

THE DIGITALIZATION OF THE INFORMATION SYSTEM TO IMPROVE PERFORMANCE USING THE WARD AND PEPPARD APPROACH AT PT. ANANTA AUTO ANDALAN

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ABSTRACT

Amidst the dynamic milieu of contemporary business operations, the digitalization of information systems emerges as a cornerstone for organizational competitiveness. This research delves into PT. Ananta Auto Andalan's utilization of the Ward and Peppard approach to orchestrate this pivotal transformation. Aimed at bolstering PT. Ananta Auto Andalan's business efficacy through optimized information systems, this study entails a meticulous examination of the company's structural framework, role delineations, and internal and external contextual factors. The strategic directives stemming from this scrutiny, employing the Ward and Peppard methodology, encompass initiatives such as upgrading internet bandwidth from 10 Mbps to 20 Mbps to accommodate burgeoning network requirements and tailoring digitalization strategies to align with the distinct information needs of each department. Our findings underscore the efficacy of embracing the Ward and Peppard approach as it furnishes PT. Ananta Auto Andalan with a robust blueprint to navigate the evolving business landscape, including the establishment of a dedicated IT/IS team tailored to organizational imperatives. In essence, this study delineates the efficacy of the Ward and Peppard approach in optimizing information systems, thereby fortifying PT. Ananta Auto Andalan's trajectory towards success in the digital era.

Keywords: PT Ananta Auto Andalan, Information System, Ward and Peppard.

1 INTRODUCTION

The implementation of information systems (IS) has become a necessity for companies in the digital era. With technological advancements, IS has become a support system driving various aspects of company operations, ranging from data management to business analysis. IS enables companies to manage information more efficiently [1]. With centralized data storage and fast access, companies can enhance employee productivity and optimize business processes. IS helps companies make better and faster decisions based on accurate data analysis. By using sophisticated data analysis tools, companies can identify market trends, understand customer actions, and design more effective strategies. IS can help companies compete better in competitive markets. By using the right technology, companies can create added value for customers and differentiate themselves from competitors [2].

PT Ananta Auto Andalan is an automotive company that has become one of the industry leaders in Indonesia. With a focus on manufacturing automobiles and automotive components, the company has successfully built a strong reputation for its product quality and excellent customer service. Since its establishment, PT Ananta Auto Andalan has continuously innovated in design, technology, and production processes to meet the evolving market demands. PT Ananta Auto Andalan implements sustainable business practices and is environmentally friendly [3].

PT Ananta Auto Andalan has a division dedicated to Information Technology (IT) or Information Systems (IS) known as the Information Technology and Systems Division (ITSD). ITSD is responsible for the development, implementation, and maintenance of all company information systems, as well as the information technology infrastructure supporting daily operations. The

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ITSD team collaborates with other departments within the organization to ensure that information technology needs are met and also oversees the security and availability of the company's information systems. Additionally, ITSD is involved in the development and implementation of technological innovations that can enhance operational efficiency and provide a competitive edge for PT Ananta Auto Andalan in the competitive automotive market [3].

Based on interview results and observations, it was found that PT Ananta Auto Andalan lacks a website that could effectively introduce its company profile and branding. This situation indicates a missed opportunity to harness the vast potential of digital marketing. With the existence of an official website, the company could present comprehensive information about its history, vision, mission, products, and services offered. Furthermore, the website could serve as an effective platform to showcase achievements, certifications, and customer testimonials, thereby enhancing trust and reputation among consumers. Therefore, the presence of a professional and informative website could be a powerful instrument in strengthening the brand image and increasing PT Ananta Auto Andalan's digital presence in the market.

PT Ananta Auto Andalan faces several issues that affect its overall operations. One of the main problems encountered by the company is the lack of effective information system integration. This results in obstacles in workflow and interdepartmental coordination, which in turn can slow down decision-making processes and disrupt operational efficiency. The company also faces challenges in dealing with increasingly fierce market competition, especially from competitors offering products at more competitive prices or with more innovative features. The inability to effectively respond to market changes and consumer trends is also an issue that requires attention. Additionally, the lack of digital technology, such as the absence of an official website, poses a barrier to the company's marketing and branding efforts in this digital era. To address these issues, a comprehensive and integrated strategy involving various departments within the company and the implementation of appropriate information technology solutions are needed.

