

# Analysis of Strategic Planning of Agency Information Systems and Technology PT Asuransi Asei Indonesia Using Ward and Peppard Method

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**Abstract**— PT Insurance Asei Indonesia is committed to supporting the growth of the insurance industry in Indonesia in line with the OJK Indonesia Insurance Development Roadmap 2023-2027, one of the main pillars of which is the acceleration of digital transformation. However, PT Insurance Asei Indonesia still lacks information technology facilities for the management of insurance agents, hindering business growth and customer satisfaction. The research uses Ward and Peppard methods that use Value Chain tools, Porter's Five Force analysis, SWOT analysis, and Mcfarlan Strategic Grid. The aim is to provide a comprehensive understanding about designing strategic plans for information systems and technology for the management of insurance agents at PT Insurance Asei Indonesia. The results of this research are strategic planning of systems and information technology in particular management of insurance agencies and operational business as a whole. Information systems and strategic technology plans will contribute to increased efficiency, decision-making effectiveness, and competitive advantage.

**Keywords**— Strategic Information System, Technology Planning, Insurance Agents, PT Asuransi Asei Indonesia, Digital Transformation, Ward and Peppard, Value Chain, Porter's Five Force, SWOT, Mcfarlan Strategic Grid.

## I. INTRODUCTION

PT Insurance Asei Indonesia is one of the insurance companies that has been in existence since 2014. Asei Insurance is committed to supporting the growth of insurance industry in Indonesia in accordance with the OJK Indonesia Insurance Development Roadmap 2023-2027, which aims to realize a healthy, efficient, integrated insurance industry, strengthen consumer and society protection, as well as support national economic growth. Accelerating digital transformation is a major tenet of the roadmap. Digital transformation is the process of applying digital technology to transform business processes and improve company performance. (Yoo et al., 2010).

At present PT Insurance Asei Indonesia does not have an information technology facility for the management of the agency, so the registration process of the agent, the issuance of acceptance documents is still done manually which requires a time-consuming process as well as agency difficulties in accessing insurance product information. Such weaknesses can hinder the growth of the business of Asei Indonesia Insurance and reduce customer satisfaction. Based on this, strategic planning of the system and information technology agency of PT Asuransi Asei Indonesia is required.

The research was carried out using the Ward and Peppard method of strategic planning of information systems and information technology, which will be performed in several stages, and each will use several methods, including the analysis of the internal and external business environment using the SWOT method while the SI/TI internal and exterior environment analysis using SWOT and Porter's Value Chain. Then the mapping of application portfolios using the Mcfarlan Strategic Grid method. The hope of this research can provide a comprehensive understanding of the need for system planning and information technology agency PT Insurance Asei Indonesia to be able to provide system recommendations that can improve the efficiency of work by performing automation of various processes that manage information so as to improve management efficiency by satisfying the information needs for decision-making.

## II. LITERATURE REVIEW

### A. Insurance

According to Law Number 40 of 2014 insurance is an agreement between two parties, ie. Policyholder and insurance company, on the basis of which insurance firms collect premium payments:

- Compensation to the insured or the insured for loss, damage, expenses, lost profits or legal liability to third parties that the insured or the insured may suffer in the event of an uncertain event; or\
- Payments based on the death of the insured or the lifetime of the insured with benefits, the amount of which is determined and/or based on the results of fund management.

### B. Information System

An information system is one that is made to assist people complete activities and solve problems by giving the appropriate information to the right people at the right time. Information systems can be manual systems, computer systems or a combination of these (Jogiyanto, 2005).

### C. Analysis of Information

System analysis, according to the book "Information Systems Analysis & Design," is the process of breaking down an information system into its constituent pieces in order to identify and assess issues, opportunities, potential roadblocks,

and anticipated needs in order to suggest improvements (Jogiyanto, 2005).

**D. Information Systems Strategic Planning & Information Technology Strategy**

According to Turban (2003) strategic planning of information systems and information technology (SI/TI) is a process to determine how SI/TI can be used to achieve organizational goals. This planning needs to take the organization's internal and external aspects into account and be in line with its business strategy.

**E. Ward and Peppard Strategic Planning**

The Ward and Peppard method is a framework used to analyze the relationship between business strategy and information technology (IT). This framework was developed by John Ward and Joe Peppard in 1996 in their book Strategic Planning for Information Systems. In Figure 1 is Ward and Peppard's SI/TI strategic model.

