

**ANALYSIS ON THE PROTECTION OF INTANGIBLE ASSETS  
ON THE START-UP COMPANIES  
IN THE FIELD OF INFORMATION TECHNOLOGY IN INDONESIA**

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# **Analysis on The Protection of Intangible Assets on The Start-up Companies in The Field of Information Technology in Indonesia**

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## **ABSTRACT**

Intangible assets are divided into identifiable intangible assets and unidentifiable intangible assets. Some intangible assets that can be identified include: trademarks, inventions or trade secrets, and copyrights, while some intangible assets that can not be identified is in goodwill and human assets. This study aims to analyze the protection of the intangible asset in start-up companies in the field of information technology in Indonesia.

The study was limited to the management of trademarks, patents and trade secrets, copyrights, goodwill, and human capital. The analysis showed that the protection of intangible assets in start-up companies in the field of information technology was conducted, but has not been fully implemented, because there are several factors that are considered important but not yet implemented by the companies.

Business firms should optimize the protection of intangible assets owned, as an intangible asset is an important asset in the company based on information technology. The government also needs to provide adequate socialization regarding intellectual property rights to the start-up companies in the field of new information technologies is established. In addition, the process of registration of intellectual property rights should be more easy and can be done at a reasonable cost.

**Keywords:** asset management, intangible assets, start-up company, information technology.

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# 1. INTRODUCTION

## 1.1 Backgrounds

In developed economies, production requires not only such traditional factors as capital and labor but also skills, organizational structures and processes, culture, and other factors collectively referred to as intangible assets. (Brynjolfsson, Lorin, and Yang, 2002). The value of intangible assets became the most significant part of the market value of any firm traded on the stock exchange (Louisot, 2004). Companies in the field of technology and services mostly have intangible assets such as patents, science, and human capital (Damodaran, 2009: 3). In the information age, intangible assets are far more important than the tangible assets that traditional accounting systems were designed to measure (Lin and Tang, 2009).

Thornhill and Amit (2003) in his study of corporate bankruptcies in Canada concluded that the failure of the new company was due to factors of general management and financial management, while the failure of the company's older due to pressure from outside factors, such as the adaptation of new technology. Petkov (2011) assume that errors in the company's management to identify intangible assets in the company's accounting is one of the main factors among several other factors that led to the financial crisis of 2008.

Mo and Zhou (2003) examine issues in the creation and management of intangible assets in the virtual enterprise, and discusses the application and adaptation of the various tools and methodologies that studied and developed in industrial projects to allow for smooth operation in a virtual enterprise for running

the project on a global scale. Damodaran (2009: 5) describe the characteristics of the start-up companies are: having a few of historical information, have little income or even have operating losses, depending on the individual capital, most can not survive, have more than one claim against equity, and investments owned not liquid. Start-up technology companies producing complex products often have problems with market entry due to several reasons. (Ruokolainen, 2004).

According to data reported by Beritasatu (2012), the number of digital start-ups in Indonesia reached more than 1500 companies and some have died. With the condition that the company pioneering in the field of information technology has a majority of assets in the form of intangible assets, is still young, and has a high failure potential, the authors are interested in researching the management on the company's intangible assets, especially in the aspect of protection of intangible assets performed by these companies.

## **1.2 Research Objectives**

Based on the background and the main problems that have been proposed, research objectives then formulated. The purpose of this study was to analyze the protection of intangible assets in start-up companies in the field of information technology in Indonesia.

## **2. LITERATURE REVIEW AND ANALYSIS TOOLS**

### **2.1 Literature Review**

MacLeod (2012) did research explained that the 20th-century British scientists encourage research by scientists funded by the university and the state to be used by the public. In its development, the neoliberalism and government

budget tightening led researchers to start looking for funds from the market or commercial enterprise. In the end the patent and copyright system began to be made to protect the rights of ownership of the research that developed to date.