The study on Strategic Planning of Information Systems and Information Technology (IS/IT) at the Education and Culture Agency of Metro stated that strategic planning of IS/IT, in line with the produced IS/IT portfolio, can be utilized for future strategic planning. This enables prioritization of activities necessary to achieve optimal results and contribute to the desired goals. The research results yielded a blueprint for strategic planning, which refers to the organization's business plan based on the analysis of acquired data [6]

Building on the aforementioned previous research, this study investigates Information System Strategic Planning at PT Ananta Auto Andalan using the Ward and Peppard Approach. This research focuses on planning strategic information system plans without considering hardware, software, networks, databases, and procedures. It is hoped that this research can provide application portfolio recommendations for future development.

2 LITERATURE REVIEW

Strategic Planning of Information Systems (IS) is a systematic approach aimed at aligning IS strategy with organizational goals. This process involves analyzing the organization's internal and external environment, identifying IS needs, and developing plans to meet those needs. Some commonly used framework models for strategic IS planning include the Ward and Peppard Model, the Rockart Model, and the Greiner Model, each providing a unique approach to linking IS strategy with organizational business goals. Research in this field has shown that organizations successfully implementing strategic IS planning processes can experience several benefits, such as improved alignment between IS and business strategy, enhanced decision-making, better efficiency and effectiveness of IS, increased user satisfaction, and competitive advantage. Key success factors in implementing Strategic IS Planning include senior management involvement, clear planning processes, effective communication among stakeholders, adequate resources, and ongoing measurement and evaluation. Strategic IS planning is a crucial step for organizations seeking to

optimize the utilization of IS to achieve their business goals and enhance their chances of success in competitive markets [6].

PT Ananta Auto Andalan, based in South Jakarta, Indonesia, is a prominent Hyundai authorized dealer, offering a comprehensive range of services to its customers. In an effort to provide comprehensive automotive solutions, the company offers sales of new cars, including various latest Hyundai models such as sedans, SUVs, and MPVs. Additionally, PT Ananta Auto Andalan provides comprehensive service and maintenance, including engine repairs, tune-ups, oil changes, and offers a variety of genuine Hyundai spare parts to maintain optimal performance of customers' vehicles. Known for its excellent reputation in customer service, PT Ananta Auto Andalan prides itself on its experienced and knowledgeable staff team, ready to assist customers with their needs. With a commitment to customer satisfaction, the company continues to be the top choice for those seeking a satisfying automotive experience [7].

The Ward and Peppard approach refers to the framework used in the development of information system (IS) strategies in various organizations. This model is known as a comprehensive and structured approach to understanding the role of IS in achieving organizational business goals. In this approach, Ward and Peppard classify IS strategies into four main categories: business support, system exploitation, competitive advantage, and business transformation. This approach emphasizes the importance of integrating IS strategies with broader business strategies to create added value for the organization. By using this model, organizations can identify opportunities and challenges related to IS utilization, as well as plan the necessary steps to maximize the contribution of IS to achieving business goals. Thus, the Ward and Peppard approach provides useful guidance for organizations in developing effective and integrated IS strategies aligned with business strategies [8].

3 RESEARCH METHODOLOGY

This research employs two methods, namely data collection method and analysis method. The data collection method involves observation, interviews, literature review, and similar literature research. Meanwhile, the analysis method used refers to the approach by John Ward and Joe Peppard as depicted in Figure 1, consisting of three main stages: input stage, process stage, and output stage.

