RELATEDNESS EFFECT ON IT OUTSOURCING STRATEGIES AND KNOWLEDGE MANAGEMENT ON ORGANIZATIONAL PERFORMANCE IMPACT ON GOVERNMENT PAPUA PROVINCE

*Oscar O Wambrauw**

Abstract: *Utilization of information technology in the organization should consider the limited resources such as data, application systems, technology, facilities and human resources. Given limited resources, this is a major factor in the need for governance guidelines governing the use of information technology in organizations. The purpose of this study was to test the effect of Relatedness affects the IT Outsourcing and Knowledge Management Strategy and its influence on the performance improvement of the implementation of government in Papua Province. This study took place at the District Government Agencies / City and Bureau / Agency / Office of the Autonomous Province across the province of Papua. The population in this study are all agencies in the province of Papua, with a sample size of 106 agencies are autonomous province and district / city in the province of Papua, the sample unit is 2-3 respondents each agency. Techniques of analysis in this study is the analysis of the path. Techniques of analysis in this study is the analysis of the path. From the results of path analysis showed that the effect on the Relatedness of IT Outsourcing Strategy, Knowledge Management and Organizational Performance. This indicates that the higher the value of IT Relatedness effect on Outsourcing Strategy, Knowledge Management and Organizational Performance, it will lead to higher Outsourcing and Knowledge Management Strategy, and the Organization Performance. Outsourcing Strategy effect on Knowledge Management and Organizational Performance. This shows that the higher the value of Outsourcing Strategy, will result in the value of Knowledge Management and Organizational Performance. On the other hand, no significant effect Outsourcing Strategy to Organizational Performance. This illustrates that however high the value of Outsourcing Strategy, yet the high and low impact on Organizational Performance.*

Keywords: *Information Technology, Organizational Performance, Papua Indonesia*

1. BACKGROUND

The utilization of information technology in organizations should consider resources limitations such as data, application systems, technology, facilities and human resources. Given resources limitations become major factors in the need for guidelines in the governance which set the use of information technology in organizations.

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* University of Cendrawasih, Indonesia, *E-mail: oscar.wambrauw.jp@gmail.com*

The development process starts with measuring the maturity level of an organization's information technology today. There is no denying that this time, the role of information technology becomes important for the survival of an organization, with the core business that is directly or indirectly dependent on the reliability of the management of information technology (information technology / IT). With the supporting management of information and technology (also known as information systems), it will be able to optimally assist the organization in achieving its objectives.

Knowledge (knowledge) is a vital part in the social life of modern humans. Furthermore, in an organization, the role of knowledge possessed as a whole can improve the competitiveness and efficiency of the work of the organization concerned. In the age of information, it is important to realize that the flow of knowledge in and out of the organization takes place very quickly. With the utilization of information and telecommunications technology, revolution dissemination and utilization of knowledge are not strange things. Many organizations today adopt and implement a Knowledge Management system as a means to support the processes associated with the empowerment of knowledge possessed.

Organizations that wish to compete in the global era require external cooperations in the field of information technology in line with the organization's strategy to focus on core competition (core competencies) it has. Outsourcing is considered as a means to reduce costs, decrease job that allows a company to concentrate on a number of important aspects of the development and use of information technology, and accesses to information would be too costly to be undertaken by the organization. In outsourcing activities, organizations are the party that is associated with the need for information technology, whereas the development of information technology continues to evolve rapidly. One thing that is needed by the company is the computers used to look for information, to process and even to present the data. Only by concentrating on its core capabilities, the organizations can create products or services that have competitive advantages (Indradjit 2000). Akomode *et al.*, (1998) says that the core competences or core activities present a performance offered by an organization in the form of long-term competitive advantage, which is protected and controlled by management policy.

Based on the above explanation, the goal of this study was to examine the influence of IT Relatedness affecting the Outsourcing and Knowledge Management Strategy and its influence on the performance improvement of the implementation of government in Papua Province.

2. THEORETICAL REVIEW

Technology refers to all forms of ways or methods used to create, store, change, and use information in all its forms (Mc. Keown, 2001, in Suyanto, 2005).

