The Significance of Management Competencies Towards the Success of Information Technology Investments and Business Strategies and Its Impact on Company Performance

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Abstract: - Information technology had an important role for organizations in both the public and private sectors to face intense competition and product and market expansion. Organizations try to dominate the industry through the application of technology in every line of business, but the decision to invest in information technology is not always successful. Various technology investment failures are caused by a lack of management competence which results in maintenance costs increasing beyond the budget. This research analyzes the influence of Management Competency on information and strategic technology investment and its impact on company performance. The population analyzed is companies in the communications, manufacturing and financial sectors listed on the Indonesia Stock Exchange in 2018-2021. The research results show that management competency has a very significant influence on Information Technology Investment and Business Strategy, and has a very strong influence on company performance

Key-Words: Management Competency, Information Technology Investment, Business Strategy

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1 Introduction

Information technology had the important role in the sustainability of organizations in both the public and private sectors. The role of information technology in a form of digital economy provides organizations with the opportunity to grow faster by taking advantage of existing opportunities. Digital economic transformation is urgently carried out because it will reduce production costs and on the other hand can increase customer loyalty with service of excellence in the form of speed and good service quality. According to McKinsey (2016) , that to win and capture the opportunities of the digital era, the government and business sector must act innovatively in order to create value in three dimensions, i.e : 1) Products and services. Innovation to meet customer needs that have not been met or are partially met, by creating new products or services using digital technology; 2) Business model. Transforming customer experiences, delivery models and value propositions, enabled by digital technology; 3) Business process.

Khadir dan Triwahyuni (2003) defines information technology as a form of technology applied to process and transmit electronic information to speed up consumer response. The use of information technology helps companies to take business leaps and bounds, although not always information technology investments will be successful. Furthermore (McKinsey 2016), stated that if Indonesia can take advantage of digitalization, it is predicted that it can realize revenues of around USD 150 billion in 2025, with Gross Domestic Product growth 10 percent per year. To realize this, information technology investment in Indonesia continues to experience a significant increase. International Data Corporation, (2016) stated that information technology investment in Indonesia in 2016 reached USD 15.3 billion. Meanwhile, in 2020 information technology investment grew at a CAGR level of 11.9% or Rp. 230.5 Trillion (BMI Research 2016).

On the one hand, the increasing value of information technology investments has also been accompanied by failures in this field. based on research results Agarwal (2017) shows that 62% of information

technology projects are not within budget and this is also followed by an increase in maintenance costs which have soared by 47% higher than initial estimates. Apart from that, it was also found that 41% of investments failed to provide benefits for the company. Meanwhile, based on research results Gartner (2016) found that 75% of IT investments in ERP projects failed due to financial problems, long return on investment time, utility and resource problems. This shows that there are still challenges related to IT investment.

The phenomenon of this field also shows that investments in information technology fail, as in the case of PT. Telkomsel invested in the form of E-Commerce Belanja.com, a startup in the digital commerce sector, but failed and had to close the startup, (Fajri 2022). Several investment failures in information technology have also been experienced by international companies such as JD.ID, Spotify, and Alphabet which have invested their funds in information technology, but because the return on investment can only be felt in the long term and the companies are not ready to face this, they have to make reductions and cancellation of investment development (CNN Indonesia 2022). It was further mentioned that the failure of this investment also led to significant layoffs, and this failure was also influenced by mistakes in the development of business strategies, (CNN Indonesia 2022).

The success of technology investment and business strategy cannot be separated from management competence in running the company, (Laudon and Laudon 2019). (Reich, Gemino, and Sauer 2014) also stated that management competency will influence target achievement through appropriate business strategies, including investing in information technology, as a basis for management support in realizing organizational goals, namely continuous performance improvement.

Due to the phenomenon of very rapid development and investment in information technology, conducting this study is very important to determine the success of information technology investment in Indonesia.

2 Literature review

2.1 Company performance

An Organizational performance is the ability to utilize existing resources effectively, efficiently, through development, innovation and quality improvement (ALDamoe, Yazam, and Hamid 2013). While according to Musofwan and Widyaningsih (2022), Organizational performance is a measure of the company's level of success in achieving its goals. This measuring tool can use the level of efficiency and how much influence it has in achieving goals. Ahmad (2015) states that organizational performance can be related to the quantity and quality of individual or group work results based on standards set by the company as a basis for measurement. Based on Peter and D.J.Savoie (2017) defines performance as an organization's ability to use resources efficiently. In this case, efficiency is not only related to performance measures but is also a goal that conflicts with other goals. This research uses benchmarks for the level of efficiency, economic level, level of company effectiveness through survey respondents and using secondary data to determine the level of company performance.

