

IS/IT Plan in Determining Needs for Printing Industry in PT. Indrakila Offset Mojokerto

Eko Susanto Tejo¹

¹*Bachelor Program of Information System, STMIK STIKOM, Surabaya, East Java, Indonesia.*

ABSTRACT : *PT. Indrakila Offset is an offset printing company located in Mojokerto. In the application of information systems, PT. Offset Indrakila investments have experienced failure of IS/IT for not using good planning and not paying attention to the actual needs of the company. The investment failures of IS/IT are causing patchy in repair applications and many losses experienced by the company. PT. Indrakila Offset already invested the IS/IT as a ready-made application to manage reservations and sales. But it can not go well, because the company is not doing a good plan at the time of investment IS/IT, such as ready-made applications that can not accommodate the needs of the company. From the results of the determination of the planning needs of the IS/IT are producing an application portfolio that is divided into 4 quadrants McFarlan Strategic Grid and a road map of the IS/IT consisting of 13 activities that must be performed in the first year and 5 activities to do in the second year. All implementations of IS/IT were done by a third party.*

KEYWORDS : *Planning, IS/IT, SWOT, and Portfolio*

I. INTRODUCTION

Business processes in the upper mid-sized companies, today requires a strong integration of power between one another to achieve company goals. Similarly, in the PT. Indrakila Offset Mojokerto which is a company that is engaged in the largest offset printing in Mojokerto. With such a reputation, of course, work processes that occur in the company require the velocity at each stage that occurs in the work process, so the impact on an increasingly short time to complete their respective functions. The processes are in PT. Indrakila Offset namely the purchase process that addresses the purchase of raw materials and other materials used for the production. The next process that is marketing process is a process performed commerce offerings to enterprise customers, after being extended to the production process of raw materials to the finished goods according to customer orders covering the piece of paper, printing processes, die cutting process to packing process. Once the customer orders goods have done, then the next process is the process of selling that is the selling of its products to the customer. The other process is a process that is time and attendance and payroll processes and employee absenteeism is calculated every week, and attendance is as basic salary calculation employee.

PT. Indrakila Offset has invested IT to business processes. The investment made in the form of ready-made applications to manage data ordering, sales and financial data (administration), computer equipment to support the application, and a special printer to print the film. But it is not going well because the company did not do the planning at the time of IT investments and also do not pay attention to the actual needs of the company. Like a ready-made applications that have been implemented, are not able to accommodate the needs of the company. Based on the above problems, it is necessary IS/IT Needs Determination Plan Industry Printing in PT. Offset Indrakila Mojokerto. In this plan will be determined requirement of IS/IT to PT. Offset Indrakila which refers to the theories of John Ward and Joe Peppard. To determine the condition of the company, used a SWOT analysis to know the strengths and weaknesses of the company and the opportunities and threats from the IT side and the business side. Additionally it also analyzes the company's SWOT analysis of the internal (strengths and weaknesses) and external factors (opportunities and threats) which also corresponds to the input stage of the method of John Ward and Joe Peppard. It is expected that the plan will help the company to develop the IS/IT in a company by giving priority in its business processes.

II. THEORY AND RESEARCH HYPOTHESES

IS Strategy and IT Strategy

If we expect that the application of Information Technology (IT) can be optimized, it takes a strategy of Information Systems/Information Technology (IS/IT) is aligned with the business strategy of the organization. This is necessary in order for the IT investments made in accordance with the needs of the company and can provide measurable benefits of achieving the goals and objectives of the organization. Ward and Peppard [11] said IS strategy emphasizes the determination of the required application information systems organization. The essence of the strategy of Information Systems (IS) is to answer the question “what?”, while the IT strategy is more emphasis on the selection of technology, infrastructure, and expertise related to answer questions “how? ”. The relationship between IT strategy, IS strategy and business strategy can be seen in Figure 2.1 below:

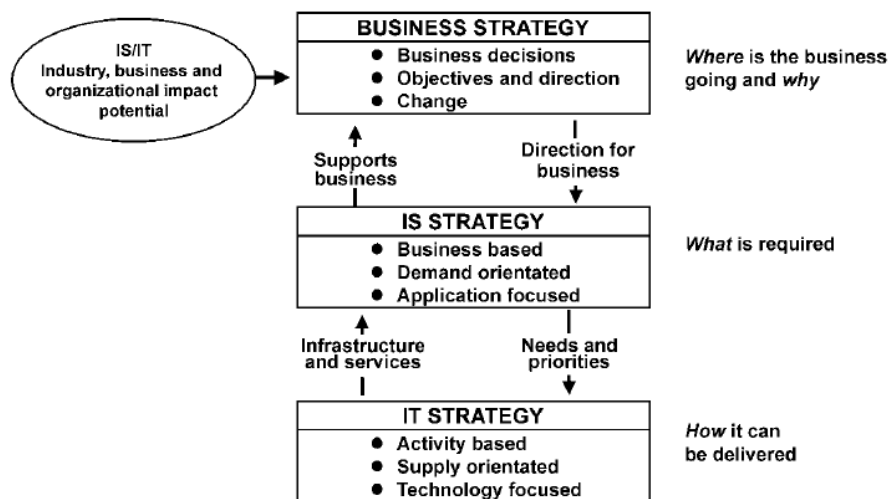


Figure 1. The relationship between business strategy, IS strategy, and IT strategy

(Ward and Peppard, 2002)

To determine IS/IT strategy can support the achievement of the vision and mission of the organization, required an understanding of the organization's business strategy. That understanding includes an explanation of some of the following questions: why a business is run?, where the purpose and direction of the business?, when the goal is achieved?, how to achieve goal, and is there any changes that must be made?. So in building a strategy of IS/IT, which is a central issue is the alignment of strategy IS/IT with the business strategy of the organization.

