

# **Comprehensive Intellectual Capital Management, Resource Based Theory, and Knowledge Based Theory**

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## **Abstract**

The purpose of this study was to analyze the concept of integration of Intellectual Capital and Knowledge Management that can improve and update by the Resource Based Theory (RBT) and Knowledge Based Theory (KBT). The research method is qualitative interpretive approach and grounded theory research. The study states that the concept of integration of IC and KM can improve and update the RBT and KBT as the basic theory of IC and KM must be adapted to the conditions of pharmaceutical companies in Indonesia . Thus there are changes in the concept of improving and updating RBT and KBT be complementary role RBT and KBT . The management model that is used to supplement the role of RBT and KBT is a Comprehensive Intellectual Capital Management ( CICM ) model because it is very complete and comprehensive as well as an integration or combination of IC and KM .

*Keywords: Comprehensive Intellectual Capital Management, Resource Based Theory, Knowledge Based Theory, Intangible Assets*

## **Introduction**

*Intellectual Capital (IC)* as intangible asset for the company must be managed and enforced well so that it can give benefit on the form of performance improvement, competing ability, and welfare of the company. One of the methods that can manage and enforce IC is *Comprehensive Intellectual Capital Management (CICM) model* (Hermawan, 2015). CICM is a complete and comprehensive management model of IC with three stages, they are Knowledge Management (KM), Innovation Management (IM), and Intellectual Property Management (IPM) (Al-Ali, 2003). The existing three stages in CICM are valid to management and enforcement of three component of IC, namely human capital (HC), structural capital (SC), and relational capital (RC). Referring to the research of Hermawan (2012), every stage in CICM can produce performance even though the highest performance will be gained if the company has been in intellectual property management stage or the company has been able to manage the their intellectual wealth.

The existence of CICM models have proven that the intangible assets of the company made significant contributions to the company, and this is consistent with the resource based theory (RBT) and the knowledge based theory (KBT). The essence of both theories is that the company will gain a competitive advantage and a superior advantage if they manage their assets properly. However, the trends shows that RBT focuses on physical assets contributing to organizational performance. In fact, in 1998 alone, IC management has contributed approximately 50% - 90% to the value creation of the firm, while management of traditional physical assets accounted for only 10% - 50% to the value creation by the firm (IFAC, 1998). It means that in this era of nowadays knowledge economics, intangible assets play an important role and a greater sustainability for the company. In addition, the KBT concept can also improve the company's performance by accelerating the flow of knowledge within the company in the form of knowledge transfer or knowledge sharing by using SECI (Socialization, Externalization, Combination, Internalization) method. This method can also be used to accelerate the flow of knowledge and the company's performance on the stage of CICM because at one stage there is phase of knowledge management.

Thus, the three concepts or models (CICM, RBT, and KBT) can be related and developed to theoretical concept of CICM model that can complete the role of RBT and KBT. Based on those considerations, the objective of this research is to arrange theoretical concept review completing the role of RBT and KBT.

### **Research Model**

This research combines qualitative interpretive research approach or interpretive accounting research (IAR) with grounded theory research. The researcher uses IAR in accordance to Lukkaa and Modell (2010) and Harris and Durden (2011)'s recommendation. They state that IC (or also the flow of this knowledge) is in the domain of management accounting research in intellectual resource management field. IC in the domain of management accounting is included in the category of non-financial IC and this research included in it. Meanwhile, the grounded theory research (Creswell, 2009) is chosen because

it is used to formulate a theoretical study that is able to complete the study RBT and KBT as the basic theory of IC and KM.

The focus of the research is to develop a theoretical study that is able to complete the RBT and KBT role as the fundamental theory of IC and KM. What is meant by the ability to complement the referred role is technically able to operationalize the concept or theory of RBT and KBT. Meanwhile, data collection technique in this research is conducted in three ways, namely focus group discussion (FGD), documentation and other data sources of the process of grounded theory research. For FGD, and documentation conducted in March-June 2015. For other sources of data collection process of the process of grounded theory research was conducted in July-September 2015. The FGD was conducted by involving key informant who chosen through judgment method. FGD was conducted on Saturday, 13 June 2015 at in Sri Raras Jati restaurant, Sidoarjo, East Java, Indonesia, involving 7 (seven) participants. The goal of FGD was to get more detailed information and to conduct an information cross check, including triangulation of data sources that have been obtained by previous researchers. Documentation is done by searching journals and literature or materials associated with IC and KM as well as the pharmaceutical company's business performance. Documentation is mostly done through Scopus indexed international journals link, such as the international journal, *Intellectual Capital*. The process of collecting data from the process of grounded theory research is done by examining the theories according to IC and KM, namely RBT and KBT. The data in the form of theoretical studies and also researches that have been conducted in the perspective of RBT and KBT are collected and analyzed.

