



Strategic Planning of Information System (Case Study: Ministry of Religious Affairs in Southwest Sumba)

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ABSTRACT

The increase of public services based on information and communication technology (e-Government) requires a government organization to have IS / IT strategic planning. One of the benefits of IS and IT strategic planning is that e-Government development becomes more targeted, effective, efficient and transparent in order to support good and clean governance. Ministry of Religious Affairs Office in Southwest Sumba has also implemented the IS in carrying out its duties and services, but the use of IS in the office has not been done fully, and there are still many activities that are done conventionally which consequently make the office cannot achieve optimal target and performance. This paper will discuss about the steps of strategic information system planning in the Ministry of Religious Affairs Office in Southwest Sumba using Ward and Peppard framework.

Keywords: *Strategic Planning, Information Systems, Ward And Peppard.*

1. INTRODUCTION

Strategic Planning of Information System and Information Technology (IS / IT) is very important to determine the success of an Information system and Information Technology [1]. Strategic planning can work effectively, if it implements continuous strategic planning in order to ensure business processes which are appropriate with technology change. The Benefit of Strategic Planning is to align the direction and priorities of IS / IT according to business priorities, create effective and efficient management, and identify opportunities of IS / IT for competitive advantage and business value increase. [2]

In making strategic planning of IS / IT, a framework is needed to optimize its role, increase organization's business value, and create competitive advantage. [3] IS / IT built without good planning will be ineffective,

inefficient, difficult to integrate, and may cause financial losses due to non-priority investments. Stages which will be performed in the implementation of e-Government require a detailed and complete strategic planing. The strategic planning is commonly called as the roadmap of the e-Government implementation. [4]

The Ministry of Religious Affairs Office of Southwest Sumba is a vertical agency that is responsible for duties and functions of the Ministry of Religious Affairs in district / city based on the policy of province office head and law. In carrying out its duties and functions the office is guided by the vision and mission that have been formulated into 2015-2016 Southwest Sumba Ministry of Religious Affairs' strategic plan document. Based on the problems, strategic issues and attention to the objectives and targets that have been set, so there are strategies and medium-term policies that require technology and information systems in order to achieve more optimal achievement. The achievements that have not been optimal in the office are caused by various problems faced. the problems are cost, unprepared human resources, planning and infrastructure.

In order to achieve the visions, missions and objectives of ministry of Religious Affairs Office in Southwest Sumba, a strategic business plan and a strategic plan for IS / IT are required. The development of IS / IT is intended to achieve organization goals as well as enhance competitive advantage. Furthermore, the planning of IS / IT is intended to adjust IS / IT developed in accordance with the strategic plan and need of information in the Office.

2. LITERATURE REVIEW

IS and IT strategies are differentiated by their function. IS strategy is more emphasized to determine supporting applications of information systems needed by the organization. On the other hand, IT strategy is more emphasized in determining technology and infrastructure of IS / IT, and resources that exist in the organization [5]. For more detailed information, it can be seen in Figure 1.

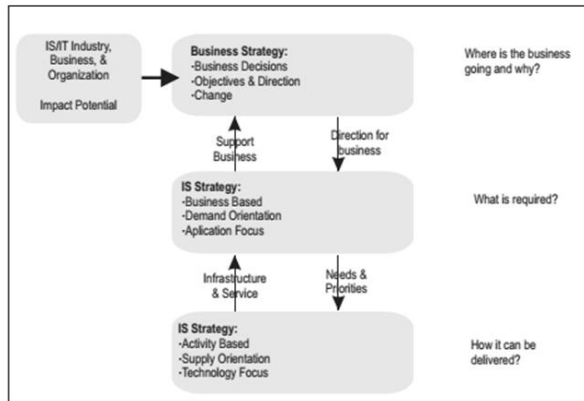


Fig. 1. Relationship between Business Strategy, IS Strategy and IT Strategy (Ward, 2002)

2.1 IS / TI Strategic Planning

IS / IT strategic planning is defined as a way of identifying an application mapping, which the application can assist an organization in executing and realizing its business objectives and planning [6]. Result obtained from the development of IS / IT strategy is an existing portfolio of existing applications that will be implemented to create competitive advantage that aligns with organization strategy.