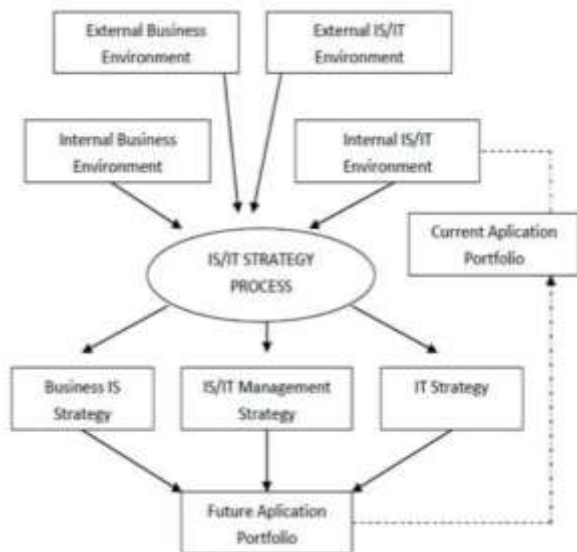


Fig. 1. SI/TI Strategic Model (Ward and Peppard, 1996)

**F. Porter's Value Chain Analysis**

Porter's Value Chain analysis has many benefits for companies, both in the short and long term. Here are some of the benefits according to Rangkuti (2010):

- Helps the company to understand its internal activities more clearly.
- Helps the company to identify its competitive advantage.
- Helps the company to improve the efficiency and effectiveness of its activities.
- Helping the company to improve its financial performance.
- Helping the company to improve its competitiveness.
- Helping the company to increase customer satisfaction.
- Helps the company to increase its innovation.
- Helps the company to increase employee motivation and morale.

**G. SWOT Analysis**

SWOT analysis is used to measure the Strengths currently owned by the company, Weakness that currently still exist in the company, Opportunities that can be utilized by the company, and Threats that must be faced by the company. Strengths and weaknesses are the result of analysis of the internal company, while opportunities and threats are variables that come from outside the company.

**H. IFAS and EFAS**

IFAS (Internal Factor Analysis Summary) and EFAS (External Factor Analysis Summary) are prepared to determine the weight, classification and priority of a company's strengths, weaknesses, opportunities and threats. The results of the weight score calculation will be used to analyze the company's quadrant position in doing business.

**III. RESEARCH METHODS**

The object of research in this paper is the system planning and agency information technology of PT Asuransi Asei Indonesia which will be analyzed using the Ward and Peppard method.

**A. PT Asuransi Asei Indonesia**

Asuransi Asei is a subsidiary of state-owned company PT Reasuransi Indonesia Utama (Persero) which was previously named PT Asuransi Ekspor Indonesia (Persero). Asuransi Asei was established on October 9, 2014 under Decree AHU-29156.40.10.2014 issued on October 13, 2014 by the Minister of Law and Human Rights of the Republic of Indonesia. The establishment of Asuransi Asei is the result of the spin off of the insurance and reinsurance business of PT Asuransi Ekspor Indonesia (Persero) in accordance with the letter of the Financial Services Authority Number KEP-121/D.05/2014 dated October 21, 2014, and the letter of the Ministry of SOEs Number S-07/MBU/2014 dated January 08, 2014 related to the Transformation of PT Asuransi Ekspor Indonesia (Persero) into a Reinsurance SOE.

**B. Stages of Research**

The steps to be taken in conducting this research can be seen in Figure 2.

Figure 2 can be concluded that the steps of this research start from the data collection process in the form of literature studies, interviews and observations. After data collection, analysis is done using the Ward and Peppard method. The Ward and Peppard method consists of several stages, namely the input stage, the SI/TI strategic planning process, and the output stage.

**C. Data Collection**

The first stage of this research is to collect data through literature studies and field studies that will be used in the questionnaire preparation process. Literature studies are carried out by looking for literature and journals related to research. Field studies of the research material to be studied by knowing the existence of a problem, so that it can be formulated into research for the solution of the problem. Field

studies were carried out by distributing questionnaires to employees of PT Asuransi Asei Indonesia.

