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### Strategic Planning of Information Systems Beauty Clinics with Ward and Peppard Model Approaches (Case Study: Virgina Aesthetics Company (Farina Beauty Clinic))

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#### ABSTRACT

Virgina Aesthetic Company (Farina Beauty Clinic) is an organization or company engaged in the field of face and body skin care services. To be able to get a competitive advantage and be able to survive in tight competition, the strategy that can be done by a beauty clinic is differentiation and cost reduction. One of the things that can be done for cost-reduction is to make the business processes in the Beauty Clinic more efficient, one of the things that can be used for efficiency is Information Systems (IS) / Information Technology (IT). This research is an effort to build an information system strategic planning and application portfolio in the Virgina Aesthetic Company (Farina Beauty Clinic) that can provide optimal, well integrated and innovative contributions that can unite all supporting aspects in achieving clinical business strategies to increase its competitive value especially in health services.

In preparing the information system strategic planning framework using the Ward and Peppard Model approach and in evaluating the elaboration of information systems strategic planning and business strategies using IT Balance Scorecard. Several analytical methods such as Value Chain Analysis, SWOT Analysis, PEST Analysis and Five Force Model Analysis are used to analyze internal and external business environments. Strategic Grid McFarlan Analysis is used to map the application portfolio. In the end this research resulted in a recommendation for the organization in the form of development priorities which were divided into two related matters, the establishment of an IS / IT unit and the development of an application portfolio that would support the sustainability of Virgina Aesthetics Company (Farina Beauty Clinic) Karawang.

#### INTRODUCTION

The development of information systems that are so rapid to give such a huge impact on the quality of an organization or company. In an effort to improve the quality required information systems that support all work units in the Virgina Aesthetic Company (Farina Beauty Clinic). In developing business strategies, the Information Systems (IS) strategy and the Information Technology (IT) strategy must be integrated with the company's business strategy. To plan an IS/IT strategy it is first necessary to know

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the environmental conditions, the direction and objectives of the company's business, what information is needed, the opportunities and business constraints faced and alternative solutions. After knowing the environmental conditions, direction and objectives of the company's business activities, it can be evaluated what systems are in accordance with the needs and support the company's business strategy in achieving the company's vision and mission. Strategic information systems for companies, it is necessary to select and select what technology is most suitable for use in supporting the information system.

The IS/IT strategic model that will be built based on Ward and Peppard analysis methods can produce future application portfolio planning that can make a real contribution to the application portfolio in the Virginia Aesthetic Company (Farina Beauty Clinic) (Ward & Peppard, 2002). The planning is needed to adjust the steps of the organization with the information system so that it is in tune with the organization's development to meet the organization's information system needs in the future (Rochim, 2007).

To achieve the effectiveness and efficiency of the Virginia Aesthetic Company (Farina Beauty Clinic) information system, the role of information systems strategic planning needs to be managed appropriately so that the company's vision and mission are achieved. Optimal use of information technology so that it can compete with other companies. Data and information need that are fast, precise and accurate are needed. Facing increasingly fierce competition needs to be supported by information systems strategic planning (IT Strategic Plan). To be able to increase value and create competitive advantage and strive for sustainable growth, a framework that can provide a strategic role for information systems or information technology is good for the Virginia Estetika Company (Persero). Strategic planning integrated information systems facilitate the management of existing resources and will produce information that is accurate, timely and can be used jointly by the parties concerned.

## **MATERIALS AND METHODS**

Information system is a system within an organization that meets the needs of daily transaction processing, supports operations, is managerial and strategic activities of an organization and provides certain external parties with the necessary reports (Leitch & Davis, 1983).

In the information system there are three activities that will produce information needed by the organization to make decisions, control operations, analyze problems and create new products. These activities are input, process and output. Input functions to record or collect raw data from within and outside the organization. Processing functions to convert raw input data into meaningful forms. The output functions to send the information that has been processed to the parties who will use it or to the activities that will use the information.

Effective use of information systems requires an understanding of the organization, management and information technology that makes up the system. An information system forms value for the Company as an organization and management solution to the challenges that come from the environment.

The strategy is basically a form of activity or approach applied by managers to satisfy their customers, form attractive market positions and achieve organizational goals.