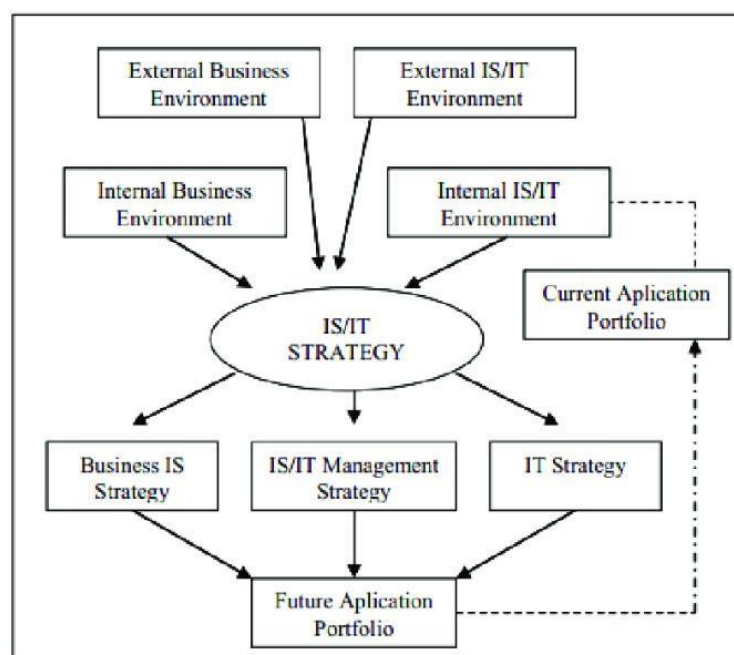


Figure 1. Information Systems Strategic Model (Ward and Peppard, 2002)

A. Input Stage [9]:

1. Internal Business Analysis: In this stage, the main focus is on understanding the core of PT Ananta Auto Andalan's business. This includes understanding the company's vision, mission, objectives, and business strategies. Additionally, identification of strengths to leverage, weaknesses to address, as well as opportunities and threats within the company's internal environment is conducted. The SWOT approach is used to assist in identifying these factors. Analysis is also carried out on key business processes, organizational structure, and company culture to gain a more comprehensive understanding of the internal dynamics of the company.
2. External Business Environment Analysis: After understanding the internal conditions of the company, the next step is to analyze external factors that influence PT Ananta Auto Andalan's business. These factors include economic, political, social, and technological conditions that can impact the company's operations. In this analysis, the PEST approach (Political, Economic, Social, and Technological) is used to comprehensively scan the external environment. Additionally, identification of main competitors in the market, ongoing market trends, and new opportunities that may arise in the automotive industry is conducted.
3. Internal IS/IT Environment Analysis: This stage involves evaluating the existing information technology (IT) infrastructure at PT Ananta Auto Andalan. This includes the information systems used and the IT expertise of human resources. Analysis is conducted to identify internal strengths and weaknesses related to the company's IS/IT. The method applied is the Value Chain.
4. External IS/IT Environment Analysis: Analysis is conducted on the development of new technologies relevant to the automotive industry in the company's external environment. Trends and solutions in information systems/information technology (IS/IT) are also identified to understand how these technologies can support the company's competitive advantage. However, potential risks and challenges related to the implementation of these new technologies need to be considered as well. The method applied is the Value Chain.

- B. Process Stage: After understanding the business environment context and the information systems/information technology environment, the next stage involves in-depth analysis of the information obtained from both environments. The analysis results from the previous stage serve as the basis for proposing appropriate strategies.

C. Output Stage [10]:

- a Business IS Strategy: In this stage, the IS strategy supporting the achievement of PT Ananta Auto Andalan's business goals is formulated. This involves determining the types of information systems needed to support key business processes, as well as setting priorities for the development and implementation of new information systems.
- b IS/IT Strategy: This strategy relates to the management of IT infrastructure, IT human resources, and IS/IT security. The focus is on determining the appropriate technology for the development and implementation of new information systems, while ensuring the alignment of IT infrastructure with evolving business needs.
- c IS/IT Management Strategy: This stage involves formulating strategies for IS/IT governance, including decision-making processes, internal controls, and risk management. It also encompasses the development of an organizational culture that supports the effective and efficient utilization of IS/IT, as well as the development of training and development programs to enhance IT human resource skills.

