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

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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 (Juhanai 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 $df = \text{Number of cases} - 2$, 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%).

| 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%       |
| 28 | Conservative attitude                            | 32.6%       |
| 29 | Project implementation is gradually compared to the whole | 46.5%     |
| 30 | Project implementation with ROI as expected      | 62.8%       |
| 31 | The concept of trial and error ("tried and true") | 41.9%   |
| 32 | Floating technology through analysis             | 46.6%       |
| 33 | Innovative solutions in solving operational problems | 46.5% |
| 34 | 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%      |
The application of IS through in-depth analysis produces innovative solutions in solving problems and generates new innovations for product marketing. The application of IS through in-depth analysis produces innovative solutions in solving problems with 67.4% and generates new innovations for product marketing with 51.2%, while the application of IS through in-depth analysis produces innovative solutions in solving problems with 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

| Kendall’s tau_b | STROBE       | STROIS       |
|-----------------|--------------|--------------|
| Correlation Coefficient | 1.000       | 0.508        |
| Sig. (2-tailed)  | 0.000        | 1.000        |
| 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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