Information technology is a general form that describes any technology that helps to produce, manipulate, store, communicate, and or keep information (Williams, Sawyer, 2005 in Suyanto, 2005). Information technology is an intangible resource that is owned by a company (Hitt, Ireland, Hoskisson, 2001) and is a strategic organizational resource (Wade and Hulland, 2004 in Tanriverdi, 2006). In addition, (Aji 2005 in Lester, 2007) explains that information technology is a technology that utilizes the computer as the primary device to process data into useful information. Therefore, a company that operates business units in the industry has the opportunity to exploit cross-unit IT synergies by using the resources and information technology management processes between business units concerned (Tanriverdi 2005 in Baiq Anggun, 2007).

Researchers who support the influence between variables:

1. The effects of information technology relatedness on the strategy of IT outsourcing, several studies conducted by Lee (1996); Nichols (2002); Chen and Perry (2003) and Reyes *et al.*, (2005).

2. Direct effects of IT Relatedness on the knowledge management capabilities, some of the results of the research conducted by Brown and Magill (1998); Brown (1999); Alavi and Leidner (2001); Schultze and Leidner (2002). While indirect effects on the knowledge management through IT Outsourcing are the results of the research on the literature study conducted by Behn R., (2008); C.P. Barros, (2007); Berman (2008).

3. The direct effects of IT Relatedness to organizational performance, from this study that shows this relationship is Kelley (1994), Siegel and Griliches (1992) in Devaraj and Kohli (2003); Hitt and Brynjoltsson (1995), Dewan and Min (1997) in Devaraj and Kohli (2003). While the indirect relationship of IT Relatedness through knowledge management capabilities on the performance, as studied by Barua and Mukhopadhyay (2000); Sambamurthy *et al.*, (2003); Nengah (2005) and Tanriverdi (2005). While seeing the indirect effects through IT outsourcing strategy is the research finding of the literature study conducted by Lee, Jae-Nam. (2006); Curley, Martin (2004); Chicester, Wiloy (2000); Barta, Peter; Richard Zabow (2003).

4. The direct effects of IT outsourcing strategies to organizational performance. Some research indicates that outsourcing strategies directly affect the performance of the organization, the research conducted by Ceris (2005); Lee, Jae-Nam. (2006); Murthy, S. (2004); Payton, F. C. and R. Handfield. (2003); Beulen, E. and P. Ribbers. (2003); Vitharana, P. and R. Dharwadkar. (2007). While seeing the indirect effects through knowledge management capabilities, the results of the literature study conducted by Curley, Martin (2004); Delporte-Vermeiren, Dominique J.E. (2003); Bent, Peter; Matthew T. Furton (2003).

5. The effects of knowledge management capabilities on Organizational Performance. The results of studies showing this relationship are ones conducted by Barua and Mukhopadhyay (2000); Sambamurthy *et al.*, (2003); Nengah (2005) and Tanriverdi (2005); Kelley (1994), Siegel and Griliches (1992) in Devaraj and Kohli (2003); Hitt and Brynjoltsson (1995), Dewan and Min (1997) in Devaraj & Kohli (2003).

3. MATERIALS AND METHODS

This study took place at the District Government Agencies / City and Bureau / Agency / Office of the Autonomous Province across the province of Papua. The choice of location was determined because: first, Papua (not including West Papua Province) is a province consisting of 26 districts and cities that are implementing special autonomy in accordance with Law No. 21 year 2001, in which all government agencies are currently strengthening institutional capacity building so that each agency experiences significant growth. Second, in accordance with Presidential Decree No. 3 of 2003 on the National Development policies and strategies of e-government, which has been mandated to every Governor and Regent / Mayor to take the concrete steps necessary in accordance with the duties, functions and their respective authorities to the implementation of e-government development nationally. Third, the choice of the object of this study was intended to describe and explain the problems and theories studied. Fourth, the ease of access the required data.

