

*Original Research Article*

# Firm characteristics and intellectual capital disclosure on service companies listed in Indonesia stock exchange period 2008-2012

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## Abstract

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Intellectual capital disclosure is a report issued by company that is aimed to show value of company in order to sustain competitive advantage. This study analyzes the effect of firm characteristics on company's intellectual capital disclosure. Independent variables used in this study are firm size, firm age, industry type, listing status and managerial ownership and the dependent variable is intellectual capital disclosure. The data used are secondary data from Indonesia Stock Exchange i.e. annual report of services companies listed in Indonesia Stock Exchange period 2008-2012. Sample is selected by purposive sampling technique Among 226 service companies listed in Indonesia Stock Exchange period 2008-2012, there are 146 service companies meet the criteria. In analyzing data, multiple linear regressions with dummy variable are used. The result of analysis shows that firm size, firm age, and listing status affect intellectual capital disclosure significantly. While the type of industry and managerial ownership does not affect intellectual capital disclosure significantly. The limitations of this research are independent variable that is limited to firm characteristics without involving external factors of firm and assessment of intellectual capital disclosure is subjective because using content analysis in providing the code on each item of intellectual capital disclosed.

**Keywords:** Company Age, Company Size, Intellectual Capital Disclosures, Listing Status, Managerial Ownership, Type of Industry

## INTRODUCTION

### Background

Intellectual capital is viewed as a very important role in creating and sustaining competitive advantage and value to a company. Especially for service companies that depend their activities in running the business on their intellectual capital. According to Kuryanto (2008), now, the companies have to change their business strategy from labor-based business to knowledge-based business. The companies with knowledge-based business apply the concept of knowledge management in charge of

looking for information on how to select, manage, and utilize resources efficiently. Special attention to the company's intellectual capital can be appropriate solution to solve the problem. In the era of globalization, the development of technology increases the competition among enterprises. This condition is being a challenge and a threat for the existence of the company. Company should be able to choose the right strategy in order to survive in the competition. According to Kuryanto (2008), there is a phenomenon that occurs in a society signed by a shift in the type of service to industrialized or

knowledge societies. These conditions encourage the companies to look for strategies that can be used to solve the problem. In a knowledge-based company, the conventional capital resources, financial resources and other physical assets become less important than capital based on knowledge and technology. This condition was happened in service companies, the services that they offer rely on their intellectual capital. Service companies have to increase their intellectual capital in order to create the value of company and sustain the competitive advantage. Based on that, physical assets can not give more value to service companies if without proper management by the human resources of the company. Therefore, the attention to physical assets can not be used to anticipate and adjust the changes in knowledge and technology that increase rapidly.

The strategic role of intellectual capital is as a company's potential to increase the competitive advantage that is might be not owned by other companies or difficult to be imitated by other competing companies. Intellectual capital with all of their knowledge and technology will be able to anticipate and adapt all forms of uncertainties that could threaten the company's existence. Such conditions can be benefit in order to enhance firm's value through profit creation, strategic positioning (market share, leadership, and reputation), technological innovation, customer loyalty, costs reduction, and the increasing of productivity. According to Yuniasih (2010) intellectual capital is an emerging topic in recent years in Indonesia, the phenomenon of intellectual capital began to flourish, especially after the advent of SFAS No. 19 on intangible assets. According to SFAS No. 19, intangible assets are identifiable non-monetary assets and has no physical form and owned to use in the production or delivery of goods or services, leased to others, or for administrative purposes. In paragraph 09 in the statement mentioned examples of intangible assets, such as science and technology, design and implementation of new processes or systems, licenses, intellectual property, market knowledge and trademarks (including brand and product publicity title). SFAS No.19 has alluded to the intellectual capital although not directly. It indicates that the intellectual capital has received attention. However, companies in Indonesia have no more attention to the three components of the intellectual capital (human capital, structural capital, and customer capital). According to Abidin (2000), the firms in Indonesia tend to use conventional based business in building the business which product produced is still poor of technological content. In fact, in order to compete in the era of knowledge-based business, those three components of intellectual capital required to create value added of the company. Purnomosidhi (2006) mentions that research on intellectual capital disclosure practices and the influence of corporate governance on intellectual capital disclosure in the annual reports of public

companies is interested to conduct in the context of Indonesia due to the following:

Depperindag, BPPT, and the Treasury work together in reviewing tax incentives for industries who do research and development (R&D) in Indonesia. Providing incentives for the industry intended to encourage the businesses to enterprise innovation of activities and R&D so as to attract foreign investors to enter Indonesia. Based on a global survey conducted by Taylor and Associates in 1998, quoted by Williams (2001) turns on issues of intellectual capital disclosure is one of the 10 types of information which user needs. Indonesian Business World no longer has a competitive advantage. Indonesia's business rank is far below Malaysia and Thailand. The low competitiveness due to several factors, such as low productivity of human resources. Thus, it can be said that the Indonesia's human resources is still less able to compete at the global level because of lack of mastery and application of technology.

According to SFAC, the purpose of financial reporting is to provide financial information about the reporting entity that is useful to potential investors and other creditors in making decisions about providing resources to the entity. But according to Oliveira et al (2005), the traditional financial statement has lost its relevance as an instrument of decision makers. Mouritsen et al (2004) found a large gap between market value and book value disclosed as result from the failure of company in disclosing hidden value in its annual report. Canibano, et al (2000) stated that the quality of financial reporting can be improved by increasing the intellectual capital information. Therefore, intellectual capital disclosure in the company's annual report has become an interesting theme, because intellectual capital is believed as driving factor and the creator of firm value (Ulum, 2011).