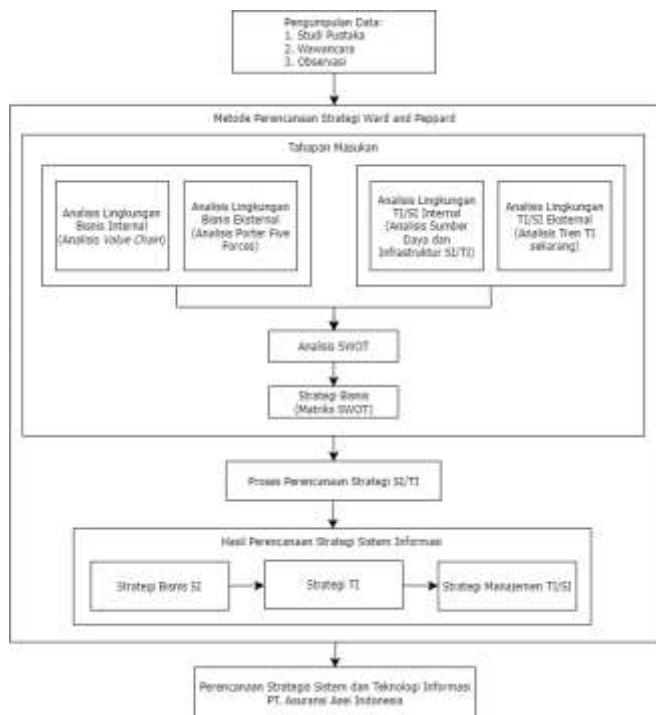


Fig. 2. Stages of Research

#### D. Ward and Peppard Strategic Planning Analysis Method

In this study using the Ward and Peppard method to analyze the data and information generated. This method consists of several inputs, namely the first stage of analyzing the internal business environment is carried out to identify and map the activities involved in business processes, both from the main activities and supporting activities in business processes at PT Asuransi Asei Indonesia. The tools used are value chain analysis. In order to identify current competition among similar industries, the threat of new competitors entering the market, the threat of substitute goods or services, the bargaining power of suppliers and customers, and the threat of new competitors entering the market, the company conducts a second analysis of the external business environment. The tools used are porter's five force competitive models. The third stage of analyzing the internal SI/TI environment is evaluating all SI/TI resources at PT Asuransi Asei Indonesia such as software and hardware. The analysis is carried out using McFarlan's Strategic Grid model which consists of four quadrants, namely Strategic, High Potential, Key Operational, and Support. The fourth stage is the analysis of the external SI/TI environment, analyzing the technological developments that occur from various references to find out how the influence of technological developments and their benefits to the company. Furthermore, the output stage consists of business SI strategy, IT strategy and SI/TI management strategy.

#### E. SWOT Business Analysis

In this analysis, a comparison is made between the internal

factors and external factors that have been analyzed. In this case, internal factors will be strengths and weaknesses while external factors will be opportunities and threats. Here are some stages of SWOT analysis, namely:

- Entering the company conditions that have been identified. In accordance with the provisions, internal factors will become strengths and weaknesses while external factors will become opportunities and threats.
- Strength and Weakness parameters are taken from the results of analyzing the internal business environment using value chain analysis as well as data from interviews and observations.
- Opportunities and Threats parameters are taken from the results of the analysis of the external business environment using porter's five force method.
- Compile the first column (opportunities and threats) and (strengths and weaknesses).
- Weighting the factors in the second column, ranging from 1.00 (very important) - 0.0 (not important)
- To calculate the IFAS, the third column rates each factor on a scale from 4 (excellent) to 1 (bad) based on the factor's impact on the company's situation. Positive variables (all variables categorized as strengths) are given values ranging from +1 to +4 (excellent) by comparing them with the main competitors.
- To calculate EFAS, rate the third column for each factor by giving a scale ranging from 4 (outstanding) to 1 (poor) based on the influence of the factor on the company's condition. The rating value for the opportunity factor is positive (greater opportunities are given a rating value of +4, but if the opportunity is small, it is given a rating of +1).
- Multiply the weights in the second column by the values in the third column to get the weight coefficients for the fourth column. The result is a weighting score for each factor that varies in value.
- Add the emphases (column 4) to get a total company emphases score. The total score shows how the company reacts to its external and internal strategic factors.
- Determine point x by subtracting strengths from weaknesses. to determine point y by subtracting opportunities from threats.
- Create a SWOT matrix diagram depicting the company's position with x and y points.
- Explain the company's quadrant position based on the SWOT matrix diagram that has been drawn.
- Create a 2x2 matrix containing SWOT analysis which is divided into several columns including SO column, WO column, ST column, and WT column.

