

# AN ASSESSMENT OF INTELLECTUAL CAPITAL IN REGIONAL GOVERNMENT ENTERPRISE; EMPIRICAL STUDY IN SUKOHARJO DISTRICT \*

Anton Agus Setyawan

Fakultas Ekonomi Universitas Muhammadiyah Surakarta  
Jalan A. Yani Tromol Pos I Pabelan Kartasura Surakarta 57102 Telp. 0271-717417 psw.229  
E-mail: rmb\_anton@yahoo.com

## Abstract

*BUMD (Regional Government Enterprise) is one of the sources of revenue for regional government, whether provincial or district. But the fact is BUMD has a low performance. This happens due to lack of understanding about quality service standard and also low quality of human resource. This research uses intellectual capital approach to analyze the quality of organization in BUMD. This research analyses the effects of human capital and customer capital to customer capital. The respondents are BUMD employee in Sukoharjo district who had been work more than a year in their institution. This research use intellectual capital methods developed by Bontis et al (2000) and Stewart (1997). The tools of analyses of this research is hierarchical regression analyses. The conclusion is BUMD must increase their human resource's quality and standardized their service in order to increase their organization's performance.*

**Keywords:** *intellectual capital, human capital, customer capital, structural capital*

## INTRODUCTION

The implementation of regional autonomy brings several changes in the public sector practices. A lot of critics have been told to public organization (i.e. government organization) in Indonesia since they have very bad quality of service. The main problem is the quality of human resource and public organization. Ideally, it all should have change since regional autonomy demands more qualified human resource and organization in public sector. Regional autonomy demands creative, smart, innovative and entrepreneurship public employee. Those kinds of public employee

will have to disseminate in all of public organization. However, several concepts have been used to analyze regional government's performance, for example, the idea to change bureaucratic paradigm of public employee to entrepreneurship paradigm. It becomes the main concept of corporate governance (Osborne dan Plastirk, 1997; Osborne dan Gaebler, 1992). In Indonesia, several concepts of modern management have been implemented in the public sector. Several districts in central Java province has change their service procedure to the public in order to increase community's satisfaction. For example, Sragen district in central Java province has imple-

\* The Original version of this paper has been presented in the 1<sup>st</sup> International Conference on Business and Management Research "Facing 21<sup>st</sup> Century Challenges" Denpasar 23-24<sup>th</sup> of August 2006

ments one stop service in investment regulation (Setyawan, 2005). Those examples show that local government organization is progressing in a positive way. Unfortunately, transformation process in the local government organization is very slow. It happens due to two problems. First, the quality of human resource or public employee is low. Second, the performance of local government is also in a low quality. It does not have a standard of measurement. How can we measure an abstract object such as the intangible resources in organization such as intellectuality of human resource?

Local government enterprise or BUMD is one of the local government organizations, which directly contact with customer (i.e. society). BUMD have a strategic role in the development of local economic whether in the district or province level. Local government has a dream that BUMD could increase local government revenue (PAD). Unfortunately, the role of BUMD in the development of local economic is insignificant in Indonesia. In average, the contribution of BUMD in local government revenue is less than 1 percent (Budisatrio, 2002). This problem happens due to two problems in BUMD. First, BUMD also have lack of qualified human resource in order to achieve their desired level of performance. Second, there is a dualism in the goals performance of BUMD in Indonesia. The first goal is to give an excellent service to the society. The second goal is to earn profit to local government revenue. These two goals are contradictive, since, BUMD is in a non-profit organization. Their business sometimes does not earn profit but only to serve society. For example, PDAM, which is a BUMD in water distribution. Their core business is water distribution for society. Production cost in water distribution is higher than the price of the water itself. That's why PDAM is always

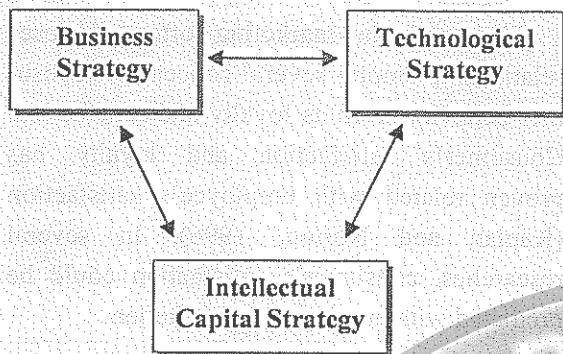
become a cost center or subsidy center in local government budget.