The population in this study was all agencies in the province of Papua, with a sample size of 106 autonomous provinces and districts / cities in the province of Papua. The units of analysis (respondents) in this study were representatives of each agency of the Districts / Cities and autonomous agencies of the Provinces that have been responsible and competent in managing and implementing the process of the implementation of information and communication technology, which were expected to provide valid information as research data, namely more or less 2-3 respondents of each agency to assess the research instruments.

The analysis technique in this study was the path analysis usin Sobel Test approach on the testing of mediation between variables. In accordance with the objectives of the research conducted could be categorized as an explanatory research, ie research that aims to find an explanation of the causal relations or the effects of the relationship between a variable with other variables through hypothesis testing (Umar, 2004). The variables in this study were the variables of IT Relatedness, Outsourcing Strategy, Knowledge Management, and Organizational Performance. The Path analysis model was based on the following conceptual framework:

The constructs built as in the above path diagram could be divided into three groups, namely: Exogenous construct consisting of IT Relatedness (X1), and the

Figure 1: Conceptual Framework
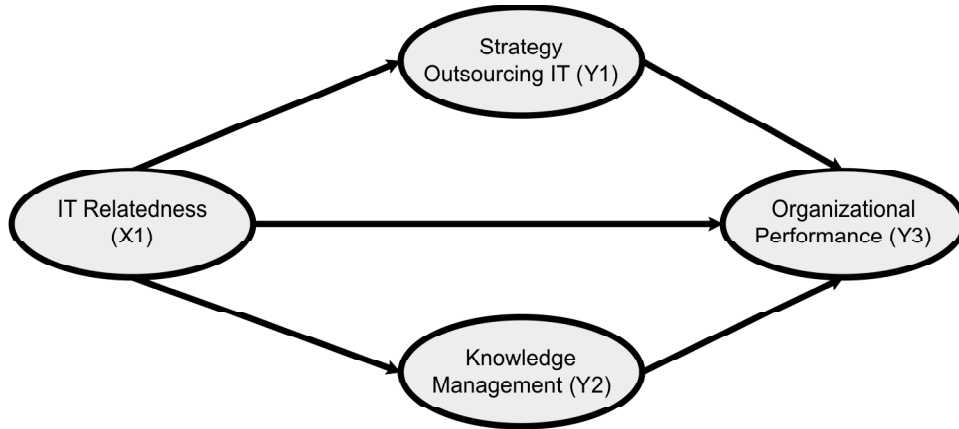
endogenous construct consisting of Outsourcing Strategy variables (Y1), Knowledge Management (Y2), and Organizational performance (Y3). Exogenous constructs (exogenous constructs), also known as *source variable* are variables that are not predicted by the other variables in the model. Endogenous constructs (endogenous constructs) are variables whose value is determined in the model. Furthermore, the picture above can also be expressed in equation form as follows:

1. $Y_1 = P_1 X_1 + \varepsilon_1$
2. $Y_2 = P_2 X_1 + \varepsilon_2$
3. $Y_3 = P_4 X_1 + P_5 Y_1 + P_6 Y_2 + \varepsilon_3$

2. **Second Step**: An examination on the assumptions underlying the path analysis, among others:

    (a) Relationships in the model are linear and additive. Examination on this linearity assumption can be seen from the residual plots. According to Gujarati (1991) one of the purposes of the investigation is to determine whether residual variables included in the model may not be linear. If the residual value is dispersed to the forecast shows a random pattern, then the data does not indicate abnormalities, so that the relationship between variables can be said to be linear.

    (b) Any residual data model distributes normally. The normal distribution is a theoretical distribution and continuous random variables. To test whether the sample is a normal distribution, Kolmogorov Smirnov *Goodness of fit test* is used with the test criteria if the number of significance (sig.)> 0:05, then the data are normally distributed.

(c)   Variables are measured without error (valid and reliable).

3.   **Third step**, Path Coefficient Calculation (Parameter Estimation)

Solimun (2002), Riduan and Kuncoro (2007) mention that essentially the path coefficient is a standardized regression coefficient (Beta Coefficient) that is the regression coefficient calculated from the data base that has been set in raw numbers or Z-*score* (data set with mean value=0 and standard deviation = 1). The standardized path coefficient (*standardized path coefficient*) is used to explain the effects of the independent variables (*exogenous*) to other variables treated as dependent variable (*endogenous*).