Planning : David [2] said that planning is an important bridge between the present and the future are able to increase the likelihood of achieving the desired results. Planning is the process by which the person who determines whether it is necessary to take a business, looking for the most effective way to achieve the desired goals, and prepare to cope with a variety of unexpected difficulties with adequate resources. Planning is the beginning of a process in which an individual or a business can turn an empty dream come true (achievement). In addition, planning is an investment in the future to achieve success and help a company achieve maximum impact of a particular business. Planning enables companies to consider the various factors which are relevant and which are most important to focus on. Planning enables companies to gather the necessary resources and perform various tasks in a way that is as efficient as possible and enable companies to save resources, avoid waste or waste sources of ecological data, the corresponding profit, and is classified as a company that is effective and useful. Planning enables companies to identify exactly what you want to achieve and precisely also the details of who, what, when, where, why, and how that is required to reach the desired destination.

The planning process should involve managers and employees from all parts of the organization. Planning can have a positive impact on organizational and individual performance. Planning enables organizations to identify and benefit from external opportunities and minimize the impact of external threats. Planning is more than just a possibility into an account the efforts of the past and the present into the future. Planning also includes the development of the mission, forecasting events and future trends, goal setting, and the selection of a strategy to run. The planning process begins with the observation and analysis to determine the current condition of the company. After that, choose the appropriate methodology for planning in the company in

accordance with its conditions. From the observation and analysis as well as the use of such methods, then we will know what steps we have to do to make planning for the company.

John Ward and Joe Peppard IS/IT Strategic Planning Method: The most important factor in the strategic planning process of IS/IT is the use of the methodology, with the aim that the use of the methodology in the strategic planning of IS/IT to minimize the risk of failure, ensuring the involvement of all interested parties, minimizing the dependence of individuals, as well as more emphasis on process and targets. Ward & Peppard [2] said that IS/IT strategic planning is the process of identifying a portfolio of computer-based information system applications that will support the organization in the implementation of business plans and realizing its business goals. Strategic Planning IS/IT study the effect of IS/IT on business performance and contribution to the organization in selecting strategic steps. In addition, strategic planning IS/IT also explains the various tools, techniques, and frameworks for management strategies to align IS/IT with business strategy, and even look for new opportunities through the application of innovative technologies. Strategic planning scheme John Ward and Joe Peppard can be seen in Figure 2.2 below:

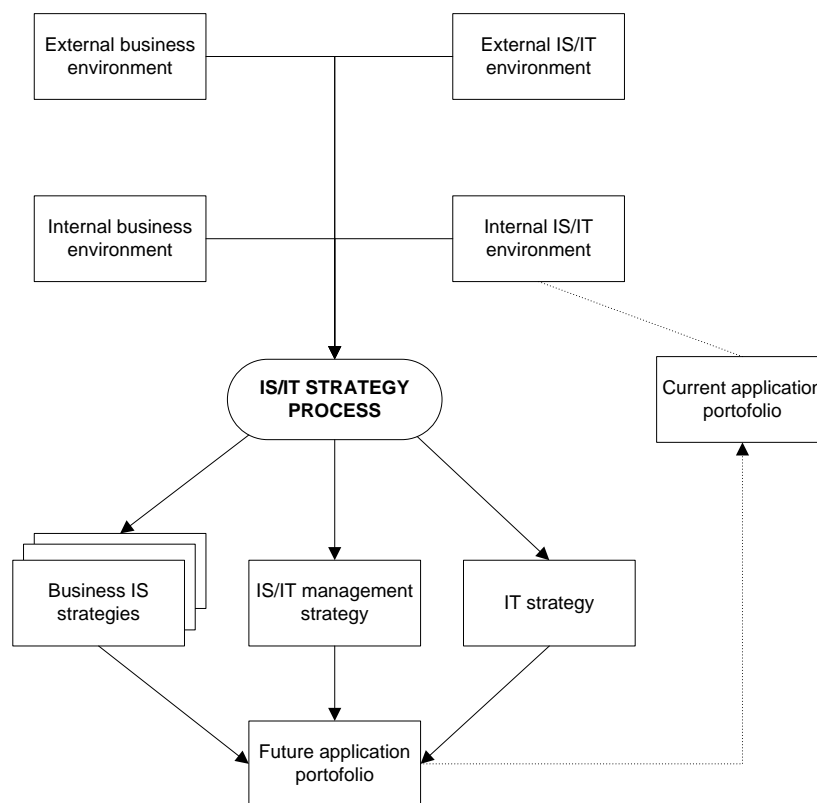


Figure 2. IS/IT Strategic Model (Ward and Peppard, 2002)

Methodological approaches Ward and Peppard [11] version started from state IS/IT investment in the past are of little use to the organization's business goals and capture business opportunities, as well as the phenomenon of increasing the competitive advantage of an organization being able to utilize IS/IT to the maximum. Less beneficial IS/IT investment for the organization due to the strategic planning of IS/IT is more focused on technology, not based on business needs. Ward & Peppard [11] said that this methodology consists of the input stage and output stage. Input stages consisting of:

- [1] Analysis of internal business environment, which includes aspects of today's business strategy, objectives, resources, processes, and cultural values of the organization's business.
- [2] Analysis of external business environment, which includes aspects of economic, industry, and firm competitive climate.
- [3] Environmental analysis of internal IS/IT, which includes conditions of IS/IT organization from the perspective of today's business, how to maturity, how to contribute to the business, human resource skills, resources and technology infrastructure, as well as how the portfolio of IS/IT existing this.
- [4] Environmental analysis of external IS/IT, which includes the utilization of technology trends and opportunities, as well as the use of IS/IT by competitors, customers and suppliers.