According to Hartono (2006), organizational strategy consists of a series of competitive activities and business approaches applied by management in running the operational activities of the organization. The right strategy for an organization or company is:

1. Organizations or companies need to actively shape activities. A company strategy provides a way or approach for a company to be able to provide a road map for operations, instructions for doing business, planning for building sustainable good services beyond its competitors.
2. To unify decisions, initiate activities carried out by departments, managers and employees in the organization into a coordinated and integrated planning at the corporate level.

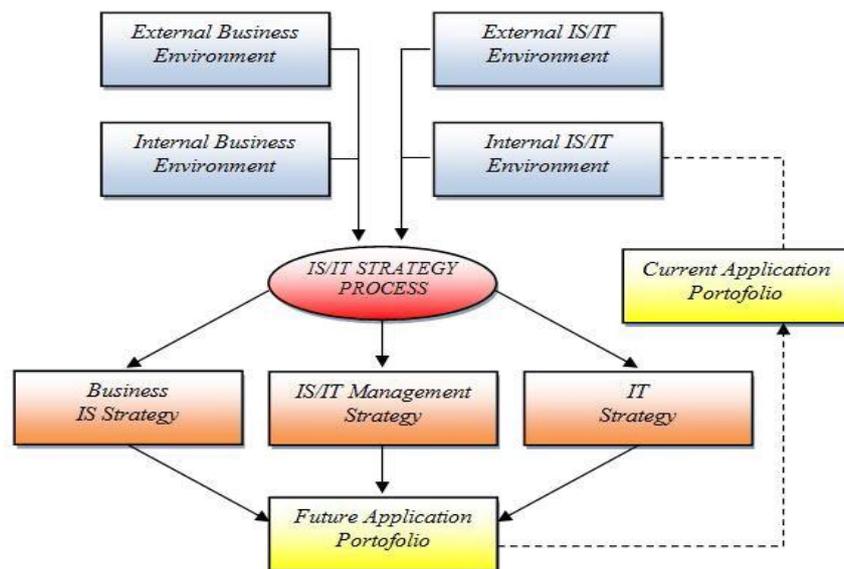
Building an information system strategy and information technology means thinking strategically and planning for the effectiveness of long-term management processes and influencing optimal information in various forms of information systems and information technology that use manual systems and computer systems, computer and telecommunications technology and organizational aspects in system management information or information technology.

Peppard & Ward's (2003) opinion on strategic planning is, "strategic planning and a framework for management to align the IS / IT strategy with the business strategy, even used to look for new opportunities through the application of innovative technology".

The conclusion of information system strategy planning is a process to compile the planning, use and implementation of information systems and information technology comprehensively in an

organization in line with the organization's business strategy to support the achievement of organizational goals effectively and efficiently. Information systems and information technology strategies should lead to integrated system performance to produce accurate information that can be used as input in making decisions.

This Ward and Peppard planning model start with information technology investments that already exist and are less useful in supporting the company's vision and mission and utilizing the latest information technology that can enhance the competitive advantage of the company or organization. Strategic planning in addition to utilizing technology must also be based on business needs. Here is Ward and Peppard's strategic model:



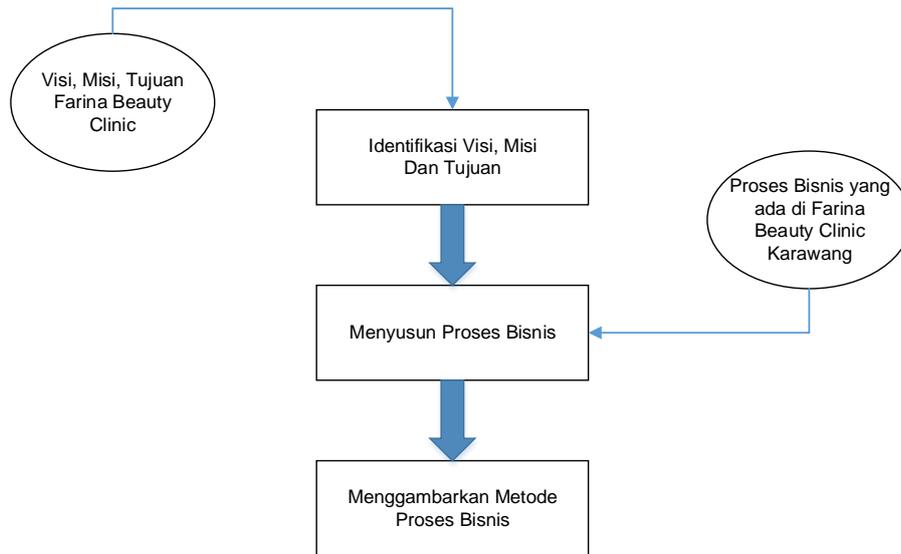
**Figure 1.** Ward and Peppard Strategic Model  
(Peppard & Ward, 2003)

