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Dear
On behalf of the Organizing Committee of **the 4th International Conference on Computer Applications and Information Processing Technology (CAIPT, 2017)**, held from 8 to 10 August 2017, at the Anvaya Resort Hotel, Bali, Indonesia, we are very pleased to inform you of the acceptance of your full paper the title of which appears below.
Name of Author : Arifin Fajrin Nurman
Title of article : Governace of Information System Development as Tourism Support Used IT Balanced Scorecard and Mc Farlan
Presentation Type : Parallel presentation
In this connection, we would like to invite you to attend the above said Conference. Please confirm your attendance by editing your status on the conference website and transferring the conference fee no later than 25 June 2017. Should you fail to confirm by that date, the Organizing Committee has the right to cancel your presentation. For more information, please see the crucial points related to the Conference attached herewith.
We would like to take this opportunity to express our appreciation for your interest in participating in the Conference.
We look forward to your participation.
All the best wishes,
General Co - Chairs CAIPT 2017,

Dr. Eva Handriyantini, S. Kom, M. MT

Governance of Information System Development as Tourism Support Used IT Balanced Scorecard and McFarlan

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Abstract— **Nowdays, tourism becomes an object that is being development targeted by government. Government efforts in the development of tourism is done through many ways and media, one of which is a service through information system. Information system in its governance and development requires a structured pattern for the direction of its development more effectively and efficiently. Therefore we need a way to be managed better. Mc Farlan matrix has a pattern of governance development by grouping based on the criteria of needs and objectives of information system development according to the strategy of the organization, whereas IT Balanced Scorecard (BSC) method is a pattern analysis conducted to measure organizational readiness or initial conditions. Both methods show a way that can be used to manage, classify and measure of the development of organizational information systems as a form of tourism carrying capacity.**

Keywords—tourism; information system; management; IT BSC; Mc Farlan

I. INTRODUCTION

Tourism is a temporary undertaking organized from one place to another, with the intent not for business or to work in the places visited (Handayaningsih, 2010). Tourism Destination is a geographical area located within one or more administrative areas in which there is Tourism Attractions, Public Facilities, Tourism Facilities, accessibility, and interconnected communities and complete the realization of Tourism. Government Regulation no.50 of 2011 on the National Tourism Development Master Plan Year 2010 - 2025, explains the process of developing tourism towards a better direction which includes planning efforts, implementation and control, in order to create value added as desired. The development of national tourism includes:

a. Tourism Destination;
b. Tourism Marketing;
c. Industri Pariwisata; and
d. Tourism Institution.

Tourism Department at district / city level have a great responsibility in improving the tourism potential in the region. Measuring the success of the tourism office is the number of tourists who come to visit at tourist sites in the District / City (Handayaningsih, 2010). According to Ward and Peppard, organizations in industry, marketing, and government sectors rely heavily on their information systems. Therefore, we need a strategy for the development of information systems in order to achieve the vision and mission in fulfilling the needs of the organization (Pan dan Hsu, 1995). Utilization of information systems is used to achieve organizational goals and mission, ranging from meeting the needs at the highest level in the organization and needs at the lowest level or operational needs (Yunis dan Surendro, 2009).

To facilitate these differences, it would require a paradigm in planning, designing, and managing information systems (Yunis dan Surendro, 2009). In order to prepare an information system development framework or portfolio, an appropriate approach is needed in order to serve as a frame of reference in development (Ward dan Peppard, 2002).

II. RESEARCH OBJECTIVES AND METHODOLOGY

In this chapter we aare going to discuss about the current research and the methodology that would be use in this research. Furthermore, it will explain about the design of this research and the objective that are willing to be achieve.

A. IT Balanced Scorecard

IT Balanced Scorecard is a tool to measure the performance of an information technology that sees its business units from four perspectives, namely contributions to the organization, user orientation, operational excellence, and future orientation. Van Grembergen and Van Bruggen in 1997 adopted the BSC for use in the information technology department (van Grembergen and Van Bruggen, 1997). They argued that the information technology department is the internal service provider perspective adopted should be

amended and adapted. Changes made by van Grembergen and Van Bruggen can be seen in Figure 1.