According to Supranto (2004), beta coefficient of Y on X (B_{yx}) will be equal to the coefficient of X on Y (B_{XY}), as well as the correlation coefficient (r_{xy}). So that the path coefficients calculation using the correlation matrix, or by looking at the standardized regression coefficients (beta coefficients) essentially results on the same value.

4.   **Fourth step**, testing the significance of the effect in the path analysis. Testing the significance of direct effects is by consulting t value with t table. If the value f the t_{count} < of the value of the t_{table} then H_0 is accepted H_a is rejected, or no significant direct effect of independent variables on the dependent variable. Conversely, if the value of t_{count} > the value of the t_{table} then H_0 is accepted or H_a is rejected or there is a significant direct effect of the independent variables on the dependent variable.

5.   **Fifth Step**: examination of the validity of the model.

The examination of the validity of the model can use the coefficient of determination of the total. The total diversity of data that can be explained by the model is measured by the formula:

$R^2_M = 1 - P^2_{e1} P^2_{e2}....P^2_{ep}$

The interpretation of R^2_m is the same as the interpretation of the coefficient of determination (R^2) in the regression analysis. A model is valid if it has a high precision and accuracy. The measurement of accuracy of the model is the coefficient of determination (R^2) with values ranging from 0 to 1.

In this study, the examination of the validity of the model uses the principles *theory triming*.

III. RESULTS OF THE STUDY

1.   Vadility Test and Research Instruments Reliability

Here presents the table of validity and research insruments validity of each variable:

Table 1
The Results of Validity and Reliability Tests

Items	X1		X2		X3		Y	
1	X11	0.720	X21	0.815	X31	0.813	Y11	0.730
2	X12	0.698	X22	0.768	X32	0.776	Y12	0.698
3	X13	0.765	X23	0.788	X33	0.834	Y13	0.671
4	X14	0.748					Y14	0.722
Cronbach	0.711		0.698		0.733		0.659	

From the table above, it can be seen that all correlation values of each indicator and item are above 0.3. so that, all indicators and questions items were valid. While from the alpha cronbach a value of above 0.6 was obtained for all variables so it could be concluded that the research data instruments were valid.

2. Results of Factor Analysis

The values of loading factors showed the weight of each indicator as a measurement of each latent variables. The indicator with the biggest loading factor showed that the indicator was a measurement of the strongest variables (domain). The results of factor analysis are shown as follows:

Table 2
The Values of Loading Factors of Each Variable

Indicators	X1		X2		X3		Y	
1	**X1.1**	0.728	**X2.1**	0.821	**X3.1**	0.802	**Y1.1**	0.695
2	**X1.2**	0.722	**X2.2**	0.740	**X3.2**	0.775	**Y1.2**	0.744
3	**X1.3**	0.743	**X2.3**	0.810	**X3.3**	0.845	**Y1.3**	0.682
4	**X1.4**	0.742					**Y1.4**	0.707
5								

In the IT Relatedness variable (X1), there are four indicators, namely Infrastructure (X1.1), Strategy Formulation Process (x1.2), IT HR Process (X1.3), and Management Vendor Process (X1.4). From the highest factor loading values, it is obtained that the IT HR Process indicators (X1.3) is the most dominant in forming the Information Technology Relatedness variables.

In the IT Outsourcing Strategies variables (X2), there are three variables, namely Integrity Level (X2.1), Allocation Control (X2.2), and Performance Period (X2.3). From the highest factor loading values, it is obtained that the Integrity Level indicators (X2.1) is the most dominant in forming the IT Outsourcing Strategies variables.

In the management knowledge variable (X3), there are three indicators namely, Management Capabilities of organizational knowledge resources to product (X3.1), Management Capabilities of organizational knowledge resources to customers (X3.2), and management capabilities of managing the organizational knowledge resources to managerial (X3.3). From the highest factor loading values, it is obtained

that the the management capabilities of organizational knowledge resources to managerial indicators (X3.3) is the most dominant in forming the knowledge management variables.

