The Role of Co-creation Strategy in Mediating External Business Environment and Company Capability on Company Performance at ICT Wholesale Carrier Service Companies in Indonesia

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Abstract

This study aims to examine the influence of the external business environment and company capability on company performance mediated by co-creation strategy in wholesale carrier service companies determined by the scope of network and infrastructure in Indonesia. This study employs a causality methodology of the strategic management approach using SEM-PLS. The method was employed based on a conceptual basis using several hypothesized relationships. An in-depth literature review was done and the hypotheses was tested using a random sample of 32 from a population size of 60.

Sobel test revealed that the co-creation strategy has a mediator role in its efforts to increase the role of the external business environment and company capability to increase company performance in the Indonesian wholesaler telecommunications industry. The results of this study are expected to provide managerial implications for the telecommunications companies in Indonesia, especially the utilization of company capability to improve company performance.

Keywords: *External business environment, company capability, co-creation strategy, company performance, wholesale carrier Service Company with a network and infrastructure scope*

INTRODUCTION

The rapid technology advancement and telecommunications infrastructure have enabled rapid digitalization in various areas, changing society's lifestyle. Technological advancements and digital transformation directly influence the data usage ecology and the growing use of wireless internet. Based on Indonesia's GDP growth data (Q3-2020), information and communication continue to be a critical strategic industry for supporting the nation's consumption and production [1]. The innovation is expected to be focused on the ICT sector. Not only data and voice services, but the latest technological developments have also encouraged most telecommunications and information companies to expand into content-creating services, applications, digital services, and digital solutions. Although technology advancements promote the rapid expansion of data services, this does not always translate into higher revenue for service providers. This issue is caused by consumers' preference for more affordable data services while the providers have to make a relatively high investment (OPEX and CAPEX). In this case, consolidation of operators' resources should be viewed as a solution to coordinate their business operations more efficiently. Furthermore, non-telco companies have been able to develop new markets due to consumer preference change during this period of technological upheaval. The existence of over-the-top (OTT) companies that employ a wide network and low-cost data services to establish new business models is in accordance with the fast-growing digital economy trend in recent years. These OTT services have directly reduced revenue from voice and message services of telecommunications companies[2].

Several factors are considered to have an impact on the situations mentioned above. Business performance has been linked to co-creation initiatives in several earlier studies. For example, [3]developed a model to show the direct and indirect effects of co-creation activities on businesses and customers. Their study is supported by [4] who found that co-creation influences a company's performance. The implementation of a collaborative creation strategy with the customers in wholesale carrier service with the scope of network and infrastructure necessitates the variations that have to be adjusted based on customer type.

Another factor that is assumed to influence the company's performance is its capability and external environment. [5]show the impact of the company's operating capabilities, technological capabilities, and marketing capabilities on performance is becoming stronger. On the other hand, [6] found that environmental observations have a significant effect on performance. [7] also drew the same conclusion after examining the three main categories of the business environment, which are socio-cultural, institutional, and technological environment. It was found that the most significantly connected factors to performance are institutional and technological.

Based on the explanation, it is critical to investigate the external business environment and company capability to improve the business performance of wholesale carrier service in Indonesia, which is mediated by a co-creation approach.

LITERATURE REVIEW

Several previous studies are included in this section as a comparison. These studies are used as references. [8] State that when faced with an uncertain operating environment, some companies choose a non-predictive approach. This type of strategy evolves by involving co-creation with other parties. Taking this into account, it can be summarized that the external environment influences a company's creative strategy. [9] found that the external business environment, which comprises political, technological, social, and cultural environments, has an impact on company performance. Similarly, [7, 10] also revealed that the most significantly connected determinants to company performance are institutional and technological factors. The findings suggest that the company's performance is influenced by its external environment.

According to [11], distinctive organizational capability has a direct influence on co-creation. In a similar case, [12] found that sustainable and purposeful engagements across B2B systems can only be established through careful strategic calibration of the shared creative interaction capabilities and practices that underlie all actors in the network. On the other hand, [5, 13] discovered an improvement in company operating capabilities, technology capabilities, and marketing capabilities in [4] found that co-creation has an impact on company performance. Meanwhile, [3, 14] revealed direct and indirect influences of co-creation on companies and consumers.

Based on a review study of the aforementioned studies above, the following research model was developed.