4 RESULTS AND DISCUSSION

A. Input Stage

Internal Business Analysis

PT Ananta Auto Andalan is oriented towards the digitalization of its information systems to enhance company performance following the Ward and Peppard approach. The company's vision to become a leader in the Indonesian automotive industry is supported by digitalization strategies aimed at improving operational efficiency and customer service. Its mission includes the development of digital technologies to expand market reach, enhance customer experience, and optimize internal processes. In the context of digitalization, the company's objectives include enhancing system integration, leveraging data more effectively, and developing a robust IT infrastructure. Proposed strategies involve implementing integrated information systems, training employees in the use of new technologies, and utilizing data analytics for better decision-making.

SWOT analysis (Strengths, Weaknesses, Opportunities, Threats) is used to identify the Strengths, Weaknesses, Opportunities, and Threats at PT Ananta Auto Andalan as shown in the following Table 1:

Table 1. Analysis SWOT

| | Strengths (S) | Weaknesses (W) |
|-----------|--|--|
| Internal | <p>Strong brand and reputation in Indonesia automotive industry and effective digital system promotion.</p> <p>Extensive dealer network and dependable after-sales services, providing a solid foundation for digital system distribution and support.</p> <p>Skilled workforce capable of developing complex digital systems.</p> <p>Customer-centric culture ensures digital solutions meet customer needs.</p> <p>Commitment to innovation drives development of competitive digital systems.</p> | <p>Dependency on domestic market necessitates international expansion for digital systems.</p> <p>Limited production capacity may hinder scalability.</p> <p>Lack of international experience requires strategic partnerships.</p> <p>Constraints in technology development may impact competitiveness.</p> <p>Outdated systems pose efficiency and competitiveness challenges.</p> |
| Eksternal | <p>Opportunities (O)</p> <p>Strong economic growth in Indonesia boosts digital system adoption.</p> <p>Increasing demand for light commercial vehicles creates market opportunities.</p> | <p>Strategic S-O</p> <p>Leverage brand for domestic and international digital sales.</p> <p>Utilize dealer network to expand digital system reach.</p> <p>Harness workforce expertise for innovative digital solutions.</p> <p>Integrate customer needs into digital system development.</p> <p>Strategic W-O</p> <p>Reducing dependence on the domestic market by expanding into international markets.</p> <p>Increasing production capacity</p> |

| | | |
|---|--|---|
| <p>Rising environmental awareness favors eco-friendly digital solutions. Automotive technology advances offer integration opportunities. International markets present avenues for expansion.</p> | <p>Innovate to outperform competitors in digital market.</p> | <p>to meet high customer demand. Gaining experience in international markets through collaboration with other companies. Investing in research and development to enhance the company's ability to develop new technologies. Modernizing existing information systems to improve efficiency and competitiveness of the company.</p> |
|---|--|---|

Ancaman (T)

Economic crises may impact digital system demand. Increase in fuel prices and interest rates. Stricter regulations regarding exhaust gas emissions. Disruptive technological developments. This could render existing information systems outdated and non-competitive. Entry of new players into the automotive industry.

Strategic S-T

Utilize Indonesia's growth for digital system sales. Developing information systems capable of meeting the increasing demand for light commercial vehicles. Developing environmentally friendly information systems to meet the growing public awareness of the environment. Integrate automotive tech advancements into systems. Expand into international markets with digital offerings.

Strategic W-T

Diversifying markets to reduce dependence on the domestic market. Improving operational efficiency to mitigate the impact of rising fuel prices and interest rates. Investing in new environmentally friendly technologies to comply with stricter regulations regarding exhaust gas emissions. Monitoring disruptive technological developments and adapting quickly to remain competitive. Develop strategies to counter new competitors.

Internal IS/IT Environment Analysis

Through interview processes and observations, the researcher obtained information about the tasks and functions of each division at PT Ananta Auto Andalan. From the observations and task mappings, the main activities and supporting activities of each division are identified, which are then organized into a value chain method as shown in Figure 2.

