

The Impact of Business IT Strategic Alignment on Corporate Performance

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Abstract: Information technology's role is vital for a company's progress in its business management. Companies must implement differentiation and cost-reduction strategies to gain a competitive advantage in intense competition, especially among electrical appliance distributors. The implementation of cost reduction cuts business processes by streamlining IT/IS. However, business processes still have not implemented information systems, such as stock data collection, transaction problem reporting, and much more. Therefore, companies need to move dynamically with the flow of technological changes by planning the right technology strategy. Based on the problems that arise, this research is only limited to strategic planning of information systems and application portfolios using the Ward and Peppard approach because it focuses on mapping the company's internal-external factors regarding business and technology. This research hypothesizes that the determination of the strategy can be successful in realizing the application's application within five years in an electrical appliance distributor company. The research stage begins with collecting data from the literature, interviews, and direct observation. Next, analyze the internal and external environment using the help of the Ward and Peppard method. The environmental analysis results become the basis for mapping the Critical Success Factors (CSF) that need to be evaluated using the IT Balanced Scorecard. The results of this research are in the form of a proposed strategy for business, management, and information technology systems in the form of an application portfolio. The direction of application implementation is through product roadmap and master plan planning. This study aims to build the right business strategy and technology to help companies realize application implementation in the short and long term.

Keywords: Strategic Planning, Ward and Peppard, CSF, IT Balanced Scorecard

Introduction

Nowadays, every company wants to survive and grow in the era of Information and Communications Technologies (ICT) (Khan *et al.*, 2020). To continue to grow and develop in the future, companies need to implement an Information System (IS) supported by an Information Technology (IT) infrastructure (Madyatmadja *et al.*, 2021a; Andry *et al.*, 2021). Business digitization is growing for companies to apply information technology to their daily operations (Chanthinok and Naenudorn, 2022). There are three main objectives in implementing systems and technology. First, improve work efficiency by automating various processes that manage information. Then, enhance the

effectiveness of management by providing all the information needed for decision-making. The final goal is to improve competitiveness or increase competitive advantage by changing the style and way of doing business (Mulyani *et al.*, 2020). Therefore, strategic planning of information systems is now one of the keys to achieving the company's business goals.

However, not many companies use information systems and technology in the business sector, one of which is a company in the field of electrical appliance distributors. Electrical equipment distributor companies are private institutions that supply electricity supply instruments for energy, infrastructure, transportation, and other projects. Based on the evaluation of current business

processes, it is still not running effectively and efficiently. Lack of strategic planning of information systems is the leading cause of business processes that do not run smoothly. Problems that arise include lost product data, long data processing times, and the slow transfer of required data from one division to another. The issue of data loss makes companies expect strategic planning of information systems and information technology that can help manage business processes.

Technology and business strategy planning at a power tool distributor company uses the ward and peppard approach to internal and external companies. The ward and peppard method are a strategic alignment approach and the competitive impact suitable for increasing productivity, performance, control, and organizational competitiveness (Chen *et al.*, 2019). Furthermore, the evaluation process of elaborating strategic planning for information systems and business strategies can use the Information Technology Balance Scorecard (IT-BSC) (Rustamaji *et al.*, 2020). The components that determine business and technology alignment are divided into 4 IT-BSC perspectives: Corporate contribution, user orientation, operational excellence, and future orientation (Siregar *et al.*, 2018). These four perspectives can measure the performance of companies that use technology as business support and provide an overview of performance achievements following business strategies.

Based on the background of the problems described, this research focuses on building an information technology strategy in electrical appliance distributor companies. The research method used is ward and peppard to plan information technology strategies. Performance evaluation is carried out using the IT balanced scorecard to align the implementation of technology and business strategies (Tsai *et al.*, 2020). The research stage begins with collecting data from the literature, interviews, and direct observations at electrical appliance distributor companies. Next, analyze the internal and external environment using the help of the ward and peppard method. Then, the environmental analysis results are used as the basis for mapping Critical Success Factors (CSF) using the IT-BSC method. The results of this research are in the form of a proposed strategy for business, management, and information technology systems in the form of an application portfolio. The direction of application implementation is determined through product roadmap and master plan planning. This study aims to build the right business strategy and technology to help companies realize application implementation in the short and long term.