Key informants who serve as source of data on the activity of FGD are manager, a former supervisor, staff of pharmaceutical companies, the pharmaceutical industry analyst, and researcher of IC. The managers of a pharmaceutical company, who were the key informants, were the manager of human resource development (HRD), operational managers, and marketing managers. The underlying decision why the researchers made the managers as key informants was because, according to Hermawan (2013), the parties involved in the management of IC is those managers as the implementation of the components of HC, SC and RC. While reason of making the former supervisor and staff of

pharmaceutical companies as key informant in this research is the need to confirm the veracity of the information provided by the managers, who are still active in the pharmaceutical company, or in other words, the researcher needed to gain a balance information. However, the reason of making the pharmaceutical industry observers as a key informant was to provide the latest information about the development of the pharmaceutical industry and as judgment information for the information and comments provided by other informant. Last, the reason of making IC researcher as a key informant in this research is because the researcher needed the comparison between the factual information regarding the correlation of practices in the pharmaceutical company with the existing theory. Key informant from this IC researcher was also intended to cross check the related concepts, research models and as a form of triangulation activity among researchers. Key informant determination technique is done with judgment (Marshall, 1996). The following data delivers the key informant:

**Table 1.**  
**Key Informant Data**

No	Key Informant	Institution	Determination Technique
1	AP	PT. PMU Surabaya	Judgment
2	RFA	PT. BF Sidoarjo	Judgment
3	DH	Pharmaceutical Industry Observer	Judgment
4	DO	Ex Supervisor in PT. "BF" Sidoarjo	Judgment
5	SRY	IC researcher	Judgment
6	WH	IC researcher	Judgment
7	STK	IC researcher	Judgment

**Data Source:** *FGD*

The validity test of the data in this research is conducted by testing the credibility and transferability (Senton, 2004). Credibility test was conducted through triangulation tests, namely triangulation of data sources, triangulation of method, and triangulation of theory. Transferability test was done by providing the information as complete as possible in the research report related to the research process as providence that simplify complicated ones. In the qualitative research, researchers could not guarantee the research results can be applied to other research, but the task of qualitative research is to explain the

research stages and process in detail and clearly so that other qualitative researchers can understand it.

The data analysis included data collection process with data collection stage, data reduction, data display, and conclusion (Miles and Huberman, 1984). The data collection stage was done by interview and documentation. The collected data is response data of the informants through FGD implementation, and documentation such as HC qualification required by pharmaceutical company, CPOB determination, and many policies related to marketing system in the pharmaceutical company. During this data collection stage, the researcher also conducted the data collection and data validity test; they were credibility test with triangulation. The triangulation test consists of triangulation test of method, triangulation of data resource, and triangulation of theory.

The data reduction is done by selecting the data that has been collected to look for the patterns and the same opinion about the themes of research that has been determined. At the stage of data reduction there was a lot of discarded and unused data that was deviating from the theme or patterns set in the focus of research. The result of data reduction is data display. Based on this data display, the research result started to appear and was able to be decomposed into a research report. The last stage of the process of data analysis is the conclusion. At this stage researcher continued to conduct the data collection process until the data was completely saturated and researchers believed that the results of the study are relevant with the purpose and the focus of research.

In this research, the data analysis was done by testing during research process and by coding and development of conceptual categories (Glaser and Strauss, 1967), as it is characterized in the grounded theory research. Coding and development of conceptual categories are intended to formulate the concept of theoretical study in the domain of grounded theory research to complete the role of RBT and KBT as the principle theory of IC and KM.