2.2 Ward and Peppard Method

The Ward and Peppard method is run when the benefits of the IS / IT conditions developed by the organization to support its goals and opportunities business are not optimal, and when existing IS / IT conditions can be utilized to enhance organization's competitive advantage. IS / IT condition which is not so useful for the organization is because IS / IT planning strategy has not focused on organization needs and business goals, but it only focuses on developed technologies. The Ward and Peppard methodology itself consists of input and output steps [7]. Input stage consists of:

1. Analysis of internal business environment, it includes analysis of organization structure, business strategy, duty and functions, organization resource, main and supporting activities

2. Analysis of external business environment, it includes political analysis, economic aspects, social culture, and current technology conditions that can cause competition with the organization.
3. Analysis of internal IS / IT environment, it covers IS / IT condition, quality of resources and infrastructure that supports the implementation of strategic IS / IT, and the state of existing IS / IT portfolio.
4. Analysis of external IS / IT environment, it includes current IS trends, IS / IT conditions implemented in organization, business partners, competitors, and current IS development condition.

The output stage usually includes the results of the analysis process in the form of an IS / IT strategic planning document which contains: IS and IT strategy, IT and IS Management. for complete information, it can be seen in Figure 2.

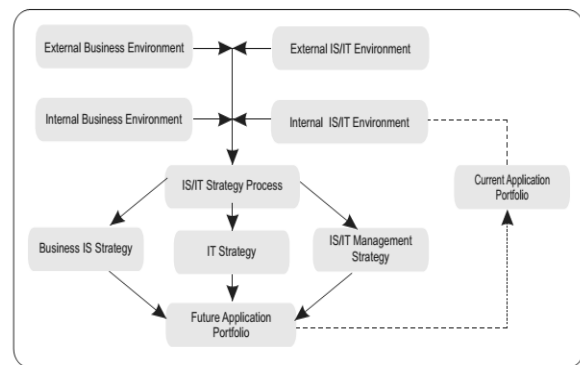


Fig. 2. Ward and Peppard Method (Ward, 2002)

2.3 SWOT Analysis (Strengths, Opportunities, Weaknesses, Threats)

SWOT analysis is systematically identified as various factors of strategies formulation required by the organization that is based on the objectives of the organization to optimize strengths and opportunities, and to minimize Weaknesses and Threats in the organization [8]. SWOT analysis is commonly called as the comparison of Strengths, Weaknesses, Opportunities and Threats [9].

2.4 Value Chain Analysis

Value Chain analysis is done to map the entire process of work in an organization into two activity categories, which are main activity and supporting activity by referring to the organization document that mentions the duties and functions of each work unit based on observation done to work processes that occur in each work unit [10].

2.5 PEST Analysis

PEST analysis is a useful tool to know market growth and decline, position, business potential and direction. PEST analysis is a business measurement tool. PEST is an acronym for Politics, Economics, Social and Technology, which is used to assess the market for business interests or organization units. So, this analysis focuses on the politics, economics, social and technology fields. The result of this analysis is usually opportunities or threats to organization that can be used in SWOT analysis [11].

2.6 Critical Success Factors Analysis (CSFs)

CSFs aims to interpret objectively and determine what activities should be done and needed, CSFs can be determined if organization objectives have been identified [12]. CSFs serves as a link between organization business strategies with existing IS / IT strategies, focuses strategic information system planning processes in strategic areas, prioritizes information system application proposals and evaluates information system strategies [13].

3. METHODOLOGY

This design consists of process of collecting primary and secondary data through observation and interview. Method used is Ward and Peppard with some analysis techniques which are PEST, Value Chain, SWOT, CSF and McFarlan Strategic Grid, analysis of internal and external business environment, and analysis of internal and external IS / IT environment. There are some issues to produce IS strategy, design of new information system portfolio, IT and management strategy of IS / IT for Ministry of Religious Affairs office in southwest Sumba regency and the design phases that will be carried out to analyze the strategy issues are as follows:

- 1) Interview and Observation Stage: aim to identify the organization environment in order to find primary and secondary data that are useful as preliminary data before conducting the analysis.
- 2) Organization Environment Analysis Stage is started with analyzing internal and external business environments using organization functionality, Value Chain, PEST, internal and external IS / IT environments analysis using McFarlan Strategic Grid to identify available IS / IT, and the needs of IS / IT based on current technology development.
- 3) Analysis Process Stage: using data generated from environment analysis, SWOT analysis techniques, CSF Analysis, and McFarlan Strategic Grid
- 4) Stage of strategy formulation: the result of analysis process will be arranged in a portfolio for application

in information system strategy, management strategy formulation of information system and new information technology, and also arranging roadmap in IS / IT field is done to support the performance of Ministry of Religious Affairs Office in Southwest Sumba Regency.