While the output stage is carried out to produce a part of an IS/IT strategic planning document whose content consists of:

- [1] Business IS strategy, which includes how each unit/business functions will utilize IS/IT to achieve business goals, a portfolio of applications and information architecture overview.
- [2] IT strategy, which includes policies and strategies for the management of technology and IS/IT human resources.
- [3] Strategic Management of IS/IT, which includes the common elements that are applied throughout the organization, to ensure consistency of policy implementation IS /IT required.

SWOT Analysis : Jogiyanto [3] said that SWOT analysis is used to assess the strengths and weaknesses of the resources owned by the company as well as the opportunities and external threats faced. Where are the strengths and weaknesses of the internal side of the organization while opportunities and threats are from external organizations. SWOT analysis is also a strategic planning method used to evaluate the factors into strengths, weaknesses, opportunities, and threats that may occur in achieving the objectives of the project activity/business activities or institutions/agencies in a wider scale. For this purpose the necessary assessment of the environmental aspects both from internal and external environments that affect the strategy pattern institutions/agencies in achieving goals.

Internal Factor Evaluation Matrix : David [2] said that the results of the SWOT analysis will be developed in the internal factor evaluation matrix (Internal Factor Evaluation - IFE Matrix) to evaluate the strengths and weaknesses of the major functional areas of business, and is also the basis for identifying and evaluating relationships among those areas. Regardless of how many factors are incorporated into the Internal Factor Evaluation Matrix, the total weighted scores ranged from a low point of 1.0 and 4.0 as the highest point. Score total weight below 2.5 characterize organizations that are weak internally, whereas scores were significantly above 2.5 indicate a strong internal position.

External Factor Evaluation Matrix : David [2] said that, the results of the SWOT analysis will be developed in the external factor evaluation matrix (External Factor Evaluation - EFE Matrix) to evaluate the economic information, social, cultural, demographic, environmental, political, governmental, legal, technological, and competitive. Regardless of how many factors are incorporated into the External Factor Evaluation Matrix, the total weighted score highest possible an organization is 4.0 and the lowest weighting score is 1.0. Score a total weight of 4.0 indicates that an organization responds very well the opportunities and threats that exist in the industry. In other words, the strategy of the company is effectively able to take advantage of existing opportunities and minimize the potential negative influence of external threats. Score a total weight of 1.0 indicates that the strategy of the company is not able to take advantage of existing opportunities or avoid threats that arise.

Offset Printing : Wibisono [8] said that Offset printing is an indirect printing types that use high technology. Print also called indirect because the process must go through the rubber printing blanket. The results are generally offset printing on the paper-based media or synthetic paper. Excellence with offset printing that prints in color quality is much more durable (not quickly fade) than using digital print, printing in large quantities the price will be much cheaper than digital printing, can print on various media types of paper surfaces that can not be done by digital machines, such as the thickness of the paper can print up to 500gr, capable of printing on patterned areas, can print on paper that is relatively thin field, can print with full ink block with sharp and uneven results. Offset printing industry has three main stages, namely pre-press stage (before printing), printing stage, and the final stage (finishing). Characteristic in offset printing that required the use of film and printing plates that will be used as a medium for the transfer of documents to be printed onto the surface of paper, cardboard, plastic, etc..

At the stage before printing (pre-press), a design created manually process the film created manually. While the designs, are made by a computer (in the form of the data) and processed into films through the image setter. Further processed is into a plate. Films are used for printing the films known as ortho film that only produces the absolute value (only produce half-tone, not a continuous tone). The film has so that can be directly reproduced to the printing plate exposure machine which is further processed in the plate processor. At this stage of printing, the plate is ready for use in-cylinder mounting plate on the printing press. Plate gets ink process from roll to roll ink and water from the water where there is a separation between image and non-image with the physical process (the oil-based ink and water repel each other). Furthermore, from the plate (which has a separate image and non-image) is transferred to the blanket, then from the blanket to paper. After the printing process, it called finishing processes, such as: Matter of books to go through the process of binding, print a packing box has to go through the process of die cutting and gluing.