## **Research Result and Discussion**

To reach the formulation of integration model of IC and KM as new strategy in the era of economics science, the researcher performed research activity, namely FGD,

documentation, triangulation of method, triangulation of source, and triangulation of theory. FGD was applied to key informants who had been determined based on the judgment of researcher and also based on the snowball. Documentation was done by searching for the data related to the pharmaceutical company in East Java and study theme of IC and KM in many relevant internet sites, such as in international journal and accredited national journal. Triangulation of method was done during the research by doing cross check to the interview result with documentation data and vice versa. Triangulation of source was done by doing cross check between the data gained from one key informant to another. For triangulation of theory was done by doing cross check between research result and used theories, they are the resource based theory (RBT) and the knowledge based theory (KBT).

The use of triangulation of method, triangulation of source, and triangulation of theory are intended as credibility test for the data. The data analysis was done by data reduction, coding, and data display as well as supported by researcher as research instrument, so that the same theme and concept of integration model of IC and KM as new strategy and theoretical study of IC and KM that can improve RBT and KBT was gained. The following table present the same concept data or pattern as the result of data analysis process.

**Table 2**  
**The Same Concept or Pattern from Coding Process**

<i>Coding</i>	<i>Theme or concept</i>
<b>A</b>	<b>The relation between CICM and RBT and KBT as Principle Theory of IC and KM</b>
A. 1.	Concept of IC and KM adjusted to the Condition of Pharmaceutical Industry in Indonesia
A2.	CICM as Management Model That Can Complement the Role of RBT and KBT

**Source: Data Display of Coding Result and Data Reduction**

Based on the same concept or pattern from coding result, researcher conducted discussion of research result by relating between the used theory and phenomena of research result, and also with the previous research.

## **A. The Relation between CICM and RBT and KBT as Principle Theory of IC and KM**

The referred relation of CICM and RBT and KBT is implementation of CICM model if related to RBT and KBT or also CICM model to complement the role of RBT and KBT. To reach the stage, this research was analyzed qualitatively regarding the integration of IC and KM as they are applied in industry of pharmaceutical company in Indonesia. These are the results of study.

### **A.1. The Concept of IC and KM Adjusted to the Condition of Pharmaceutical Industry in Indonesia**

The initial purpose of this research is to find the theoretical concept that can improve RBT and KBT. The words “can improve” means that the role composition of tangible assets and this intangible assets is expected to be role by intangible assets. It means that this research expected the portion of intangible assets role is more than tangible assets either in strategic activity and operational. It is based on the recommendation of Sharabati et al (2010), Chen *et al* (2004), Daum (2005), Boekestein (2006), and Kamath (2008) that pharmaceutical company are manufacture company that have solid knowledge with high research level and innovation compared to other companies or company type which has highly intensive IC, many use much knowledge, and also perform interaction between human and technology, as well as dependent on the IC as renewal resources.

However, according to the research result of FGD, documentation, and research process of grounded theory research, it is gained that pharmaceutical industries in Indonesia is different from pharmaceutical in foreign countries as recommended by the IC researchers as mentioned above. According to key informant, pharmaceutical industries in Indonesia do not conduct basic research to produce “patent medicine” as in foreign country so that its research activity is neither as much as nor as deep as pharmaceutical companies in foreign country. One of the researches done by pharmaceutical company in Indonesia is when they give flavor to their medicines, for example orange or strawberry flavor in the children medicines. This kind of research makes pharmaceutical companies in Indonesia only purchase the non-patent medicine from other countries, so that they do not require complicated research. Next, they do conduct many innovations in medicine production, but

the innovation is more focused on the marketing activity. Pharmaceutical companies also still needed tangible assets in production activity, more over middle and lower pharmaceutical company that have no branded product so that the activity is more in production. Some pharmaceutical companies even only perform packaging because the medicine is already made by the bigger pharmaceutical companies. The summary of pharmaceutical industry condition in Indonesia is as follows.