Various previous researches have been conducted to examine the factors influencing the disclosure of intellectual capital on companies in annual reports. Artinah (2013) revealed that ownership concentration and firm size has a positive influence on the disclosure of intellectual capital. While, the independent variable such as commissioner, leverage, and firm age has no significant effect on the disclosure of intellectual capital. In the research of Bukh et al (2005), managerial ownership has significant effect on intellectual capital but firm size and firm age has no effect on intellectual capital disclosure. While, in the research of Bruggen et al (2009), firm size and type of industry has positive effect on intellectual capital disclosure. The research conducted by Wijana (2013) found the inconsistent effect of type of industry on intellectual capital disclosure. Abdolmohammadi (2005) provided evidence of the relation between type of industry and intellectual capital disclosure in annual reports of companies in America. White et al (2005) found positive effect of firm size on intellectual capital disclosure but Bukh et al (2005) did

not find the effect of firm size on intellectual capital disclosure. The inconsistent of some research results is suspected as a trigger of varying degrees of intellectual capital disclosure of the company. Therefore, it is necessary to conduct further research in order to obtain consistency findings when applied to different environment conditions.

Firm Characteristics studied in this research include firm size, firm age, type of industry, managerial ownership and foreign listing status. Those five independent variables are used because they are considered having significant effect on intellectual capital disclosure. Firm size can be calculated from the total assets owned by the company (Bruggen et al, 2009). The greater the total assets owned by the company means the greater the size of the company. Large companies certainly have great intellectual capital as well the large companies tend to reveal all matters relating to the company's operations and transparent in disclosing information relating to the company as well the intellectual capital disclosure. Another factor that is thought to be a factor influences the disclosure of intellectual capital is firm age. Firm age shows the company's ability to exist and compete in the business world. Those company's abilities are supported by a high intellectual capital. The company that is able to exist for a long time or live longer is a company that makes knowledge as their capital. Thus, older companies will reveal much more information of intellectual capital. In addition, Widiastuti (2002) stated that the older-old company has more experience then will be more aware of the needs of their constituents of company's information. In addition, the type of industry is also one of the determinants of intellectual capital disclosure. Industry type is a characteristic that is owned by a company in running the business. Different type of industries allow for a difference intellectual capital disclosure level because the company that has the type to rely on the ability of intellectual capital is more likely to reveal their intellectual capital in order to show the true value of the company. In this research, the type of industry in this study is based on intellectual capital intensity measured by the GICS (Global Industry Classification Standard) that was used by global community financial. GICS is a system developed by Morgan Stanley Capital International (MSCI) and Standard & Poor's (S & P) to be used by global financial community. The standard divided industries into two group, High-IC intensive industries and Low-IC intensive industries. Because the standard is global, it is expected can also be used on companies in Indonesia.

Managerial ownership is also important factor influences intellectual capital disclosure. If the company has high managerial ownership then the managers will give more attention of stakeholder's gain. With managerial ownership, managers will feel as the owner of

the firm then they will act also as the owner of firm and effort much for what the owner needs. The more shares owned by management, the higher their motivation to work and effort in increasing their intellectual capital in order to increase firm value. In this case, management will disclose more information of intellectual capital as the information that the investors need. Companies that do a listing in some countries face scrutiny from a broader group of stakeholders and must incorporate certain aspects of other state regulations to the annual report. Companies which do multiple listing will face the increasing demand for information relating to the management of intellectual capital of some groups of stakeholders interested in the intellectual capital. It can be said, companies that do a listing in some countries will disclose more about intellectual capital in order to give the information that user need.

In this research, the measurement of intellectual capital disclosure uses the index number by three point scale as the quality criteria for scoring the disclosure index (Guthrie and Abeysekera, 2006; Sujana and Abeysekera, 2007). Intellectual capital disclosure consist of structural capital, relational capital and human capital. Specifically, Intellectual capital disclosure explain some information such as customer loyalty, the competencies of employee, the training for employee in order to increase competencies and knowledge related to their job, and innovation of networking and information system.

## Literature study and hypothesis development

### Signaling Theory

Signaling theory states that there is information content in disclosure of any information that may be a signal to investors and the other potential in economic decisions making. A disclosure assumed containing information if it can trigger market reaction, might be in the form of stock price changes or abnormal return. If such disclosure has positive impact in the form of stock prices rising, then such disclosure gives a positive signal. However, if disclosure has negative impact, then the disclosure is negative signal. Based on this theory, annual report disclosure of companies is important information because it affects investor's decision-making process. According to Miller and Whiting (2005), an organization will seek to demonstrate positive information signal to investors through a mechanism of annual reports. The company's annual report is a means of delivering information from the company's management to investors. According to Oliveira (2008), a manager has the motivation to disclose private information voluntarily as they wish the information can be interpreted as a positive signal about the performance of companies and to reduce information asymmetry. Voluntary disclosure of intellectual capital

allows the investors and other stakeholders to be better in assessing the company's ability in the future, do a proper assessment of the company, and reduce their risk perceptions (Williams, 2001). By revealing Intellectual Capital, the company can provide more information about the capabilities of company and the company's expertise in the field in order to increase the value of company. The increasing of firm characteristics encourages the management to do more intellectual capital disclosure in order to give the signal that the firm has high intellectual capital quality than other competitive firms, it also means that firm is excellent in managing their resources.

### **Intellectual Capital**

Until now the definition of intellectual capital is often interpreted differently. As a concept, intellectual capital refers to non-physical assets or intangible capital that is associated with human knowledge and experience as well as the technology used. Intellectual capital is often defined as a knowledge resource in the form of employees, customers, processes or technologies that can be used by the company in the process of firm value creation (Bukh et al, 2005). Sangkala (2006) also mentioned that intellectual capital as the material intellectual which includes knowledge, information, intellectual property and experience that can be used together to create wealth. Intellectual capital is the tools needed to find opportunities and manage threats in life. Many experts say that intellectual capital is a very big role in adding the value of an activity, including in realizing the independence of a region. Various organizations, institutions and social strata who excel and achieve many advantages because they continue to develop their human resources or competence.

Based on the various definitions above, it can be concluded that intellectual capital is a concept that can provide new knowledge-based resources and describe intangible assets and if used optimally can allows the company to do the strategy effectively and efficiently. Thus, the intellectual capital is knowledge that gives information about the intangible value of a company that can affect the durability and competitive advantage.