Figure 1 explains Ward and Peppard's strategic model in system planning and information technology, including important parts in the preparation of the IS / IT Strategic Plan. The stages in Ward and Peppard consist of input and output stages. The framework for preparing information systems strategic planning based on this methodology requires an analysis of four inputs, as follows:

1. The Internal Business Environment
2. The external business environment
3. The Internal IT Environment
4. The external IT environment

The IS / IT strategic planning methodology that will be used is a strategic planning method based on the Ward and Peppard Model. In this model there are 2 stages: the input (output) and output (output) stages. Input stages are internal business environment analysis and external business environment analysis, internal IS / IT environment analysis and external IS / IT environment analysis. For the output stage, the IS business strategy, IT strategy and IS / IT management strategy. Some of the techniques / methods used are Value Chain Analysis, SWOT Analysis, PEST Analysis, Five Forces Model Analysis and Strategic Grid McFarlan Analysis. Whereas in evaluating the elaboration of strategic planning of information systems and business strategies using the Balance Scorecard approach.

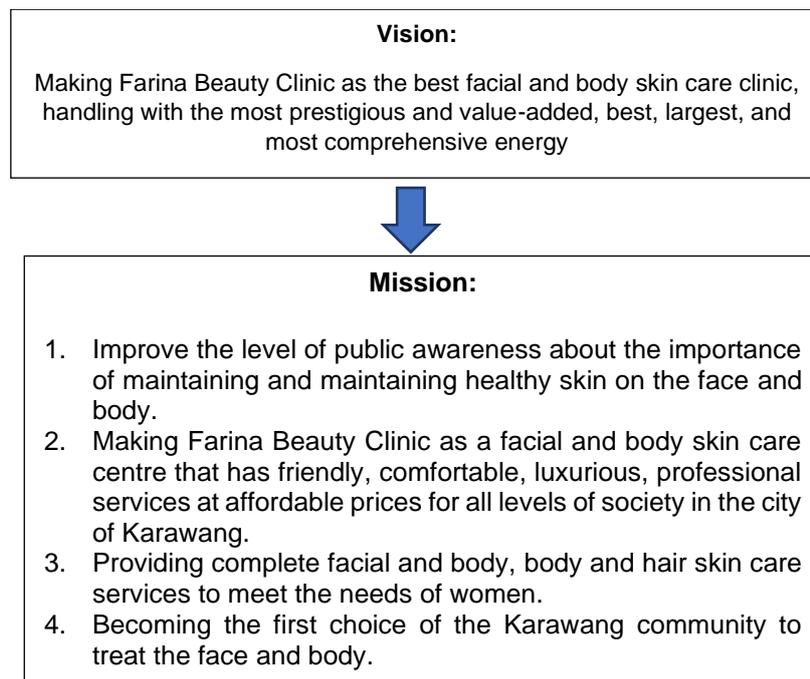
In this section, researchers identify the vision, mission, and goals to be achieved by the Farina Beauty Clinic, then compile any business processes that exist in Farina Beauty Clinic Karawang and describe them in the business process model.