Interbrand (2007: 55) explained that the strength of a brand is a major determinant of the risk profile as a marketing asset. Interbrand (2007: 56) summarized the 7 (seven) dimensions of brand strength, namely: market, stability, leadership, internationality, trend, support, and brand protection.

The results of research of Wyatt (2005) suggests that management's decision to do the recording of intangible assets in companies linked to how much of the technology used in the company's operations, the length of cycle use of technology, and other factors related to intellectual property rights that affect the company's ability to take advantage of investment appropriately.

## **2.2 Theory Basis**

### **2.2.1 Intangible asset**

Hall (1993) investigated the role of intangible resources in business strategy and in particular linking them with the identification of intangible resources as a source of sustainable competitive advantage. From research to national companies were interviewed, there are five (5) forms of intangible assets that is a priority, namely: the company's reputation, product reputation, employee knowledge, culture, and organizational networks.

Financial statements that show the value of a company's assets are on the balance sheet (Damodaran, 2002: 29). According to Cohen (2005: 9) all companies have two types of assets: assets that can be touched and assets can not

be touched. Types of assets that can be seen, felt, tasted, sold, purchased known as tangible assets, whereas that do not meet these things called intangible assets. In valuation, intangible assets should be amortized in accordance with the estimated period of his life, with a maximum amortization period is 40 (forty) years (Damodaran, 2002: 33).

### **2.2.2 Trademark**

According to Big Indonesian Dictionary (2003), a trademark is a name, symbol, figure, letter, word, or other marks that are used by industrial and commercial companies to name their goods and distinguish themselves from others, usually protected by law . The Government of the Republic of Indonesia issued the Law of the Republic of Indonesia Number 15 Year 2001 regarding Brand as a legal basis for the protection brand in Indonesia.

### **2.2.3 Patent and trade secret**

According to the Law of the Republic of Indonesia Number 14 Year 2001 regarding patent, is a patent is an exclusive right granted by the state to investors on their investment in the field of technology, which for during a certain time implement their own investment or give approval to others to implement . Trade secrets are types of assets that result from a proprietary technology or way of doing business (Cohen, 2005: 17). According to the Law of the Republic of Indonesia Number 30 Year 2000 on the Trade Secret, the trade secret is information that is not known by the public in the field of technology and / or business, has economic value because it is useful in business activities, and kept secret by the owner of a trade secret . Corporate trade secrets which can be

chemical formulas, recipes, customer data, machine design, and other types of information typically has a value and a source of competitive advantage for firms (Hannah, 2005).

Patents assessed in different ways, depending on how it is acquired (Damodaran, 2002: 33). Patents can be obtained by developing themselves through research and through the acquisition of patents that are owned by other companies.

#### **2.2.4 Copyright**

According to the Law of the Republic of Indonesia Number 19 year 2002 on Copyright, the copyright is the exclusive right of the author or recipient of the right to publish or reproduce the creations or give permission for it without reduce restrictions under laws in force. Copyright is usually made on the results of creative work or writing materials, such as books, music, photographs, illustrations, screenwriter, film and television broadcasting, and software code (Cohen, 2005: 15).

Copyright protection in the digital and online distribution services is an important requirement (Kwok and Yang, 2003). Digital marker technologies (watermarking) can be used to protect copyright, but makes the process and the delivery of services to longer.

#### **2.2.5 Goodwill**

The concept of goodwill is generally used by analysts in the business and marketing to measure the value of the assets of a company name or brand name, which affects the calculation of accountants and business analysts, but is rarely



used by economists (Mueller and Supina, 2002). When a company buying another company, the purchase price is allocated first to the tangible assets, and the remaining is allocated to the calculation of intangible assets that can be identified, such as patents, copyrights, and trademarks (Damodaran, 2002: 33). The remaining calculation of residuals is calculated as goodwill. Trade secrets that can not be patented usually calculated as a form of corporate goodwill.