1. Contributions to the organization's perspective

   Perspectives that evaluate IT performance based on the views of executive management, directors and shareholders IT evaluation can be separated into two types, short term in the form of evaluation financially and long-term oriented projects and functions IT itu sendiri

2. User-oriented perspective
   A perspective evaluating the performance of information technology based on the viewpoint of business users and customers of existing business units. The organization identifies the customer and the market segment to be entered. This perspective allows an organization to align a variety of important customer sizes, that is: satisfaction, loyalty, retention, acquisition, and profitability with the customer's own and market segments being targeted. It also enables organizations to explicitly identify and measure which sets value propositions (factors driving) that the organization will provide to customers and target market segments.
3. Operational excellence perspective
   A perspective that assesses IT performance based on the IT management's point of view, the parties to the audit, and the party that sets the rules used. The operational excellence of an organization can be seen in the internal business operations that occur.
4. Future-oriented perspective

   Perspective that assesses IT performance based on the perspective of the department itself. In this perspective will prepare the organizational infrastructure that allows the objectives of the three previous perspectives to be achieved. The ability of an organization to be able to produce products or services in the future with satisfactory service capabilities should be prepared from now on.

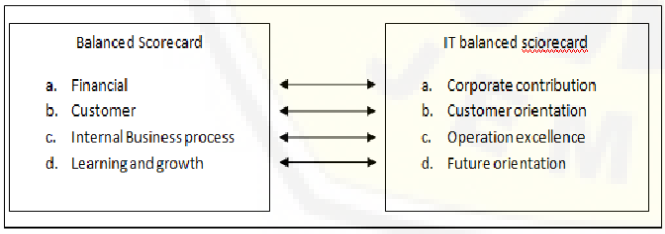

Figure 1. Changes made by van Grembergen and Van Bruggen against the Balanced Scorecard method (van Grembergen and Van Bruggen, 1997).

B. Information System Portfolio

According to Ward and Peppard, the concept of the application portfolio serves as a tool for jointly displaying all types of information systems currently owned or planned. In addition, the application portfolio is also used to explain the contribution of the information system to the organization / company. Based on this application portfolio is used to map the information system based on its contribution to the business process of the organization / company, can be seen in Figure 2.

STRATEGIC	**HIGH POTENTIAL**
Critical information systems to support strategic business to come	Information systems that may be important in achieving success from the company
The information system used and the success of the organization depends on the application	An information system that has value but only serves as a tool that supports the company's business processes
KEY OPERATIONAL	**SUPPORT**

Figure 2. McFarlan Matrix framework

According to Ward and Peppard McFarlan's matrix as one of the tools to manage and assemble an application portfolio has the virtue of explaining the contribution of each company's information system. 2x2 matrix form is the form most widely known is able to explain the variables that are not overlapping but mutually exclusive.

C. Information System Development Method In Work Area Units

Target of research to be achieved is the formation of a form of governance design of information system development. The governance plan that has been prepared will become a direction and tool of information system development strategy in each work area units, especially the tourism office.

In the development of an information system in a government agency is often not in line with the vision and mission of the stakeholders. This is due to the weakness of the management process and the lack of agreement on the development model and the need for development. Management problems that often experienced is scheduling the development of information systems of each work area units that can not be managed properly. Each work area units has the view that its institution is most in need of development. Another problem arises when the integration process will be done from the system already owned by each work area units, the problem that arises is that each work area units has a different information system design that is difficult to integrate.

Therefore it needs a proper way or pattern of development in order to get a roadmap of development of information system that able to integrate vision and mission from each stakeholder. It is necessary to obtain a quality and stable development plan.

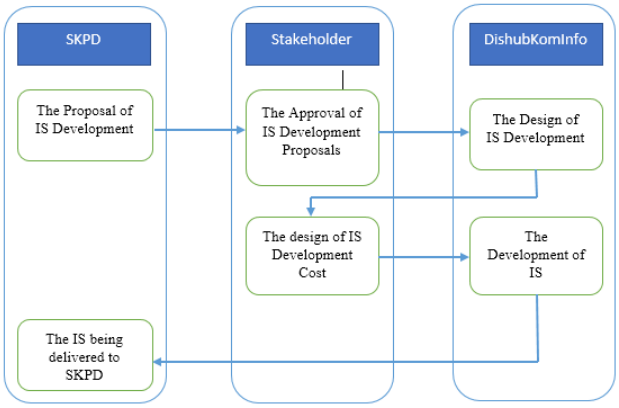

Figure 3. Flow of Submission of Information System Development in work area units

D. Methodology in Management of Information System Development

Although often experience problems in managing the development of an information system, but if there exists a pattern of good management, and structured it will get an information system development process is maximized, as needed, and becomes a form of manifestation of the vision and mission of qualified stakeholders. In the development of an information system there are several development cycles that can be used. However, problems will arise when there are 2 or more agencies proposing or submitting a development proposal. However, if a stakeholder (or leader) or a responsible agency has a good governance plan then such problems can be avoided.

A draft governance framework should be based on the policies of the management and responsibility agencies as the basis and guidance on the preparation. A governance plan should also be able to clearly illustrate the direction of development strategy and development objectives.

