference from MCA or ROA. Those methods have output in ratios that can easily compared and adapt into another industries with different characteristics. The indicators for non-monetary method are also context related and cannot be used in different industries.

2.4.2.1 Scorecard Method (SC)

The Scorecard Methods identify the various components of intangible assets or intellectual capital, and then report the generated indicators and indices in scorecards as graphs.

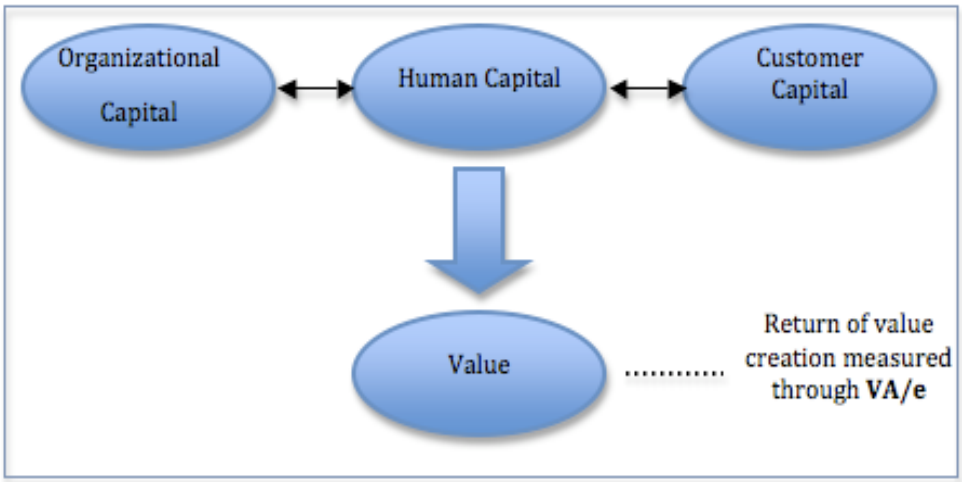
2.4.3 Value Added per Employee

The main objective of this study is to know whether there are any relationship between intellectual capital and market value using hypotheses testing. Since Value Added per Employee (VA/e) and Stock Exchange Value per Employee (SAV/e) are the key variables in the hypotheses within this study, a clear explanation regarding the definition and categorizing of VA/e and SAV/e will be explained in the next paragraph.

Efficiency of company measurement is important because it shows whether the company succeeds in satisfying stakeholders demand or not. In general, this efficiency is measured by looking at the return of company's financial capital not at the knowledge capital. This condition also happen because there are many methods of measuring the return of financial capital than knowledge or intellectual capital. However, Hult (1998) as cited from Berglund, Grönvall, & Johnson (2002) stated that among the few methods to measure the knowledge capital, Value added per employee is, however among these methods, the most frequently used. The advantage in using value added is that it can represent a company's intellectual capital in the way that it describes the company's ability to create value from limited input. (Berglund, Grönvall & Johnson, 2002).

Intellectual capital could be divided into Organizational capital, Human capital and Customer capital. The interaction between these three components (i.e. in which human capital leverage with structural capital) creates the value, or more precisely, the return of intellectual capital. The return of this value creation is

what can be approximately measured by using value added per employee. This could be explained further by seeing figure 2.3 below:



Source: Berglund, Gronvall & Johnson (2002)

Figure 2.3

VA/e for Approximate Measurement of IC

VA/e is an important or key indicator of efficiency since it could be used to measure labor productivity, which is an important indicator in measuring efficiency. This theory is supported by Lev (2001) in his current work (conducted with Towers Perrin and Feng Gu of Boston University). He found that various measures reflecting human resource practices (e.g., extent of incentive-based compensation, termed LPCT in Table 4, employee training, etc.) are also strongly correlated with intangibles earnings and capital. The measure has also strong correlation with profitability. Nevertheless, unlike profitability, it is not subject to vagaries of inconsistent accounting, such as profit, that can be manipulated through for instance; various adjustments. (Wiarda & Luria, 1997 as cited in Berglund, Grönvall & Johnson, 2002).