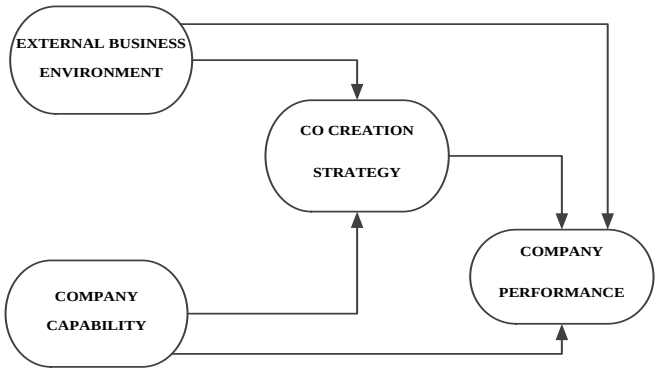

Figure 1. Research Model

The hypotheses were formulated as follows:

1. External business environment influences co-creation strategy
2. Company capability influences co-creation strategy
3. External business environment influences company performance
4. Company capability influences company performance
5. External business environment influences company performance through co-creation strategy
6. Company capability influences company performance and co-creation strategy

METHODOLOGY

The study collected and analyzed the data, incorporated the results, and drew conclusions using a quantitative method with a descriptive and causal design. The data

was collected through online and offline means. To obtain the survey data, this study used Google Forms that was disseminated through social media. In addition, questionnaires were distributed to the directors and senior leaders of the ICT wholesaler companies with the scope of network and infrastructure in Indonesia. This study was done utilizing a one-shot time horizon and cross-sectional data methods. A wholesale carrier service company with coverage of network and infrastructure is the unit of analysis in this study in which its company management was chosen to be the unit of observation.

This study employs Partial Least Square (PLS) to analyze the hypotheses. PLS is an analytical model developed from the structural equation model of Structural Equation Modeling (SEM) that reflects the relationship between latent variables and measurement components that show the relationship between latent variables and its indicators. On the other hand, the study population is a wholesale carrier service company with network and infrastructure coverage in Indonesia. According to the documentation study, there are 60 companies, which equals 66 business units. This study took 32 random samples.

Sometimes, a third phenomenon can influence the relationship between two phenomena. The strength of the relationship between the two previous phenomena is influenced by this phenomenon. As shown in the research model, it can be seen that the effect of the independent variable on the dependent variable consists of direct and indirect effects mediated by a mediator variable, in this case, a co-creation strategy. The Sobel test, invented by [15], was used to examine the mediation hypothesis [16]

RESULT

Partial Least Square (PLS) Analysis Result

The outer model depicts the relationship between variables and their indicators, whereas the inner model identifies the relationship between variables. Figure 1 shows the data processing result that was done using SmartPLS 3.0.

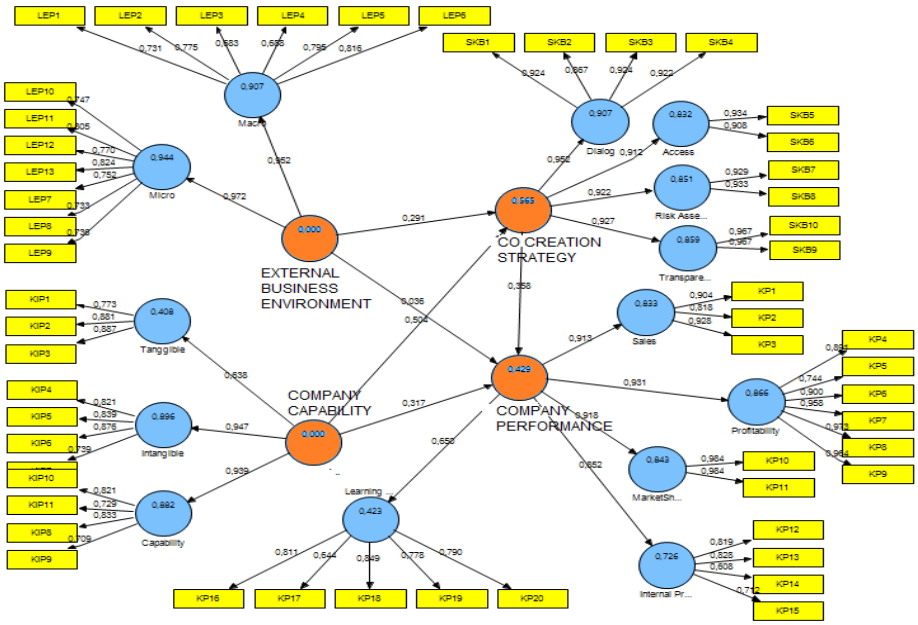

Figure 2. The Path Coefficient

Figure 1, which is described in Table 1, explains that all variables have valid indicators used in the model (loading factor > 0.50). The AVE score > 0.50 indicates that each of the constructs being tested has sufficient convergent validity. Also, because the composite reliability value (CR) is greater than 0.70, all measurement models can be considered to be highly reliable.