**Figure 3.** Framework for the Arrangement of the Farina Beauty Clinic Business Model

## RESULTS AND DISCUSSION

### Development of a Virgina Aesthetic Company Business Model

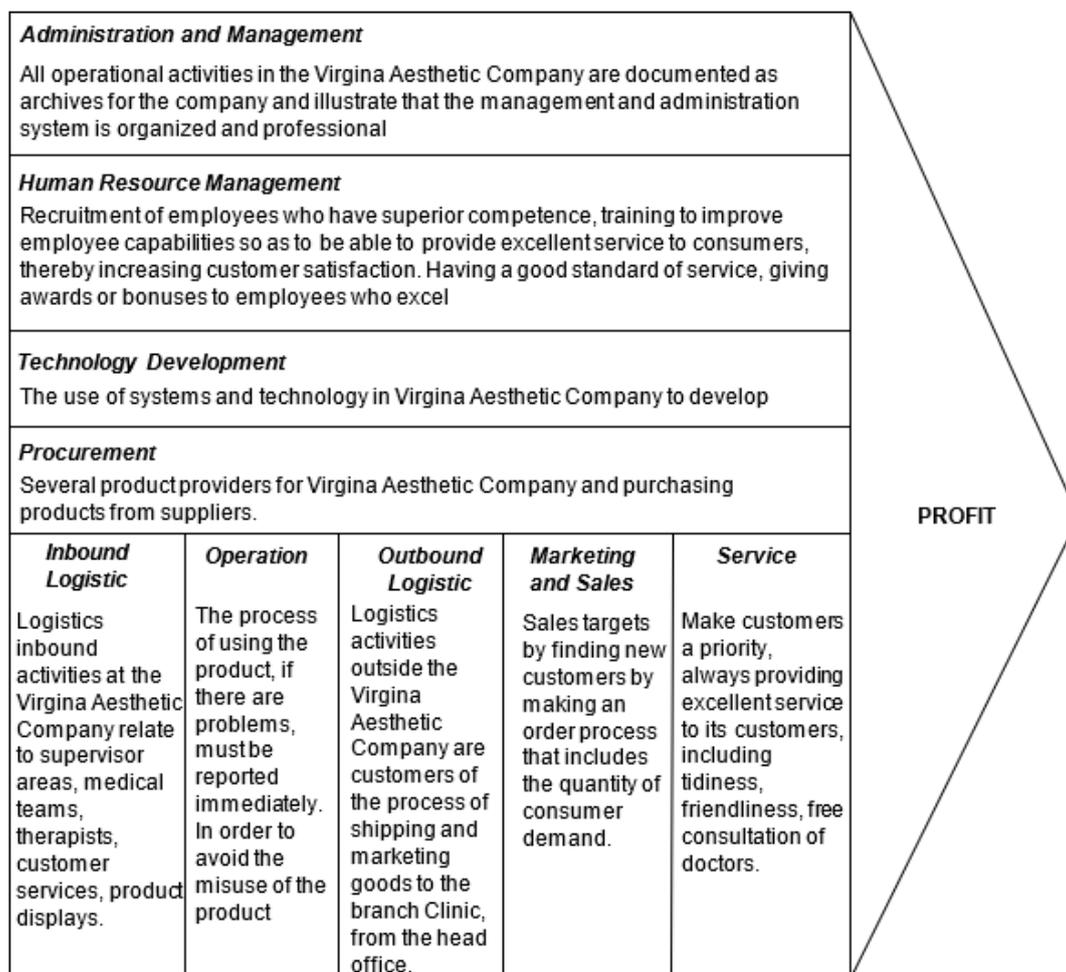


**Figure 4.** Vision and Mission of Virgina Aesthetic Company (Farina Beauty Clinic)

At the Virgina Aesthetic Company (Farina Beauty Clinic) there are several business processes that are carried out, which are as follows:

1. Facial  
To have facial skin that is clean, white and free from pimples, one treatment that can be done is to do facials.

2. Beauty Clinic  
Beauty treatments are services to perform several procedures aimed at improving the appearance so that the face is fresher and cleaner.
3. Salon and SPA  
Spa is a beauty treatment that can refresh the body and mind, improve mental and psychological health.



**Figure 5.** Virginia Aesthetic Company Value Chain

PEST analysis is useful for evaluating external environmental variables to identify the opportunities and general risks of a particular strategy, because changes in these factors can cause significant industrial transformation, especially in the long run. The following external factors that affect the business process of the Virginia Aesthetic Company (Farina Beauty Clinic) based on PEST Analysis:

1. Political factor  
Political factors are factors that can affect the state of the economy and several other industries, such as the existence of policies from the government towards a country or region which will affect the financial sector, business and the country's economy.
2. Economic factor  
The economic situation affecting the face and body skin care industry in Indonesia is the increase in income per capita of the Indonesian people from 2017 to 2018. BPS on its website ([www.bps.go.id](http://www.bps.go.id)) recorded per capita income in 2018 reaching Rp 12.45 million or 1,308 US dollars has increased compared to 2017 which only reached Rp 10.51 million or 1,166 US dollars. Whereas the increase in per capita income in 2019 will reach almost 20% at US \$ 1,562.
3. Social factor  
The socio-cultural environment that influences the face and body skin care industry in Indonesia, especially Karawang, is a change in trends in the lifestyle of urban communities, now both women and men pay more attention to their appearance.