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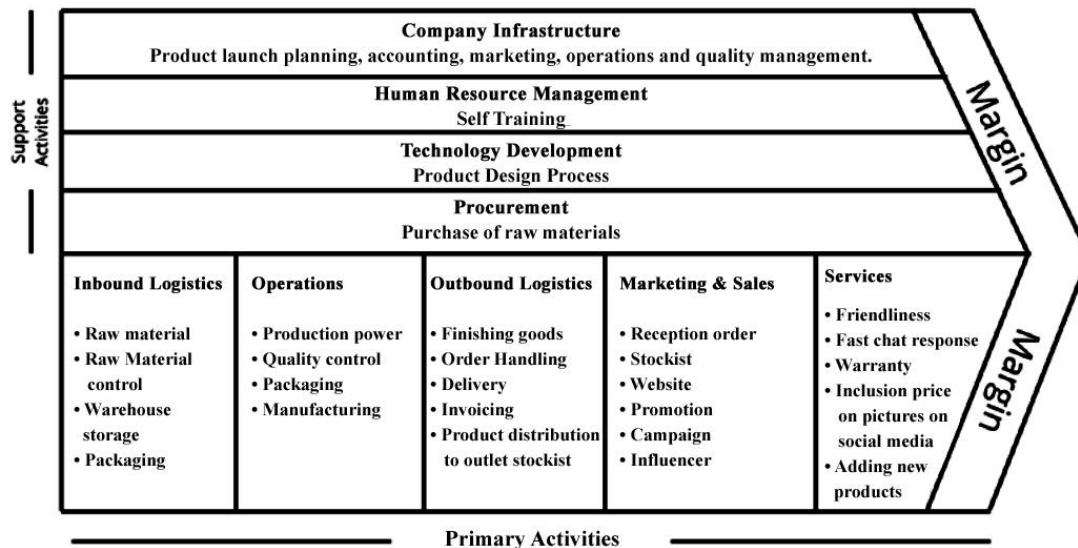


Figure 2. Value Chain Analysis of PT Ananta Auto Andalan

PEST Analysis

PEST Analysis is a strategic planning tool that helps organizations understand the Political, Economic, Social, and Technological factors that can influence business. By understanding these factors, organizations can make better decisions about strategy, operations, and investments [11].

- Political Factors:** Indonesia is a relatively stable democracy with a growing economy. However, there are some political risks associated with corruption and bureaucracy. The Indonesian government's policies support the automotive industry and have implemented policies to encourage investment and growth. However, there are also some regulatory barriers that can make it difficult for businesses to operate. Additionally, Indonesia has a growing economy and is a member of the Association of Southeast Asian Nations (ASEAN). This provides opportunities for PT Ananta Auto Andalan to export its products to other countries in the region. However, there are also some trade barriers that can make it difficult to export goods and services.
- Economic Factors:** Interest rates in Indonesia are relatively high. This can make it difficult for businesses to borrow money and invest in growth. Additionally, inflation in Indonesia is relatively low. This is good for consumers and businesses because it means prices do not rise too quickly.
- Social Factors:** Disposable income is increasing in Indonesia. This gives consumers more money to spend on discretionary items, such as vehicles. Consumers in Indonesia are also increasingly demanding vehicles that are more fuel-efficient and environmentally friendly. This poses a challenge for PT Ananta Auto Andalan, as it needs to invest in new technologies to meet these demands.
- Technological Factors:** Data security is becoming an increasingly important issue for businesses. PT Ananta Auto Andalan needs to invest in data security measures to protect its customers' data from cyber attacks.

Porter's Five Forces Analysis

Porter's Five Forces Analysis can be seen in Figure 3. Competition among automotive component manufacturers is measured by the threat of new entrants, suppliers, buyers/users, and the threat of substitute products.