Materials and Methods

Ward and Peppard Framework

The ward and peppard method are an application portfolio identification process based on the development of information systems and information technology strategies (Fajrillah *et al.*, 2022).

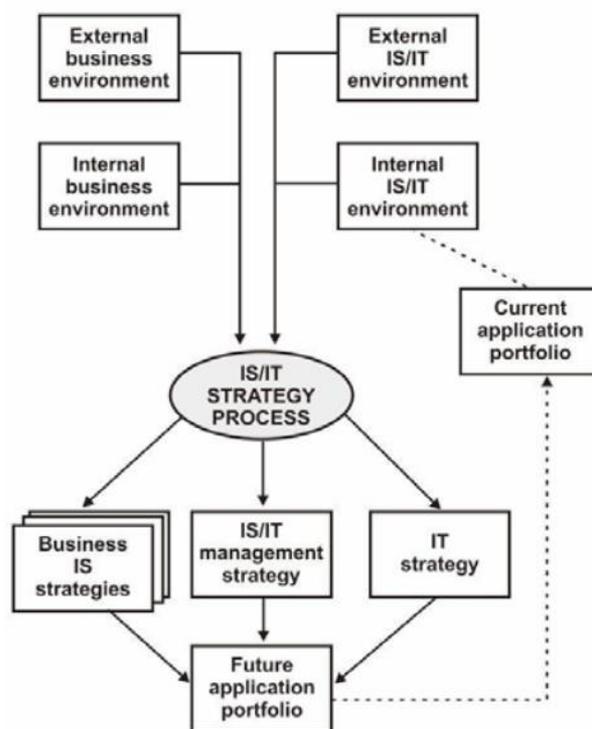


Fig. 1: Ward and peppard framework (Faizal and Chernovita, 2022)

Figure 1 shows the ward and peppard method consists of input and output stages. The input stage consists of 4 types of analysis, including the internal business environment, external business environment, internal IS/IT environment, and external IS/IT environment (Widayanti and Zulkarnaen, 2022). The output stage produces IS/IT strategic planning documents comprising business information systems, information technology, and management.

IT Balanced Scorecard (IT-BSC)

The development of information technology makes it necessary to measure the performance of information technology. Measurement and evaluation of technology are based on measurement results from four perspectives (Sudaryo and Purnamasari, 2019). The customer orientation perspective is a way to become the supplier of choice directly and indirectly. Second, corporate contributes to achieving business goals by delivering information services. Third, operational excellence provides timely and effective service at targeted service costs. The fourth is, future orientation develops internal capabilities through innovation and learning. The model designed can handle dependence on business systems and processes in assessing a company's performance to achieve business goals (Kevin *et al.*, 2020).

Data Collection

This qualitative research aims to develop a theory and gain an in-depth understanding (Hakam, 2020). The techniques used are interviews, observations, and literature studies on the business processes of electrical appliance distributor companies. Interviews by asking questions that have been prepared to meet the required data needs. Observations look at the situation of places, actors, and activities in the company. The literature study focuses on company documents related to business and technology implementation.

Research Methods

The research stage begins with identifying problems with several work units related to business processes and IS/IT users of electrical appliance distributor companies. Figure 2 shows the stages of the research, which are divided (Nugraha and Manuputty, 2022):

1. Data collection. Collecting data with literature study (understanding the concept of ward and peppard), observation (a description of current business processes and technology), and interviews (making questions related to standard operating procedures and business needs)
2. Internal and external environment. The analysis is divided into four: The first internal business environment using Mission, Objective, Strategy, and Tactic (MOST). Analysis of the external business environment using the five forces model. Then, internal IS/IT environment analysis uses McFarlan strategic grid and external IS/IT environmental analysis to find current technology trends
3. Internal and External Evaluation (IFE-EFE). Knowing how much influence the internal factors (strengths and weaknesses) and external factors (opportunities and threats) have on the company's business processes
4. Mapping CSF with IT-BSC. Analysis of the company's internal and external environment in the form of future application requirements. The mapping process uses four IT-balanced scorecard perspectives
5. Formulate strategic. Map out the proposed strategic plan for the initial development of information systems and information technology infrastructure. In addition, companies need to develop appropriate organizational structures, policies, and procedures (management strategy) to finalize the process in the future
6. Mapping future application portfolio. Mapping is divided into four quadrants: Strategic, key operational, high potential, and support
7. Product roadmap and IS/IT master plan. Companies need to make plans in the next five years related to the development of information systems