2.2 Management Competency

Management competency relates to management functions related to the process of selecting, implementing and evaluating on a scheduled basis as a goal-oriented strategy to improve organizational performance. (Lynam et al. 2007). Meanwhile, according to King (2009) states that management competency is related to the ability to obtain, distribute and utilize existing resources within the company. J Honeycutt (2000) states that the management competency process is divided into three parts, namely: (1) knowledge management is the process of creating knowledge (*Creation*), (2) knowledge utilization, which includes activities related to the application of knowledge, (3) knowledge sharing, i.e the transfer of knowledge from one party to the other party. Sharing knowledge means that individuals can work together and realize the importance of knowledge for the company and share the knowledge gained with other individuals. This research uses benchmarks in the form of *Knowledge Capture*, *Knowledge Sharing*, *Knowledge Application* to determine the ability to obtain, distribute and utilize the resources within the Company. Because management competency is the implementation of various strategic functions to improve management performance (Rapert, Velliquette, and Garretson 2002).

2.3 Information Technology

T Tharom (2002) states that information technology is the fields of technology related to the provision and dissemination of information. The development of

information technology has a trend that continues to change over time, such as developments in hardware, software, brainware, networks and procedures, (Laudon and Laudon 2019). Porter (2007) Porter (2007) asserts that investment in information technology gives companies competitive advantages. This is because investment in information technology is embedded in the company's value chain, which has the potential to create competitive advantage. However, many managers make mistakes so that information technology implementation projects fail (Hilmi et al. 2016). Bodnar dan Hopwood (2019) said that information technology failures can be minimized with the support of management that has information technology competence. In this research, the success of Information Technology Investment is measured using the Total Budget Ratio, Information Technology Staff Budget, and Information Technology Maintenance Budget.

2.4 Business strategy

A business strategy is a strategy for how one or each business unit that a company operates will grow and develop. Porter (1985) says that strategy is a tool to achieve competitive advantage. There are several choices that management can make at the business unit level, namely Competitive, Cooperation, Coopetition. Of these three options, the most widely used and popular strategy is the competitive strategy. One of the competitive strategy concepts that is very popular is the concept put forward by Michael E. Porter, namely the concept of Generic Strategy. In this research, strategies are used that are appropriate to the Generic Strategy, including Cost Leadership Strategies. The characteristic is that companies concentrate their attention on low product selling prices to reduce production, promotion and research costs. If necessary, the product produced simply imitates a competitor's product. *Differentiation Strategies*. The characteristic is that the company decides to build a potential market perception of superior products/services so that they look different compared to competitors' products. Customers are expected to be willing to buy at high prices because of this difference. Focus Strategies. The characteristic is that companies concentrate on certain market shares to avoid competitors.

2.5 The Influence of Management Competency on Information Technology Investment

Management's ability to detect dynamic environmental changes will determine the company's success in the future, therefore management must be sensitive to developments in information technology (Ahmad, 2020). Reich (2018) also reveal that management competence will appear in the form of support for investing in information technology. Pistoni and Songini (2017) shows that management competency has a positive influence on success in investment and information technology development. These results are in line with research by Rofiati, (2019) which found that management competence has a central role in the success of information technology investments. Based on theory and previous research, the following hypothesis is proposed:

H1: Management competency has positive effect on the success of information technology investments.

2.6 The Influence of Management Competency on Business Strategy

The concepts and business models implemented by companies cannot be separated from management experience and competence (Sudrajat, 2017). The same research results were shown by Andriani et al, (2019) that management competence related to environmental developments will influence the business strategies implemented by companies to survive. Meanwhile Josuh, (2016) who conducted research on companies in Malaysia also found that management competency plays an important role in determining company strategy. Based on the results of previous research, the following hypothesis is proposed:

H2: Management competency has positive influence on the Company's business strategy