Based on the reasons and the comparisons with other methods above, it was clear that VA/e is very suitable for this study of the relationship between intellectual capital and market value. Furthermore, VA/e is eligible for the intellectual capital measurement within the companies with different sizes and various industry sectors. These are the reasons why the writer does not use other methods like HRCA and EVA for this study. They are not suitable for a comparison between companies with different sizes. VA/e allows us to conduct the study from an external perspective on an organizational level, while at the same time giving us an individual approach. It helps us to get an insight of how respective employees within the companies contribute to the value added (Berglund, Grönvall & Johnson, 2002).

To prove the chosen hypotheses within this study, the author needed to use a method that could adequately measure the sample companies' intellectual capital and its market value. This study required method that could compare companies of different sizes with particularly large number of samples in several periods of time. The author then decided to use Value added and Stock exchange value that both divided by employee. Furthermore, According to Hult (1998) as cited in Berglund, Grönvall & Johnson (2002) said that it is possible to compare different companies over a period of several years by using Value Added per employee, which suites this study perfectly.

In order to calculate the VA/e variable, the term "value-added" needs to be defined. Value added (VA) could be described as the positive differences between sales prices of goods with purchasing prices of goods purchased to

produce goods (Savas 2003). In fact, there are several different methods to measure the VA. The authors has decided to use the most basic and established definition, which is:

$$VA = OUT - IN$$

OUT in the formula refers to the revenues from sales of all products and services. Hence the term IN refers to all the expenses incurred in earning the revenue except labor expense because it is considered as the value of human capital (Anggreni, 2007). Furthermore, the formula for VA within a company is:

$$VA = OP + EC + D + A$$

Where:

OP = operating profit

EC = employee cost

D = depreciation

A = amortization

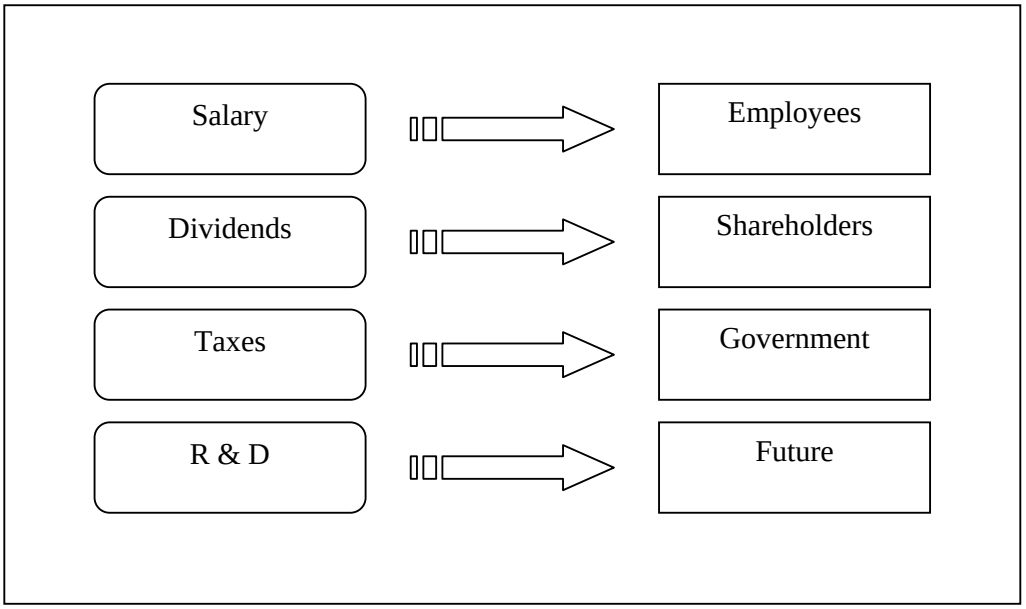
Therefore VA/e can be calculated as follows:

$$\frac{VA}{e} = \frac{OP + EC + D + A}{e}$$

where:

EC= total salaries + social fees

There are four stakeholders that have the distribution from the created value added. Those four stakeholders are dividends, salary, research & development (R&D) and taxes. Every stakeholder has its dependence on many factors, different from each other's. The instances for this factor are the amount and quality of work force, the characteristic of industry sector, investment plan, government regulation, etc. Below is the figure of value added within the company:



Source: Svenska Managementgruppen (1982)

Figure 2.4
Value Added

2.5 Previous Empirical Studies

Tom Stewart's "Brainstorming" titled article initiated the intellectual capital booming in the 1990's. The article also caused the economics researchers all around the world to turn into that "new" term. People were trying to explore what they can do or get from intellectual capital. They wrote researches about

definition of intellectual capital, how to measure, the benefits for organization, and many more that could answer their curiosity on intellectual capital.

The research in the issue of intellectual capital could be clustered based on: (1) the understanding of intellectual capital measurement and reporting in practice, (2) the generalization notion of intellectual capital, (3) The focus on the organizational processes that support knowledge management and the use of intellectual capital.

2.5.1 The Understanding of Intellectual Capital Measurement and Reporting in Practice

Abdolmohammadi (2005) research about the relationship between intellectual capital disclosure and market capitalization found that there is a tendency that the frequency of disclosure of information about brand and proprietary processes is increasing over the study period. He found that “old” economy sectors disclosed more on intellectual capital categories of brand and partnership. On the other hand, the “new” economy sectors were focused on information technology and intellectual property. The result of the study also found that there is a significant effect of intellectual capital disclosure on company’s market value..

The similar study about the relationship between intellectual capital and market value also conducted by Berglund, Grönvall & Johnson (2002). Their study was about the correlation between the intellectual capital and the market value using samples from Swedish companies. To conduct the investigation, intellectual capital and market value are quantified with, respectively, value

added per employee and stock exchange value per employee. This study found that most companies in this investigation show very poor values regarding the Intellectual Capital Multiplier, resulting in erosion of the companies' human capital.

However, Vergauwen, Bollen, and Oirbans (2007) found that firms with relatively high level of structural capitals, disclose more information on intellectual capital in the annual report. The study found no such significant association between human and relational capital in firms and intellectual capital disclosures regarding these items. Firms might have a transparency drawback in addressing these issues in reports when these intellectual categories are relatively of greater importance for firms

2.5.2 The Generalization Idea of Intellectual Capital

Roslender and Fincham (2001) critically debated on what type of intellectual capital accounting was required (as cited in Tayles, Pike, Sofian p.523, 2006). They indicated that the prevailing concerns about measurement (and disclosure) were actually a mechanism for obscuring the critical human input. Given that the calculus of financial management has dominated the management of business enterprises for many decades, there is a need to extend its application to human resources and intellectual capital. From their perspective, however, there also seems to be a pressing urgency to debate whether it is appropriate to accept this extension (i.e. they question the very notion of applying the financial management calculus to the human factor at all). Rather than embracing the traditional calculus that financial and

management accounting exemplifies, they seek to reaffirm the desirability of developing an enabling accounting which has its focus on a self-management approach. One that underscores the potential of organizational participants offering (emancipatory) accounts of their own lived organizational experiences.