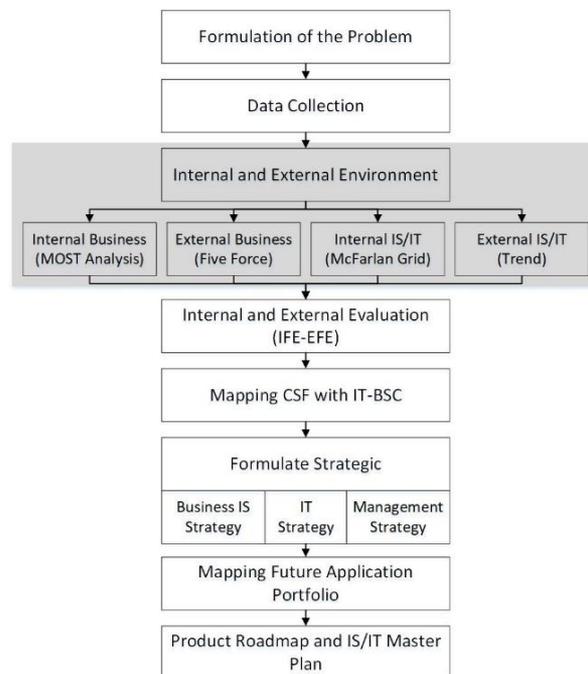


Fig. 2: Research method (Setiawan and Yulianto, 2017)

Results

Define Internal and External Environment

Determining a strategy is inseparable from the business targets to be achieved (Rajnoha *et al.*, 2019). Therefore, it is necessary to define the internal and external environment, which is divided into the following inputs:

- Internal business environment. It covers aspects of the organization's current business strategy using the Mission, Objective, Strategy, and Tactic (MOST) method
- Missions. Define the main goals to be achieved. Power tool distributor companies want to focus on ensuring reliable supply and the best prices for clients, providing integrated solutions for global facilities and operating systems, and increasing client profitability
- Objectives. Defines the company's objective standards that contribute to the mission's success. The electrical appliance distributor company focuses on providing electricity supplies for various fields more quickly and precisely
- Strategies. Define actions to achieve the company's goals and mission. The company focuses on building information systems, technology infrastructure and improving the quality of human resources which will use it

- Tactics. Defines the use of methods in implementing the strategy. Every user involved in the business process works together to implement the system
- External business environment. Covering the company's economic, industrial, and competitive climate aspects using the five forces model method
- The threat of new entrants. Related to how easy it is for new entrants to compete in similar business competition. The number of potential competitors around the company's area is only 10-15%. The company has a lot of product differentiation and the use of different raw materials
- Rivalry among existing competitors. The more competitors, the more the company will work hard to win the competition. The capital requirement to become a distributor of electrical equipment is quite expensive. The company has repeat customers above 75%. The formation of customer loyalty through exemplary service by accepting product customization
- The threat of substitute products or services. Related to the existence of goods or services that can replace similar products. In electrical appliance distributors, the need for replacement products is not too high
- Bargaining power of buyers. Related to the ability of consumers to influence the selling price of goods. Buyers are dominated by industries in large sectors. The existence of sales informs the product customers
- Bargaining power of suppliers. Suppliers can use bargaining power against buyers in the industry by raising prices or lowering the quality of the products purchased. In the company, it is not dominated by only one supplier
- IS/IT internal environment. Covers the perspective of current information systems and technology in terms of business contributions in the form of the McFarlan strategic grid with the influence of:
- Strategic quadrant. Categorize applications that are service centers to facilitate business processes and transactions. The applications that are included in the strategic quadrant are sales applications
- Key operational quadrant. Categorize applications that are useful for business process continuity. The applications included in the key operational quadrant are E-procurement, inventory, and tracking applications
- High potential quadrant. Categorize innovative applications and become a competitive value in business process continuity. The application that is included in the high potential quadrant is the company profile website
- Support quadrant. Categorize applications that can support business processes but do not affect business continuity. Finance and Human Resource Information System (HRIS) applications are included in the support quadrant
- External IS/IT environment. Categorize IS/IT developments by analyzing information system, network, and digital technology trends
- Information system trends. Technological developments facilitate the use of web-based applications. Web applications are more flexible and can be accessed on various devices
- Network technology trends. The use of computer networks can take advantage of media without cables. A computer network in the form of cloud computing uses the internet and servers from service providers to manage data and applications
- Digital technology trends. The internet of things is increasingly popular because it can transfer data over a network without requiring human-to-human or human-to-computer interaction. The phenomenon of big data appears as a result of the rapid flow of information, but its application in the public sector is still limited (Silalahi *et al.*, 2022). Big data helps in shaping new findings (Madyatmadja *et al.*, 2021b)