4. DISCUSSION

Organizations which want to improve or update infrastructure, or even optimize the benefits of Information system and Information Technology (IS / IT) should do strategic planning [14]. The use of it is to identify the main goal, focus, and needs which are needed to innovate strategy and renewal. The focus is not only on technology but also on strategy. Strategic planning methods are needed to improve the quality of public services in government organizations that want to realize public services based on information and communication technology, so that e-Government development becomes more systematic, directed, and sustainable [15].

4.1 External Business Environment Analysis

a. PEST Analysis

In this stage, the researcher will conduct an analysis of the external business environment using PEST. PEST analysis is an analysis of external business environment factors which covers politics, economics, social and technology fields [7]. The results of this analysis can get a new opportunity or threat for the company. The Ministry of Religious Affairs Office in Southwest Sumba Regency is an institution that has great potential and is improving infrastructure for the community welfare. There are 4 factors that become indicators in analyzing it, the factors are:

1. Politics Factor
It covers the situation and conditions of local community development dynamic that directly impacts on formal and informal rules in the office environment.
2. Economics Factor
It includes matters that relate to economics policy in governance which affects the condition of the office.
3. Social Factor
It includes social environment conditions that describe and affect the office working environment.
4. Technology Factor
It includes technology advances that can help organization facing business challenges and supporting the business process efficiency.

Strategic goals and objectives of Ministry of religious affairs Office in southwest Sumba are gotten from internal business environment analysis, and they are accordance with its visions and missions that can be seen in table 1 below:

Table 1: Goals and targets of the office

Number	Objective	Target
1	Improving the quality of religious education and things related to religion	<ul style="list-style-type: none"> Improving National Education Standard (NES) especially in religious education unit The realization of religious education quality in schools The realization of educator's quality, professionalism, and welfare The realization of quality in religious education management
2	Developing tradition of discussion	<ul style="list-style-type: none"> The realization of toleration between one believer to others The availability of harmony agents in developing religious understanding which based on multi culture
3	Increasing moral appreciation and development ethics	<ul style="list-style-type: none"> There is an increase of believers' qualities that are good moral and attitude. There is an increase of believers' motivation and participation in country development. There is an increase of believers' dignity in national identity development. There is an increase of believers' role in developing harmony.
4	Improving the quality service for believers	<ul style="list-style-type: none"> There is an increase in religious life quality. There is an increase in understanding, appreciation, practice, and the development of religious values. There is an increase in believer's harmony. There is an increase in believers or communities service quality.
5	Improving the role and function of Religious Institution	<ul style="list-style-type: none"> There is an increase in believers potential empowerment There is an increase in believers' access to economics resources in order to increase living standard and welfare. There is an increase in believers' solidarity and attitude in economic development.
6	Increasing believers' knowledge and independence	<ul style="list-style-type: none"> Increased believers' knowledge, attitudes and independent mental Increased confidence in developing believers' potentials Disappearance of people's dependence
7	Improving togetherness culture and mutual cooperation	<ul style="list-style-type: none"> There is an increase in mutual cooperation culture among religious community. There is an increase in tolerance and togetherness among believers

		<ul style="list-style-type: none"> There is an increase in believers service without any discrimination Increasing mutual respect among believers There is an increase in transparency in public services
8	Improving supervision system in Public Service	<ul style="list-style-type: none"> There is an increase in governance, which is clean, accountable, and reliable There is an increase in socializing integrity zone as a movement of mental revolution There is an increase in state civil apparatus understanding about Corruption Free Area and Clean Free Serving Area. There is increase in ASN understanding about 5 cultural work values of the Ministry of Religious Affairs.

b. SWOT Analysis

After finding the elements of strengths, weaknesses, opportunities and threats from 4 areas that are the main activities, then SWOT analysis is used to obtain strategic steps for the office. 40 strategies are obtained from the analysis, and they are shown in table 2 below:

Table 2: Results of SWOT Analysis of the Ministry of Religious Affairs Office in Southwest Sumba Regency

Number	SWOT Analysis Strategies
1	Coaching for young Catholics
2	Coaching for Catholic Institutions
3	Coaching for Catholic Social / Spiritual Organizations
4	Service for 10 Houses of Worship construction/Catholic institutions
5	Service for Facilities / infrastructures for 10 Catholic institutions
6	Catholic data collection
7	Orientation of Catholic counselors who are non-civil servant
8	Distributed salary for the welfare of 230 catholic counselors who are non-civil servant in southwest Sumba.
9	Implementing cross-sectoral coordination related to harmony of believers and government
10	Coaching for teachers who teach Catholic subject, given by the Ministry of Religious Affairs
11	Coaching for teachers who teach Catholic subject who receive professional teacher allowance
12	2013 Curriculum technical guidance for teachers who teach Catholic subject
13	Preparation of Catholic subject examination
14	Technical guidance of Scientific Writing for teachers who teach Catholic subject in Southwest Sumba
15	Coaching for SMAK St. Dominikus-Tambolaka
16	Monitoring the performance of SMAK St. Dominikus-Tambolaka
17	Coaching for Church Assembly
18	Data collection of Christian people and institution
19	Establishment of a group that is built up by people of the church and Christian Denomination
20	Procurement of Christian facilities and infrastructure in