This article introduces a new method to measure local government organization (i.e. BUMD). The new method is intellectual capital. Intellectual capital measures intangible assets in organization, which sometimes fail measured by financial report. Intellectual capital was developed by Bontis, Keow and Richardson (2000) and Stewart (1997).

### 1. Knowledge as a Strategic Intangible Asset

One reason BUMD have a low performance is their disability to control over the value chain of the industry. It happens due to lack of competitive advantage. For example, BUMD in financial business such as BKK and Bank Pasar often loss in competition with private financial institution such as BPR or other private bank, especially in Central Java, where private financial institution is the market leader. Knowledge is the main value chain in service business. Knowledge in financial business is competitive interest rate and service quality standard. The latter is often ignored by BUMD. Unfortunately, both are very important aspect for consumer. They are also the real form of intangible asset for company.

Measurement of company knowledge is the main problem in the knowledge management issue. They are several methods for measuring intangible assets, but they all have weakness. One of them is intellectual capital. As a method, intellectual capital is in the developing age so it needs several adjustments. IT and chemical companies in USA use intellectual capital method in determining their business strategy (Nickerson, 1998). Figure 1 is the integration process of intellectual capital and business strategy by those companies.



Source: Nickerson (1998)

**Figure 1. Integration Process in Decision Making**

A company should answer four basic questions before adopting the models above:

- Who is going to be the target market?
- What kind of investment should be done to maintain relationship with customer?
- What kind of technology should be developed?
- How company should organize itself?

## 2. Intellectual Capital Concept

There are several definitions of intellectual capital. Intellectual capital is intellectual material-knowledge, information, intellectual property rights, experiences-which can be used to create wealth (Stewart, 1997). Another definitions by Brooking (1996), defines intellectual capital as a combination of market intangible asset, intellectual property, infrastructure and human resource, which be able to optimize the major functions in the company. Bontis (1998) defines intellectual capital as an exploratory of effective function of the knowledge in production process by combining tangible and intangible assets. Intellectual capital is also unseen process and assets and intangible assets of the company (Roos, 1997). Olve and Wetter (1999) define intellectual capital as an element in the company's value, which is similar to market premium.

Intellectual capital is a new approach to analyze phenomena in the knowledge-based economy. This approach count gap between company's values with their assets, which could not be explain by physical assets. For example, if a company sent their employee to have training in management quality, then they have to pay the cost of training. The payment is an investment by the company, so it needs a return. If the employee complete his training and then he get promote as a production manager, company could analyze their return. While he become a production manager the company increase their productivity because of several changes in production process by the manager from his new knowledge, then we could say that the company has their return on investment. The problem is to determine how much knowledge has it effects on the productivity. This is the main issue of this paper. This paper tries to explain the role of intangible asset in the company, in this case BUMD. This paper use intellectual capital definition proposed by Stewart (1997). By this definition, intellectual capital of an organization gained from human capital, customer capital and structural capital.

H1 human capital has a positive effect on structural capital mediated by customer capital.

## 3. Human Capital

Human capital is individual ability required by organization to solve customer's problem (Stewart, 1997). Human capital also defines as a combination of talent, education, experience and attitude to life and business (Hudson, 1993). Bontis completes the definition of human capital as a collective ability of a company in arranging the best solution from their individual knowledge. In other words, human capital is the quality of human resource, which

be able to give their contribution to organization.

Employee is increasing intellectual capital by their competence, attitude and intellectual ability (Ross, Edvinsson and Dragonneti, 1997). Skill and education are includes in employee's competence. Employee's intellectual ability keeps cognitive and innovative aspect, so that they can solve organization's problem. Employee is an important asset of the company, but their not belong to company. So, employee turnover is a loss for company. But, they are also a thought that if a company loss a high quality employee, it will force them to build a new perspective, and finally a company's knowledge instead of individual knowledge formed in the organization.