Calculate Internal and External Factors Evaluation (IFE-EFE)

The Internal Factor Evaluation (IFE) matrix is a strategy formulation tool to summarize and evaluate the main strengths and weaknesses in the functional areas of the business. Meanwhile, the External Factor Evaluation (EFE) matrix is used to find opportunities and threats from the environment around the organization. To identify internal and external factors, use the following components (Ben-Abdallah *et al.*, 2022):

- Weights. The weighting ranges from 0.0 (not critical) to 1.0 (very important) for each factor. The sum of all weights must be 1.0
- Ratings. Indicates each internal factor whether it shows major weakness (1), Minor weakness (2), Little strength (3), and significant strength (4). For each external factor, define the company's current strategy's effectiveness. External factor indicators show superior company response (4), Above-average company response (3), Average company response (2), and poor company response (1)
- Scores. The average value below 2.5 describes the company as weak internally/externally. If it is above 2.5, it indicates a strong position

Based on the results of the calculations in the IFE matrix Table 1, the total weighted score is 2.19. From the total weighted score, the application of technology in the field of electrical appliance distributors has a weak internal position because it is below the value of 2.50. The company has not taken advantage of its strengths to overcome existing weaknesses. The company's main strength is collaborating with global and large power distributors, with a score of 0.31. Meanwhile, the company's main disadvantage is that the application of technology is still minimal and has not facilitated complaints against transactions, with a score of 0.07. Next, mapping the EFE matrix in Table 2.

Table 1: IFE matrix analysis results

No	Internal factor	Weight (a)	Rating (b)	Score (c = a × b)
Strengths				
1	Global and extensive power distributor collaboration	0,08	4	0,31
2	A company is known to the public	0,04	3	0,13
3	Have loyal customers	0,07	4	0,30
4	Promotion through connections	0,05	3	0,15
5	Product quality guarantee	0,07	4	0,30
Weakness				
1	The application of technology is still minimal	0,07	1	0,07
2	Ordering goods to suppliers is still waiting for confirmation of the availability of goods	0,08	2	0,16
3	Don't have employee absence data yet	0,06	2	0,12
4	Don't have a transaction complaint platform yet	0,07	1	0,07
5	There are often data shortage problems	0,09	1	0,09
6	Don't have a technology division that handles errors yet	0,07	2	0,15
7	Product delivery to customers is not monitored in real-time	0,09	2	0,18
8	The stock of raw materials and products is not real-time	0,08	1	0,08
9	Product sales have not reached remote areas	0,07	2	0,14
Total score matrix IFE		1,00		2,19

Table 2: EFE matrix analysis results

No	External factor	Weight (a)	Rating (b)	Score (c = a × b)
Opportunities				
1	Tracks records in various industrial sectors	0,11	4	0,42
2	Product design according to customer's wishes	0,13	3	0,39
3	Collaboration with electrical management manufacturing partners	0,12	4	0,49
4	Security standards according to global regulations	0,16	3	0,47
5	Excellent service to customers	0,07	4	0,30
Threats				
1	more extended payment period for competitors from suppliers to a company	0,14	1	0,14
2	Increase in the cost of products sold by suppliers	0,15	1	0,15
3	Wider distribution and marketing network of competitors	0,12	1	0,12
total score matrix EFE		1,00		2,48

Based on the calculations in the EFE matrix table, the total weighted score is 2.48, indicating that the electrical appliance distribution business takes advantage of opportunities to overcome threats. The company's foremost opportunity is a collaboration with electrical management manufacturing partners of 0.49. Meanwhile, the company's main threat is the increased cost of products sold by suppliers, with a score of 0.15.