#### 4. Technological factor

According to Wawan Wardiana (<http://eprints.rclis.org>), technological developments can improve performance and enable a variety of activities to be carried out quickly, precisely and accurately, which in turn will increase productivity.

Porter's five framework is the most powerful and widely used tool to analyze the pressures of competition in the market. The character and competitive forces operating in the industry are never the same from one industry to another. To understand the pressures of business competition when a company enters the industry and has opportunities, Porters is divided into five segments.

Analysis using the SWOT matrix (Strength, Weakness, Opportunities, Threats). Following are the SWOT analysis results:

##### 1. SO (Strength - Opportunities) strategy

The SO (Strength - Opportunities) strategy is an internal environmental strategy in the SWOT analysis that is to use strength by exploiting opportunities. The following table SO (Strength - Opportunities) Strategy based on SWOT identification.

**Table 1.** SO (Strength - Opportunities) Strategies

No	SO Strategy	Description	CSF	IS/IT Proposed
1	Development of knowledge dissemination systems owned by senior HR to junior HR	Conduct training for employees to improve expertise.	Virigina Aesthetic Company (Farina Beauty Clinic) must provide support and facilities to increase team productivity.	HR Application Virginia Aesthetic Company (Farina Beautu Clinic)
2	Development of service facilities to improve patient or community satisfaction	Support employees by providing the tools needed to perform their duties.	Authorize employees to conduct work processes with discipline	The Virginia Aesthetic Company performance 'Decision support system' application
3	Development of a system to assess the performance of each employee so they can be monitored by Virginia Aesthetics's top management.	Ease of access to employee data in HRD or staffing.	The staffing department must provide data for each employee needed by top management, such as attendance data, performance data, etc.	The Virginia Aesthetic Company performance 'Decision support system' application
5	Development of centralized data organizing facilities so that it can be used in every department that needs it	Data of each department must be integrated with each other	Build one main database server in Virgina Aesthetic Company	Distributed Database Application
6	Development of facilities that can store each document	Make it easy for HR to be able to upload or download documents	Build one main database server in Virginia Aesthetic Company (Farina Beauty Clinic)	Virginia Aesthetic Company (Farina Beauty Clinic) document system application

##### 2. WO (Weakness-Opportunities) Strategies

The WO (Weakness - Opportunities) Strategy is an internal environmental strategy in the SWOT analysis, which is to use strength by exploiting opportunities. The following is a WO (Weakness - Opportunities) strategy table based on SWOT identification.

**Table 2.** WO (Weakness - Opportunities) Strategies

No	WO Strategy	Description	CSF	IS/IT Proposed
1	Utilization of cooperation with government agencies such as BPJS	Utilization of cooperation with government agencies such as BPJS to improve relations and benefits felt by the community	Virgina Aesthetic Company (Farina Beauty Clinic) utilizes cooperation with the government to increase the number of consumers	Financial application

2	Improve the strategic system of effective and efficient facial care services	Services are carried out to disseminate information on facial skin care services to the community	Virginia Aesthetic Company (Farina Beauty Clinic) must create an information system for facial skin care services to customers.	Service information system application Medical Records Application Pharmacy Application
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### 3. ST (Strength - Threats) Strategies

The ST (Strength - Threats) strategy is an internal environmental strategy in the SWOT analysis that is using strength by taking advantage of opportunities. The following table is an ST Strategy (Strength - Threats) based on SWOT identification, namely:

**Table 3. ST (Strength - Threats) Strategies**

No	ST Strategy	Description	CSF	IS/IT Proposed
1	Utilization of the budget for the provision of facilities and infrastructure Virginia Aesthetic Company (Farina Beauty Clinic)	Utilization of the budget for the provision of facilities and infrastructure of the Virginia Aesthetic Company (Farina Beauty Clinic) in the face and body skin care services.	Virginia Aesthetic Company (Farina Beauty Clinic) must provide clinical facilities and infrastructure for facial and body skin care services	Financial application Inventory application Service information system application
2	Utilization of the budget to provide facilities that can be accessed by leaders to be able to support long-term decisions	Company leaders must have an information system to access and check the facilities at the Virginia Aesthetic Company (Farina Beauty Clinic)	Virginia Aesthetic Company must provide a facility procurement information system.	Executive information system application Inventory Application
3	Development of a system that can help diagnose skin diseases	Provision of a diagnosis system to help doctors	Virginia Aesthetic Company (Farina Beauty Clinic) must provide special tools to help diagnose skin diseases	Expert system diagnosis application for diseases