**Table 3**  
**The Condition of Pharmaceutical Industry in Indonesia**

No	The Condition of Pharmaceutical Industry in Indonesia
1	Do not conduct basic research to find the medicine formulation
2	Only purchase the off-patent medicine
3	The performed innovation by adding the certain flavor in the medicine
4	Still very needed tangible asset for production and operational
5	In middle and lower pharmaceutical company, the needs of tangible assets is more that intangible assets
6	The small pharmaceutical company only perform the packaging because the production is given to the bigger pharmaceutical company, or it is known as “maklon” medicine

**Source: Managed Data**

Thus, based on this research, it is shown that the research of OC in pharmaceutical companies or industries in Indonesia cannot leave the essence of tangible assets in the form of machines, building, equipment, vehicle, and other tangible assets. It means not all pharmaceutical company in Indonesia can be called as high IC intensive based company. The mapping to pharmaceutical company in Indonesia which is high IC intensive based company or not high IC intensive is still needed to be done. Thus, the effort of integration of IC and KM to be able to improve RBT and KBT shall consider the condition of pharmaceutical industry or company in Indonesia.

The result of this research is not linear to the initial purpose to improve the RBT and KBT because the condition of pharmaceutical industry in Indonesia is different with pharmaceutical industry in foreign country as reference of IC researches in foreign country. The different research result with initial purpose of the research has been conducted in the domain of qualitative research. It is caused by the three conditions of qualitative research result, they are the research result is in line with the initial planning, the research result is

partially different with the initial planning, and research result is very different with the initial planning. Therefore, this research result does not improve RBT and KBT but as a complement to the role of RBT and KBT with CICM as management model that can complete the role.

**A.2. CICM as the Model that Can Complement the Role of RBT and KBT**

Comprehensive Intellectual Capital Management (CICM) is made as model that can improve RBT and KBT because it is very complete and comprehensive in exploring the component of IC (HC, SC, RC) and the stages of CICM. As Figure 1, it is explained about CICM model. In the figure, there are three stages if CICM, they are

1. Knowledge management (KM),
2. Innovation management (IM),
3. Intellectual property management (IPM).

	<b>Human Capital</b>	<b>Structural Capital</b>	<b>Relational Capital</b>
Competitives Tools ↑	Maximize Value: IP Management		
Prototypes of new product & services ↑	Extract Value: Innovation Management		
Knowledge & Brainpower ↑	Create Value: Knowledge Management		

**Figure 1**  
**CICM MODEL (Modified by Researcher)**  
 (Source: Al-Ali, 2003:66)

CICM model as in Figure 1 is supported by management goal and purpose for CICM illustrating what and how the purpose of the stages of CICM. It is explained in Table 4, as follows.

**Table 4**  
**The Purpose of Management and Purpose for CICM**

<b>CICM Stage</b>	<b>IC Group</b>	<b>Purpose</b>	<b>Purpose of Management</b>
<i>Knowledge Management</i>	Material Raw Source of Knowledge	Creating Value	Recognize and enforce the knowledge resource required to maintain the organizational process
<i>Innovation Management</i>	Innovation Process and Resource	Extraction (Issuing Value)	Release and re-configure innovation resource to create new ways in performing business and faster new product
<i>Intellectual Property Management</i>	Intellectual Wealth	Maximizing Value	Allow the use of intellectual wealth to improve competitive position of the company and increase the organizational income

Source: Al-Ali (2003:66)

Based on Figure 1 and Table 4 above, it can be known about the purpose of every stage of CICM. The first stage is KM which emphasizes more in creating value. The concept that can be used in this process is SECI (socialization, Externalization, Combination Internalization). The second stage is IM which emphasizes more in extract value or produce the values owned by the company. The four strategies that can be used in this stage are customer driven (from consumer), inward employee driven (from inside of employee themselves), outward employee driven (from outside of employee), and technology driven (from technology). Meanwhile, in the third stage, that is IPM which more emphasizes in maximize value owned by the company. IPM strategy that can be done is brand management (the existence of special work unit handling the brand of the company), and IP Portfolio (improve good intellectual property, combine good IP with the bad one, eliminate IP which is already gone in the market).

Meanwhile, this research is qualitative research that will always define something contained in the data source, either explicit or implicit. Related to this, the researcher conducted data collecting process by FGD and documentation through interpreting process of FGD result. During the FGD process, researcher showed some concepts or models such as CICM model (Figure 1) and management purpose and purpose for the stages of CICM

(Table 4) to key informants. Thus the research result and discussion on this research is more related to the interpreting of Figure 1 and Table 4. The research result presentation and discussion of every stage of CICM is as follows.