Mapping CSF Using IT Balanced Scorecard

Analysis of Critical Success Factors (CSF) to determine the needs of the organization and the environment that affect the success or failure (Gedam *et al.*, 2021). CSF analysis on electrical appliance distributor companies illustrates the identification of success factors to see IT/IS needs that can affect implementation plans in the future. The next step is to determine success based on the IT balanced scorecard in Table 3.

Formulate Strategic Recommendation

The results of the analysis of the internal and external environment in the form of a CSF produce a business information technology strategy, an information technology system, and an IT/IS management strategy.

Information technology strategy. Discuss the configuration of software and hardware requirements on

the proposed network infrastructure. Identification of technology architecture development or technology portfolio catalog is shown in Fig. 3.

The strategy of business information systems. It covers how each business unit/function will utilize IS/IT in the form of an application portfolio and an overview of information architecture. For areas of criticism and suggestions, currently, there are no facilities to accommodate them. The proposed blueprint is in the form of a company profile website that can function as a service for criticism and suggestions as well as product information. In terms of product sales, use a sales application to reach a broader range of customers. Customers can view product specifications, negotiate prices and make purchase orders. To help purchase products from suppliers, then develop an e-procurement application. The purchasing department can view new product catalogs faster and negotiate prices with suppliers. In the finance section, users can create financial and payroll reports offline. When the internet is available, it can synchronize the data that has been completed. Regarding employment, employees have access to the Human Resource Information System (HRIS) to assist with the attendance process and request leave. Regarding the stock of goods, users can update in real-time on the inventory application. Delivery monitoring uses tracking applications to generate reports of goods arriving.

Domain Application	Sales	Inventory	Finance	HRIS	E-Procurement	Company Profile Website	Tracking
Presentation	Google Chrome	Google Chrome	Google Chrome	Google Chrome	Google Chrome	Google Chrome	Google Chrome
DBMS	MySQL	MySQL	MySQL	MySQL	MySQL	MySQL	MySQL
Platform	Windows Server 2016	Windows Server 2016	Windows Server 2016	Windows Server 2016	Windows Server 2016	Windows Server 2016	Windows Server 2016
Application Platform	Android Studio & Java Kotlin	Visual Studio	Visual Studio	Visual Studio	Apache & PHP	Apache & PHP	Visual Studio
Database Platform	Microsoft SQL Server 2016	Microsoft SQL Server 2016	Microsoft SQL Server 2016	Microsoft SQL Server 2016	Microsoft SQL Server 2016	Microsoft SQL Server 2016	Microsoft SQL Server 2016
LAN	Ethernet	Ethernet	Ethernet	Ethernet	Ethernet	Ethernet	Ethernet
WAN	Internet	Internet	Internet	Internet	Internet	Internet	Internet
WAN Security	Firewall	Firewall	Firewall	Firewall	Firewall	Firewall	Firewall

Fig. 3: Technology portfolio catalog

Table 3: CSF results based on IT balanced scorecard

No	objective	Key decision	Application solution
Corporate contribution perspective			
1	The realization of a quality complaint management system user orientation perspective	Build a system to manage criticism and suggestions from customers	Company profile website
2	Realization of a system to help purchase products operational excellence perspective	Build a sales system so that customers' can directly order from the application	Sales
3	The realization of a system for managing the production of raw materials	Build a company asset management system so that it is constantly monitored	Inventory
4	The completion of a strategy to communicate with suppliers regarding the purchase of raw materials	Build a strategy for purchasing goods from suppliers, price negotiation processes and product catalogs	E-procurement
5	The culmination of a monthly and daily financial report management system future orientation perspective	Building strategy for making sales, purchasing, financial and asset reports	Finance
6	The realization of a tracking system for goods sent to customers	Building a real-time tracking system for shipments	Tracking
7	Completion of employee attendance system	Build an employee data storage system for attendance, leave, and overtime	Human Resource Information System (HRIS)

IT/IS management strategy. Management strategy recommendations aim to guide policies for implementing IS/IT strategies. These strategies include:

- Development of information systems in several fields, such as IT infrastructure, application systems, and IT/IS services
- Policy on hardware and software standardization
- Improved stakeholder involvement in key activities and business support activities
- Improvements to the structure and job descriptions of the company in the form of adding an IT division
- Define the network topology according to the application

Mapping Future Application Portfolio

Application mapping as a strategic solution in the form of McFarlan quadrant classification. The application groupings are listed in Table 4.