### 4. WT (Weakness - Threats) Strategies

The WT (Weakness - Threats) strategy is an internal environmental strategy in the SWOT analysis that uses strengths that take advantage of opportunities. The following is a WT (Weakness - Threats) strategy table based on SWOT identification, as follows:

**Table 4. WT (Weakness - Threats) Strategies**

No	WT Strategy	Description	CSF	IS/IT Proposed
1	Increasing the distribution of drugs, medical devices that are more effective and efficient so that they are available on time	Improvements were made to determine the availability of drugs, facilities, and medical devices	The Virginia Aesthetic Company (Farina Beauty Clinic) must build an integrated information system regarding managing the availability of drugs, facilities and medical devices	Supply chain management application
2	Improve services that are more effective and efficient while minimizing errors	This is due to inaccurate data, incorrect use of the application but not yet integrated	Completing and integrating Information system applications in the Virginia Aesthetic Company (Farina Beauty Clinic) and providing them in every clinic division	Distributed database application

Based on the results of the preparation of application needs in the Virgina Aesthetic Company (Farina Beauty Clinic), the authors formulated the application requirements in the form of Mc Farlan Strategic Grid Analysis, where each application is classified based on the influence of the application, namely Strategic, Key, Operational, High Potential, and Support.

#### 1. Mapping the Strategic Quadrant

There are several applications that are categorized into strategic quadrants, where they serve as a service center to facilitate business processes and business transactions and determine business steps that affect the success of the Karawang Virgina Aesthetic Company (Farina Beauty Clinic) in the future. The applications that are categorized in the strategic quadrant are:

- a. Application of Expert System for Disease Diagnosis.
- b. Supply Chain Management Application.
- c. Executive Information System Application.
- d. Health Service Information System Application

#### 2. Mapping the Key Operations Quadrant

In the key operational quadrant, there are several applications that are used for business process continuity in the Karawang Virgina Aesthetic Company (Farina Beauty Clinic). The applications that are categorized in this quadrant are:

- a. Medical Records Application
- b. Finance Application
- c. Pharmacy Application
- d. Inventory Application
- e. Distributed Database Application

#### 3. Mapping the High Potential Quadrant

In the high potential quadrant, it is categorized as innovative applications that become competitive value and have the potential for the business continuity of the Karawang Virgina Aesthetic Company (Farina Beauty Clinic). The application that is categorized into this quadrant is the Clinical HR Application.

#### 4. Mapping the Support Quadrant

In the support quadrant, it is categorized as applications that can support business processes but do not affect the business continuity of the Virgina Aesthetic Company (Farina Beauty Clinic) Karawang. The applications that are categorized into this quadrant are:

- a. Decision Support System Application Company Performance Virgina Aesthetic (Farina Beauty Clinic).
- b. Company document system application Virgina Aesthetics (Farina Beauty Clinic).

### Research Results Resume

**Table 5.** Resume of Research Results

No	Analysis that has been done	Results / Conclusions from Analysis	Application Reference
1	Un-integrated database	Design a database for the Company by analyzing existing data needs and normalizing it so that it can reduce data redundancy and improve data consistency.  With the existence of a distributed database, the process of finding data in each branch can be done very quickly so that information can be received immediately when needed.  The database system that is created must be able to update the data at any time and the ease needed for the system operator in each section to be able to make changes to the data.	Distributed database application
2	Facial skin care health services	Health service information system is needed to provide information about health services to the community.	Health service information system application
3	Procurement of drugs and medical devices (Pharmacy)	The following are the results of the analysis in the pharmaceutical section,	Pharmacy Application