Outer Model Evaluation

The loading factor value for the observed variables is as follows.

Table 1

Convergent Validity

Variable	Dimension	Indicator	Loading Factor (λ)	SE (λ)	t value	Average Variance Extracted (AVE)	Composite Reliability (CR)
EXTERNAL BUSINESS ENVIRONMENT	Macro Environment		0.952	0.009	110.720	0.562	0.885
		LEP1	0.731	0.043	17.098		
		LEP2	0.775	0.043	18.166		
		LEP3	0.683	0.053	12.964		
		LEP3	0.688	0.056	12.275		
		LEP5	0.795	0.044	18.087		
		LEP6	0.816	0.053	15.349		
	Micro Environment		0.972	0.005	189.570	0.589	0.909
		LEP7	0.752	0.059	12.825		
		LEP8	0.733	0.053	13.925		
		LEP9	0.736	0.051	14.448		
		LEP10	0.747	0.040	18.892		
		LEP11	0.805	0.038	20.936		
		LEP12	0.770	0.056	13.758		
		LEP13	0.824	0.034	23.915		
COMPANY CAPABILITY	Tangible Asset		0.638	0.077	8.262	0.720	0.885
		KIP1	0.773	0.062	12.565		
		KIP2	0.881	0.029	30.648		
		KIP3	0.887	0.026	33.912		
	Intangible Asset		0.947	0.010	98.472	0.673	0.891
		KIP4	0.821	0.042	19.467		
		KIP5	0.839	0.039	21.346		
		KIP6	0.876	0.023	37.933		
		KIP7	0.739	0.060	12.326		
	Organizational Capability		0.939	0.013	72.395	0.601	0.857
		KIP8	0.833	0.035	23.932		
		KIP9	0.709	0.056	12.556		
		KIP10	0.821	0.049	16.784		
		KIP11	0.729	0.042	17.261		
CO-CREATION STRATEGY	Dialog		0.952	0.012	81.875	0.827	0.950
		SKB1	0.924	0.024	38.669		
		SKB2	0.867	0.034	25.324		
		SKB3	0.924	0.019	49.438		
		SKB4	0.922	0.019	47.696		
	Access		0.912	0.020	46.658	0.848	0.918
		SKB5	0.934	0.011	81.889		
		SKB6	0.908	0.031	29.167		
	Risk Assessment		0.922	0.016	57.532	0.867	0.929
		SKB7	0.929	0.021	45.079		
		SKB8	0.933	0.016	57.512		

	Transparency		0.927	0.015	59.949	0.935	0.966
		SKB9	0.967	0.009	103.692		
		SKB10	0.967	0.009	109.589		
COMPANY PERFORMANCE	Sales		0.913	0.014	63.615	0.759	0.904
		KP1	0.904	0.018	48.853		
		KP2	0.818	0.035	23.226		
		KP3	0.928	0.012	78.361		
	Profitability		0.931	0.013	72.714	0.825	0.966
		KP4	0.891	0.023	38.409		
		KP5	0.744	0.073	10.149		
		KP6	0.900	0.028	32.707		
		KP7	0.958	0.009	106.338		
		KP8	0.973	0.005	210.881		
		KP9	0.964	0.007	135.225		
	Market Share		0.918	0.017	54.822	0.968	0.984
		KP10	0.984	0.004	227.661		
		KP11	0.984	0.004	242.677		
	Internal Proses		0.852	0.028	30.559	0.558	0.833
		KP12	0.819	0.037	22.148		
		KP13	0.828	0.046	18.001		
		KP13	0.608	0.084	7.231		
		KP15	0.712	0.071	10.090		
	Learning & Growth		0.650	0.067	9.721	0.604	0.883
		KP16	0.811	0.036	22.248		
		KP17	0.644	0.095	6.798		
		KP18	0.849	0.046	18.464		
		KP19	0.778	0.088	8.889		
		KP20	0.790	0.034	23.197		

Inner Model (Structural Model) Evaluation

The inner model was tested using R-square, predictive relevance (Q-square value), and Goodness of Fit (GoF). According to [17], the R-Square value of 0.67 is strong, 0.33 is moderate, and 0.19 is weak. GoF was used to validate the measurements and the structural models. The values were 0 - 0.25 (low), 0.25-0.36 (medium), and > 0.36 (high). For the structural models, Q-square predictive relevance measures how well the model generates conservation values while also estimating the parameters. If the Q-square value > 0, the model is predictively relevant. On the other hand, if the Q-square ≤ 0, the model is not predictively relevant. The Q-square parameter is 0.35 (high), 0.15 (medium) and 0.02 (low).