In the application portfolio mapping, the status indicates that new components are added (new) and improvements to existing elements (upgrade). The sales application is new in the company and will include various features, such as customer orders, proof of payment, delivery receipts, order history, and reports. The inventory application is upgraded by changing the data collection of raw materials and products. The finance application is improving by adding payroll processing and paying bills. HRIS is a new component that includes absenteeism, application for leave, and overtime. The development of the e-procurement application focuses on the supplier order module, new product catalogs, and price negotiations. Upgrading the company profile website focuses on transaction complaints services if there are problems. For new services, the tracking application facilitates customer order data, drivers, cars, delivery receipt numbers, GPS points, and reporting.

Table 4: Future application portfolio

No	Future application	Status	Position
1	Sales	New	Strategic
2	Inventory	Upgrade	Key operational
3	Finance	Upgrade	Support
4	HRIS	New	Support
5	E-procurement	New	Key operational
6	Company profile website	Upgrade	High potential
7	Tracking	New	Key operational

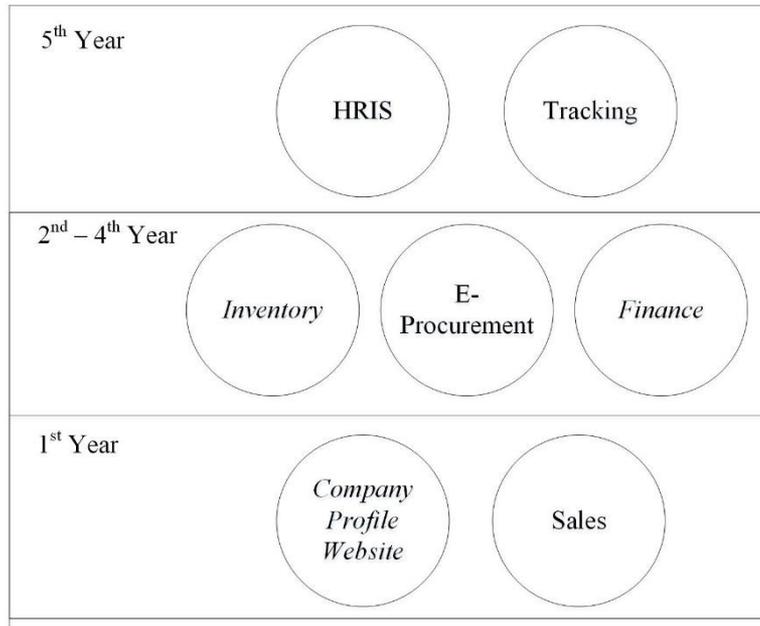


Fig. 4: Application roadmap

Product Roadmap Implementation and IS/IT Master Plan

The application roadmap section explains the direction of application development. The application roadmap is shown in Fig. 4.

The development of the IT/IS master plan refers to the application roadmap for the next five years as follows:

1. First-year. Implementation of the corporate contribution perspective in developing a company profile website. In addition, a user orientation perspective is implemented in the form of a sales application
2. Second year. Implementation of operational excellence perspective in the form of inventory. The inventory application helps collect data on the stock of goods
3. Third year. Implementation of operational excellence perspective in the form of e-procurement application. The e-procurement application helps purchase products from suppliers, checks new product catalogs, and negotiates prices

4. Fourth-year. Implementation of an operational excellence perspective in the form of a finance application to assist financial reporting

Fifth-year. Implementation of future orientation perspective in the form of HRIS and tracking application. HRIS assists in collecting employee data. The tracking application monitors the company's shipments

Discussion

Information systems strategic planning is identifying application portfolios that will support organizations in implementing business plans. The strategic planning process begins with analyzing the internal and external environment regarding business and technology. The analysis results of the internal business environment are in the form of definitions of the company's mission, goals, strategies, and tactics. External business environment analysis by defining competitive conditions using the five-force model. Mapping of application requirements in analyzing the internal environment in a McFarlan strategic

grid. To obtain IS/IT developments in the outside world, companies need to analyze information system trends, technology trends, and digital technology trends. After getting the results of the environmental analysis, then evaluate internal and external factors. In the Internal Factor Evaluation (IFE) matrix, the total weighted score has a weak internal position and shows that the company has not been able to take advantage of its strengths to overcome existing weaknesses. In the External Factor Evaluation (EFE) matrix mapping, the electric appliance distribution business must take advantage of opportunities to overcome threats. Furthermore, there is a need to interpret clear objectives/targets in determining strategy and information needs.