Human capital represents stock of employee's individual knowledge (Bontis, Keow and Richardson, 2000). Knight (1997) proposes organization will increase their human capital quality if they hire, manage and develop the best human resource.

**H2** Human capital has a positive effect on customer capital

**H3** Human capital has a positive effect on structural capital.

#### 4. Customer Capital

Customer capital is the depth (penetration), width (coverage), and profitability of the organization's franchise (Saint Onge, 1998). Customer capital represents potency of organization come from their intangible assets (Bontis, 1999). Customer capital has a strong relationship with market orientation concept. Market orientation is the use of market intelligence by organization widely to anticipate customer needs at the present and in the future (Kohli and Jaworski, 1990).

Research in marketing often discloses relationship among several concepts of consumer behavior, such as loyalty and satisfaction. Consumer's satisfaction and loyalty has proven related with employee's satisfaction (Kaplan and Norton, 1996). In several researches, consumer's satisfaction could be predicted with employee's satisfaction.

**H4** Customer capital has a positive effect on capital.

#### 5. Structural Capital

Structural capital is the organizational capabilities of the organization necessary to meet market requirements (Saint Onge, 1998). It also could be defined as everything stays in the company when employee is going home (Roos, 1997). Structural capital emerges from the process and value of the organization, which reflects external and internal focus of the organization plus value development in the future. If a company has bad system and procedure, then intellectual capital in the company could achieve their full potency.

Knight (1999) divides structural capital into several type, they are organizational strategy, internal network, system, database and file. Also property rights, patent, process, invention, trademark, brand and license are includes in structural capital. Organization, which has strong structural capital, could also have a good corporate culture. It will support their employee to try something new, learn new thing and even, experience failure. Structural capital is a critical path, which makes intellectual capital possible to measure at the organizational level.

#### 6. Empirical Research

Bontis, Keow and Richardson have conducted a research about the effects of intellectual

capital on company's performance in Malaysia manufacturing and service industries. Respondents of this research are CEO of several major companies in Malaysia. There are 107 respondents of this research and analyzed by PLS (Partially Least Square) method. The result shows there is a positive significant of intellectual capital to company performance.

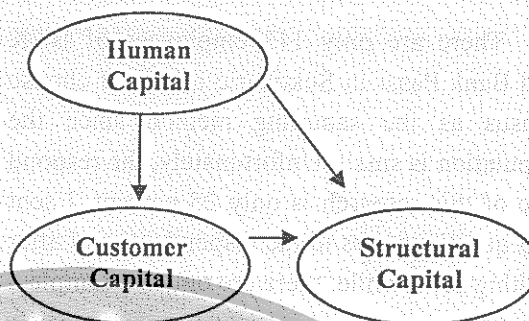
Bontis, Crossan and Hulland (1999) also test learning process in the organization with intellectual capital method. The setting of this research is financial consultant in Canada. This research introduce SLAM (Strategic Learning Assessment Map) construct to measure company's learning process. This construct has been developed from intellectual capital method. The respondents of this research are CEO of the financial consultant. The result shows that company has better learning process when implementing the concept of intellectual capital.

Bontis and Girardi (1999) analyses the effect of intellectual capital training to the quality of manager's decision. This research uses KRMS (Knowledge Management Receptivity Survey) instrument. The respondents are executive in public organization in Canada. The result shows that the quality of manager's decision has increase after they receive intellectual capital training.

Coff (2002) tests the role of human capital in the merger process. The setting of this research is companies in the USA, which conduct merger during 1988-1989. The result shows that human capital is one of the antecedents of company value after a merger process.

## 7. Conceptual Model

This research tests the intellectual capital model proposed by Bontis et al (2000).



Source: Bontis et al (2000)

Figure 2. Intellectual Capital Model

## RESEARCH METHOD

### Sample and Population

Population of this research is BUMD employee in Sukoharjo district in Central Java province. They are the employee of BKK (Badan Kredit Kecamatan) and Bank Pasar. Those two institutions are public financial institution organized by Sukoharjo district. There are 12 units of BKK all over Sukoharjo district. Table 1 shows employee data of those 12 BKK and one Bank Pasar.