#### **2.2.6 Human capital**

Knowledge of the employees considered as one of the most important contributors to the success of a business, and knowledge of employees is also rated as one of the most durable resources (Hall, 1993). According to competence, Hall (1993) divides the human resources into functional capabilities and cultural capabilities.

Expenditure on human resources development is one of the things that is hard to capitalized (Damodaran, 2002: 590). That's because spending on human resources can be spread out into the various types of financial statements of the company and to separate the expenses from the salaries and employee benefits is a hard thing to do.

The research conducted by Hormiga, Batista-Canino, and Sánchez-Medina (2010) showed that human capital plays an important role in the early establishment of a company.

#### **2.2.7 Start-up company**

Companies according to Big Indonesian Dictionary (2003) is an activity (work, etc.) organized by equipment or regular manner with the aim of profit (to

produce something, preparing or making goods, trade, provide services, and so on) or an organization legal entities that do transactions or business. The word meaning of pioneering by Big Indonesian Dictionary (2003) is the very first effort. Matching terms of pioneering (start-up) companies in Indonesia are a beginner or a new company (Rahayu, 2005). From these terms can be described that the start-up company is a newly formed organization to produce something, that process or make the goods, trade, providing services, with the aim to make profit.

## **2.3 Analysis Tools**

### **2.3.1 Instrumen testing**

The data test in this study performed using validity and reliability test.

**2.3.1.1 Validity test.** One of the way to perform validity test is using Pearson correlation or Product-Moment (Wright, 1992). In particular, if we have observations with variations  $(x_1, y_1), (x_2, y_2), \dots, (x_n, y_n)$ , the correlation coefficients of  $r_{count}$  obtained by the equation

$$r_{count} = \frac{\sum_{i=1}^n (x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum_{i=1}^n (x_i - \bar{x})^2} \sqrt{\sum_{i=1}^n (y_i - \bar{y})^2}}$$

Where  $\bar{x} = \sum_{i=1}^n \frac{x_i}{n}$  and  $\bar{y} = \sum_{i=1}^n \frac{y_i}{n}$ . To perofm validity of the variable or attibute,  $r_{count}$  compared with  $r_{table}$  with significance of 1 percent or 5 percent. If  $r_{count} > r_{table}$ , the question item is considered as valid.

**2.3.1.2 Reliability test.** Reliability test uses to decide the internal consistency on the data. One of the coefficient that can be used to do assessment of internal consistecy is *Cronbach's alpha* (Bland and Altman, 1997).

$$\alpha = \frac{k}{k-1} \left( 1 - \frac{\sum s_i^2}{s_T^2} \right)$$

Where  $k$  is the number of items variety of questions,  $s_i^2$  is the variance of the item  $i$  and  $s_T^2$  is the variance from the total score derived from the sum of all question items.

### **2.3.2 Importance-performance analysis**

Importance-performance analysis introduced by Martilla and James (1977) to measure the relationship between consumer perception and priority assessment of product or service quality improvement. In its development, the analysis of the performance of the original interest is used to measure the perceptions from the the consumer side (Martilla and James, 1977), and then developed to measure perceptions of the business owner (Levenburg and Magal, 2005).

### **2.3.3 Likert's scale**

The survey instrument that was built to collect the importance-performance analysis of each element of the sample generally use numerical or Likert's scale (Levenburg and Magal, 2005), where respondents indicate the value of the particular statement with 5 or 7-point scale (Keown, 1973). In this study the importance and performance was measured using a Likert scale positive with a value of 1 to 5. Answer choices Strongly Disagree (SD) were given a score 1, Disagree (D) were given a score 2, Doubtful (DB) were given a score 3, Agree (A) were given a score 4, and Strongly Agree (SA) were given a score 5.