No	Analysis that has been done	Results / Conclusions from Analysis	Application Reference
		namely: processing of master drug data, processing of new drug stock data, processing of drug inventory data, and processing of service data / prescribing patients	
4	Medical examination / provision	This is a sub-system that handles data related to the examination / provision of actions against patients by health workers, these actions include: processing of patient / consumer condition data, processing of diagnosis data, processing of referral data processing of prescription drug data.	Medical Records Application  Application of Expert System for Disease Diagnosis
5	Item flow analysis, availability of goods between suppliers and consumers	The group is suppliers, Virginia Aesthetic Company as a health service or facial skin care, and patients as consumers.	Supply Chain Management Application
6	Performance and delivery of information.	Seeing the conditions and situation in the field, the performance of Virginia Aesthetic Company (Farina Beauty Clinic) in delivering information is still using the offline method, which is still using leaflets or brochures or posted on the announcement board.	Website Application
7	Analysis of human resources	<p>The efforts of Virginia Aesthetic Company (Farina Beauty Clinic) to create a good image (quality) in the eyes of its customers are largely determined by the quality of its standardized HR, so at the beginning of recruitment it is necessary to hold selection stages such as administrative selection (selection of candidate files), psychological tests power, and ability tests in their respective fields. And the next selection is done like a psychological test and if it passes it will do the training.</p> <p>Human resources in an organization need to be developed to a certain extent in accordance with organizational development. HR development can be carried out through continuous education and training.</p>	HR Application for Virginia Aesthetic Company (Farina Beauty Clinic)  Decision System Application for Virginia Aesthetic Company Performance (Farina Beauty Clinic)
8	Executive information systems analysis	In this case the information system on the executive in the hospital, such as at the manager's level or like a director, Gunsu get detailed information from each section or sub-system in the Virginia Aesthetic Company (Farina Beauty Clinic) that has been integrated with each other. For example, information obtained includes: the number of patients / consumers available (with gender details), number of rooms used, service reports and service indicators. By evaluating and taking decisions or actions for the progress of the company.	Executive information system application
9	Document Analysis	Document analysis is used to find out the documents used in a company or agency. Document analysis is also used clearly what are the functions and functions of the documents, as for the documents used such as at the beginning of registration, the patient card (patient / consumer identity), the patient / customer member	Document system application

No	Analysis that has been done	Results / Conclusions from Analysis	Application Reference
		card, and all data including employee data and others, such as identity data employee, payroll data, employee member data, and documents related to the company.	
10	Financial analysis	The financial sector accepts all cash receipts related to finance. In this process there are a number of documents that will be needed, including: medical records, proof of payment, deposit certificates, purchase of medicines and the provision of facilities and other inventory that supports all company activities. In the process of financial statements produced are daily reports, ledgers (classifying and separating cash receipts based on the items), and payroll / payroll, and other expenses.	Finance Application Inventory Application

**Table 6.** Portfolio Applications with Priority and Strategic Blueprint IS / IT

STRATEGIC	HIGH POTENTIAL
<ul style="list-style-type: none"> <li>- Expert System Diagnosis of Disease Applications</li> <li>- Supply Chain Management Application</li> <li>- Executive Information System Application</li> <li>- Health Service Information System Application</li> </ul>	<ul style="list-style-type: none"> <li>- HR applications from the Virginia Aesthetic Company (Farina Beauty Clinic)</li> <li>- Website Application of the Virginia Aesthetic Company (Farina Beauty Clinic)</li> </ul>
<ul style="list-style-type: none"> <li>- Medical Record Application</li> <li>- Finance application</li> <li>- Pharmacy application</li> <li>- Inventory Application</li> <li>- Distributed Database Application</li> </ul>	<ul style="list-style-type: none"> <li>- Performance Decision System Application at Virginia Aesthetic Company (Farina Beauty Clinic)</li> <li>- Document Application System at Virginia Aesthetic Company (Farina Beauty Clinic)</li> </ul>
KEY OPERATIONAL	SUPPORT

## CONCLUSION

Based on the results of research conducted by researchers on strategic planning of information systems for beauty clinics with 'ward and peppard' models in Karawang, it can be concluded that, Farina Beauty Clinic is an organization or company engaged in the field of face and body beauty service providers. To be able to gain competitive advantage and be able to survive in tight competition, the strategy that can be carried out by Farina Beauty Clinic Karawang is with differentiation and cost reduction. One of the things that can be done for cost-reduction is to make the business processes at Farina Beauty Clinic more efficient, one thing that can be utilized for efficiency is information technology with careful planning so that it can help, support and align with business objectives from Farina Beauty Clinic.

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