Internal-External Matrix : David [2] said that Internal-External Matrix (IE Matrix) to position an organization's various divisions in a nine-cell display. IE matrix is based on two key dimensions: the IFE total weighted scores on the x-axis and the EFE total weighted scores on axis y. Remember back that every division within an organization must make the IFE matrix and EFE matrix in relation to the organization. Scores obtained from the total weight divisions enables IE Matrix arrangement at the enterprise level. On the x-axis of the IE Matrix, the IFE total weighted score of 1.0 to 1.99 indicates a weak internal position; score of 2.0 to 2.99 were considered; and a score of 3.0 to 4.0 is strong. Similarly, on the y-axis, EFE total weighted score of 1.0 to 1.99 is considered low; score of 2.0 to 2.99 were considered; and a score of 3.0 to 4.0 is high. Note Internal-External Matrix example in Figure 2.3 below:

| | | WEIGHT TOTAL SCORE IFE | | |
|---------------------------|----------------------|------------------------|--------------------------|--------------------|
| | | Strong 3.0 - 4.0 | Considered 2.0 - 2.99 | Weak 1.0 - 1.99 |
| WEIGHT TOTAL SCORE EFE | High 3.0 - 4.0 | I | II | III |
| | Medium 2.0 - 2.99 | IV | V | VI |
| | Low 1.0 - 1.99 | VII | VIII | IX |

Figure 3. Internal-External Matrix (IE)

IE Matrix can be divided into three major parts that have implications for different strategies. First, provisions for divisions that fall into cells I, II, or IV can be described as grow and build (grow and build). Intensive strategy (market penetration, market development, and product development) or integrative (backward integration, forward integration, and horizontal integration) may be most appropriate for these divisions. Secondly, the divisions that fall into cells III, V, or VII can be handled well through strategies to maintain and sustain (hold and maintain); market penetration and product development strategies are the two most widely use in this kind of division. Third, the general provisions for the entry in the cell division VI, VIII, or IX is harvested or divested (harvest or Divest). Successful organizations are able to achieve a portfolio of businesses that are entering or around the first cell in the IE matrix.

SWOT Matrix : David [2] said that SWOT matrix is an important matching tool that helps managers develop four types of strategies: SO Strategies (strength-opportunities), WO Strategies (Weaknesses-Opportunities), ST Strategies (strength-threats), and Strategy WT (weaknesses-threats). Matching external factors and internal key is the hardest part in developing a SWOT Matrix and requires good judgment and none of the truest guide. From the results of the SWOT matrix will be used as the basis for determining planning needs of the IS/IT.

III. METHODS

Based on the above problems, it is necessary IS/IT Plan in Determining Needs for Printing Industry in PT. Offset Indrakila Mojokerto. In this plan will be determined requirement of IS/IT to PT. Offset Indrakila which refers to the theories of John Ward and Joe Peppard. To determine the condition of the company, used a SWOT analysis to know the strengths and weaknesses of the company and the opportunities and threats from the IT side and the business side. Additionally it also analyzes the company's SWOT analysis of the internal (strengths and weaknesses) and external factors (opportunities and threats) which also corresponds to the input stage of the method of John Ward and Joe Peppard. Once the analysis is done, then proceed with developing four kinds of strategies which are: SO Strategies (strength-opportunities), WO Strategies (weakness-opportunities), ST Strategies (strength-threats), and WT Strategies (weakness-threat). The next process is to do the planning needs of the IS/IT company that is based on current conditions (current condition) and the strategies that have been developed. It is expected that the plan will help the company to develop the IS/IT in a company by giving priority in its business processes.

Planning needs of the IS/IT covers requirement of IS/IT, business IS strategy and IT strategy, and a strategy of the management of IS/IT. After the planning needs of the IS/IT is done, then the results of the

planning needs of the IS/IT will then be evaluated portfolio IS/IT at PT. Offset Indrakila. Schematic stages of research can be seen in Figure 1 below:

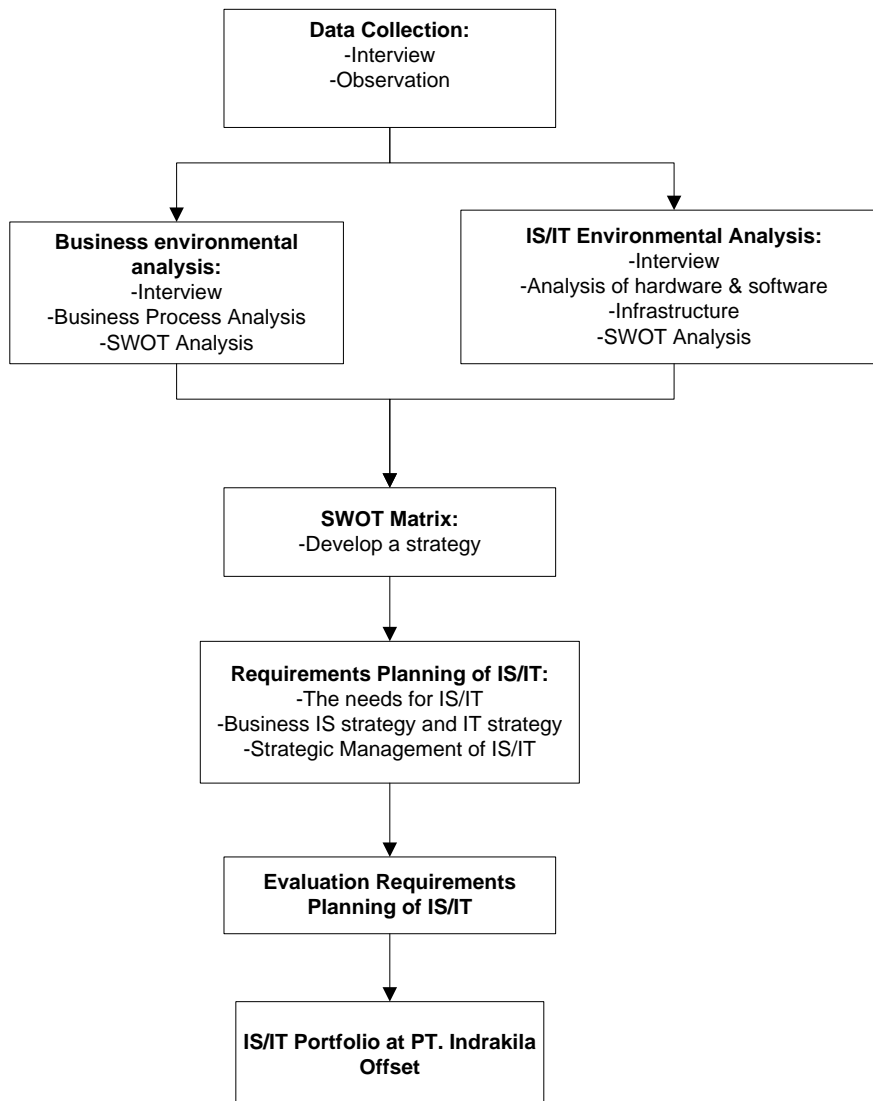


Figure 4. Stages of Research

Early Stage

Interview

- Interviews were conducted during the research activities underway. Interviews were conducted with the director of PT. Indrakila Offset. It is aimed to obtain data and information on the neighbor state company PT. Indrakila Offset Mojokerto.

Observation

- Observations made at the beginning of this study. It aims to find data and information directly to the company by way of direct observation.

Literature study

Literature study carried out during the research activities underway. The study was done by the study of literature in the library or via the web. It aims to acquire more data and knowledge about the material requirements determination plan of the IS/IT industry printing to be made, such as:

- [1] Regarding the business environment
- [2] Environmental IS/IT

- [3] Regarding the internal factor evaluation matrix
- [4] Regarding external factor evaluation matrix
- [5] Internal-external matrix
- [6] SWOT matrix
- [7] Information technology needs
- [8] IS business strategy and IT strategy
- [9] Strategic management of IS/IT
- [10] *McFarlan Strategic Grid* analysis

SWOT Analysis : Jogiyanto [1] said that the analysis is done by registering the strengths and weaknesses of the resources of the company and the opportunities and external threats faced. Where are the strengths and eaknesses of the internal organization while opportunities and threats are external factors of the organization. SWOT Analysis is also a strategic planning method used to evaluate the factors into Strengths, Weaknesses, Opportunities, and Threats that may occur in achieving the objectives of the project activity/business activities or institutions/agencies in a wider scale.

McFarlan Strategic Grid : Ward & Peppard [11] said that McFarlan strategic grid for mapping the application of information systems based on its contribution to the organization. The mapping is done in four quadrants (strategic, high potential, key operation, and support). From the results of the mapping obtained an overview of the contribution to the organization's information systems applications and future development.

Development Phase : Stages used in the study began with the collection of data by conducting interviews and observations to the director at PT. Indrakila Offset. Once the data is collected, then separated into 2 parts business environment analysis and environmental analysis of IS/IT. In this analysis, SWOT analysis method is used to determine the strengths and weaknesses in the company's internal and identify opportunities and threats in the external company. In addition, the SWOT analysis is useful to know the current condition of the company. After the analysis is done, then continued with the strategy developed 4 types: SO Strategies (strengths-opportunities), WO Strategies (weaknesses-opportunities), ST Strategies (strengths-threats), and WT Strategies (weaknesses-threats). The next process is to do the planning needs of the IS/IT company that is based on current conditions and the strategies that have been developed. Planning needs of the IS/IT include requirement of IS/IT, business IS strategy and IT strategy, and management strategies of IS/IT. After planning the needs of the IS/IT is done, then the results of the planning needs of the IS/IT will then be evaluated portfolio IS/IT at PT. Indrakila Offset.

IV. RESULTS AND DISCUSSION

Interview and Observation

Based on the results of interviews and observations conducted in PT. Indrakila Offset Mojokerto, the authors obtain the data and information as follows:

- [1] PT. Indrakila Offset has a production capacity of approximately 5000 pieces per hour.
- [2] It has 6 Heidelberg offset printing machine 1 color and 2 color, 5 die-cutting machine, 2 cutting machine, and planografi machine.
- [3] No IT devices in use today.
- [4] Approximately 20% of employees belong to are not productive (age above 50 years).
- [5] Been doing IT investments in the form of computer software to manage the data order, stock, financial, design, and administration. However, it has become a new problem for the use of ready-made applications can not accommodate the needs of the company.
- [6] On Investment IS/IT long appeared much trouble and always be fixed, but it is not a good solution because it becomes patchy and can not solve the problem.
- [7] Transport costs are quite large and take up considerable time when it should send the design, requesting approval of the design to the customer, and make the film, because the company has to visit customers to demonstrate the results of the design of the order because there is no online facility at the company.
- [8] Data and documents are managed manually so often the case wrong, damaged, or the loss of the document.
- [9] Companies want to invest the IS/IT that can fit the needs of the company and can be the solution of the existing business processes. In addition the company also did not want to run into an error or failure in the implementation of the IS/IT like never before.