In Government Organization Performance variables (Y), there are four indicators, namely Financial Performance (Y1.1), Service Performance (Y1.2), Internal Business Process Performance (Y1.3), and Learning and Growth Performance (Y1.4). From the highest factor loading values, it is obtained that the Service Performance indicators (Y1.2) is the most dominant in forming the Government Organizational Performance variables.

3. Asumption Testing in the Path Analysis

Linearity testing of the relationship between variables in this study using the Curve Fit method showed that all of the effects were in the form of linear model. The next is to test the assumption of normality in the residuals of each equation in the path analysis. Sig Kolmogorov Smirnov to third equations respectively 0.584, 0.899, and 0.918 were all greater than 0.05, so the assumption of normality of the residuals were met.

4. The Results of the Path Analysis

The first stage in the analysis was the path of goodness of fit models testing. The coefficient of total determination was equal to 54.54%. This indicates the diversity of data that can be explained by the model is equal to 54.54%, or in other words, the information contained in the 54.54% data can be explained by the model. While 44.6% is explained by other variables (which are not contained in the model).

The hypothesis testing was performed using the T-statistics on each of the direct effects paths partially. The complete results of the analysis are contained in the results of the path analysis, and can be seen in Appendix 3. The following table presents the results of direct effects hypothesis testing.

Table 3
Direct Impact Testing Results Model Path

Variables relationships	Coefficient	T-Statistic	P-value	Conclusion
IT Relatedness on Strategy Outsourcing	0.273	3.237	0.002	5% significant
IT Relatedness on Knowledge Management	0.216	3.154	0.002	5% significant
IT Relatedness on Organizational Performance	0.133	1.696	0.093	10% significant
Strategy Outsourcing on Organizational Performance	0.142	1.639	0.104	Non significant
Knowledge Management on Organizational Performance	0.561	5.230	0.000	5% significant

Graphically, the results of the path analysis are presented as follows:

Figure 2: Result of the Path Analysis
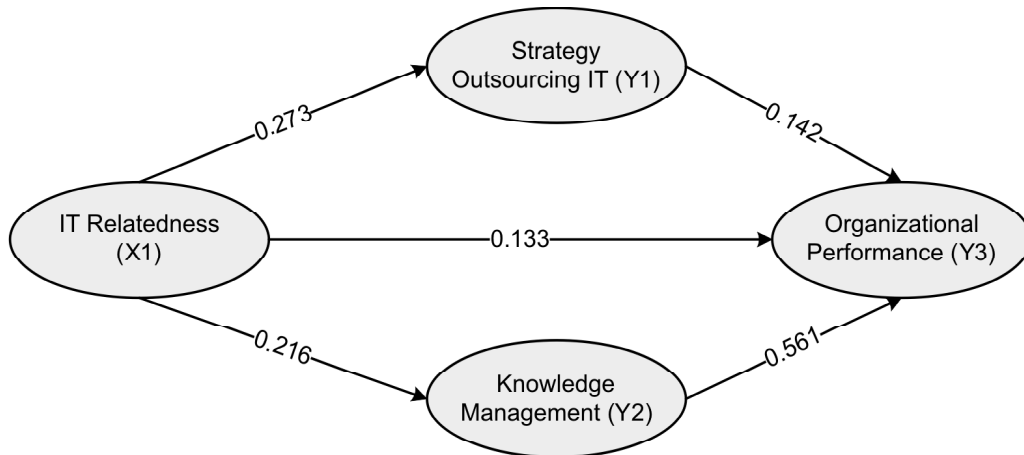
Based on the above tables and figures, the results of direct effects hypothesis testing in the inner model are as follows:

1. The effects testing of the IT Relatedness variables (X1) on the Outsourcing Strategy (Y1) obtained a path coefficient of 0.273 with p-value of 0.002. Since the p-value <5% then **there was sufficient evidence to accept the hypothesis** "the IT Relatedness (X1) affects the Outsourcing Strategy (Y1)". Because the path coefficient was positive, it could be concluded that the relationship between the two was positive. The higher the IT Relatedness (X1), the higher the Outsourcing Strategy (Y1).