### **Components of Intellectual Capital**

Intellectual capital consists of several components that can be used as the basis for the company to implement its strategy. By understanding the components of intellectual capital, it is expected to help the company to create value and enhance competitiveness. Sawarjuwono (2003) states that intellectual capital consists of three main elements: (1) Human Capital. Human capital is the lifeblood of intellectual capital. This is where the source of

innovation and improvement, but it is a component that is difficult to measure. Human capital is also very useful knowledge's resource, skills, and competencies within an organization or company. Human capital reflects the collective ability of the company to produce the best solutions based on the knowledge possessed by the people who are in the company. Human capital will be increased if the company is able to use the knowledge owned by employees, (2) Structural Capital or Organizational Capital. Structural capital is an organization's ability to meet the company's routine processes and structures that support employee's efforts to produce optimal intellectual performance and overall business performance, for example the company's operational systems, manufacturing processes, organizational culture, management philosophy and all forms of intellectual property owned by companies. An individual may have a high intellectual level, but if the organization has poor systems and procedures then intellectual capital cannot achieve optimal performance and potential cannot be utilized fully, and (3) Relational Capital or Customer Capital. This element is a component of the intellectual capital that provides real value. Relational capital is a harmonious relationship owned by the company with its partners, both derived from reliable suppliers and quality, coming from a loyal customer and will be satisfied on services of companies, derived from the company's relationship with the government and with surrounding communities. Relational capital can arise from different parts of the environment outside of the company who can add firm value.

These three components are related to intellectual capital. Companies need to pay attention to the three components of the intellectual capital that can be utilized to improve the performance and firm value. The company will not achieve optimal intellectual performance when resources are not supported by its intellectual and good operating system of company. The good interaction between human capital and internal capital will create successful external capital. The attention to the external environment is surrounding the company. Good cooperation relationship will improve business collaboration that can benefit both parties, so as to improve the performance and firm value.

### **Intellectual Capital Disclosure.**

Sawarjuwono (2003) suggests that changes in the current business environment provides a lot of influence in corporate financial reporting, especially in terms of presentation and valuation of intangible assets. The failures of current financial statements in providing information about what is the creators of value of the company is one of that effect. More complete report form

at this time has become a way to provide guidance on the rules and obligations for employees and how the employees' contribution to corporate value creation. Disclosure of intellectual capital has become a new form of communication that controls the contract between management and workers to create a strategy in order to meet the demands of stakeholders and convince stakeholders for excellent company's policy. Intellectual capital disclosure can increase the value relevance of financial statements. Increase in the value relevance of financial statements may prevent the company on the following conditions: (1) Failure to deliver the relevant information, resulting in deterioration of the company's financial position and can eliminate the long-term competitiveness, (2) Investors difficult to accurately assess the value of the company for the allocation of resources by using financial statements that are not reported intellectual capital, and (3) Manager is difficult to determine the relevance of intangible assets necessary for the operation of the company.

According to Abeysekera (2007), the disclosure of intellectual capital is a report issued by a company that is aimed to meet the information needs of those who are not involved in making the report so as to meet the needs of the parties will be informed. Research of Guthrie and Petty (2000) also revealed that (1) More disclosure of intellectual capital (95 %) are presented separately and not presented in figures or quantitative., (2) Disclosure of intellectual capital is mostly done by the company. There is no particular pattern in these reports. Many things are revealed to spread among the three elements of intellectual capital, (3) Reporting and disclosure of intellectual capital is still not complete, and (4) Overall the company emphasizes that intellectual capital is essential for success in the face of future competition.

Intellectual capital disclosures are not presented in the balance sheet. It is still disclosed voluntarily in annual report. This was due to the disclosure of intellectual capital is difficult to measure and quantify. SFAS 19 has not been set on the identification and measurement of intellectual capital.. Until now, there is no grouping of the components of intellectual capital that are mutually acceptable and there is no specific pattern of intellectual capital disclosure (Yunanto, 2010). However, there is a development of the concept of intellectual capital in Indonesia with the regulations in PSAK 19 on intangible assets. According to PSAK No. 19, intangible assets are non-monetary assets that can be identified without physical form, owned and under the control of a company, may be sold, leased, and exchanged to the other party or for administrative purposes. At this research, disclosure of intellectual capital is used as the dependent variable being the center of attention research.

Firm Characteristics. There are several firm characteristics used in this study (1) Firm Size. The

definition of the size of the company by Riyanto (2008) is the size of the company's views of the value of equity, the value of sales or asset values. Furthermore, according to Torang (2012), firm size is defined as a variable that measures the context of the demands of the service or product the organization. Based on two definitions above, it can be seen that the size of the company is a scale that determines the size of companies that can be looked of equity value, the value of sales, number of employees and total assets whose value is a variable that measures the context of the demands of the service or product organization. Purnomosidhi (2006) stated that the size of the company are used as independent variables with the assumption that the larger companies do a lot more activities and usually have many business units and has the potential for long-term value creation. Large firms more often supervised by a group of stakeholders with an interest in how to manage intellectual capital management-owned, such as employees, customers and organization's workers, (2) Firm Age. Widiastuti (2002) states that firm age can demonstrate that the company still exists and is able to compete. Meanwhile, according Nugroho (2012) firm age is a company's initial operational activities until the company can maintain the company's going concern or maintain the existence of the business world. By two definitions that have been described, it can be concluded that firm age is the length of company's life that shows that the company still exists, able to compete in the business world, able to maintain the continuity of its business and part of the documentation that showed the purpose of the company. By knowing the age of the company, it will also determine the extent of the company can survives. The longer the life of the company, the company will provide more intellectual capital disclosure in order to show their value added, (3) Type of Industry. Broad disclosure of the company's intellectual capital with each other varies depend on the high risk and firm characteristics. In this study, the industry is divided into two, IC High-intensive industries and Low-IC intensive industries. It is based on the Global Industry Classification Standard (GICS) which is a taxonomy industry developed by Morgan Stanley Capital International (MSCI) and S & P to be used by the global financial community. High-IC intensive industries is the industry group that has been able to properly utilize the intellectual assets then it creates excellent competitive enterprise and to improve the performance of the company, (4) Managerial Ownership. Managerial ownership is the existence or the absence of stock owned by management on the company. According Juniarti and Sentosa (2009), managers who has company's shares of course will harmonize his interest with the interests of shareholders. While the manager who does not own shares of the company, it is possible only concerned with his own interests. Managerial ownership is part of determinant factor in reducing con-