	the form of Computers, Printers and other religious books
21	Implementation of partnership between believers (establishment of meetings and dialogue among them)
22	Implementation of coordination with Christian education institution
23	Availability of incentive fund for 60 honorary teachers at SMTK Tambolaka and SMTK Setia Sumba
24	Data collection of Christians and Christian institution (data from all religious institutions, clergies)
25	Data Collection of students, institutions, and teachers who teach Christian subject
26	Data management of Christian Education
27	Coordination of Christian Education among related institutions
28	Coaching for Youth of Christian Church
29	Coordination with the Christian Education Institution
30	Discussions of Christians and Christian Internal Forum
31	Availability of incentive fund for 60 honorary teachers at SMTK Tambolaka and SMTK Setia Sumba
32	The increase of 150 Islamic non-civil servant counselors in Quran educational school and the group of Islamic lecture and discussion
33	The realization of Muslims consciousness about the obligation to pay zakat and the optimization and utilization of it (Implementation of zakat Collection Guidance in 3 Mosques)
34	Improving the Quality of Service and Technical Guidance of Islamic school, Islamic institution, and Mosque Empowerment that cover 3 Islamic boarding schools, 1 Islamic elementary school, 20 groups of Islamic lecture and discussion, 10 Quran educational schools and 3 Mosques
35	Improving the quality of service and technical guidance in education implementation by conducting activities in Islamic schools which are 1 Islamic kindergarten, 3 Islamic elementary schools, 1 Islamic junior high school, and 1 Islamic senior high school.
36	Guidance for Hajj candidates and Hajj, for 200 hajj candidates in Southwest Sumba
37	150 Hajj Registrations from 11 districts in Southwest Sumba Regency
38	Conducting Hajj Coordination Meeting
39	Conducting Mentoring Activities, Data Collection, and Islamic school staff competition
40	Implementation of transparent and accountable budget report of Hajj and Umrah

c. CSFs Analysis

After the results of SWOT analysis, objective and target analysis obtained, they will be used as a material of CSFs analysis and serve as an indicator of success and mapping the needs of IS in the Office. The results of the analysis can be seen in table 3 below:

Table 3. Results of CSFs Analysis of Ministry of Religious Affairs Office in Southwest Sumba

Number	Indicators of CSFs Analysis
1	Development of Catholic Institutions
2	Development of Catholic Social / Spiritual Organization
3	Implementing cross-sectoral coordination related harmony of believers and government
4	Technical Guidance of Scientific Writing for Teachers

	who teach Catholic subject in Southwest Sumba
5	Implementing cross-sectoral coordination related harmony of believers and government
6	Data management of Christian Education
7	Coordination of Christian Education with related institutions
8	Coaching for Christian Church Youth
9	The realization of Muslims consciousness about the obligation to pay zakat and the optimization and utilization of it (Implementation of zakat Collection Guidance in 3 Mosques)
10	Improving the Quality of Service and Technical Guidance of Islamic school, Islamic institution, and Mosque Empowerment that cover 3 Islamic boarding schools, 1 Islamic elementary school, 20 groups of Islamic lecture and discussion, 10 Quran educational schools and 3 Mosques
11	Conducting Hajj Coordination Meeting

d. Value Chain Analysis

After doing value chain analysis, then the office main activities and supporting activities are obtained. The main activities are undertaken in:

- 1) Catholic Community Guidance Section
- 2) Christian Guidance Section
- 3) Islamic Society Guidance Section
- 4) Haj and Umrah Organizer Units.

Supporting activities at Ministry of Religious Affairs Office of Southwest Sumba are the activities undertaken in:

- 1) General Unit
- 2) Civil Service Unit
- 3) Financial Unit
- 4) Program Unit.

Identified activities will be considered for the recommended IS / IT solution.

4.2 Analysis of External IS / IT Environments

In this stage, the analysis is done to see trends and current IS trends, by looking at IS conditions implemented in the office and the current IS development conditions.

