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Analysis of Relationship Pattern Between Strategic Orientation of Enterprise Business and Strategic Orientation of Information System

Edy Prayitno[1], Heru Agus Triyanto[2], Budhi Dharmawan[3]
STMIK AKAKOM Yogyakarta, Indonesia

ABSTRACT

This study aims to determine the alignment of the relationship between business strategies and information systems strategies in a company. This study uses a questionnaire that asks respondents to answer questions about aligning the relationship between the observed variables, namely business strategy and information system strategy. The results of respondents' answers were tested for data quality with validity and reliability. By using valid and reliable data, the correlation test is performed using the Kendall correlation coefficient. The results showed the relationship between the company's business strategy with the existing information system strategy.

Keywords: alignment strategies, information systems, business strategies, information systems strategies

INTRODUCTION

Most companies today rely on information infrastructure to win the competition (Asmita Manna, Anirban Sengupta, Chandan Mazumdar, 2016). At present the business, as well as the industry, is undergoing a thorough transformation, which is leading to business operations using digital technology (Juhani Ukko, Mina Nasiri, Minna Saunila, Tero Rantala, 2019). This digital transformation poses major challenges for companies (Li et al., 2018), when connected products, services, and operations change business, creating new strategies to adopt the necessary changes (Kallinikos et al., 2013; Yoo et al., 2012)

Information systems is a form of application of digital technology that is now used by most companies. Companies that cannot compete because they do not have an information system to assist their operational activities, questions that arise then information systems relating to the company. Information system is one of the main business functions for companies that must be supported by its existence. This is because information systems will support business processes with technological solutions by providing cost and time efficiency (Sahika Eroglu, Tolga Cakmak, 2016).

Because of the dynamics and complexity of business, aligning information systems with the strategic objectives of the organization becomes very important to note (Ola El-Telbany, Ahmed Elragal, 2014).

The role of information systems in achieving performance has been proven by many companies in the form of efficiency in the utilization of resources owned in achieving the targets set, VTIS (vessel traffic information system), and e-commerce is a form of the role of information systems in supporting operational performance and support of information systems in mastery market

The company chosen as the object of this research has a business strategy as a corporate and information systems strategy as a field strategy. At this company the level of relationship between the company's business strategy and the information system strategy will be measured as well as how the relationship occurs with the effectiveness of the information system and the company's performance.

This study analyzes how the relationship between the company's business strategy and information systems strategy in the company.

The limitations of this study are (1) The distribution of questionnaires is done only once (one shot survey) so that the validity and reliability tests are carried out only once without repetition of questionnaire distribution. (2) Respondents who are selected based on purposive sampling with the criteria: strategic decision makers and executors of these decisions, are in an affordable location, and are considered to know and be involved in the preparation of strategies.

(3) This research only reveals the relationship that occurs between observational variables, namely the company's business strategy, information system strategy, company performance, and the effectiveness of the information system.

METHOD

Data collection

The method used in collecting data is the survey method, and archive research. The survey method was conducted using a sample. The sample selection is done with nonprobability (not random) with consideration of several things, namely: (1) The geographical location of the respondents most likely to be met personally by the researcher; (2) Responsibility and involvement of respondents in the preparation of the strategy, then what is examined is the top Management and officials at the level below it. (3) The length of time the respondent worked in the company.

Research Instruments

The instrument that will be used in this research is STROBE (Strategic Business Enterprise Orientation) with dimensions (1) Aggressiveness (Aggressiveness), the attitude of the company in allocating resources to improve market position; (2) Analysis, company analysis, problem solving;

(3) Defensiveness, defensive behavior related to commitment to cost freedom and efficiency; (4) Future (Futurity), temporary considerations set forth in the main strategic decisions, which discuss with consideration of effectiveness considerations (5) Proactive (Proactive), developing companies in developing industries; and (6) Risks (Risks), selected product and market allocation decisions.

The second instrument is the STROIS (Strategic Orientation of Information System), with dimensions (1) support for Aggressiveness, referring to the attitude of the company in allocating resources (investment and application of IS) to improve market position relatively quickly compared to competitors ; (2) IS support for Analysis, refers to the characteristics and attitudes of the company in solving problems as a whole; (3) IS support for Defensiveness, describes defensive behavior associated with an emphasis on reducing costs and efficiency, as well as how an organization defends the company's area by implementing IS; (4) IS support for the Future (Futurity), key strategic decisions and decisions, related to the emphasis on effectiveness and efficiency considerations with the application of IS; (5) IS support for Proactiveness, describing proactive behavior, ongoing research into market opportunities and experiments with potential responses to trends that occur with the application of IS; and (6) IS support for Risk (Riskness), the extent of risk that can be reduced by the application of IS.