### **3. DATA ANALYSIS**

#### **3.1 General Overview**

##### **3.1.1 Start-up companies in the field of information technology**

In recent years sprung up initiatives and actions of individuals and groups in Indonesia that established the pioneering company using information technology as a base for doing business. Pioneering companies that use information technology as a base for doing business are also known as digital start-up. Some businesses they are run by these companies include: software development; development of electronic games; making website; information technology consultant; infrastructure development of information technology; digital promotion agencies, and sale of goods or services that use the Internet as a media to sell products. Internet selected as a tool for marketing because connection fees more affordable and accessible from various parts of the world.

#### **3.2 Research Method**

##### **3.2.1 The place and time of study**

The research was conducted on start-up companies in the field of information technology that have domicile in the territory of Indonesia. Data is collected from June 2012 to August 2012.

##### **3.2.2 Types and sources of data**

This study used data sources in the form of primary data collected by the researcher through questionnaires and interviews. Distributed questionnaires containing questions for the management start-up company in the field of information technology which based in Indonesia.

### 3.2.3 Operational definition

The dimension attributes in this study was limited to trademarks (X1), patents and trade secrets (X2), copyright (X3), goodwill (X4), and human capital (X5).

### 3.2.4 Research instrument testing

**3.2.4.1 Validity test.** Validity test obtained in order to know the level of reliability of the data. With the number of respondents of group of companies with the number  $n = 34$  and the error rate of 5 percent is obtained  $r_{table}$  value is 0.339. Since  $r_{count}$  value is greater than the value of  $r_{table}$ , then all statements is statistically valid.

**Table 3.1 Validity Test Result**

Questions	$r_{count}$ Importance	$r_{count}$ Performance	$r_{table}$	Decision
Trademark (X1)				
X11	0,753	0,830	0,339	Valid
X12	0,590	0,519	0,339	Valid
X13	0,784	0,857	0,339	Valid
X14	0,748	0,843	0,339	Valid
Patent dan Trade Secret (X2)				
X21	0,807	0,734	0,339	Valid
X22	0,857	0,764	0,339	Valid
X23	0,801	0,874	0,339	Valid
X24	0,875	0,829	0,339	Valid
X25	0,691	0,811	0,339	Valid
Copyright (X3)				
X31	0,731	0,647	0,339	Valid
X32	0,852	0,881	0,339	Valid
X33	0,700	0,797	0,339	Valid
Goodwill (X4)				
X41	0,582	0,797	0,339	Valid
X42	0,794	0,817	0,339	Valid
X43	0,500	0,828	0,339	Valid
X44	0,819	0,874	0,339	Valid
Human Capital (X5)				
X51	0,839	0,752	0,339	Valid
X52	0,791	0,912	0,339	Valid
X53	0,811	0,885	0,339	Valid

X54	0,691	0,925	0,339	Valid
X55	0,728	0,919	0,339	Valid

Source: Processed primary data, 2012

**3.2.4.2. Reliability test.** Reliability test is used to see the consistency of the data. Reliability test results in this study showed a Cronbach's Alpha of all attributes greater than 0.6, so attributes in this study statistically reliable.

**Table 3.2 Reliability Test Result**

Attributes	Cronbach's Alpha	Reliability Limit	Decision
<b>Importance</b>			
Trademark (X1)	0,669	0,6	Reliable
Patent dan Trade Secret (X2)	0,864	0,6	Reliable
Copyright (X3)	0,631	0,6	Reliable
Goodwill (X4)	0,619	0,6	Reliable
Human Capital (X5)	0,815	0,6	Reliable
<b>Performance</b>			
Trademark (X1)	0,768	0,6	Reliable
Patent dan Trade Secret (X2)	0,861	0,6	Reliable
Copyright (X3)	0,614	0,6	Reliable
Goodwill (X4)	0,848	0,6	Reliable
Human Capital (X5)	0,919	0,6	Reliable

Source: processed primary data, 2012

### **3.3 Data Analysis and Discussion**

#### **3.3.1 Cartesian diagram analysis**

Primary data which obtained from the survey respondents was analyzed using Cartesian diagram. Using a Likert scale, the average obtained between importance and performance aspects based on the perception of respondents. The mean is a middle value that is used as a measure of middle tendency, because theoretically there is no definite interval scale (Martilla and James, 1977). The mean of aspects of importance and performance of respondents in Table 3.3 are

used to determine the position of the center of respondent's perception of the importance and performance of information technology companies respondents in relation to the protection of intangible assets held by the companies.