flict potential between managers and shareholders. The increasing of managerial ownership means adjusting the manager's position as the owner of the firm then the manager will be more responsible on firm performance, and (6) Listing Status. Companies listed in multiple or foreign stock exchange are argued to have greater agency problem. Consequently, voluntary disclosure such as intellectual capital disclosure reduces the monitoring cost of shareholders.

Listing status in organized and prestigious markets can also be used by a firm to provide signals to stakeholders about company's strength. Companies that do a listing in some countries face scrutiny from a broader group of stakeholders and must incorporate certain aspects of other state regulations to the annual report. In conjunction with the intellectual capital, the increasingly global interest in intellectual capital, companies which do multiple listing will face the increasing demand for information relating to the management of intellectual capital of some groups of stakeholders interested in the intellectual capital. Williams (2001) found a positive relationship between multiple listing of firm with the information including the disclosure of intellectual capital.

#### **Relationship Between Firm Size and Intellectual Capital Disclosure**

Large companies usually observed by stakeholder, therefore disclosure practices such as intellectual capital disclosure are predictable performed if the company attempts to minimize political costs (White et al, 2007). In general, the larger the size of the company, it will higher the level of intellectual capital disclosure undertaken by the company. Therefore, it caused a greater demand for a company to disclose their intellectual capital. The research conducted by Bruggen et al. (2009) found that the size of the company is one of the determinants of intellectual capital disclosure of companies in Australia. The same thing is stated by Guthrie et al (2006) that the level of intellectual capital disclosure is related to firm size positively. Based on this, the hypothesis that will be developed are as follows:H1: There is a positive effect of firm size on intellectual capital disclosure.

#### **Relationship Between Firm Age and Intellectual Capital Disclosure**

Firm age is expected to have the positive relationship to the intellectual capital disclosure. The underlying reason is the older the firm age shows the more experience the company in running the business. The company that is able to exist for a long time or live longer is a company that makes knowledge as their capital. Companies that

have more experience will be more aware of the need of company information. White et al (2007) explained that there is a significant relationship between firm age and intellectual capital disclosure. Based on this, the hypothesis that will be developed are as follows: H2: There is a positive effect of firm age on intellectual capital disclosure.

#### **Relationship Between Type of Industry and Intellectual Capital Disclosure**

Type of Industry is a classification of companies based on company field. In a certain type of industry a company needs customers and investors' confidence in their ability to produce the quality of goods and services. Therefore, such companies require disclosure of information regarding intellectual capital of the company. Bruggen et al. (2009) stated that the type of industry plays a key factor as a determinant in intellectual capital disclosure in the annual report. This statement is supported by Bukh et al (2005) that showed that type of industry affect intellectual capital disclosure. Based on the description above formulated hypothesis as follows:H3: There is a positive effect of type of industry on intellectual capital disclosure.

#### **Relationship Between Listing Status and Intellectual Capital Disclosure.**

Companies that do a listing in some countries face scrutiny from a broader group of stakeholders and must incorporate certain aspects of other state regulations to the annual report. In conjunction with the intellectual capital, the increasingly global interest in intellectual capital, companies which do multiple listing will face the increasing demand for information relating to the management of intellectual capital of some groups of stakeholders interested in the intellectual capital. Williams (2001) found a positive relationship between multiple listing of firm with the amount of information including the disclosure of intellectual capital. Based on the description above formulated hypothesis as follows: H4: There is a positive effect of listing status on intellectual capital disclosure.

#### **Relationship Between Managerial Ownership and Intellectual Capital Disclosure**

The existence of managerial ownership in company encourages the management tend to disclose intellectual capital information widely. This is happened because when management has the proportion of share ownership, the management of company will act as the

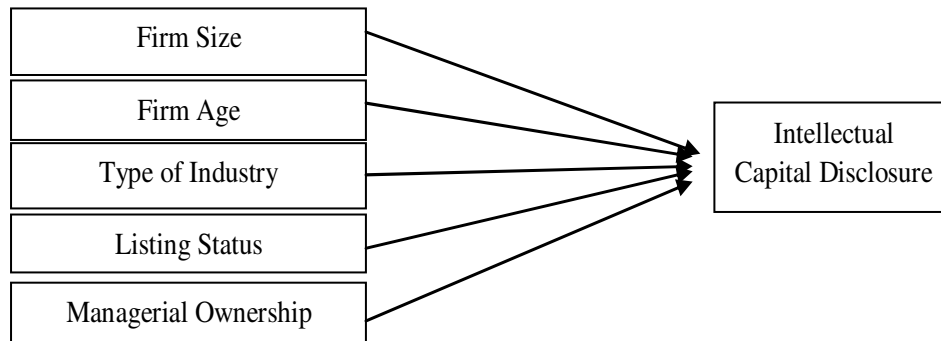


Figure 1. Theoretical Framework

owner. The management will get more motivation to work and increase their intellectual capital in order to create the firm value. Therefore, the management tried to reveal more information of intellectual capital which will be published. Research of Bukh et al (2005) showed managerial ownership affects the intellectual capital disclosure positively. Thus, the hypothesis that will be developed is H5: There is a positive effect of managerial ownership on intellectual capital disclosure.