2. The effects Testing of IT Relatdness variables (X1) on the Knowledge Management (Y2) obtained a path coefficient of 0216 with p-value of 0.002. Since the p-value <5% then **there was sufficient evidence to accept the hypothesis** "the IT Relatedness (X1) affects the Outsourcing Strategy (Y1)". This means that the higher the IT Relatdness values(X1), the higher the Knowledge Management values (Y2).

3. The effects testing of the IT Relatedness variables (X1) on the Organizational Performance (Y3) obtained path coefficient of 0.133 with p-value of 0.093. Since the p value <10% then **there was sufficient evidence to accept the hypothesis** "IT Relatedness (X1) affects the Organizational Performance (Y3)". Because the path coefficient was positive, it could be concluded that relationship between the two was positive. The higher the IT Relatedness (X1), the higher the Organizational Performance (Y3).

4. The effect testing of the Outsourcing Strategy variables (Y1) on the Organizational Performance (Y3) obtained path coefficient of 0.142 with p-value of 0.104. Because p-value> 5% then **there was not enough evidence to accept the hypothesis** "the Outsourcing Strategy (Y1) affects the Organizational Performance (Y3)". This means that regardless of the Outsourcing Strategy values (Y1), will not affect the intensity of the Organizational Performance (Y3).

5. The effect testing of the Knowledge Management variables (Y2) on the Organizational Performance (Y3) obtained path coefficient of 0561 with a p-value of 0.000. Since the p-value <5% then **there was sufficient evidence to accept the hypothesis** "the Knowledge Management (Y2) affects the Organizational Performance (Y3)". This means that the higher the Knowledge Management values (Y2), the higher the Organizational Performance values (Y3).

The following table presents the results of indirect hypothesis testing.

Table 4
The Results of Model Path Indirect Effect Testing

	Variable relationship		Indirect effect	Conclusion
Independent	Dependent	Mediator	coefficient	
X1	Y3	Y1	0.273x0.142= 0.039	Non Significant
X1	Y3	Y2	0.216x0.561 = 0.121	Significant

The following table presents the results of indirect effects hypothesis testing. Based on the table above, there are six indirect effects with the following results:

1. There was no indirect effect between the IT Relatedness with the Organizational Performance through the Outsourcing Strategy with indirect efficient coefficient of 0.039 (0.273x0.142) due to both the direct effects shaping this indirect effect were not significant. This means that regardless of the IT Relatedness values, it will not affect the organization performance values, although the Outsourcing Strategy values change.

2. There was no direct effect between the IT Relatedness with the Organizational Performance through the Knowledge Management with indirect effect coefficient of 0.121 (0.216x0.561) due to both the direct effects shaping the indirect effect were significant. This means that the higher the IT Relatedness values, the higher the organizational performance values, if the Knowledge Management values change.

From the results of the path analysis, it is showed that the Relatedness affects the IT Outsourcing Strategy, the Knowledge Management and the Organizational

Performance. This indicates that the higher the IT Relatedness values affect the Outsourcing Strategy, the Knowledge Management and the Organizational Performance will lead to higher Outsourcing and Knowledge Management Strategy, and the Organization Performance.

The Outsourcing Strategy affects the Knowledge Management and the Organizational Performance. This shows that the higher the Outsourcing Strategy values will result on the Knowledge Management and the Organizational Performance.

On the other hand, the Outsourcing Strategy has no effect on the Organizational Performance. This illustrates that however high the Outsourcing Strategy values do not yet affect the intensity of the Organizational Performance.

IV. CONCLUSION AND SUGGESTIONS

From the path analysis in the previous section, some conclusions were obtained as follows: (1) the IT Relatedness affects the Outsourcing Strategy, the Knowledge Management and the Organizational Performance. This indicates that the higher the IT Relatedness values affect the Outsourcing Strategy, the Knowledge Management and the Organizational Performance. It will lead to higher the Outsourcing and Knowledge Management Strategy and the Organization Performance (2) the Outsourcing Strategy has no significant effect on the Organizational Performance. This illustrates that however high the Outsourcing Strategy values do not yet affect the intensity of the Organizational Performance.

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