Data Quality Test

This study uses the reliability of one-shot measurement, because the measurement is done only once then the results are compared with the results of other questions. The validity and reliability test will be carried out completely by using Cronbach's Alpha (α) technique.

Item Validity Test, carried out by using several criteria, namely: (1) Value of r Table used for df = Number of cases - 2, where in this case, df = 43 - 2 = 41. Significance level of 5%, obtained figures r Table = 0.1993; (2) the value of r results for each statement item can be seen in the Corrected Item - Total Correlation column; and (3) if r results are Positive, and r results> r

Table, then the item or variable is valid, but if r results are not Positive, and r results <r Table, then the item or variable is Invalid.

Reliability Test, using the criteria (1) value of r Table used for df = Number of cases - 2, where in this case, df = 43 - 2 = 41. Significance level of 5%, obtained figures r Table = 0.1993; the value of r results for this reliability test used r results = alpha number; and if r Alpha is Positive, and r Alpha> r Table, then the item or variable is reliable, but if r Alpha is not Positive, and r results <r Table, then the item or variable is Not Reliable.

RESULT AND DISCUSSION

Business Strategy Analysis (STROBE)

The results of the analysis of the business strategy carried out are as follows: planning and management techniques in operations contributed to the company's business strategy by 69.8%; application of cost control systems and quality systems contributes 60.5%; and the implementation of projects with an appropriate level of ROI contributed to the business strategy of 662.8%. But there is a conservative attitude of the company (32.6%) and unwillingness to increase capacity (37.2%) and conduct development research (32.6%).

Table 1. Constructive Analysis STROBE

No	Contribution to the company's business strategy	Percentage
1	Implementation of tariff policies	48,8%
2	Granting management rights to business units	32,6%
3	IS support for directors' policies	60,5%
4	The use of analysis using IS	58,1%
5	Use of operational planning techniques	69,8%
6	Technology support to win the competition	41,9%
7	Implementation of a cost control system	60,5%
8	Application of management techniques and processes	69,8%
9	Implementation of a quality system	60,5%
10	Ability to maintain position and enter new markets	48,8%
11	Technology and equipment substitution	55,8%
12	Bargaining power against competitors	39,5%
13	Development Research	32,6%
14	Forecasting of operational indicators	46,5%
15	Ability to see trends	37,2%
16	Operational performance analysis	51,2%
17	The ability to find new business opportunities	48,8%
18	"First movers" and "innovators" in introducing new products	32,6%
19	Capacity building	37,2%
20	Elimination of unproductive business units	48,8%
21	Conservative attitude	32,6%
22	Project implementation is gradually compared to the whole	46,5%
23	Project implementation with ROI as expected	62,8%
24	The concept of trial and error ("tried and true")	41,9%
25	Floating technology through analysis	46,6%
26	Innovative solutions in solving operational problems	46,5%
27	Application of innovation in marketing	41,9%
21	Conservative attitude	32,6%
22	Project implementation is gradually compared to the whole	46,5%
23	Project implementation with ROI as expected	62,8%
24	The concept of trial and error ("tried and true")	41,9%
25	Floating technology through analysis	46,6%
26	Innovative solutions in solving operational problems	46,5%
27	Application of innovation in marketing	41,9%

Information Systems Strategy Analysis (STROIS)

The IS strategy analysis is carried out by analyzing the information in Table 2. The explanation is that the contribution of IS to the company produces internal survival and competitiveness of the company (72.1%) and is useful for forecasting and estimating operational indicators (74.4%). However, the application of IS in the company has not been able to produce operational performance outputs and bargaining power of service users (39.5%).

