

Analysis in the Strategic Formulation for Business and Information Technology Alignment of the Research and Development Planning Institution in Batu City

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Abstract. The Batu City Area Research and Development Development Planning Institution (Badan Perencanaan Pembangunan Penelitian dan Pengembangan Daerah-Bappelitbangda) is one of the important regional apparatus organizations for the Batu city government. However, in carrying out its performance, Bappelitbangda still faces difficulties in several cases in monitoring the vision and mission achievement, for instance; the reporting that is often not in accordance with the results achieved and not evaluating the achievement of indicators in the regional apparatus organizations that do not reach the target. The difficulty is due to the lack of technology's role in supporting Bappelitbangda's performance so that the objectives to be achieved are not maximal. To resolve this, it is necessary to have strategic planning of the information system that can help Bappelitbangda achieves the goals. The method proposed in this study is by adapting the strategic planning method that starts by analyzing both the internal and external environment in terms of business or term of Information Systems (IS)/Information Technology (IT) and also the SWOT analysis. The results of this study could be the proposals for business IS strategies, IT strategies and IS/IT management strategies. This research is expected to contribute to help Bappelitbangda in improving performance by formulating information system requirements in accordance with existing conditions. Therefore, this paper further explains how the existing conditions can formulate the needs in accordance with the steps that have been determined because the previous papers only explain the impact obtained by using the method. The objectives as well as the new strategic formulas analysis based on SPBE which are expected to help Bappelitbangda harmonize the technology utilization. In the future, this research can be developed by selecting more complex scope so that the data obtained is also obtained in more detail.

Keyword : Strategic Planning, Information System, Achivement of Objectives, SPBE

1. Introduction

The Indonesian government supports the information technology application to improve performance and improve the services. This step is used to actualize the good governance as written in Presidential Instruction No. 3 of 2003 concerning the National Policy and Strategy Development of e-governance and the Minister decision of Communication and Information No. 12 / SK/MENEG/KI/2002 on March 1 2002: the

Formation of the e-Government Task Force Organization Development in each government institution of the Republic of Indonesia

In 2018, the government also issued Presidential Regulation No. 95 of Electronic-Based Government Systems (Sistem Pemerintahan Berbasis Elektronik - SPBE). SPBE is the government administration by utilizing the information and communication technology to provide services for the SPBE users. At the Central Institution and the Regional Government, the SPBE is intended to create an efficient, effective, transparent and accountable work process. Also, the quality of public services can be improved. Evaluation of SPBE users is needed so that the implementation of SPBE can run by the objectives and periodically will be able to discover the extent of the progress of the implementation of the SPBE at each Central and Regional Government Agencies. The results of the evaluation will be in the form of SPBE index value which is a representation of the overall SPBE implementation level. Batu City Government gets an index value of 2.47 with a sufficient category.

In the Batu City government, the Regional Apparatus Organization (Organisasi Perangkat Daerah-OPD) which has the task of planning, development and development is the Regional Research and Development Planning Institution (Badan Perencanaan Pembangunan Penelitian dan Pengembangan Daerah-Bappelitbangda). But the results obtained was 2.43, which was still below the specified SPBE standard value that is 2.6. The result was shown from the actual work in Bappelitbangda that is not running as it should so there are some problems arise, resulting in the work was done less effectively and efficiently. Furthermore, based on the results of the SPBE evaluation team, it was explained that there were still some fewer index values. This value is stated in the planning management service indicators and recommendations suggested by the SPBE evaluation team, that it needs to improve the transaction services to be automated services. Those problems in Bappelitbangda which are the cause of the need for improvements to improve the work efficiency and effectiveness by maximizing the use of technology and information technology governance.