Internal-External Matrix : Based on the results of the evaluation matrix weighting scores of internal factors and external factors evaluation matrix, then the score will we plot the weighting matrix in the internal-external (IE Matrix). David [2] said that IE matrix positioning the various divisions of an organization in a nine cell display. The total score of the weight on the internal factor evaluation matrix by 2.48 will be described on the x -

axis and the total score of the weight of the external factor evaluation matrix by 3.35 will be depicted on the y-axis. The results from the intersection of the score weights on the x-axis and y-axis can be seen in figure 2 below:

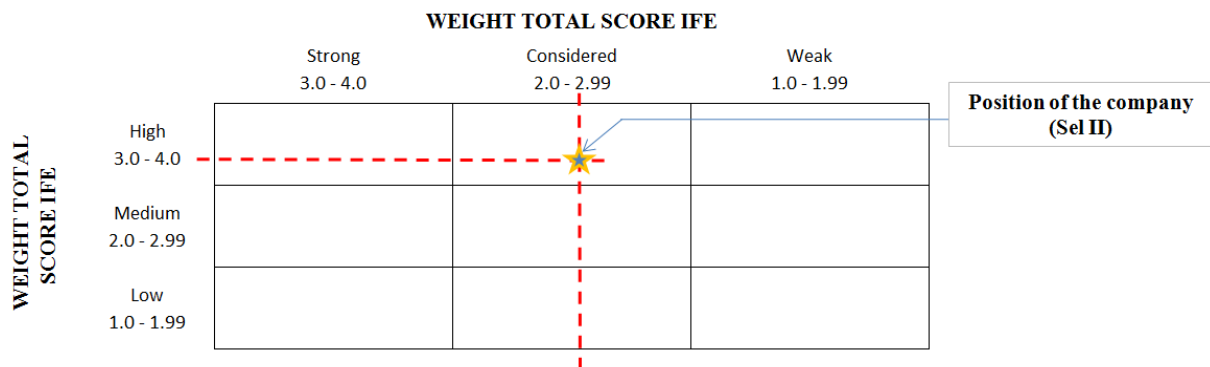


Figure 5. IE Matrix

In figure 2, it is seen that the intersection point is in quadrant II are illustrated with growing conditions and build (grow and build). In these conditions, the company is expected to develop an intensive strategy (market penetration, market development, and product development) or integrative (backward integration, forward integration, and horizontal integration) may be most appropriate for these divisions.

Intensive strategy there are 3 things that can be done when the position of the company lies in the growing conditions and build (grow and build), ie:

- [1] Market penetration strategies that seek to improve the market share for the products/services in the market today through the efforts of a larger marketing.
- [2] Development of the market, namely the introduction of products/services that exist today to new territories.
- [3] Development of products that strive to increase sales strategies by improving or modifying the products/services that exist today.

While the strategy of integration there are 3 things to do when the company is located in the growing conditions and build (grow and build), ie:

- [4] Integration forward that attempt to gain greater control over distributors.
- [5] Backward integration is a strategy that seeks ownership or control over a larger corporate suppliers.
- [6] Horizontal integration is a strategy that seeks ownership or control over a larger corporate competitors.

Result of SWOT Matrix : Once we get the results of the internal-external matrix (IE Matrix) that the point of intersection between the x-axis (2.48) and the y-axis (3.35) is in quadrant II, then we create strategies that are intensive or strategies that are integrated in the SWOT matrix. SWOT Matrix is an important matching tool that helps managers to develop four types of strategies (David, 2009). The intersection point of the x-axis and the y-axis is the company's position to current conditions. In the SWOT matrix, there are 4 kinds of strategies, namely: SO Strategies (strengths-opportunities), WO Strategies (weaknesses-opportunities), ST Strategies (strengths-threats), and WT Strategies (weaknesses-threats). Strategy SWOT (SWOT matrix) is as follows:

- [1] Using the online facility to facilitate the consumers to make an offer.
- [2] Monitor the quality of production so as to have the advantage over competitors with quality production.
- [3] Maximizing existing production capacity and scheduling (ordering and delivery).
- [4] Applying/planning inventory stocks of raw materials.
- [5] Using the online facility as a means of sending and receiving design.
- [6] Doing offers to prospective new customers and existing customers to pay attention to.
- [7] Doing election/selection in the purchase of printing equipment.
- [8] Doing IT investments to support the company's business processes (with good planning).
- [9] Doing an order with a large scale so as to reduce the price of production in order to compete with competitors.
- [10] Handle your own design.
- [11] Investing IT tools and IT infrastructure that required by company.
- [12] Perform engine maintenance scheduling in that the engine was not damaged during the production process.
- [13] Developing products with consumers looking for new markets (*outer box*).
- [14] Adding IS/IT section on organizational structure.
- [15] Providing training for employees on new products.

- [16] Doing IT adoption especially online facility.
- [17] Documenting the results of the design to be used as a portfolio.
- [18] Controlling stocks of raw materials.
- [19] Establish cooperation with vocational schools to give students the opportunity to intern at PT. Indrakila Offset.
- [20] Installing job advertisements on the vocational schools to find a new employee the appropriate field.