Table 2. Analysis of Construction of STROIS

No	Contribute to the company's IS strategy	Percentage
1	The application of IS increases market share	60,5%
2	The application of IS produces more competitive efficiency and tariffs	62,8%
3	The application of IS results in the ability to win the competition	55,8%
4	The application of IS can improve the company's position	69,8%
5	The application of IS provides support to the Directors' policies	67,4%
6	Application of IS in analysis for the development and decision making of Directors	51,2%
7	The application of IS to operational management planning and techniques	46,5%
8	The application of IS produces outputs to the company about operational performance	39.5%
9	The influence of senior management on the application of IS	46,5%
10	The application of IS results in the ability to survive internally	72,1%
11	The application of IS can control operational costs and performance	53,5%
12	The application of IS in the management process	51,2%
13	The application of IS produces quality products	60,5%
14	The application of IS can maintain the company's position	65,1%
15	Application of IS as a substitute product	67,4%
16	The application of IS creates bargaining power over partners	48,8%
17	The application of IS creates bargaining power against service users	39,5%
18	Implementation of IS in resource management	60,5%
19	The application of IS as a competitive ability	72,1%
20	Estimation and forecasting of operational indicators through the application of IS	74,4%
21	The application of IS in anticipation of trends	69,8%
22	The application of IS in the analysis of operational performance	65,1%
23	The application of IS provides the ability to search for opportunities and new business	82,8%
24	The application of IS makes the company a "first mover" and an "innovator" in introducing new products	55,8%
25	The application of IS can increase capacity	41,9%
26	The application of IS provides information about the capabilities of the business unit	72,1%
27	The company implements an IS project that has an ROI level as expected	65,1%

28	The application of IS through in-depth analysis	67,4%
29	The application of IS produces innovative solutions in solving problems	51,2%
30	The application of IS generates new innovations for product marketing	44,2%

Analysis of STROBE and STROIS Relationships

The analysis of the relationship between STROBE and STROIS is how strong the relationship is between the dimensions forming the two constructs. This analysis is done because it wants to know how much alignment of strategies that occur in the company. The relationship is obtained by conducting a correlation test using the coefficient of Kendall's tau that occurs and the significance of the two constructs.

Table 3. Kendall correlation results between STROBE and STORIES

			STROBE	*STROIS*
Kendall's tau_b	*STROBE*	*Correlation Coefficient*	*1,000*	*0,508*
		Sig. (2-tailed)		*0,000*
		N	*43*	*43*
	STROIS	*Correlation Coefficient*	*0,508*	*1,000*
		Sig. (2-tailed)	*0,000*	
		N	*43*	*43*

Probability figures that are far below 0.05 (0,000) show the strong alignment between business strategy and information systems strategy in the company. While the correlation number of 0.508 shows the relationship that occurs in both of these strategies is rather low.

CONCLUSION

The conclusion that can be drawn from the research conducted is that the correlation test obtained a significant number of strategic alignments between business strategies and information strategies that are so strong. The quality of the closeness of the relationship that occurs is very low, which is caused by the absence of a link between the information system strategy and business strategy, which is indicated by the preparation of a corporate business strategy while the preparation of the information system strategy is a field. This conclusion is in line with the results of research conducted by David Martinez-Simarro, whose research shows the effectiveness of innovative IS strategies in companies with low-cost business strategies. In contrast, innovative IS strategies fail to offset the risk of innovation in marketing activities and consequently in business strategies that rely on image differentiation (David Martinez-Simarro, Carlos Devece, Carlos Llopis-Albert, 2015).

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REFERENCES

Manna A., Sengupta A., Mazumdar C., A Survey of Trust Models for Enterprise Information Systems, International Conference on Computational Modelling and Security (CMS 2016), Procedia Computer Science 85 (2016) 527 – 534.

Ukko J, Nasiri M., Saunila M., Rantala T., Sustainability Strategy as a Moderator in The Relationship between Digital Business Strategy and Financial Performance, Journal of Cleaner Production 236 (2019) 117626.

Li, L., Su, F., Zhang, W., Mao, J.Y., 2018. Digital transformation by SME entrepreneurs: a capability perspective. Inf. Syst. J. 28 (6), 1129e1157.

Kallinikos, J., Aaltonen, A., Marton, A., 2013. The ambivalent ontology of digital artifacts. MIS Q. 37 (2), 357e370

Yoo, Y., Boland Jr., R.J., Lyytinen, K., Majchrzak, A., 2012. Organizing for innovation in the digitized world. Organ. Sci. 23 (5), 1398e1408

Eroglu S., Cakmak T., Enterprise Information System within The Contect of Information System Security: s Risk Assessment for a health Organization in Turkey, Procedia Computer Science 100 (2016) 979 – 986.

El-Telbany O., Elragal A., Business-Information Systems Strategies: A Focus on Misalignment, Procedia Technology 16 (2014) 250 – 262

David Martinez-Simarro, Carlos Devece, Carlos Llopis-Albert, How Information Systems Strategy Moderates The Telationship between Business Strategy and Performance, Journal of Business Research, Volume 68, Issue 7 (2015) 1592-1594.