Table 1. Employee Data of Bank Pasar and BKK Sukoharjo District

No.	BUMD Bank Pasar and BKK	Number of Employee
1.	Baki	16
2.	Sukoharjo	7
3.	Nguter	6
4.	Gatak	6
5.	Kartasura	6
6.	Grogol	11
7.	Mojolaban	9
8.	Polokarto	5
9.	Tawang Sari	6
10.	Bulu	4
11.	Weru	3
12.	Bendosari	6
13.	Bank Pasar	28
	Total	113

Source: Bagian Perekonomian Pemkab Sukoharjo

There are only 113 employees of BKK and Bank Pasar in Sukoharjo district. I choose census as the sampling method since the population is small. Unfortunately, the respond rate of this research is only 25 percent. I sent 113 questionnaires to the respondents and after waiting for a while, there are only 28 complete questionnaires.

### Operationalization of Definition

Human capital is individual ability required by BUMD for solving customer's problems measured by rating scale from not good to very good.

Customer capital is the depth (penetration), width (coverage), and profitability of the BUMD's franchise measured by rating scale

from not good to very good.

Structural capital is the capabilities of the BUMD necessary to meet market requirements measured by rating scale from not good to very good.

### Measurement

There are three variables in this research; they are human capital, structural capital and customer capital. I measure each variables by instrument developed by Bontis et al (2000) and Stewart (1997). Table 2 shows the construct validity of all variables. This research uses confirmatory factor analysis to measure construct validity of intellectual capital construct. Table 3 shows the reliability or internal consistency of the intellectual capital con-

Table 2. Factor Score of Intellectual Capital Construct

No	Item Pertanyaan	Factor Score
<i>Human Capital</i>		
1.	Appreciation to employee	0,911
2.	Working facility	0,911
3.	Employee's personal relationship	0,841
4.	Employee's perception to company's image	0,656
5.	The performance of working team	0,853
6.	Training program	0,911
7.	Competency	0,767
8.	Promotion policy	0,903
9.	The contribution of employee's idea.	0,822
10.	Employee's ability in decision making	0,786
<i>Structural Capital</i>		
1.	Appreciation to information.	0,636
2.	Management and storage of data.	0,638
3.	Company administration and files.	0,785
4.	Information spreading in the company	0,742
5.	Company's library	0,886
6.	Computer network	0,726
<i>Customer capital</i>		
1.	Public relation department's performance	0,939
2.	Service to customer	0,939
3.	Information for customer.	0,771
4.	Communication with supplier and competitor.	0,939
5.	Response to customer complaint.	0,805

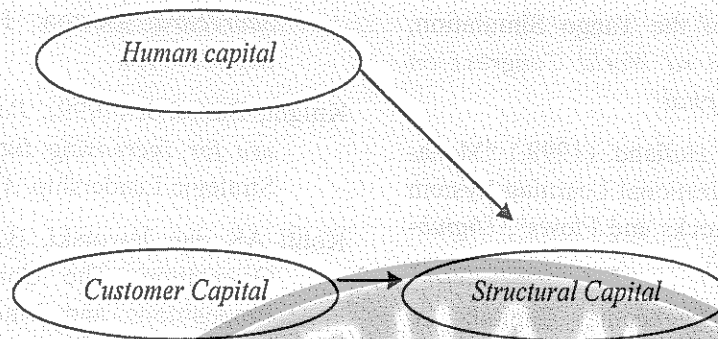


Figure 3. Intellectual Capital Model of BUMD in Sukoharjo District

## CONCLUSIONS

This research shows a different result with the one conduct by Bontis et al (2000) and Stewart (1997). It shows that customer capital is not an intervening or mediating variable in the relationship of human capital and structural capital. In this setting, human capital and customer capital are antecedents of structural capital. It also means that the quality of human resource is independent from the quality of service. But together, they all have a positive effect to the ability of BUMD to meet customer requirements. The model proposed by Bontis et al (2000) is revisited in this research. Figure 3 shows the intellectual capital model of BUMD in Sukoharjo district.