**Table 3.3 The Mean of Importance-Performance**

<b>Questions</b>	<b>Importance</b>	<b>Performance</b>
<b>Trademark (X1)</b>		
X11	4,24	3,21
X12	4,62	4,24
X13	3,94	3,21
X14	4,29	3,38
<b>Patent/Trade Secret (X2)</b>		
X21	4,09	2,88
X22	4,24	3,56
X23	4,24	3,24
X24	4,26	3,44
X25	3,88	3,24
<b>Copyright (X3)</b>		
X31	4,21	3,88
X32	3,79	3,35
X33	4,23	3,44
<b>Goodwill (X4)</b>		
X41	4,35	3,91
X42	3,65	3,03
X43	4,38	3,91
X44	4,03	3,68
<b>Human Capital (X5)</b>		
X51	3,97	3,38
X52	4,5	3,88
X53	4,44	3,74
X54	4,5	4,18
X55	4,21	3,97

Source: Processed primary data, 2012

From the calculation of the mean importance and performance aspects, obtained that the perceptions of the performance that has been done by the respondent companies tend to be smaller than the respondent's perception of aspects of importance.

In the trademark attributes, factors considered important but not yet implemented, the company has not regularly conduct supervision and control over brand infringement by other companies. Factors that are considered important and are already implemented is companies have internet domain name that matches the name brand, with details (whois data) that accurate. Other factors that are considered important and have not implemented is a factor of company brand that registered in the institution of intellectual property rights and factors of other companies using brands owned by the company under a written agreement and following the specified quality standards.

In attribute patents and trade secrets, which is considered an important factor but not yet implemented are an employee or associate companies signed a written agreement on ownership of inventions or trade secrets. Factors considered important and has been implemented is to prevent companies from engaging in invention and trade secret infringement that has been owned by other institutions and companies have procedures to identify and protect inventions, secret plans, and trade secrets owned.

In attribute copyright, factors considered important but have not implemented are employees and partners signed an agreement to ensure that the company that owns copyright in the work that has been made by the employee and the company reserves the right to change the content and use the work for the enterprise. Factors that are considered important and has been implemented is the company does not display the digital content that violates the copyright other institutions. Factors that are considered less important and are have not



implemented all of the content published by the company are protected by copyright that has been registered.

On the attributes of goodwill, the factors that are considered important and are already implemented companies have database of customers and business partners in its use are protected in employment contracts, thus preventing abuse by employees and the company is actively developing and maintaining strong relationships with business entities, communities, as well as relevant academic environment. Factors that are considered less important and has not been implemented is a consulting firm providing legal advice in handling (purchases, sales, employment, insurance). Factors that are considered less important but has been implemented is the company perform regular evaluation and recording of the activity of customers and business partners.

In the human capital attributes, factors considered important but have not implemented is the company providing good welfare benefits (salary, health care, pensions). Factors that are considered important and has been implemented is the company perform capacity building of human resources through training and the provision of equipment and facilities and the companies providing labor support (computer, workplace, internet connection) for employees. Factors that are considered less important and are have not implemented companies have senior management has extensive experience and a high level of expertise within the industry. Factors that are considered less important, but has been done, the company is actively conducted to collect data on the knowledge of employees in the database (knowledge base, frequently asked questions, standard operating

procedure) in order to protect the business running when the employee quit working.

### **3.3.2 Discussion**

By considering the results of analysis, protection of intangible assets in start-up companies in the field of information technology have not been fully implemented. This is because there are several factors that are considered important but not yet fully implemented by such companies.