### Theoretical Framework

Awareness of a company's intellectual capital increase with the rapid development of science and technology, then it is considered important for the company to disclose its intellectual capital in order to give positive information to the stakeholders, attract investors, and is used to increase the competitive advantage that can add firm value. To understand how the relationship between several firm characteristics as independent variables and the disclosure of intellectual capital as the dependent variable can be described in a systematic theoretical framework as shown in the figure 1 above.

## RESEARCH METHODOLOGY

### Population and Sample

Population is overall of the research object which can be a source of research data. Based on the definition, the population in this research is service companies have already listed in Indonesia Stock Exchange period 2008. Service companies use more intellectual resources compared to other companies. The success of the service companies in providing their services to customers rely on the intellectual resources of the company. Based on that reason, service companies are determined as the ideal research population. Period

2008-2012 was chosen because researcher wants to obtain the recent information of the relationship between firm characteristics and intellectual capital disclosure of service companies listed in Indonesia Stock Exchange. The sampling method is done using purposive sampling technique; the sample is selected based on the information that in accordance with certain criteria and considerations in order to obtain samples in accordance with predetermined criteria.

### Data Collecting Method

Data collecting methods used in this study was content analysis, a method of data collection techniques of research through observation and analysis of the contents of a document or message. The purpose of content analysis is to identify the characteristics or specific information contained in a document to produce an objective and systematic description. Method of measurement the level of intellectual capital disclosure by this method has been widely used by previous researchers such as Sawarjuwono and Agustin (2003), Guthrie et al (2006), Purnomoshidi (2006). According Purnomosidhi (2006), "The breadth of intellectual capital disclosure is best to be measured by content analysis". Content analysis is done by reading the company's annual report for each sample and code the information contained in there. The four point as the quality criteria for scoring the disclosure index was used in this research (Guthrie and Petty, 2000). The scale is presented in table 1 below.

### Variables and Measurement

Firm Size. Firm size describes how big the company is, as indicated by the value of total assets presented in the balance sheet of the year. Several studies use total assets and total sales to measure the size of the firm.

**Table 1.** Criteria of Score of Intellectual Capital Disclosure

Score	Explanation
0	The disclosure item does not appear in annual report.
1	The disclosure item appears in general in annual report
2	The disclosure item appears qualitatively in annual report
3	The disclosure item appears quantitatively in annual report

Source: Guthrie and Petty, 2000

**Table 2.** Service Companies of High-IC and Low-IC Intensive Industries

High-IC Intensive Industries	Low-IC Intensive Industries
Banks	Energy
Financial Institution	Utilities
Securities Company	Transportation
Insurance	Non Building Construction
Investment	Wholesale
Health Care	Retail Trade
Advertising, Printing and Media	Restaurant, Hotel and Tourism
Property and Real Estate	
Building Construction	
Computer and Services	
Telecommunication Services	

This study indicates the firm size by the total value of the total assets of the company in 2008-2012.

SIZE = *Logarithm natural* of total asset

Firm Age. Firm age is the level of maturity of a company. In this study, firm age is measured from the beginning period of company's operation until the period of research (2008-2012).

Age= the period of research–beginning period of company's operation

Type of Industry. The board of intellectual capital disclosure between one industry and others is different, it depends on the risk on industry and firm characteristics. The type of industry in this study is based on intellectual capital intensity measured by the Global Industry Classification Standard in Woodcock and Whiting (2009). GICS is a system developed by Morgan Stanley Capital International and Standard & Poor's (S & P) to be used by global financial community. Because the standard is global, it is expected can also be used on companies in Indonesia. The measurement group into two, 1 if company is high-intellectual capital intensive industries and 0 if company is low-intellectual capital intensive industries. High-intellectual capital intensive industries is the industry group that has been able to leverage their intellectual assets to create competitive advantage then the company can improve the performance of company. Type of industry above has little difference with the type of industries that exist in Indonesia Stock Exchange. Therefore, to adjust list of

firms of high-intellectual capital intensive industries and low-intellectual capital intensive industries to existingservices company listed onthe Indonesia Stock Exchange, the researcher madea listof service companies including high-intellectual capital intensive industries and low-intellectual capital intensive industries with reference to classification of type of industry by Global Industry Classification Standard in Woodcock and Whiting (2009). The industry classification is described in table 2 above:

Managerial Ownership. Managerial ownership is the proportion of shares held by executive managers. The executive managers have the power to control all decisions within the company which reflects business decisions. The executive managers include managers, directors and board of commissioners (Saleh et al., 2008). Managerial ownership is calculated by the percentage of shares owned by the management compared to the number of shares outstanding.

Listing Status. In this study, a dummy variable is used to measure the status of the listing gives the score (1) for firms whose listing more than one country and score (0) for firms that listing domestically.

Intellectual Capital Disclosure. Intellectual capital disclosure that is measured by index number (ICD Index). ICD Index assessment is done by comparing the amount of intellectual capital disclosures made by the company and the maximum amount of intellectual capital disclosures should be made by the company. Framework



**Table 3.** Index of Intellectual Capital Disclosure

Measurement	Item
Internal Capital	Intellectual Property: Patent, Copyright and Trademarks Infrastructure assets : Management philosophy, Corporate culture, Management process, information System, Networking system, and Financial relation
External capital	Brands, Customers, Customers loyalty, Companies' name, Distribution channel, Business collaboration, Licensing agreement, Favorable contract, and Franchising agreement
Human Capital	Know-how; Education, Vocational qualification, Training, Work-related knowledge, Work-related competencies, and Entrepreneur spirit

**Source:** Guthrie and Petty (2000), Guthrie et al (2006), Wijana et al (2013)

used consists of 25 attributes, which are grouped intellectual capital into three category included internal capital, external capital and human capital. This framework is used because it is still relatively new and a modification of the framework research conducted by Guthrie and Petty (2000), Guthrie et al (2006), Wijana et al (2013) that is described in the table 3 above.