#### IV. RESEARCH RESULT AND DISCUSSION

Analysis of the internal business environment of PT Asuransi Asei Indonesia using the value chain analysis method obtained from the results of interviews and direct observation of business process activities from each division or section, can be seen in Figure 3.



Fig. 3. Company Value Chain Analysis

The results of porter's five force analysis found that the influence on companies that have high scores is the threat factor of new entrants and competition in similar industries. Although the threat of substitute products or services exists, the bargaining power of buyers and suppliers has little effect on the firm.

In the current existing system there are several systems used including AS400, MyAsei, Core System Care Trade Insurance, Core System Care General Insurance, Guarantee, and Sharia where the data generated is not integrated making it difficult for divisions involved in the business process to process data. In addition, the number of systems makes work inefficient and effective and requires a long time to process data.

Based on the results of the analysis of the Internal SI/TI environment, the mapping of future SI/TI needs of PT Asuransi Asei Indonesia is classified into four quadrants of the McFarlan Strategic Grid.

TABLE I. McFarlan Strategic Grid Analysis Results

<i>Strategic</i>	<i>High Potential</i>
<ul style="list-style-type: none"> <li>Integrated Information System</li> </ul>	<ul style="list-style-type: none"> <li>Marketing Information System</li> <li>Production Transaction Information System</li> <li>Cooperation Agreement Information System</li> </ul>
<ul style="list-style-type: none"> <li>Accounting Information System</li> <li>Investment Information System</li> </ul>	<ul style="list-style-type: none"> <li>Risk Management Information System</li> <li>HRIS Information System</li> <li>Portal Information System</li> </ul>
<i>Key Operational</i>	<i>Support</i>

Analysis of the external SI/TI environment is carried out to obtain an overview of current SI/TI developments. The analysis includes server trends, computer network trends and information system application trends that can be used as opportunities to be utilized in accordance with the needs and strategies of PT Asuransi Asei Indonesia in the future.

SWOT business analysis is the systematic identification of various factors to formulate a company strategy. The reasoning for this study is to optimize opportunities and strengths. But at the same time, weaknesses and threats can be minimized.

A. Determination of Internal Strategy Factors (IFAS)

The purpose of an IFAS (Internal Factor Analysis Summary) analysis is to determine and evaluate the system's internal strengths and weaknesses within an insurance firm. To weight the value of strengths and weaknesses, a questionnaire was conducted on 16 respondents with a scale of question weight values Not Affected (1), Moderately Affected (2), Affected (3), and Very Affected (4).

TABLE II. Internal Strategy Factor Analysis (IFAS)

No	Internal Factor	Weight	Rating	Weight Score
<b>Strength</b>				
1	Agent skills and experience	0,08	4	0,33
2	Company reputation	0,11	3	0,33
3	Technology used	0,10	3	0,29
4	Processes and procedures	0,07	3	0,22
5	Agent support and training	0,08	4	0,33
6	Customer database	0,10	3	0,29
<b>Subtotal</b>		<b>0,54</b>		<b>1,78</b>
<b>Weakness</b>				
1	Lack of agent training	0,10	1	0,10
2	Lack of advanced technology	0,12	2	0,28
3	Inefficient processes and procedures	0,11	2	0,22
4	High operational costs	0,07	2	0,14
5	Lack of customer database	0,06	2	0,12
<b>Subtotal</b>		<b>0,46</b>		<b>0,86</b>
<b>Total</b>		<b>1,00</b>		<b>2,64</b>

From the Internal Strategic Factor Analysis (IFAS) in Table II, the strength and weakness factors have a total score of 2.64. Because the total score is above 2 (average), this means identifying an internal position that is in a period of growth.

B. Determination of External Strategy Factors (EFAS)

The purpose of the EFAS analysis (External Factor Analysis Summary) is to identify and evaluate external opportunities and threats to the insurance company's system. To weight the value of opportunities and threats, a questionnaire was conducted on 16 respondents with a scale of question weight values Not Affected (1), Moderately Affected (2), Affected (3), and Very Affected (4).