III. ANALYSIS AND RESULT

The results obtained based on the research include the composition of the analysis of environmental conditions of the tourism office using IT Balanced Scorecard, and the form of SI development portfolio using the McFarlan matrix as a reference of governance development. Another point discussed in this section is a discussion of the concept of SI / IT development strategy as the basis for the preparation of governance system development portfolio

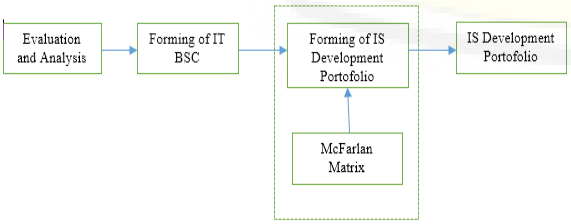

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Figure 4. The Preparation of Information Systems Development Plan Diagram

A. Condition of the Research Environment

The current condition of Banyuwangi district in general and the people of osing and tourism office of Banyuwangi district have undergone many changes. This can be seen from the infrastructure readiness and commitment of the driving wisara in Banyuwangi. Several studies and literature studies have shown readiness Banyuwangi to compete with other districts (Prasetyo, 2016).

B. IS/IT Development Strategy

The process of designing a development strategy / IT is a thought process to determine strategic steps and a long-term development strategy which aims to obtain an information effectively. The design form of the strategy becomes the basis or reference of SI / IT development for the overall development model, either in information systems (IS) and information technology (IT) which combines manual and computerization process, computer technology and telecommunication. Another understanding of SI / IT development strategy formulated by Lederer and Sethi explained that it is a process of determining the objectives of the activities undertaken by the organization and identification of potential information systems that can be implemented within the organization to support its activities.

An SI development strategy has several concepts or notions that serve as the foundation for development. Some concepts are combining the overall objectives or targets expected of the organization, the process of understanding the information needs of the organization to achieve the targets to be achieved, and the implementation of the technology (information system) that serves to present the information. The SI development strategy can also be understood as a system development plan that refers to the future role of SI in the organization (Wilson, 1989). The SI development strategy can also be seen as the way an organization or company has the ability to outrank its competitors (Doherty dkk., 1999).

The main target of the organization using the strategy in the development of SI / IT is:

1. The process of aligning SI / IT with the business processes of the organization to identify contributions from SI / IT and the determination of development investments made by the organization.Harapan untuk mendapatkan keuntungan bisnis dari pengunaan SI/TI
2. Hope to gain business benefits from the use of SI / IT
3. Effective use of cost and technology in the future.

Development of appropriate resources and competencies to support the process of utilization and distribution of SI / IT in all organizational units.

Table 1. Analysis IT Balanced Scorecard (Arifin, 2013)

No.	Obyektif	Measure	Target
1.	**Corporate Contribution**		
a.	The cornerstone in IS / IT development	Evaluate the effectiveness of use	Able to be the basis / direction in developmen

No.	Obyektif	Measure	Target
	b. Allocation of funds for IS development	The availability of funds	t Helps ease in IS development in financial terms
2.	**User Orientation** IS development for better community services.	User satisfaction	Ease of service to the community
3.	**Operational Exellence** Integration of information / data from IS in some agencies	The effectiveness of integration	Maximize communication between agencies in data usage
4.	**Future Orientation**		
	a. Experts	Number of IT personnel in some agencies	Reach the appropriate amount of IT personnel
	b. Supporting tools	Number of supporting facilities available	Provides ease of traffic flow data exchange
	c. Development commitment from stakeholders	Service to consumers / society is getting better	The development of several information systems / applications that facilitate the community

No	Obyektif	Inisiatif	Assessment
1.	**Corporate Contribution**		
	a. The cornerstone in IS / IT development	Create local regulations and SIMDA	Currently several work units have been using the foundation (SIMDA) to develop applications. But some others still have not used it. (Process Achieving Target)
	b. Allocation of funds for IS development	Allocation of funds in several agencies	Some agencies already have enough development funds. Although it is still constrained by the main target of development, but the prepared development fund is sufficient. (Process Achieving Target)
2.	**User Orientation** IS development for better community services.	Making IS in several government agencies	Development of IS in each SKPD is currently running. Some of them already have systems that help the process of the service to the community / business. (Process Achieving Target)
3.	**Operational Exellence** Integration of information / data from IS in some agencies	Making IS that is able to provide information / data that can be used simultaneously	The commitment of each stakeholder in work area units has had the same vision and mission so that the concept of system integration can be implemented. (Process Achieving Target)
4.	**Future Orientation**		
	a. Experts	Recruitment / training of IT personnel	Some IT experts in each work area units are available although still not sufficient. (Process Achieving Target)
	b. Supporti	Installation of towers at	The current number of IT

No	Obyektif	Inisiatif	Assessment
	ng tools	specified points in accordance with the mapping of the planning	technology support facilities is sufficient. This can be seen from the number of towers and other technologies that have been installed based on PerDa in 2007. (Achieving Target)
	c. The commitment of the stakeholder for IS development	Already used several mobile based applications (android)	Some apps are launched and used. (Process Achieving Target)

C. Aplication Portofolio

Application portfolio is a presentation showing how jointly planning and the potential of the information system that aims to demonstrate the contribution of information systems to the business organization. An application portfolio is expected to outline the development of SI / IT from the organization to facilitate its management process (Ward dan Peppard, 2002).