### Technique Analysis

#### Descriptive Statistics Analysis

Descriptive analysis is used to give the overview of the research's objects as they are, without having to do data analysis and draw conclusions of a general nature. The steps performed in the descriptive statistical analysis are as follows: (1) Transforming data for each variable into numeric table format so it is easy to be interpreted, (2) Determining the specific size used. In this study, descriptive statistical used is the average value, maximum value, minimum value, and range, and (3) Interpreting the specific size used so an overview of the firm characteristics and disclosure of intellectual capital will be obtained.

#### Regression Analysis

The data analyst technique used is quantitatively. This study uses multiple regression model by the following equation:

$$ICD = \beta_1 SIZE + \beta_2 AGE + \beta_3 IND + \beta_4 LST + \beta_5 MO + \epsilon$$

## RESULT AND DISCUSSION

### Multiple Regression Analysis

#### Coefficient of determination (Adjusted R<sup>2</sup>)

The coefficient of determination (Adjusted R<sup>2</sup>) coefficient

of Adjusted R<sup>2</sup> obtained is 0.218. It means that 21.80% of intellectual capital disclosure can be explained by firm size, firm age, type of industry, listing status and managerial ownership as independent variables, while the rest can be explained by other factors.

#### Simultaneous Significant Test (F-Test)

F-Test shows whether all the independent variables included in the regression model have an influence collectively or simultaneously on the dependent variable. Basically F value derived from ANOVA table which can be seen significance level (0.000) is lower than alpha value (0.05). These results indicate that independent variables in this study had a significant effect on intellectual capital disclosure simultaneously.

#### Partial Significant Test

Basically, partial significant test shows how far the influence of independent variables individually in explaining the dependent variable. The result is shown the significant probability value for firm size (0.000), firm age (0.000) and listing status (0.000) that are lower than alpha value (0.05). In other hands, type of industry and managerial ownership have no significant effect on intellectual capital disclosure. It is because their probability values above 5%. It can be seen from their significant probability values respectively 0.213 and 0.302 (sig. > 0.05).

Coefficients for regression equation can be seen. It can be arranged to the following equation and interpreted as follows:

$$ICD = 0.021 + 0.023 SIZE + 0.014 AGE - 0.024 IND + 0.349 LST + 0.004 MO + e$$

Based on the equation above, the number of 0.021 shows ratio of intellectual capital disclosure. It will be 0.021 if all independent variables are considered constant. Firm size has a positive coefficient, it is 0.023. Positive regression coefficient indicates that firm size has

a positive effect on intellectual capital disclosure. Assuming other variables are fixed, if firm size increases one percent, then it will increase intellectual capital disclosure 2.3%. Firm age has a positive coefficient, it is 0.014. Positive regression coefficient indicates that firm age has a positive effect on intellectual capital disclosure. Assuming other variables are fixed, if firm age increases one year, then it will increase intellectual capital disclosure 1.4%. Type of industry has a negative coefficient, it is 0.024. It means that the intellectual capital disclosure level of low-intellectual capital intensive industries is higher of 0.024 than high-intellectual capital intensive industries. Listing status has a positive coefficient, it is 0.213. It means that intellectual capital disclosure level of dual listed company is higher of 0.213 than nondual listed company. Managerial ownership has a positive coefficient, it is 0.004. Positive regression coefficient indicates that when the managerial ownership increases one percent, intellectual capital disclosure will increase 0.4%.

## DISCUSSION OF RESULTING

### The Effect of Firm Size on Intellectual Capital Disclosure

Assessment of the effect of firm size on the disclosure of intellectual capital by using multiple regression shows results were significant. It can be seen on the significance value of 0.000 which is lower than  $\alpha = 0.05$  level. Based on the results of multiple linear regression, it can be concluded that the first hypothesis stated that the firm size affect the disclosure intellectual capital positively is accepted. It is because larger size of the firm possible to have a broader ownership structure, so there is a greater demand from the shareholders. Large companies will more disclose including intellectual capital in order to meet the demands of need for more disclosure including intellectual capital disclosure. Large companies are often scrutinized by particular stakeholder groups and therefore positive disclosure practices such as intellectual capital disclosure might be predicted if a firm is attempting to minimize political costs (White et al, 2007).

Results of analysis using multiple linear regression showed that firm size positively affect the disclosure of intellectual capital. The greater the total assets owned by the company, the greater the intellectual capital disclosures. This result is not in line with Bukh et al (2005) that found there is no effect of firm size on intellectual capital disclosure. However, Bukh et al. 2005) presented the opposite argument that large companies compared to small ones, seem less risky to investors and have better access to resources, thus the latter have greater incentive to reduce uncertainty by intellectual capital disclosure. This study is consistent with research

of Bozzolan et al (2003), Garcia-Meca et al (2005), White et al (2007), Oliveira et al (2008) and Artinah (2013) which state that there is positive effect of firm size on intellectual capital disclosure. This can be caused by several things such as the following:

In terms of competition and market needs, large companies are entities that are much highlighted by the market as well as the general public. Disclosing more information about intellectual capital is a part of the company's efforts to realize the company's public accountability. Whereas for smaller companies generally are in a situation of intense competition with other companies, disclosing too much about their true identity especially on the intellectual capital to external parties could jeopardize its position in the competition. Therefore, small companies tend not to perform disclosure of intellectual capital as complete of large corporations. Managers of small companies believe that the more information is disclosed could endanger the competitive potential of the company (Ulum, 2009).

In terms of the cost ability, large companies is more likely to have information production costs or the cost of loss competition lower than in small companies. Large companies also have a great resource, so the company needs and was able to finance the provision of information, especially information for intellectual capital internal purposes (Almilia, 2007). While Marwata (2001) states that companies with relatively small resources may not have the information ready as a large company, so the company needs large additional costs relatively to be carried out as complete disclosure, especially for intellectual capital disclosure as a voluntary disclosure of company.

In terms of human resources, a large company may recruits human resources with high qualifications needed to apply advanced reporting system. Big companies tend to employ highly skilled individuals and sophisticated management reporting systems that can provide an array of corporate information (Depoers, 2000). Therefore, it is easy for companies to disclose their intellectual capital information.