Based on the problems that have been described, it is necessary to have a solution to align the business strategy with IS/IT so that the performance of Batu City Bappelitbangda can run well. The solution can be obtained by implementing the information systems strategic planning. The strategic planning later can support the goals of the organization [1]. Strategic Information System Planning (SISP) can be defined as a process in an organization in which to determine the investment in information technology so that the objectives of the organization can be achieved and also may improve its business performance [2]. An organization that does not have a strategic IS/IT will result in the investment systems procurement that does not support the business objectives, and also will result in the data redundancy, data inaccuracies, no coherent sources of information and all projects are evaluated on a financial basis [3]. Moreover, an organization that implements SI strategies might have better performance compared to organizations that do not implement SI strategies [4].

SISP model is used because [5] SISP is a mechanism that can be used to support organizations to ensure IT is aligned with the activities that the organization needs. In this case study Bappelitbangda does need this.

2. Information System Strategic Planning

Since the 1970s, the topic of strategic planning has become an exciting and quite important matter for information systems, whether in developing countries or developed countries. That is because strategic information planning can help managers to define information systems, developing SI strategies and placing resources for SI

strategies [4]. Strategy is an action taken to achieve the goals that have been set in accordance with the plans that have been made [6], and SISP is a process of identifying a portfolio of computer-based applications that will help companies in achieving their goals with business strategies and create excellence for competitors [7]. The definition of SISP also explained as a mechanism used to support organizations to ensure the IT is aligned with the activities required by the organization because SISP is considered one of the critical management issues. Information technology that is associated with proper planning will support the increasing success of an organization [5].

Based on these definitions, it can be concluded that SISP is the process of defining a technology-based application portfolio that will support the business plan of the organization so that the organization can align information systems with the business needs so that the objectives of the organization can be achieved.

The strategic information system planning is intended to ensure that the technology is aligned with organizational needs. The purpose of strategic information system planning covers all aspects needed to facilitate the organization's operations.

The objectives described as follows [5]:

1. IT aligns with business goals
2. Exploring the IT for the competitive advantage
3. Identifying the applications that are new and more effective
4. Increasing the organization leadership's management commitment from
5. Improving communication with users
6. Estimating the need for IT resources
7. Allocating the IT resources
8. Developing SI / IT architecture
9. Increasing the visibility

3. Method

The process/plot used in this study is explained in the figure as follows. The study starts by identifying the organization, Bappelitbangda, to determine internal and external conditions. These conditions are used as a basis for SWOT analysis which the results will produce solutions for SI business strategies, IS/IT management strategies and IT strategies. Then SPBE assessment analysis will be added, and the results will be in the form of a strategy formula analysis based on SPBE.

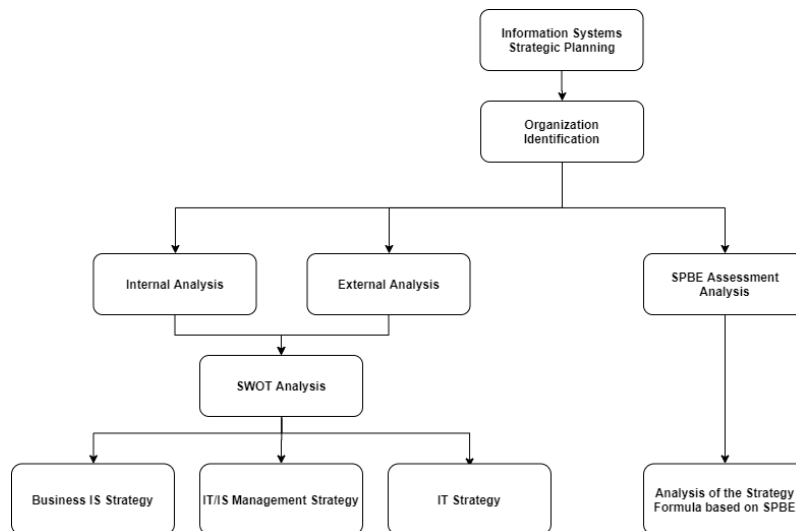


Figure 1. Methodology

4. Result and Discussion

4.1 SPBE Assessment Analysis

Based on the SPBE assessment conducted by the Government of Batu City, there are 37 assessment indicators. But in this study, the focus is on indicators related to the planning. The indicator is at indicator 10, which is the Internal Policy of Planning and Budgeting Management Services, and on indicator 27, which is Planning Management Services. In each indicator assessment, the minimum target value is 3. But the result obtained the value of 1.