2.5.3 Focus on the Organizational Processes that Support Knowledge Management and the Use of Intellectual Capital

Stolowy and Jeny-Cazavan (2001) examine the setting of standards for intangibles (as cited in Tayles, Pike, Sofian p.525, 2006). The prominence of intangibles in a knowledge-based economy calls into question the value relevance of traditional accounting information presented in financial reports that largely ignore intangible value. In reaction, several standard-setting bodies have issued new rules on intangible assets (e.g. IAS 38). The authors posit that an in-depth study of accounting standards might prove a useful start in understanding the feasibility of developing further the various reporting frameworks for intangible assets that are currently in use. The objective of this paper is to examine how 21 national and two international accounting standards approach intangibles, both in terms of definition and treatment. One contribution of this research is to show that the lack of international homogeneity arises from a lack of national homogeneity. This finding may be of interest for accounting policy makers, practicing accountants, researchers and others concerned with the harmonization of accounting practices.

Holland (2001) moves the focus of discussion from regulations forced by standard setters within the accounting profession to an examination of market-based governance (as cited in Tayles, Pike, Sofian p.525, 2006). The paper generates new insights into private governance processes. It identifies the major qualitative factors perceived by case fund managers (FMs) to be central to the corporate value-creation process. The empirical results presented add to debates on the nature of intellectual capital and intangibles, and also provide a means to explore the private corporate governance process of FMs in greater detail. The asking of probing questions involving various intangible value-creation factors was an important form of private FM governance regarding the corporate wealth-creation agenda. A specific subset of these factors includes the need for more overt private FM corporate governance influence. The paper also identified the external events that combine with adverse changes in the intangible corporate value-creation factors to stimulate a more interventionist form of FM corporate governance. The paper reveals how information on intangibles is a primary driver of private FM governance and illustrates how financial institutions interact with companies on a dynamic basis.

2.5.4 Empirical Researches in Indonesia

The needs to realize the function and benefits of intellectual capital is not occurred only in developed countries, in developing countries there are several empirical researches were also being conducted (i.e Indonesia, Malaysia, Nepal, etc.). In Indonesia, there are several researches concentrated on intellectual capital being conducted.

Angeline (2006) conducted an exploratory study about intellectual capital disclosures on Indonesian technology-driven companies, this research is focused on four main objectives. First, to use the content analysis as the framework in identifying intellectual capital components within the annual report of technology-driven companies listed in Jakarta Stock Exchanges (JSX). Second, to investigate the existence intellectual capital assets and the extent of which intellectual capital components are listed in the annual reports. Third, to examine the extent to which industry category could influence the level of intellectual capital disclosures in the annual reports. Fourth, to test whether the following three factors: company's size, age, and the amount of pages in the annual report and the level of intellectual capital with the level of intellectual capital disclosures. The findings of this study are that the intellectual capital reported and identified is inconsistent as no framework available yet by any accounting bodies or regulatory agencies in Indonesia.

On the other hand, Anggreni (2007) on her undergraduate final thesis, conducted an empirical research on the relationship between intellectual capital and the performance of Indonesian listed companies. The research was conducted by taking sample from 3 Indonesian listed companies in the consumer goods sector and use Value Added Intellectual Capital Coefficient (VAIC) to investigate the relationship between the three components of VAIC (capital employed, human capital and structural capital) and the corporate financial performance. The findings of this research are that

intellectual capital has a positive impact on the measures of financial performance except for revenue growth, and that the level of intellectual capital also affects the future performance.

Warganegara (2007) conducted a research that concentrated on factors that affect the disclosure of Intellectual Capital on Initial Public Offering (IPO) prospectuses in Indonesia. This study identifies five factors that might affect the extent of Intellectual Capital disclosure on Indonesian IPO prospectuses; firm size, industry type, insider ownership, firm age and the nationality of the underwriting firm. However, only two factors are found to be significant in explaining the extent of the disclosures. First is the industry in which an IPO firm operates, and second is the nationality of underwriting firms. This research concludes that firms in high-tech industries have higher Intellectual Capital disclosure than firms in other more traditional industries, also there is a tendency that multi-national underwriting firms have local underwriting firms as co-underwriters in preparing the IPOs, and there is no evidence that firm size, insider ownership, firm age of Indonesian IPO firms affect the extent of Intellectual Capital disclosure on prospectuses.