In term of political costs, the larger size of firm, the greater the political costs should be covered. Companies are willing to pay extra costs for intellectual capital disclosure in order to reduce the pressure of stakeholders.

### The Effect of Firm Age on Intellectual Capital Disclosure

Assessment of the effect of firm age on the disclosure of intellectual capital by using multiple regression shows results were significant. It can be seen on the significance value of 0.000 which is lower than  $\alpha = 0.05$  level. Based

on the results of multiple linear regression, it can be concluded that the second hypothesis stated that the firm age affect the disclosure intellectual capital positively is accepted. It is because the older-age company has a lot more experience, so it will be more aware of the needs of their constituents about the company's information. Thus, the older the age of the company, the more information that is disclosed including information on intellectual capital (Widiastuti, 2002)

Firm age shows that the company that still exists is able to compete and take advantage of business opportunities in an economy. The long life of a company means the company's survival in conducting and running their business activities. The results of the analysis of firm age using multiple linear regression shows that firm age positively affect the company's intellectual capital disclosure. This result is not in line with Bukh et al (2005), Artinah (2013) and Woodcock and Whiting (2009) research in Australia that found there is no effect of firm age on the disclosure of intellectual capital. Bukh, et al (2005) identify that firm age has often been used in previous studies as a proxy for risk. From this perspective it might be expected that younger companies with less history will be more reliant upon non-financial disclosures including intellectual capital disclosures. A firm that is high risk will be more likely to disclose information as an effort to decrease its risk profile. Research has shown that well established firms are less risky (Bukh et al., 2005), so the older firms would provide less voluntary disclosure than the younger. Young companies will try to reduce skepticism and amplify investors confidence who judge them as riskiest firms (Haniffa and Cooke, 2002).

This study is supported by previous study conducted by White et al (2007) which states that the firm age is the trigger of intellectual capital disclosure practices. This is also consistent with Widiastuti (2002) which states that the older-age company has a lot experiences, so it will be more aware of the needs of their constituents about the company's information. Thus, the older the age of the company, the more information that is disclosed including information of intellectual capital. The theory that has been used to explain the relationship between firm age and intellectual capital disclosure is media agenda-setting theory. This theory suggests that firms (as a form of media) set the agenda for public opinion by emphasizing or highlighting certain issues (Sujan and Abeysekera, 2007). The older the firm age shows the more experience the company in running the business. The company that is able to exist for a long time or live longer is a company that makes knowledge as their capital. Therefore, the older firm will disclose more about their intellectual capital in order to signal their superiority over competitors.

### **The Effect of Type of Industry on Intellectual Capital Disclosure**

Assessment of the effect of type of industry on intellectual capital disclosure by using multiple regression shows results were not significant. It can be seen on the significance value of 0.213 which is greater than  $\alpha = 0.05$  level. Based on the results of multiple regression test, it can be concluded that the third hypothesis stated that the type of industry affect the disclosure intellectual capital positively is rejected. It is because the companies thought that the firm could reduce intellectual capital disclosure levels as an effort not to signal competitors and others in order to maintain any competitive advantage. Intellectual capital is important in creating competitive value of company. The companies did not want if their competitors can imitate their competitive advantage through intellectual capital that they disclosed. If such efforts were successful, the original company's intellectual capital performance level may fall and their competitive advantage decreasing.

Type of industry is approved does not affect intellectual capital disclosure. In fact, companies with high-intellectual capital intensive industry does not disclose intellectual capital more than companies with low-intellectual capital intensive industry. This result is not consistent with Bozzolan et al (2003), Petty & Cuganesan (2005), Oliveira et al (2006) and Woodcock and Whiting (2009) that argued that high-intellectual capital intensive industry companies will voluntarily disclose intellectual capital information to a greater extent than those companies in low-intellectual capital intensive industry. This study also is inconsistent with legitimacy theory that asserts organizations will take action to ensure that their activities are perceived as legitimate. Firms with high levels of intellectual capital are more likely to engage in intellectual capital disclosure because they cannot legitimize their status through the traditional symbols of corporate success, the tangible hard assets (Guthrie et al., 2004). They need to communicate how the firm uses its intellectual capital to generate value. This study supports the research result of William (2001) that states type of industry has no effect on intellectual capital disclosure. According to proprietary cost theory, type of industry does not affect intellectual capital disclosure because management that may perceive that high intellectual capital performance levels could provide a signal to competitors and those wishing to enter the market of possible value creating opportunities (William, 2001). To maintain any competitive advantage, the firm could reduce intellectual capital disclosure levels as an effort not to signal competitors and others. For example, the high level of intellectual capital performance achieved by a firm may have resulted from creativity and innovations introduced

by key employees. If a firm disclose such information underlying its intellectual capital success, this may act as a signal for a competitor to entice such employees into changing employer. If such efforts were successful, the original company's intellectual capital performance level may fall and its competitive advantage compromised. To minimize this potential threat, company with a high level of intellectual capital performance may refrain from disclosing information related to this matter. Another possible explanation is that the overall level of intellectual capital disclosure across all the firms was low during the period so that the industry effect was not apparent. This finding could be due to the lack of representativeness in sampling at sector level.

### **The Effect of Listing Status on Intellectual Capital Disclosure**

Assessment of the effect of listing status on the disclosure of intellectual capital by using multiple regression shows results were significant. It can be seen on the significance value of 0.000 which is lower than  $\alpha = 0.05$  level. Based on the results of multiple regression test, it can be concluded that the fourth hypothesis stated that the listing status affect the disclosure intellectual capital positively is accepted. It is because dual listed companies will face additional pressure to disclose intellectual capital disclosure, so they have to disclose it more in order to attract the investors.