2.7 The Effect of Information Technology Investment on Company Performance

Based on research results from llmudeen, (2021) it shows that investment in information technology is able to increase public trust because of fast and satisfying service. This condition can also significantly improve company performance. This is also consistent with the study of Azam (2015). In developing countries, investment in information technology plays a very important role in improving business performance, and the impact of investment in information technology is an opportunity that management must quickly address for business sustainability (Ji and Shi, 2020). Based on previous research findings, the following hypothesis is proposed:

H3: The success of information technology investment has positive effect on company performance

2.8 The Influence of Business Strategy on Company Performance

Management always carries out various activities in order to ensure the sustainability of the company (Sudrajat et al, 2017). The same research results were also found by Josuh et al, (2016) that when an organization is able to implement strategies by paying attention to capabilities and the environment, the organization has a great opportunity to survive in difficult conditions because the company's financial health is guaranteed. Khanaga and Oshi, (2014) found that business model updates and the formation strategy transition process have an important and significant role in improving company performance, because business model updates will provide new nuances to company activities in the form of more challenging models and targets based on their environment, (Borrero, 2020). Based on previous research, the following hypothesis is proposed:

H4: Business strategy influences company performance.

2.9 Conceptual Framework

Berdasarkan premis berupa teori dan penelitian sebelumnya maka kerangka pikir penelitian ini adalah sebagai berikut:

3 Methodology

Population and Sample

The analytical tool for testing the hypothesis in this research is the Structural Equation Model (SEM)-PLS by testing the validity and reliability of the research model data and producing Estimate for Path Coefficients to show a significant level in hypothesis testing. This research aims to assess the significance of the prediction model in testing the inner model which can be done by looking at the probability values and t-statistic values. With a probability value of $\alpha = 5\%$. The t-table value for $\alpha = 5\%$ is 1.96. So the hypothesis testing decision is supported if the value of the t-statistic < 1.96. The hypothesis is not supported if the value of the t-statistic is > 1.96.

Population in this study

Data collection was carried out through direct interviews with Information Technology Managers and Financial Managers because they are directly involved in the planning process, investing to assessing the benefits of investment for the company. The sample used in this research was selected using a purposive sampling method with the criteria, namely, companies operating in the fields of communications, manufacturing and finance because companies in this sector have high sensitivity to technological changes and publish audited annual financial reports for 2018-2021.

Data analysis method

The data analysis technique used in this research is to test the influence of intervening variables using the Structural Equation Model (SEM)-PLS method. This analysis aims to determine the validity, reliability and influence of management competency on the success of information technology investment and business strategy and its impact in the form of influence. to Company Performance. The data analysis used in this research is Validity Test, Reliability Test, Path Coefficient and Hypothesis Testing.

4. Results and Discussion

The results of this research are based on the results of interviews with 61 respondents, namely IT managers, financial managers and operational managers from 61 companies included in the Indonesian Stock Exchange using the Management Competency variable on Information Technology Investment and Business Strategy variables and their impact on Company Performance variables..

Validity and Reliability Test

Validation Test is a test used to show the extent to which the measuring instrument used in a measurement will be measured. The reliability test measures a questionnaire which is an indicator of a variable or construct.

Table 1: Validity and Reliability Test Results

Rated aspect	Loading Factor (λ)	*Cronbach's Alpha*	*Rho_A*	*Composite Reliability*	*Average Variance Extracted (AVE)*
Company performance (Z_1)		0.912	0.923	0.945	0.852
Knowledge Capture	0.759				
Knowledge Sharing	0.715				
Knowledge Application	0.847				
Business strategy (Y_2)		0.871	0.875	0.921	0.795
Cost Knowledge Application	0.893				
Differentiation strategy	0.869				
Focus strategy	0.886				
Successful Information Technology Investments (Y_1)		0.823	0.844	0.894	0.738
Total budget ratio	0.828				
IT Staff Budget	0.907				
IT maintenance budget	0.841				
Management Competency (X_1)		0.673	0.699	0.818	0.602
Effective	0.883				
Economical	0.884				
Efficiency	0.997				

Source: Data processed from SmartPLS 3.3.9 output

This table shows that the existing indicators are declared valid as a whole, because the level of data validity is expressed in a value of $\lambda < 0.5$. In this way, further testing can be carried out, namely determining discriminant validity by analyze the Average Variance Extracted (AVE) value..