Table 2

R-Square Value and GoF Evaluation

Variable	*R Square*	Communality	*Q square*	*The goodness of Fit (GoF) Index*
EXTERNAL BUSINESS ENVIRONMENT		0.533	0,751	0.536
COMPANY CAPABILITY		0.492		
CO-CREATION STRATEGY	0.565	0.749		
COMPANY PERFORMANCE	0.429	0.537		

Table 2 demonstrates that the R-square value is moderate (R^2 > 0.33), the GoF is high, and the Q-square > 0, indicating a predictive relevance that implies the model is fit.

Hypothesis Test

Table 3

Hypothesis Test

No	Structural Model	Path Coeff.	SE	t-value	R^2	Conclusion
1	External Business Environment -> Co Creation Strategy	0.291[a]	0.113	2.578	0.198	Significant
2	Company Capability -> Co Creation Strategy	0.504[a]	0.112	4.488	0.367	Significant
3	External Business Environment -> Company Performance	0.036	0.119	0.300	0.010	Insignificant
4	Company Capability -> Company Performance	0.317[a]	0.118	2.691	0.109	Significant
5	Co Creation Strategy -> Company Performance	0.358[a]	0.104	3.444	0.128	Significant
6	External Business Environment -> Co Creation Strategy -> Company Performance	0.104 [b]	0.051	2.062	0.104	Significant
7	Company Capability -> Co Creation Strategy-> Company Performance	0.180	0.066	2.730	0.180	Significant

[a]Significant at □ = 0.05
[b]Sobel test

Based on the table above, it is known that:

Company capability positively, significantly, and directly influences co-creation strategy and company performance with the dominant value of R^2 from company capability

The external business environment has no significant influence on company performance (t value < t table (2.04))

External business environment and company capability positively, significantly, and indirectly influence company performance through co-creation Strategy with the dominant value of R^2 from company capability (18%)

Company capability directly, positively, and significantly influences co-creation strategy and company performance at wholesaler telecommunications industry companies in Indonesia. Mediation studies are critical in scientific research to evaluate causal hypotheses about the impact of capabilities on company performance. Because the link between two phenomena is occasionally mediated by other phenomena, the relationship between them is not always clear. In this scenario, co-creation strategy is a useful factor to determine strategic implications that will improve company performance. Although company capability directly and significantly influences performance (R^2 = 10.9%), it was found that the mediation variable has a bigger influence (R^2 = 18%). Similarly, the external business environment significantly influences company performance through co-creation strategy compared to its direct influence (insignificant, R^2 = 1%).

The hypothesis test results support [4, 5, 11].

CONCLUSIONS AND SUGGESTIONS

This study found that in the wholesaler telecommunications industry in Indonesia, co-creation strategy plays a crucial role as a mediator in adjusting the external business

environment and increasing company capability to improve company performance. Thus, the results of this study are expected to contribute to the management of wholesale carrier service companies in Indonesia that deal with network and infrastructure, particularly to increase company capability through a co-creation strategy in order to improve the company performance.

To become a competitive company, company capability as a dominant predictor must be developed, particularly in terms of intangible assets, by increasing the qualifications of human resources expertise, employees' ability to create innovations/new products, and employee conceptual skills. In addition, it is also necessary to improve a company tangible aspect by acquiring the latest technology and by increasing the number of expert employees with competency in the field of technology and information.

The next predictor is the development of the external business environment that indirectly supports company performance improvement via co-creation strategy. The understanding of management aspects concerning the macro and micro environments related to the company strengths that can affect its capability to serve its customers also has to be taken into account. In this case, macro environment includes political, economic, social, technological, environmental, and legal environments. On the other hand, micro environment includes suppliers, customers, competitors, investors, and those representing external stakeholders who are in direct contact with the company. Thus, companies can take advantage of every opportunity and they will be able to eliminate external threats as soon as possible.

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