This research shows that listing status of company effect positively on intellectual capital disclosure. This result was not in line with Haniffa and Cooke (2002) that states listing status has no effect on intellectual capital disclosure. In other hand, this result was in line with the research of Purnomoshidi (2005) and Hope (2003) because companies that do a listing in some countries face scrutiny from a broader group of stakeholders and have to incorporate certain aspects of other state regulations to the annual report. In conjunction with the intellectual capital, dual listed companies will face the increasing demand of information relating to the management of intellectual capital of some stakeholders groups that are interested in the intellectual capital. Dual listed companies should disclose more detail on intellectual capital than companies that only listing domestically. Indonesian public company whose shares are listed on foreign stock exchanges will also face additional pressure from the local stock exchange for intellectual capital disclosure. Phenomena above indicates that the disclosure requirements of companies listed on the Indonesia Stock Exchange differ with the requirements issued by a foreign stock exchange. In addition, dual listed companies are entities that are much highlighted by the market. Then, disclosing more information about intellectual capital is a part of the

company's efforts to realize the company's public accountability in order to sustain their competitive advantage.

The relationship between listing status of company and intellectual capital disclosure has been explained by stakeholder theory. Dual listed companies actually have a wider range of stakeholders as well as more responsibilities to the stakeholders. Stakeholder theory purports that shareholders have a right to be provided with information about how the organization's activities affect them (Vergauwen & van Alem, 2005), particularly if they are less powerful shareholders who cannot access information through private meetings. Firms are not required to provide information about their knowledge assets in the financial statement, so in order to satisfy the stakeholders' need for information, companies will be forced to make voluntary disclosures about their intellectual capital. They should disclose more intellectual capital information so as to discharge their accountability to various stakeholders.

Agency and signaling theories also describe the association between listing status and intellectual capital disclosures. Companies listed in multiple and foreign stock exchanges are argued to have greater agency problems. Consequently, voluntary disclosure such as intellectual capital disclosure works as a mechanism for reducing the monitoring costs of shareholders. Listing status in prestigious markets can also be used by a firm to provide signals to stakeholders about its strength.

### **The Effect of Managerial Ownership on Intellectual Capital Disclosure**

Assessment of the effect of managerial ownership on the disclosure of intellectual capital by using multiple regression shows results were not significant. It can be seen on the significance value of 0.320 which is greater than  $\alpha=0.05$  level. Based on the results of multiple regression test, it can be concluded that the fifth hypothesis stated that the managerial ownership affect the disclosure intellectual capital positively is rejected. It is because person who holds two jobs together tend to keep information and prefer not to disclose it to other parties (Ho and Wong (2001).The managers tend to take side on management than on stockholder. The managers will more focus in getting profit than providing the information to stockholder.

Based on the results of multiple regression test, it can be concluded that managerial ownership does not affect the disclosure of intellectual capital. The result is inconsistent with the findings of Sullivan (2000), Williams and Firer (2003), Oliveira et al (2006), Li et al (2008) in Singapore, Portugal and United Kingdom that showed managerial ownership has significant association with the intellectual capital disclosure. Based on agency theory,

when the functions of management and ownership are merged, the monitoring motivation for disclosure are reduced (O'Sullivan, 2000). This study corroborates the research result of Juhmani (2013) and Ho and Wong (2001) that show there is no association between managerial ownership and intellectual capital disclosure. This indicates that there is no evidence to support the view that managerial ownership has an adverse effect on the quality of intellectual capital disclosure. However, to contain agency costs that occur because of a conflict of interest between principals and agents, shareholders monitor managers by requiring greater disclosures. Shareholders will put pressure on the managers to make more extensive intellectual capital disclosures. Even though managers do not have company's shares, they will disclose intellectual capital information to shareholders in order to show their best performance. High levels of managerial ownership will reveal a lot of information about intellectual capital with the goal to enhance shareholder value. While companies with low levels of managerial ownership will also disclose intellectual capital information to complete anyway because of the increasing of the need for outside shareholders in order to perform the monitoring. Another possible reason why managerial ownership does not influence the disclosure of intellectual capital is the percentage of managerial ownership of the companies in this study that is still relatively small. Low levels of percentage proportion of managerial ownership tends to lead the management did not participate as an owner of the company, so it will decrease the awareness of management to sacrifice resources for the activities of intellectual capital disclosure in annual reports. In addition, management has no control in determining what information should be disclosed because many policies are controlled by the majority owner.

## CONCLUSION AND REMARK

### Conclusion

Based on the analysis that has been done in this study in order to know the effect of firm characteristics on intellectual capital disclosure, the conclusions obtained are (1) Firm size positively affect the intellectual capital disclosure. The greater the total assets owned by the company, the greater the intellectual capital disclosure, (2) Firm age positively affect the intellectual capital disclosure. The older the age of the company, the more intellectual capital information that is disclosed, (3) Listing status positively affect to intellectual capital disclosure. Indonesian public company whose shares are listed on foreign stock exchanges will face additional pressure from the local stock exchange to disclose the information of intellectual capital, and (4) Type of industry and

managerial ownership does not affect intellectual capital disclosures.

### Limitation

The limitations and the opportunity for further research associated with this study are as follows (1) Independent variables are limited to firm characteristics, which only covers the firm size, firm age, (2) type of industry, listing status and managerial ownership without involving external factors of firm, and (3) Assessment of intellectual capital disclosure is subjective because the analysis of intellectual capital disclosure is done using content analysis which the researcher looked at the annual report and provided the code on each item of intellectual capital disclosed

### Suggestion

Suggestions can be given from the results of this study to further research are as follows (1) This research is the result of a content analysis of the company's annual report. This analysis is done by looking at the annual report and providing the code on each item of intellectual capital disclosed. It would have been very influenced by the subjectivity of the researcher. Future research is expected to use a questionnaire (primary data) by making observations cross-sectional. The use of questionnaires is expected to obtain additional variables which affect intellectual capital disclosures that occur in each company, and (2) For further research could also compare the breadth of intellectual capital disclosure between industries in Indonesia and other countries (study comparative)

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