### **1. Knowledge Management Stage**

At this stage, the informants agree that the pharmaceutical companies in the stage of KM is still restructuring management, recognizing, and trying to use its limited resources. Because of the limitations of resources for HC, SC and RC, pharmaceutical companies should really be able to utilize their belonging to be empowered its role in supporting the company's operations and performance. The way is by KM process. In the process of managing knowledge, pharmaceutical companies should be able to recognize and use explicit knowledge and tacit/ implied knowledge of the company and its employees. Explicit knowledge associated with visible knowledge, such as written knowledge, archived and dispersed in the form of books or other printed. Tacit knowledge related to invisible knowledge, such as knowledge in the form of know-how, experience, skill, and understanding of employees. In the process of this knowledge management, small-scale or below the level pharmaceutical company can utilize explicit knowledge for various purposes, e.g. for the development of employee skills, to improve processes and procedures, as well as the materials to do networking with other parties. Pharmaceutical companies can also take advantage of tacit knowledge from the employees to be converted into explicit knowledge. The experience and skills of employees in the form of tacit knowledge can be transformed into explicit knowledge, such as various kinds of rules, procedures operating system, or the working module that can improve the performance of employees and the company.

The use of knowledge can also be done through interaction of IC component. It means that knowledge transfer between IC component can be related each other. The utilization of knowledge consists of six groups, they are knowledge transfer from HC to RC, knowledge transfer from RC to SC, knowledge transfer from SC to HC, knowledge transfer from RC to HC, knowledge transfer from SC to RC, and knowledge transfer from HC to SC. Table 5 explains about the use of knowledge through interaction of IC component.

**Table 5**

**The Use of Knowledge Though Interaction of IC Component**

<b>Knowledge transfer from HC to RC</b>	<b>Knowledge transfer from RC to SC</b>	<b>Knowledge transfer from SC to HC</b>
Employees who had just finished a training or seminar to give input on market orientation or changes in consumer behavior of pharmaceutical products	The part of marketing sharing of experience on what is perceived by the customer about the quality of drugs both from the packaging and solubility	The part of operational or production to provides information about the new rules and regulations that exist in the CPOB thus need training for production employees
<b>Knowledge transfer from RC to HC</b>	<b>Knowledge transfer from SC to RC</b>	<b>Knowledge transfer from HC to SC</b>
The part of marketing to give feedback about the quality of med rep when doing presentations with the doctor, and also the quality of the sales team	The part of operational to provide training on new technology used for drug database system and also customer of companies	Senior manager gives explanation about the organizational strategy purpose plan

Source: Managed Data

At this stage, KM with SECI concept is also highly acceptable for the key informants. According to key informants, the SECI process is very well in the context of knowledge sharing and knowledge transfer as well as change from tacit knowledge to explicit knowledge and vice versa. According to the informant, SECI with the process of socialization, externalization, combination, internalization is able to accelerate the process of change of the knowledge either tacit knowledge or explicit knowledge. With the acceleration of knowledge transfer and knowledge sharing that will certainly accelerate the support for the performance of the company or organization.

Socialization process changes from *tacit knowledge* to *tacit knowledge*. It is often called the brainstorming, it is tools used to share the idea of every member of the team that carried out structured and systematically. The key of success of a brainstorming session is a free atmosphere without criticism to explore creative ideas in order to obtain an alternative solution without limits. Some of the benefits of brainstorming are:

- a. Improve the creativity and produce many ideas in short time, with expanding the perspective from every aspect or thought of team member who will share another idea in ourselves,
- b. Create the equality against all team involved in brainstorming process, the warm atmosphere and support each other, and without critic will encourage someone to feel comfortable to share the idea without any obstruction. It will cause the mutual respect,
- c. When every team member shares his/ her idea, then the team member will be involved and will support the decision making direction, it will grow a sense of belonging to the process.