The study also asked specific questions related to trademark registration officially to the Director General of Intellectual Property Rights, Ministry of Justice and Human Rights of the Republic of Indonesia (DG IPR). From questions regarding trademark registration, 13 respondents said there were no plans at all to register the brand, 11 respondents said there have been plans to register the brand, 1 responders already had consultations with IPR consultant, 4 respondents have entered trademark registration file, and 5 respondents had received official ownership brands documents from the Directorate General of IPR.

On specific questions relating to patent or copyright that registered officially, 22 respondents said there were no plans to register a patent or copyright, seven respondents have no plans to register a patent or copyright, 1 responders already had consultations with IPR consultant, 2 respondents have entered the file copyright or patent registration, and 2 respondents already obtained decision letter related to the recognition of ownership of copyright or patent from Directorate General of Intellectual Property Rights.

Qualitative data in this study is in the form of feedback of respondents on the management and protection of intangible assets on information technology companies in Indonesia. A total of 6 respondents said that the protection of intangible assets is important, so it must be immediately registered officially. A total of 13 respondents expressed a lack of understanding on the protection of intangible assets and the processes that are necessary to protect the intangible assets officially, and provide input to the socialization of the IPR by the relevant agencies. A total of 7 respondents to comment on the legalization of trademarks, patents, and copyrights require a difficult process, requiring a long time, and the the cost of application according to the respondents are not cheap. Respondents requested that the registration process can be further simplified. As many as 2 respondents stated that the protection of intangible assets should be started from within an organization, by strengthening the employment agreement and the standard operating procedure (SOP) in the company. One respondent suggested that there is an official institution that provides an assessment of intangible asset so that there is clarity about the value of the intangible assets of the company to be used as the basis to obtain financing from banks.

## **4. CONCLUSIONS AND RECOMMENDATIONS**

### **4.1 Conclusions**

Based on data from the analysis and discussion, the protection of intangible assets on a start-up companies in the field of information technology in Indonesia are as follows.

1. Start-up Company that became respondents had done some of the factors that are considered important like having an internet domain name that matches the name brand, with details (whois data) that accurate. In addition the company has prevention from engaging in invention and trade secret infringement that have owned by other institutions and companies have procedures to identify and protect inventions, secret plans, and trade secrets owned. The company also does not display the digital content that violates the copyright other institutions. In terms of human capital, companies have has a database of customers and business partners in its use are protected under the work agreement, so as to prevent misuse by employees. The Company is actively developing and maintaining strong relationships with business entities, communities, and relevant academic environment.
2. The companies managers in general have not supervise and control over brand infringement by other companies on a regular basis. In addition to companies's employees and partners have not signed a written agreement on ownership of inventions or trade secrets. The other thing is the employees and partners have not signed an agreement to ensure that the company owns the copyright to the the work that has been made by the employee and the company reserves the right to change the content and use the work for the enterprise.
3. The company has not provided welfare benefits (salary, health facilities, pensions) that sufficient. One thing that causes this condition is start-up company tend to have a small capital, do not have significant revenue, and is trying to run a business to a stable condition. In addition, most of the

investments in companies start-up that became respondents came from individuals, and based on observations on the respondent, the management of the company is still a family or based on friendship.

#### **4.2 Recommendations**

Based on the above conclusion, company managers need to optimize the protection of intangible assets owned, as an intangible asset is an important asset in the company based on information technology. Along with the development of the company's organizational, legal protection of ownership of intellectual property should be done so that the company will have ownership of these intangible assets legally.

From the aspect of regulation, the Government needs to provide early socialization regarding intellectual property rights to the start-up companies in the field of information technologies is. In addition to socialization that needs to be given to the manager of the company, the process of registration of intellectual property rights should be further simplified and can be performed at a reasonable cost. In terms of human capital, a company start-up in the field of information technology also needs to be given a comprehensive socialization regarding the rights and obligations of the company to the employees, so welfare of human resources at the company start-up in the field of information technology can be harmonized with the regulations related to labor system in Indonesia.

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