Changes in Organizational Structure : Based on the SWOT analysis, corporate strategy development for the organization and the results of discussions with the director of PT. Indrakila Offset, is necessary to change the organizational structure of PT. Indrakila Offset by adding divisions IS/IT as a stand-alone piece, so that the expected handling of IS/IT is more focused, faster, and more professionally so that PT. Indrakila Offset equipped to meet the development of IS/IT were then aligned with the needs of the company. The addition of the IS/IT organizational structure is a realization of the SO strategy "added the IS/IT organizational structure". By adding the IS/IT organizational structure, the company can maintain the security and confidentiality and can perform managerial control over the IS/IT, where security and confidentiality and can not perform managerial control are inherent risks in outsourcing system. Other risks that outsourcing companies no longer have the resources that have the ability to analyze management and other strategic issues and the vulnerable can be replicated by other competitors when the application is outsourced is a strategic application. Part of the IS/IT is expected to monitor, perform maintenance, and to develop the IS/IT in the future, so they can be more responsive in doing maintenance and development of the IS/IT. For the structure can be seen in Figure 3 below:

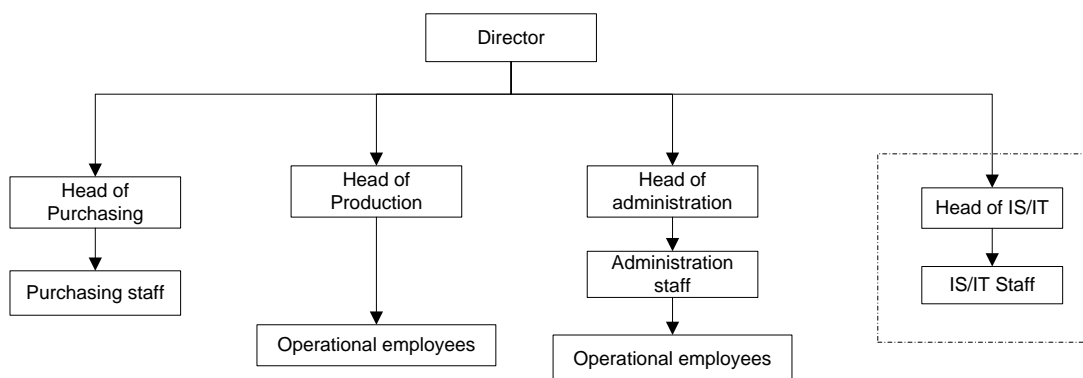


Figure 6. Proposed Addition of IS/IT Section In the Organization Structure

IS/IT Business Strategy and IT Strategy : Business strategy IS/IT explains how each unit can take advantage of the IS/IT to achieve business goals. In this case, the IS/IT will be used to support existing strategies for the company to achieve its business objectives in order to have a competitive advantage, such as a portfolio of applications and system overview. For further can be seen in Figure 4 below:

| Unit | IS/IT | Goal |
|----------------|---|---|
| Administration | Accounting information systems and human resource information systems | To manage debt, receivables, attendance, payroll, education, training, benefits and reports |
| | Marketing | To manage the promotion, sales data |
| | HR information systems (education and training) | To manage human resources in terms of education and training |
| | Scheduling | To manage the ordering and delivery scheduling |
| | Promotion and sales | To help make the offer and submit designs online (so much faster) |
| | HR Information System (recruitment) | To assist in the recruitment of new employees and work together for student internships |
| | Documentation | To store data and important information |

| | | |
|------------|---|---|
| Production | Managing quality, quality analysis and control | To perform quality control, so that quality is maintained and continuously improved to a maximum |
| | Infrastructure management | To manage the existing infrastructure in the enterprise |
| | Inventory management | To manage raw material inventory (stock) |
| | Designing product, services, and process | In order to handle the design of the product itself |
| | Documentation | To save production data |
| | Forecasting, Material requirement planning | To help make forecasting (raw material inventory planning) |
| Purchase | Infrastructure management | To manage the infrastructure and make investment plans |
| | Purchase | To manage the data on purchases made companies |
| IS/IT | Programming application, database, and information resources information system | To manage, perform maintenance, conduct development IS/IT at PT. Indrakila Offset, and do office automation |

Figure 7. Units, IS/IT, and Objectives

IT strategy describes the policies and strategies for the management of technology and human resources IS/IT. For a strategy for the management of this technology was originally done by a third party because at this point the company does not have the IS/IT organizational structure and does not have the human resources (HR) field of IS/IT. For workmanship IS/IT, companies are able to directly appoint developers to build IS/IT at PT. Indrakila Offset according to the criteria of the expected. For the future will be added to the IS/IT in the organizational structure for the treatment of IS/IT were there, as well as to conduct planning, maintenance and development of information systems in the enterprise. Development of IS/IT was started with the planning, analysis, design, implementation, and maintenance (maintenance) cycles according to the SDLC (systems development life cycle).

IS/IT Strategic Management: IS/IT Strategic Management describes the common elements are implemented through the organization, to ensure consistency of policy implementation IS/IT required. For the strategic planning of IS/IT will be documented in a document " IS/IT Strategic Plan for Printing Industry PT. Indrakila Offset Mojokerto ". For the analysis, will be documented in a document "IS/IT Needs Analysis for Printing Industry PT. Indrakila Offset Mojokerto". For design, documented in a document "IS/IT Design for Industry Printing PT. Indrakila Offset Mojokerto". The document is created with the aim to maintain the consistency of the IS/IT and human resources if the IS/IT is to switch to another person, then that person can still determine the analysis and design, so if it will do the development and improvement of IS/IT at PT. Indrakila Offset will not be a constraint for the IS/IT because it has such documentation.