TABLE III. External Strategy Factor Analysis (EFAS)

No	External Factor	Weight	Rating	Weight Score
<b>Opportunity</b>				
1	Insurance market growth	0,09	3	0,26
2	Technology development	0,09	3	0,26
3	Regulatory changes	0,11	3	0,34
4	Changing customer needs and preferences	0,11	3	0,34
5	Weak competition	0,10	3	0,30
<b>Subtotal</b>		<b>0,50</b>		<b>1,50</b>
<b>Threat</b>				
1	Intense competition	0,09	2	0,17
2	Economic crisis	0,09	3	0,26
3	Natural disasters	0,11	3	0,34
4	Unfavorable regulatory changes	0,11	2	0,17
5	Lack of skilled labor	0,10	1	0,13
<b>Subtotal</b>		<b>0,50</b>		<b>1,07</b>
<b>Total</b>		<b>1,00</b>		<b>2,57</b>

From the External Strategic Factor Analysis (EFAS) in Table III, the opportunity and threat factors have a score of 2.57. Because the total score means this indicates that the marketing division responds to existing opportunities and avoids the threats faced.

C. SWOT Matrix Diagram of PT Asuransi Asei Indonesia

Based on the results of Table II Internal Strategy Factor Analysis (IFAS) and Table III External Strategy Factor Analysis (EFAS), it is known that the IFAS value is 2.64 and the EFAS value is 2.57, indicating that the company has stronger internal strengths than external opportunities such as the SWOT matrix diagram in Figure 4.

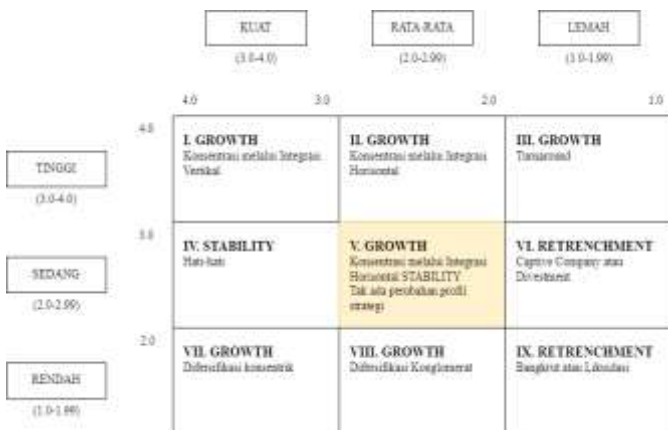


Fig. 4. SWOT Matrix Diagram of PT Asuransi Asei Indonesia

Based on the SWOT analysis applied as a strategic planning for the insurance agency system of PT Asuransi Asei Indonesia where the company is in a growth strategy position, namely a plan to increase the size and value of a business. This growth strategy can be used to improve the company's financial performance, such as revenue or profit. The types of growth strategies that companies can use are market penetration, market development, product development, and diversification.

D. SWOT Matrix of PT Asuransi Asei Indonesia

The SWOT matrix is a tool used to analyze the company's internal factors in the form of strengths and weaknesses owned by the company and the company's external factors in the form of opportunities and threats faced by the company to analyze alternative strategies to be implemented by the company. The resulting strategy alternatives can be seen in Table IV.

TABLE IV. SWOT Matrix Analysis of PT Asuransi Asei Indonesia

Strategy S-O	Strategy W-O
1. Utilize agents' expertise and experience to increase sales.	1. Address agent training shortcomings with a comprehensive training program.
2. Enhance the company's reputation through quality service.	2. Invest in state-of-the-art technology to enhance competitiveness.
3. Utilize technology to improve efficiency and effectiveness of operations.	3. Simplify processes and procedures to improve efficiency.
4. Enhance agent training and support to improve customer service.	4. Find ways to reduce operating costs.

5. Expand customer database to reach more potential customers.	5. Expanding the customer database through various marketing channels.
<b>Strategy S-T</b>	<b>Strategy W-T</b>
1. Enhance competitiveness by utilizing agents' expertise and experience.	1. Address agent training shortcomings with a comprehensive training program.
2. Build a strong corporate reputation to increase customer trust.	2. Invest in state-of-the-art technology to enhance competitiveness.
3. Utilize technology to improve efficiency and effectiveness of operations.	3. Simplify processes and procedures to improve efficiency.
4. Enhance agent training and support to improve customer service.	4. Find ways to reduce operating costs.
5. Expand customer database to reach more potential customers.	5. Expanding the customer database through various marketing channels.