Table 2: AVE Model Values

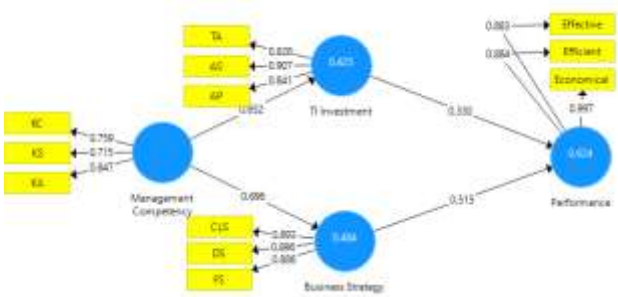
Rated Aspect	AVE
Company performance (Z_1)	0.852
Business strategy (Y_2)	0.795
Successful Information Technology Investments (Y_1)	0.738
Management Competency (X_1)	0.602

Source: Data processed from SmartPLS 3.3.9 output

From this table we can see that the extracted median value shows that all the variables show numbers above 0.5. This shows that this indicator can be considered a correct discriminant.

Table 1 shows the results of reliability tests carried out using two methods, namely Cronbach's alpha and composite reliability, where Cronbach's alpha measures the lower limit of the reliability value of a construct. By looking at the Cronbach's Alpha value of the indicators, it will be declared reliable if the Cronbach's Alpha value is greater than 0.6, then using this method the values of all indicators are reliable. while the composite reliability value is measured as good if the indicator has a Composite Reliability value of more than 0.7, this means that Company Performance (Z1), Business Strategy (Y2), Successful Information Technology Investment (Y1) and Management Competency (X1) are declared reliable. To obtain values from the path coefficient test, Goodness of Fit test, and Hypothesis Test, analysis is done by utilizing Bootstrapping values in Smart-PLS 3.3.9 as in the image below;

Figure 1 : *Bootstrapping* model values (Inner Model)



Hypothesis Testing

The hypothesis test in this research is based on the Output *Bootstrapping* value which is known from the T-Statistics value (Henseler et al., 2016). The hypothesis is accepted if the T-Statistics value is greater than the t-table value. In this study the significance level was 5% with a t-table value of 1.96. Results based on hypothesis testing results sourced from Bootstrapping Output with t-statistical values and p-values in table 3.

Table 3 : Path Coefficient value from *Bootstrapping* results

Rated Aspect	*Original Sample (O)*	*Sample Mean (M)*	*Standard Deviation (STDEV)*	*T Statistic (O/STDEBV)*	*P Values*
Management Competency (X_1) → Successful Information Technology Investments (Y_1)	0.652	0.661	0.071	9.130	0.000
Management Competency (X_1) → Bussiness Strategy (Y_2)	0.696	0.704	0.054	13.005	0.000
Successful Information Technology Investments (Y_1) → Company performance (Z_1)	0.330	0.326	0.145	2.279	0.023
Bussiness Strategy (Y_2) → Company performance (Z_1)	0.515	0.517	0.138	3.741	0.000

Source: data processed from SmartPLS 3.3.9 output

Based on table 3, it is known that based on the t-statistic value above 1.96, so that all hypotheses are concluded to be accepted, this has the greatest influence and correlation with Business Strategy. The variable Information Technology Investment Success and Company Performance has a smaller influence compared to the influence of other variables. Based on the table above, management competency has a positive effect on the success of information technology investments, which refers to the ability of competent managers to plan investments well, make decisions based on correct information, manage IT projects effectively, develop appropriate human resources, and continuously evaluate investment impact.

Management competency has a significant influence on business strategy. Effective management competency is the basis for planning, implementing and directing organizational strategies. Good management is able to plan strategies with focus, make decisions based on accurate data, manage resources efficiently, develop competent teams, control strategy implementation, adapt to environmental changes, encourage innovation, and ensure strategies are connected to real implementation. Competent management helps realize alignment between strategic plans and achieving business results.

The level of success of information technology investment on company performance has a significant positive effect because information technology has the potential to create fundamental changes in various operational and strategic aspects of the company. In order to ensure a positive impact, it is important for companies to plan information technology investments well, integrate them with overall business strategy, and have an effective change management strategy.

The business strategy variable on company performance has a significant influence. Business strategy not only provides direction, but also creates the foundation for a company's long-term success. Decisions and actions taken in the context of business strategy impact an organization's financial results, growth and sustainability.