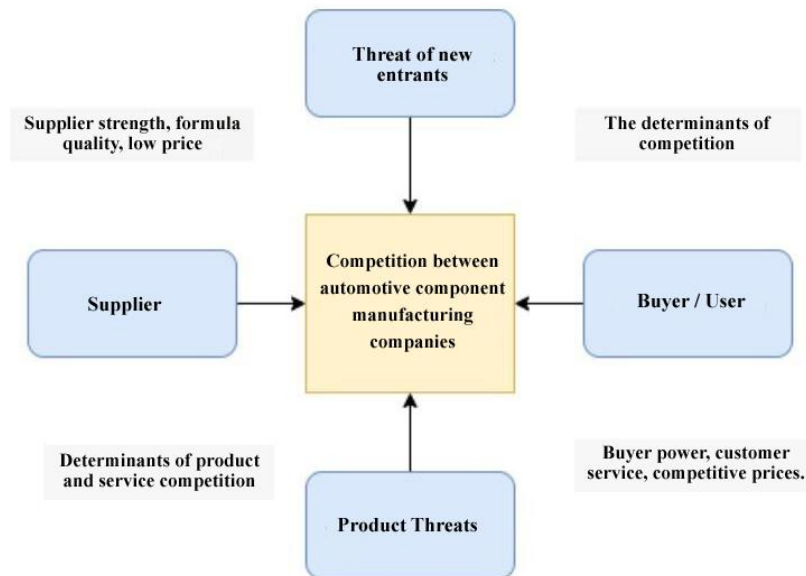


Figure 3. Porter's Five Forces analysis

b. Process Stage

The results of the SWOT Analysis revealed strengths such as a strong brand reputation and reliable after-sales service, but also weaknesses such as dependency on the domestic market and limitations in developing new technology. In addition, opportunities such as strong economic growth in Indonesia and threats such as global economic crises and disruptive technological developments were identified.

The Value Chain Analysis examined various aspects of company infrastructure, human resource management, technology development, and procurement. Company infrastructure, including organizational structure and accounting systems, was investigated to understand how information systems are embedded in day-to-day operations. Human resource management, such as recruitment policies and training, was examined to ensure the availability of human resource skills in IT. Technology development, including existing information systems and technology infrastructure, was evaluated to ensure alignment with business needs. Finally, procurement processes, such as vendor management and risk management, were studied to ensure optimal procurement of IT resources.

From this process, specific information needs in each division could be identified. For example, the sales and marketing division requires customer data and market analysis to improve sales and customer relationship management. The after-sales service division requires customer service management software and warranty management systems to handle customer inquiries and claims.

c. Output Stage

1. Business IS Strategy:

Determining the information needs for each division is carried out in order to create Information System (IS) solutions. The results of IS strategic planning, such as IS architecture, can be integrated into the IS application portfolio for the future. The process of determining IS applications following the portfolio model can be seen in Table 2. The placement of information system applications needed by PT Ananta Auto Andalan is mapped as follows:

Table 2. Proposed IS Portfolio

| Strategic | High Potential |
|--------------|----------------|
| Website | Sales IS |
| Marketing IS | KMS |
| | DSS |

| | |
|--------------------------------|--------------------|
| Strategic | High Potential |
| Accounting IS | Helpdesk |
| e-CRM e-HRM | Ms. Office, E-mail |
| Work Control and Management IS | |
| Key Operational | Support |

2. IS/IT Strategy

The computer network plan is adapted according to the existing infrastructure at PT Ananta Auto Andalan, based on the analysis of the External Environment of Information Systems/Information Technology and recommendations on organizational structure. To meet the computer network needs at PT ISE, only an increase in the existing internet bandwidth is required, from 10 Mbps to 20 Mbps.

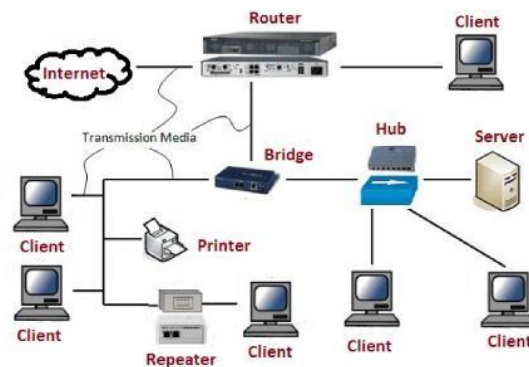


Figure 3. Proposed Computer Network Plan

As for the proposed IS implementation plan, it can be seen in the scheduling in the following Table 3:

Table 3 IS Schedule

| No | Proposed IS/IT | 2025 | 2026 | 2027 |
|----|------------------------------------|------|------|------|
| 1 | Marketing IS | | | |
| 2 | Sales IS | | | |
| 3 | e-Customer Relationship Management | | | |
| 4 | e-Human Resource Management | | | |
| 5 | Control Information System | | | |
| 6 | Accounting Information System | | | |
| 7 | Knowledge Management System | | | |
| 8 | Decision Support System (DSS) | | | |
| 9 | Helpdesk | | | |
| 10 | Website | | | |

3. Management Strategy of IS/IT:

The management strategy of Information Systems/Information Technology at PT Ananta Auto Andalan is derived from the analysis of the existing organizational structure and job descriptions of each adapted work unit. Therefore, the result is a recommendation for the organizational structure of Information Systems/Information Technology for PT Ananta Auto Andalan, as shown in the following Figure 4:

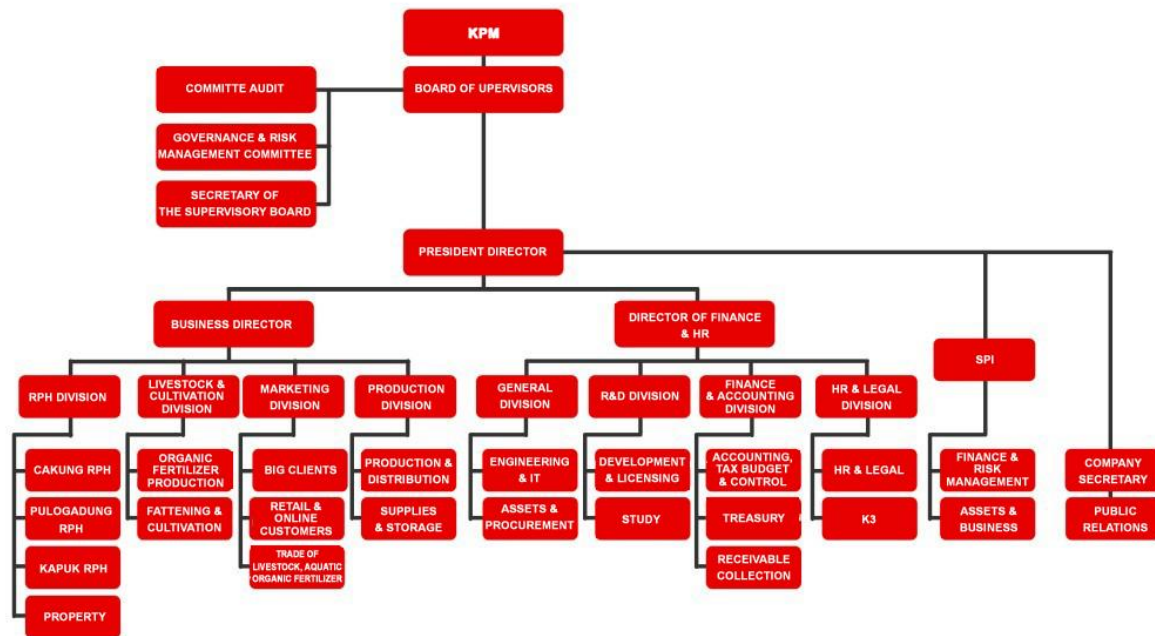


Figure 4. Proposed Organizational Structure Plan for PT Ananta Auto Andalan

5 CONCLUSION

The digitalization of information systems at PT. Ananta Auto Andalan, employing the Ward and Peppard approach, presents a strategic roadmap for optimizing corporate information systems. Through thorough analysis of organizational structure, job descriptions, and environmental factors, the study formulates precise IS/IT strategies. By systematically mapping information needs, developing computer networks, and restructuring IS/IT frameworks, the approach generates actionable proposals. Recommendations such as enhancing internet bandwidth aim to bolster operational efficiency. This research offers a comprehensive framework to navigate PT. Ananta Auto Andalan through the challenges and opportunities of the digital age.

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