For the development of the IS/IT at PT. Indrakila Offset will be developed within a maximum of 2 years, including strategic planning for medium-term planning or long-term, thus allowing the emergence of short-term planning in it. On the other hand, planning related to IS/IT is also not good if applied in more than 2 years, because if more than 2 years, there will be the development of the IS/IT and price changes that can lead to ineffective and not exactly planning that has been done. In addition, if the application of the strategic plan was made too long, then the company will be left behind by its competitors due to less rapid development with its competitors. At the initial stage, the IS/IT designed and built by third party developers who have been appointed directly by the company. Development of IS/IT is done in accordance with the order of importance (weights) have been made. For implementation and maintenance (maintenance), at first (the first year after all the IS/IT has been implemented) will be done by third parties, but third parties also have to provide training to the part of PT. Indrakila Offset IS/IT department and submit the contents of the document and explain the planning, analysis, and design to the director and part of the IS/IT PT. Indrakila Offset. It is intended that part of the IS/IT to perform maintenance (maintenance) in the event of damage or interference and can carry out the development of the IS/IT in the future.

Department of IS/IT headed by a chief department of the IS/IT and have a maximum of 2 staff. Their job is to repair damaged IT equipment, perform network installation, perform maintenance to the IS/IT, make the rules and policies, and to supervise the IS/IT is. In the long run, the IS/IT is also tasked with evaluating systems,

information technology governance, audit IS/IT as well as to develop the IS/IT in order to support the business needs of the company to the fullest and avoid the risk or threat that could affect the company in later day. All of these tasks led and supervised by the head of the IS/IT which will be reported directly to the director. The report was written, ranging from planning, analysis, and implementation as well as the calculation of all the costs involved. The document should also be stored and used as if it would make the development of a portfolio of IS/IT in the future.

Application Portfolio : In the application portfolio, an application can be categorized as strategic, high potential, key operational or support depending on its role in supporting the company's business strategy, both now and in times to come, to avoid the risk in the future, or applications that are innovative. Strategic is an application that creates or supports changes to the way the organization does business with the aim to provide a competitive advantage. High potential is an innovative application that can create opportunities for profit in the future. Key operational are applications that are petrified to avoid unfavorable conditions. Support is an application that improves the efficiency and effectiveness of business management, but not to provide a competitive advantage for the organization. Application portfolio can be seen in Figure 5 below:

| Strategic | High Potential |
|--|---|
| <ul style="list-style-type: none"> - Office automation - Promotion and sales - Purchase - Accounting IS and Human resource IS - <i>Forecasting, material requirement planning</i> - Human resource IS (education and training) - <i>Designing product, services, and process</i> - <i>Managing quality, quality analysis and control</i> | <ul style="list-style-type: none"> - Programming application, database, and information resources information system |
| <ul style="list-style-type: none"> - Infrastructure Management - Inventory management - Human resource IS (recruitment) - Scheduling (Scheduling) | <ul style="list-style-type: none"> - Documentation |
| Key Operational | Support |

Figure 8. Application Portfolio

IS/IT Strategic Planning: The final stage of this research is the implementation of a strategic plan drawn up in the form of a road map that is also a work order, the work plan and implementation schedule of the IS/IT is. The road map is based on the composition scale of priority (weights). Strategy with weights 3 (neutral) to 5 (very important) and is very important and fundamental/basic implementation done in the first year (2015) and the rest is done in the second year (2016). The road map can be seen in Figure 6 below:

| No. | Planning | Year | |
|-----|---|------|------|
| | | 2015 | 2016 |
| 1 | Procurement of IT infrastructure | | |
| 2 | Installation of Internet network | | |
| 3 | Creating office automation | | |
| 4 | Making email and online storage | | |
| 5 | Creating sales and promotion applications | | |
| 6 | Make application designing products, services, and process (for product design) | | |
| 7 | Making a purchase application | | |
| 8 | Make application attendance, payroll, performance evaluation, incentives, termination, and benefits | | |
| 9 | Creating applications for the recruitment and selection of new labor recruiting | | |
| 10 | Make application scheduling | | |
| 11 | Make managing application quality, quality control and analysis | | |
| 12 | Perform testing on all applications and infrastructure (stage 1) | | |

| | | | |
|----|--|--|--|
| 13 | Make education and training applications | | |
| 14 | Make applications forecasting, MRP | | |
| 15 | Make application infrastructure management | | |
| 16 | Forming of the IS/IT department in the organizational structure | | |
| 17 | Applying information resources information system | | |
| 18 | Perform testing on all applications and infrastructure (stage 2) | | |

Figure 9. IS/IT Strategic Plan

V. CONCLUSION

In the final stage of this research Based on the analysis and discussion of some conclusions can be drawn as follows:

- [1] In the final stage of this research resulted in an application portfolio that is divided into 4 quadrants McFarlan Strategic Grid. In the portfolio there are 8 applications are included in the strategic, 4 applications were included in the key operational, 1 application is included in the high potential, and 1 application is included in the support
- [2] IS/IT strategic plan in the form of road map that contains the implementation phase to be done, consisting of 12 activities that must be carried out in 2015 and 6 activities to be done in 2016.
- [3] Application of IS/IT in the first year and the second year is done by third party as a whole because the company does not yet have the human resources field of IS/IT. But in the second year, will set up the IS/IT organizational structure that will also monitor the implementation process of IS/IT is.

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