Table 4 : *R Square* Value

Rated Aspect	*R Square*
Company Performance (Z_1)	0.624
Bussiness Strategy (Y_2)	0.484
Successful Information Technology Investments (Y1)	0.425

Source: data processed from SmartPLS 3.3.9 output

Based on the table, it is known that the R2 value for the variable Z (Company Performance) is 0.624, indicating that all indicators (Y2,Y1) of Business Strategy and Information Technology Investment Success influence Company Performance by 62.4% and the remaining 27.6% is influenced by other indicators. Then for R2 for the Business Strategy Variable (Y2) it is 0.484, and Information Technology Investment Success (Y1) is 0.425. These results indicate that the Management Competency Variable (X1) influences the Business Strategy Variable (Y2) by 48.4%, and Management Competency (X1) influences the Success of Information Technology Investment (Y1) by 42.5%. To assess *goodness of fit*, it can be seen from the results of Q2 where the more Q2, the model can be said to be better or more fit to the data.

Calculation of the Q2 value using the formula

$$Q^2 = 1 - ((1 - R_1^2)(1 - R_2^2) \dots . (1 - R_P^2)$$

The Q2 value is used to measure how good the observation values produced by the model are and also the parameter estimates. The Q2 calculation for the research model is 0.8884 or 88.84%, indicating that the diversity of research data can be explained by the research model. Thus it can be concluded that this research model have the *goodness of fit*.

5. Conclusion

This research was conducted to examine and analyze the influence of management competency on the success of information technology investments and business strategies which influence company performance as well as provide input and discuss considerations for management in making decisions about investing in information technology and decisions on choosing the right business strategy. Based on the results of the analysis, the following conclusions were obtained:

1. The management competency variable has a significant effect on the success of information technology investment. This means that the better the management competence a company has or the more competent the managers of a company, the better the success of a company's information technology investment. this can happen because the success of investments in information technology can depend on the extent to which management has a good understanding of technology needs, selection of appropriate technology solutions, efficient project management, and the ability to anticipate and overcome challenges that may arise. Without adequate management competence, investments in information technology can experience obstacles, such as exceeding budget, delays in implementation, or even project failure. On the other hand, with competent management, companies can optimize the value of information technology investments in a more effective way. By managing resources intelligently, planning well, coordinating teams efficiently, and taking steps to reduce risk, the chances of successful investments in information technology can increase significantly.

2. The management competency variable has a positive effect on business strategy. Good management skills, including planning, organizing, leading, and controlling, form a strong foundation for the development and execution of effective business strategies. When management has a deep understanding of business objectives, market environment, and customer needs, they can formulate relevant strategies and focus on achieving desired results. Competence in coordinating resources, overcoming obstacles, and making decisions based on appropriate analysis will help companies adapt to market changes more agilely. In addition, competent management can motivate work teams, build a positive work culture, and direct the efforts of all team members towards strategic goals. Thus, management competency plays an important role in linking strategic plans with successful execution.

3. The variable success of information technology investment has a significant effect on company performance. This is because smart and successful investment in information technology has a significant impact on improving overall company performance. Successful implementation of information technology can produce a variety of benefits, including increased operational efficiency, automation of business processes, increased data accuracy, faster access to information, and increased ability to make decisions based on data. All this contributes to increasing the productivity and effectiveness of the company. Successful information technology investments can also help companies innovate, develop new products and services, and respond more quickly to market changes. This allows companies to remain relevant and competitive in a dynamic business environment.

4. Business strategy variables have a significant effect on company performance. This means that a mature and well-planned business strategy has a significant influence on improving overall company performance. A proper business strategy helps a company to identify long-term and short-term goals, direct resources in the right direction, and plan the actions necessary to achieve these goals. With a clear strategy, companies can allocate resources efficiently, optimize operational processes, and make better decisions based on the vision that has been set.

In addition, business strategies that focus on differentiation, innovation, or efficiency can also help companies differentiate themselves from competitors, respond more quickly to market changes, and create added value for customers. This can increase the company's attractiveness in the eyes of consumers and open up opportunities for growth.

Research Limitations

This research only uses 4 variables which are a small part of the factors that influence company performance. There are still many factors that influence company performance

Suggestion

It is recommended to add other independent variables that can influence company performance so that the research results can describe company performance that can be generalized for the Indonesian region.

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The authors equally contributed in the present research, at all stages from the formulation of the problem to the final findings and solution.

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