Role of matrix application portfolio will appear when there is a process of developing management information system capable or require groupings of information systems according the process proposed by the matrix. So it can be concluded that one of the reasons for using application portfolio matrix method is that the method has been known by business managers. Another reason is the use or preparation of an uncomplicated portfolio matrix. This ultimately shows that the matrix has a weakness or limitation and may not be able to handle the management process in different cases. However, the matrix is able to show the value contained in the management and direction in the settlement of a problem related to business processes managed by SI / IT.

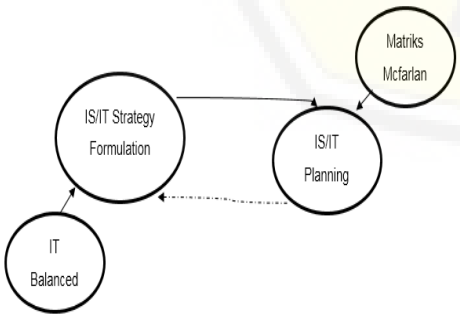

Figure 5. The Pattern of Preparation for Governance Methods in Information Systems Development

The portfolio of applications that have been described refers to the concept offered by McFarlan, which is used to provide access to a comprehensive knowledge of SI / IT contributions to the success of the organization's business (McFarlan, 1984). The 2 x 2 matrix is an easily understood form of explaining the indirect implications, the interrelated variables, and the same number of matrices that are related to the management of SI / IT being developed. The main purpose of grouping information systems is to ensure that the information systems that are owned and developed are well managed and the role of information systems that are expected to fit the business processes of the organization.

The results of the grouping of the McFarlan matrix can be used as a system development direction strategy. Grouping matrix into organizational tools for the purpose of development more clearly and precisely targeted according to the vision and mission of the organization.

D. Application Portfolio of Tourism Office of Banyuwangi Regency

The description of information systems owned by the Tourism Office of Banyuwangi Regency can be seen in Figure 7. Information Systems are grouped based on their functions presented in the form of McFarlan matrix.

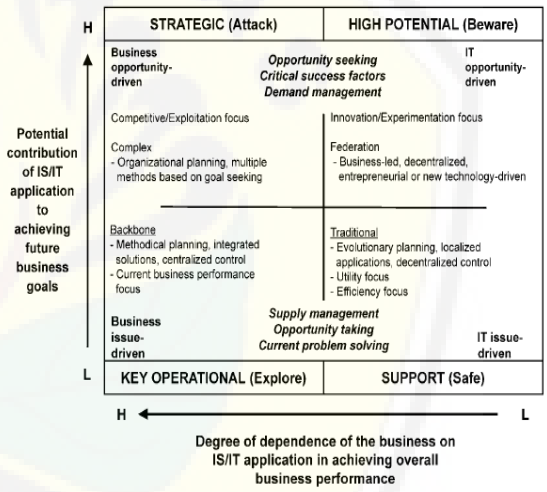

Figure 6. The Process of Information Systems Grouping In McFarlan Matrix

Strategic	**High Potential**
-	-
Banyuwangitourism.com	a. @Banyuwangi_tour (twitter) b. Banyuwangi_tourism (Instagram)
Key Operational	**Support**

Figure 7. Portfolio of Information Systems of Banyuwangi Tourism Office

IV. CONCLUSION

1. IT Balanced Scorecard analysis shows internal condition as the main factor of information system development success.Dalam proses pengembangan diperlukan adanya konsep yang terstruktur sebagai arahan pengembangan.
2. Collaboration of IT Balanced Scorecard method and McFarlan's matrix can be one way of managing. It is seen from the function shown IT Balanced Scorecard as an internal condition analysis as the basis for development and Matrix McFarlan as development strategic direction so that the direction of system development more focused.
3. The development of a system required the existence of the initial analysis of the condition of the organization that has a quantity or quality measurement in order to obtain a more accurate measure of organizational conditions.
4. The use of a matrix should be used in a wider or more complex scope for the functionality of the strategy to emerge and be apparent.

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