4.3 Internal Environmental IS / IT Analysis

In this stage, researchers will do the analysis which covers several aspects of IS / IT in the office, such as:

- a. Hardware: Hardwares in the Office can be seen in table 4 below:

Table 4: Hardwares at the Office

Number	Asset	Unit Total	Information	
			Damaged	Working
1	CPU	15	7	8
2	Monitor	15	5	10
3	Printer	10	6	4
4	Laptop	20	-	20
5	External Hard	5	-	5

	disk			
6	Scanner	5	-	5
7	Wireless	2	1	1
8	Stabilizer	15	10	5
Total		87	29	58

b. Software: Software available in the Office can be seen in table 5 below:

Table 5: Software in Ministry of Religious Affairs Office of Southwest Sumba

Number	Application Name	Application Function
1	Employee information system	Employee data collection
2	Financial Information System	To evaluate finance or physical programs or activities
3	Information System of work unit infrastructure and facilities	To log the facilities and infrastructure of each work unit
4	Information System for Employee Performance Evaluation	To evaluate and provide employee performance appraisal
5	Microsoft Office (Word, Excel and, PowerPoint)	To process data

- c. Human Resources: There has not been division or special section that manages IS / IT In the Office, but there are about 15 employees from 80 who are competent in using or utilizing e-government facilities, while the rest only can use computer facilities and internet
- d. Infrastructure: supporting infrastructure in the Office is Local Area Network (LAN) by using cable and wireless connected to internet.
- e. Strategic Planning of IS

Application portfolio and development priority of the office are obtained after doing the analysis. They can be seen in the table 6:

Table 6: Application Portfolio

STRATEGIES	HIGH POTENTIAL
Information System for Employee Performance Evaluation	<ul style="list-style-type: none"> ▪ System integration ▪ Information System for Employee Performance Evaluation
<ul style="list-style-type: none"> ▪ Employee information system ▪ Financial Information System ▪ Facilities- infrastructure information system 	<ul style="list-style-type: none"> ▪ Training information system ▪ Budget Implementation Monitoring ▪ Website (upgrade)
OPERATIONAL KEY	SUPPORT

There are 4 applications which are being used by the Office that are 1 application is located in the strategic quadrant and 3 located in operational key quadrant. From the following analyses above, so IS strategy, IT strategy, and IS/IT management strategy which are

needed by the office, can be determined. the strategies are:

a. IS Strategy

Existing IS:

1. Information System for Employee Performance Evaluation must be frequently updated and upgraded with additional functions
2. Employment Information System
3. The function of financial information system is optimized
4. Information System of work unit Infrastructure-Facilities

IS developed in the future:

1. Employee Data Management Information System.
2. Financial Record Transaction Report (E-Recon)
3. Hajj and Umrah Organizer (E-Hajj)
4. Management Information System of Goods and Services Shopping Data by Southwest Sumba ministry of religion office
5. Monitoring of Financial Management (E-Money)
6. Budget Implementation Monitoring
7. Data Archive Information System
8. Employee Presence Information System by Using Biometric Scanner Tool
9. Agency's Website (kemenagsbd.go.id)
10. Career Management Information System

b. Information Technology Strategy implemented in the Office is to improve supporting infrastructure which is Local Area Network (LAN) by using cable and wireless in the Office, and subscribe internet network.

c. Management Strategy of IS / IT: analysis toward the office finds that organization structure needs to be changed or it needs to add IS/IT division which has function to control and develop recommended IS/IT in the office.

5. CONCLUSIONS

From the description of the background and explanation in discussion which is about the process of data processing, and the analysis of research results at the Ministry of Religious Affairs Office in Southwest Sumba, it can be concluded that:

1. To realize the implementation of IS / IT strategic plan requires a commitment from a strong and consistent management, approval of the implementation plan, the existence of adequate human resources support,

technology support, infrastructure and costs in the Office.

2. Strategic IS planning by using Ward and Peppard method can help achieving the objectives, strategic targets and aligning the needs of organization strategy, and IS strategy to obtain plus-value organization in terms of competitive advantage in the Office, if it is made in accordance with the vision, Mission and objectives of the Office. Besides, it can help to produce IS recommendations that will be developed in the form of portfolio, as well as IS management recommendations in the form of new organization structure which is IS division. IS strategic plan provides recommendations for IS development in the form of development stage and development schedule

The advices that researcher gives based on IS strategic planning are:

1. The use of tools analysis that is more frequent and appropriate, so it can increase the validity level of Information System Planning document produced by the Ward and Peppard method.
2. Strategic planning by using Ward and Peppard method generates IS/IT strategy and IS/IT management strategy which can be developed again using Enterprise Architecture Planning to produce blueprint of IS/IT architecture development and change management that is completely for the organization

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