After doing the SWOT matrix, then make a quantitative model analysis as the basis for the number of values for each factor in each of the S-O, W-O, S-T, and W-T strategies. The following is a quantitative model of strategy formulation in Figure 5.

	<b>FAKTOR INTERNAL (IFAS)</b>	<b>KERUKUTAN (STRENGTH)</b>	<b>KELEMAHAN (WEAKNESS)</b>
<b>FAKTOR EKSTERNAL (EFAS)</b>			
<b>PELUANG (OPPORTUNITY)</b>		Strategi S-O : menggunakan kekuatan untuk memanfaatkan peluang = 3,28	Strategi W-O : meminimalkan kelemahan dengan memanfaatkan peluang = 2,36
<b>ANCAMAN (THREAT)</b>		Strategi S-T : menggunakan kekuatan untuk mengatasi ancaman = 2,85	Strategi W-T : meminimalkan kelemahan dan menghindari ancaman = 1,93

Fig. 5. Quantitative Strategy Combination Planning Matrix

E. Information Technology and Systems Strategic Planning Results

The proposed system recommendation is an integrated agency system, which includes five insurance business processes, namely guarantee insurance, trade insurance, credit insurance, general insurance, and sharia insurance.



Fig. 6. Agency System Login Mockup



Fig. 7. Agency System Recommendation Mockup

The purpose of the SI/TI management strategy recommendation is to provide proposals in the form of policies in implementing the SI/TI strategy. Based on the analysis of the current condition of PT Asuransi Asei Indonesia, especially for insurance agency, it is found that PT Asuransi Asei Indonesia does not have good governance for the SI/TI agency system. This governance must include the addition of an organizational structure for a special insurance agency section in the marketing division and establish the responsibilities of the various parties involved in managing SI/TI. Below is the proposed organizational structure of PT Asuransi Asei Indonesia.

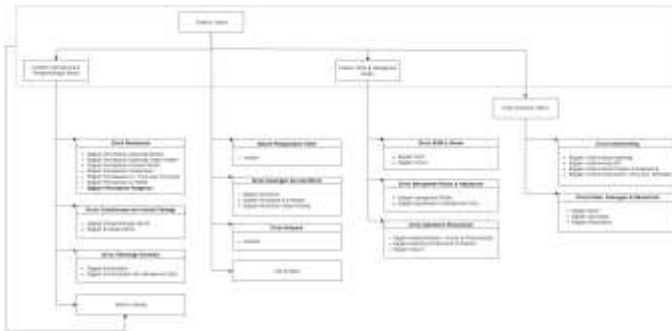


Fig. 8. Organizational Structure Recommendation

PT Asuransi Asei Indonesia by implementing these strategies is expected to achieve its goal of planning a system design that can improve work efficiency by automating various processes that manage information so as to increase management effectiveness by satisfying information needs for decision making.

V. CONCLUSION

In this study has been successfully carried out strategic planning analysis of systems and information technology agency PT Insurance Asei Indonesia using ward and peppard where performed several stages, among others using SWOT and Porter’s Value Chain. Then mapping of application portfolio using Mcfarlan Strategic Grid method. As for the results of the research based on SWOT analysis, PT Assurance Akei Indonesia has stronger internal strength compared to external opportunities. An IFAS rating of 2.64 indicates that companies have advantages in terms of the expertise and

experience of agents, the company’s reputation, and the technology used. An EFAS score of 2.57 indicates companies need to be more proactive in leveraging external opportunities such as insurance market growth, technological developments, and regulatory changes. Despite having some internal weaknesses such as a lack of agency training, sophisticated technology, and inefficient processes and procedures, the company has the potential to overcome those vulnerabilities and its goals. As for the SI strategy, it is recommended to design an integrated agency system, which includes five insurance business processes, namely, collateral insurance, trade insurance, credit insurance, general insurance, and sharia insurance. Not only that, the SI/TI management strategy plan resulted that the management of the agency system should be owned by PT Insurance Asei Indonesia which includes the addition of the organizational structure for the special section of the insurance agency in the marketing division and the establishment of responsibilities of the various parties involved in management of SI/IT. PT Assurance Asey Indonesia is expected to its objective to make system design planning that can improve the efficiency of work by performing automation of various processes that manage information so that it can improve management efficiency by meeting the information needs for decision-making.

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