For this reason, the mapping of Critical Success Factors (CSF) aims to determine the company's needs based on the IT Balanced Scorecard. The four IT balanced scorecard perspectives are based on the corporate contribution perspective, which focuses on the management system for criticism and suggestions. Furthermore, based on the user orientation perspective will develop a strategy that focuses on sales, customer complaints, and communication to retain existing customers and increase the number of new customers. Based on the operational excellence perspective, the focus is on systems that support the organization, such as building inventory systems, e-procurement, and finance. Furthermore, create a real-time tracking system and employee attendance storage based on the future orientation perspective. Based on the analysis of the internal and external environment in the form of CSF, it produces three outputs: Information systems strategy, technology strategy, and IT/IS management strategy. The overall process is the basis for classifying the business portfolio in the strategic, key operational, high potential, and support quadrants. For its implementation, the company profile website is prioritized because it is considered essential and supports every activity in the ongoing process of organizational performance in the future. In addition, the development of the sales application in the first year was also carried out because it greatly affected the performance process in improving the organization in the future. The following year focused on inventory, e-procurement, and finance applications. These three applications are included in the key operational section because, at this time, they can become the success of electric appliance distributor companies based on their business activities. In closing, the HRIS and tracking applications implementation focus on the support quadrant. Both of these applications have practical value but are not a measure of the company's success.

Defining the influence of business and IT strategies on company performance aims to overcome business problems. Electrical appliance distributor companies have shortcomings in human resource management, system integration, and IT/IS management. Development

planning that has not been well directed creates the need for an appropriate business activity strategy. The proposed information system at the electrical appliance distribution company has succeeded in realizing the efficiency of back-office processes, improving service quality to consumers, assisting in decision-making, planning, expanding the market, and product marketing. Then, in information technology, companies can gain a strategic advantage in today's tight competition between businesspeople. For future research, it is necessary to analyze the costs that arise, as well as an analysis of the feasibility of investing in the implementation of the IT/IS strategy. The calculation from the economic side and the value of the return on investment can be used as a reference for the costs that arise from the strategy obtained.

Conclusion

Electrical equipment distributor companies are private institutions that supply electricity supply instruments. Companies need to do differentiation and cost reduction to gain a competitive advantage and survive in intense competition. A cost-reduction strategy can make business processes more efficient using information technology. Careful planning helps technology implementation align with business goals. Electrical appliance distributor companies still have shortcomings in terms of lost product data, long data processing time, and slow data transfer required from one division to another. The results of mapping internal and external problems became the basis for obtaining seven critical success factors using the IT balanced scorecard. For IT/IS strategic planning to be more mature, it is necessary to add an IT/IS department to obtain standard operating procedures in the project and change management under it. Implementing the IT/IS roadmap and master plan is only valid for five years with an annual evaluation process. Companies must make a business realization analysis document for the IT/IS strategic plan development process in the next five years. Understanding management and staff is the primary key to implementing the IT/IS strategy following the company's vision and mission. This research has succeeded in contributing to the company's economy so that it considers the right technology strategy within five years. Based on research results, strategic planning can help companies to achieve long-term goals and implement the best ways to deal with opportunities and challenges. Strategic plans are also used to assess and adjust the company's direction in response to changes in the business environment. The implication of corporate strategic planning research is to help formulate a better and more systematic strategy because many things still need improvement. The application portfolio and IT/IS master plan successfully proved this hypothesis. With strategic planning,

management and staff can continue to learn for a better direction, especially in creating a more systematic strategy.

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Author's Contributions

Johanes Fernandes Andry: Established work plans, concept designed, interpretation of results, and preparation of manuscript.

Aziza Chakir: Formulated problems, data collection, and analysed.

Ronald Maraden Parlindungan Silalahi: Interpretation of results and preparation of manuscripts.

Lydia Liliana: Develop user requirements, data collection, analysed, and implementation.

Monica Clara: Interpretation of results and preparation of manuscript.

Ethics

This article is original and unpublished. Correspondence authors confirm that all other authors have read and agree that the manuscript does not involve ethical issues.

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