According to the informant, that socialization process often happens in the pharmaceutical company even the time has been scheduled. It can be every week or at any time depending on the needs of each department. Brainstorming on the pharmaceutical company's marketing department, for example, is more about how to design an effective and telling marketing system, including how they handle the customers' or doctors' complaints. This customers' complaints is typically associated with OTC (on the counter) drugs or ethical drugs. For example, the packaging is easily damaged, competitor's products are more preferable, and others. Things like that are often discussed in the form of brainstorming by converting *tacit knowledge* to *tacit knowledge*.

Externalization process, it is changing tacit knowledge into explicit knowledge. According to the informants this is done by changing seniors' knowledge in the form of know-how into the recorded fixed rule. So the core of this process is to make things into written knowledge that is recorded. For example, the ability of medical representative to negotiate with the doctor. Or the ability of tacit knowledge possessed by pharmacists related to the fulfillment of CPOB policy of Food and Drugs Monitoring Agency of Republic of Indonesia (BPOM RI). With the wide range of knowledge that is recorded will be very useful for other employees who need it and for the sustainability of pharmaceutical companies.

Combination process is done when explicit knowledge is changed or implemented to other explicit knowledge. According to key informants, it often happens during CPOB implementation from BPOM RI changed into standard operational procedure (SOP) of production or operational in the pharmaceutical company. Also, when the pharmaceutical company send their employee to the training or college, he/she must be able to make system breakthrough or effective working procedure in the form of recorded SOP. This process is highly effective to improve skill and productivity of the employees. This example shows that the connecting and combining of explicit knowledge into new explicit knowledge is more useful.

Internalization process happens when explicit knowledge is changed into tacit knowledge. Other terms are contemplation. It is done by changing explicit knowledge in the form of SOP, working procedure, or other regulation that have been recorded into invisible knowledge in the form of ideas and also another material that will be developed and still in the thought of the employee. For example, pharmaceutical product from other factories as competitor is discussed with employee to make better product so that the product can be competitive. It is called internalization.

## **2. Innovation Management Stage**

At this IM stage, innovation strategy comes from four things, namely customer driven (from customer), inward employee driven (from inside of employee), outward employee driven (from outside of employee), and technology driven (from technology). According to the key informants, innovation source often come from customer driven (from customer). The following on order are from the inside of employee (inward employee), from outside of employee (outward employee), and from technology (technology driven).

The informant also stated that the innovation of pharmaceutical product (OTC drugs) comes from customer and competitor. Therefore, customers deliver to pharmaceutical sales worker and then delivered to marketing manager. And then marketing manager will discuss it in the meeting among the managers or even in its marketing director. Innovation can also come from creative employee or employee who

followed the training. Thus, the gained knowledge from the training will be delivered as new idea. Meanwhile, innovation can also come from outside of employee, for example from management, from shareholder, from owner and others. For innovation from technology, it is usually due to emergency requirement of a machine or equipment that is required in CPOB and company shall purchase it or because the machine, equipment or computer has been out of date.

Meanwhile, related to the stages of CICM and management objectives, key informants gave the opinion that the pharmaceutical companies in this IM stages have started to find the innovation resources, so that they can begin to create new ways and new products faster. Pharmaceutical companies in this stage had started (sorted) out of the internal management issues. That is to say, the internal management is well defined so that it can start to move "out" and do new ways which are more innovative and creative. Innovation source of pharmaceutical companies is more than the marketing teams who see the market condition as well as from the employees. All IC components, namely HC, SC and RC support the creation of efforts for innovation and creativity. HC has begun to develop and empower all knowledge, experience, and skills they have to create new things and new creations. SC also supports the creation of innovation to start the growth of a culture of innovation and provides wide opportunity to HC for innovation and creativity. Systems and working procedures also provide an opportunity for employees to dare to try new things for the new ways which are more innovative and faster. Likewise, the RC has begun to capture the wishes and market changes including consumers' behavior, so that they can provide innovation input to the company management.