Managerial implications of this research are there must be several policy changes by Sukoharjo district regional government to their BKK/Bank Pasar. *First*, regional government should pay more attention to the quality of human resource in BUMD. This policy is important to increase BUMD's ability to anticipate society needs. Regional government could implement human resource policy such as: conduct more comprehensive human resource planning, increasing employee's competence and conduct a complete training

program for employee. Recruitment process of the employee should be redesign.

*Second*, BUMD must aware of the quality of the service. It needs a standardization of service in the BUMD organization. Third, Sukoharjo district regional government must give a better attention to the wealth of BUMD employees. They need more working facility and incentive in order to increase their performance.

This research has two limitations. *First*, the response rate is very low. It happens due to lack of appreciation of BKK/Bank Pasar employee with this research. *Second*, the model in this research is not directly relate intellectual capital with company or employee performance. These two limitations is open a wide chance for another researcher who has interests in such issues.

## REFERENCES

- Bontis N., Keow & Richardson, S. (2000) Intellectual Capital and Business Performance in Malaysian Industries, *Journal of Intellectual Capital*. Vol. 1 (1).
- Bontis Nick dan John Girardi, (1999.) Teaching Knowledge Management and Intellectual Capital Lessons: An Empirical

- Examination of the Tango Simulation, *paper in the 3rd World Congress on Intellectual Capital*.
- Bontis, Crossan and Hulland. (1999.) "Managing an Organizational Learning System by Aligning Stocks and Flows", *Unpublished Research*.
- Bontis, N. (1998) Intellectual Capital: An Exploratory Study that Develops Measures and Models. *Management Decision*, Vol. 36 (2).
- Bontis, Nick, Nicola C Dragonetti, Kristine Jacobsen dan Gran Roos. (1999). The Knowledge Toolbox: A Review of the Tools Available to Measure and Manage Intangible Resources, *European Management Journal*, Vol. 17 (4).
- Brooking, (1999) A. *Intellectual Capital-Core Asset for the Third Millennium Enterprise*, London: International Thomson Business Press.
- Budisatrio, Tjahjanto, (2002). Divestasi atau Revitalisasi Badan Usaha Milik Daerah, *Manajemen Usahawan Indonesia*, No. 2 (31).
- Coff, Russell W, (2002). Human Capital, Shared Expertise, and the Likelihood of Impasse in Corporate Acquisitions, *Journal of Management*. 28(1).
- Cooper, Donald P dan P. S. Schindler. (2001). *Business Research Methods*. Seventh Edition. Boston: McGraw Hill.
- Hudson, W, (1993) *Intellectual Capital: How to Build It, Enhance It, Use it*, New York: John Wiley.
- Kaplan RS dan Norton DP, (1996). *Translating Energy into Action-The Balanced Scorecard*, Boston: Harvard Business School Press.
- Knight, Daniel J, (1999). *Performance Measure for Increasing Intellectual Capital*, Strategic Leadership, March.
- Kohli AK dan Jaworski, BJ, (1990). Market Orientation: The Construct, Research Propositions and Managerial Implications, *Journal of Marketing*, Vol 54 h 1-18.
- Nickerson, Jack, (1998). Intellectual Capital Management Strategy: The Foundation of New Business Generation, *Journal of Knowledge Management*, Vol 1 No 4.
- Nunnally, J. *Psychometric Theory*, (1978), Second Edition, NY: McGraw Hill.
- Olve NG Roy dan Wetter M, (1999) *A Practical Guide to Using Balanced Scorecard-Performance Drivers*, Chicester: John Wiley and Sons.
- Osborne, David dan Peter Plastirk, (1997) *Memangkas Birokrasi*, Jakarta: PPM.
- Osborne, David dan Ted Gaebler, (1992). *Mewirauahakan Birokrasi*, Jakarta: PT Pustaka Binaman Pressindo.
- Roos, G, Roos J, Edvinsson L dan Dragonetti Nc (1997), *Intellectual Capital-Navigating in the New Business Landscape*, NY: New York University Press.
- Saint – Onge, Hubert. (1998). How Knowledge Management Adds Critical Value to Distribution Channel Management, *Journal of Systemic Knowledge Management*.
- Stewart, Thomas A. (1997) *Modal Intelektual: Kekayaan Baru Organisasi*, Jakarta: PT Elex Media Komputindo.