### **3. Intellectual Property Management Stage**

At this IPM stage, pharmaceutical company can conduct intellectual wealth management by brand management (the existence of special work unit to handle brand of the company) and IP portfolio (improve good IP, combine good IP with the bad one, and eliminate IP which is already gone in the market). Related to brand management, according to the informants, there should be a special unit or department that handles IP in the pharmaceutical companies, since there has not been such units or departments in

those companies. Usually, such units are only included in the department marketing that monitors the movement of each drug product. Meanwhile, for the IP portfolio indeed it is done in various combinations in practice. It is by monitoring the medicinal products which are already slow-moving or still fast moving. If the drug has begun to slow-moving, the pharmaceutical companies think and act so that the product could rise again. For example, by adding flavor with orange or strawberry flavor for pharmaceuticals children. Another thing to do is to change or improve the product packaging so it looks new and favored by customers. In some pharmaceutical companies, drug advertising star also becomes a determinant of the success of the drug. For example headache medicine Oskadon starred by Manteb Sudarsono, a famous puppeteer in Indonesia. However, as well as the behavior of commercials star, if the star has bad behavior and meet his doom with negative publicity in the media, the sale will be affected as well. Thus, a pharmaceutical company will replace the commercials star.

Meanwhile, related to the stages of CICM and objectives of management, as in Figure 1 and Table 4, the informant gave the opinion that the pharmaceutical companies in this stage already have intellectual property, such as the brand of products has begun to emerge, the brand image of the company is also known, including the leader product of the company. The existence of a variety of intellectual property, pharmaceutical companies is able to earn income (superiorprofit) and also able to increase the company's competitive position. At this stage, the intellectual property owned by pharmaceutical companies are not only associated with the drug, but already on other aspects. It means that many pharmaceutical companies have diversified their products or do many business conglomerations. Diversification of medicinal products is carried out by making products such as immunity, dairy, food and beverage supplements, and also healthy drinks. The point is that the products should support health. Pharmaceutical companies do business conglomerations with other businesses that are still related to pharmaceuticals and drugs, such as making dispensaries or making health clinics. There was even an effort to make the pharmaceutical business conglomerations from upstream to downstream, for example by building a factory of bag or wrapping manufacturers of drugs, intravenous tubes, bags of capsules and other pharmaceutical preparations.

Pharmaceutical companies that own intellectual property will be easier to compete and gain revenue. Leader product or a branded product which is very beneficial for the pharmaceutical companies because the products are more easily remembered by the community, for example when have headache, people will always remember Bodrex or Oskadon. Brand images also greatly affect the public perception, for example products of Kalbe Farma must be good, or Kimia Farma pharmacy is certainly complete. Things like this are called intellectual property.

Thus the existence of CICM model consists of three stages, namely knowledge management, innovation management, and intellectual property management can be complement of RTB and KBT role. The definition of complement of the role is CICM model as management model that is able to technically operationalize the integration of IC and KM with RBT and KBT as the principle theory.

### **Conclusion and Suggestion**

Based on the research result that has been done, the research conclusion is the integration concept of IC and KM that can improve and renew RBT and KBT as principle theory of IC and KM must be adjusted with existing industrial condition or pharmaceutical company in Indonesia. By considering the pharmaceutical company condition in Indonesia that not all pharmaceutical company can be categorized as high IC intensive. Thus pharmaceutical companies in Indonesia still need the role of tangible assets even though in some pharmaceutical companies the role of tangible assets is more than intangible assets. Based on the result, this research result is partially changed with the initial research plan that is not to improve or renew RBT and KBT but more to complement the role of those theories. The management model used to complement the role of RBT and KBT is CICM model because it is very complete and comprehensive and as the integration or combination of IC and KM.

Meanwhile, the advice in this research is for the managers of pharmaceutical companies who should be able to understand IC, KM, and business performance and its components respectively. This is important because the interaction between the components of IC and KM can improve performance either partially or simultaneously. The managers

of a pharmaceutical company in Indonesia also have to understand about the two models of integration of IC and KM. Two models of integration are intended for pharmaceutical companies which are new with the first model and the second model when the pharmaceutical companies have started during the development stage. The two models can be utilized by pharmaceutical companies.

It is suggested further research to conduct mapping research of pharmaceutical companies which are high IC intensive or non high IC intensive so that the research results of IC in the Indonesian pharmaceutical company can be optimized. This is important because the condition of industrial or pharmaceutical company in Indonesia is different from foreign pharmaceutical companies which are used by researchers IC overseas. While many domestic IC researchers which previous reference research from abroad. Obviously with the IC research result, the domestic IC researchers can be more careful in determining the object of research.

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