The target value needs to be improved to achieve the minimum target value. Based on the results of the recommendations given by SPBE team on the indicators of the Internal Policy of the Planning and Budgeting Management Services, it should be determined by containing the requirements and use of electronic planning and budgeting management services in all work units.

As for the Planning Management Services indicators, it should be done by upgrading to transaction services for the entire process on planning management activities automatically.

4.2 Internal Environment Analysis

The business internal environment analysis is carried out with a value chain analysis by knowing the main activities and supporting activities. Value chain analysis is carried out to find out the main activities and supporting activities of Bappelitbangda.

Value chain is an activities carried out by Bappelitbangda Batu City in delivering the final product, which is the design/plan in the form of RPJMD, RKPD, KUA and the results of kelitbangan.

The main activity of Bappelitbangda starts from the performance planning, which is then realized by performance implementation according to the plan, so the goals and objectives can be achieved. The performance measurement is done to determine whether the implementation has gone according to the corridor and the targets set.

The next step is the performance reporting based on the implementation and measurements that have been carried out. It is used as the evaluation material for further plan because if it is implemented wrongly, another solution can be found, and also what is planned is compatible with the objectives of Bappelitbangda.

Finance, staffing, administration, facilities and infrastructure, planning and control coordination, technical policy planning and technical policy assessment are the activities that support the business process in Bappelitbangda Batu City.

Based on the main and supporting series in the Kota Batu Bappelitbangda business process value chain, a comprehensive observation was carried out to support the analysis while the IS/IT internal environment analysis is carried out by discovering the condition of the SI/TI in the scope of Bappelitbangda.

For supporting the activities in Bappelitbangda, there are only a few hardware supporting which are 25 computers, 15 laptops, 25 printers, three custom printers, one router and eight stabilizers.

The software that already supports the work is e-planning which is software that is used to assist in the preparation and changes to the RKPD and KUA PPAS. For human resources, there are 48 employees in Bappelitbangda. But there is no expert staff in the IS/IT. The handling of IS/IT is carried out only by three employees who have IT backgrounds.

4.3 External Environment Analysis

Currently, the President of Indonesia has set the regulations for each government institution to implement SI/IT in all its duties.

As explained in the introduction, there are several laws, which are: Presidential Instruction No. 3 of 2003 concerning National Policy and Strategy Development of e-governance and the decision of the Minister of Communication and Information No. 12 / SK / MENEG / KI / 2002 dated March 1, 2002, concerning the establishment of a task force for the development of e-governance in each government institution of the Republic of Indonesia.

In 2018 the government also issued Presidential Regulation No. 95 of Electronic-Based Government Systems (Sistem Pemerintahan Berbasis Elektronik - SPBE).

Bappelitbangda, as one of the regional apparatus organizations, works under the Batu City Government, it has a function and task to assist the Mayor in planning, research and development through the regional secretary.

The authority, main tasks and functions (Tugas Pokok dan Fungsi–Tupoksi) of the Bappelitbangda Batu City has been regulated in Mayor of Batu City regulation number 89 of 2016 regarding the position, organizational structure, job descriptions and functions, as well as the work procedures of the Batu City development planning, research and development institution (Bappelitbangda).

The government policy makes Bappelitbangda able to carry out its tasks properly because the tasks and functions have been described in detail so it may achieve the strategic objectives maximally.

Based on the business process map owned by Bappelitbangda, the output produced by Bappelitbangda cannot be separated from community involvement.

Stakeholders involved in the Bappelitbangda business process include ministries, Regional People's Representative Assembly (Dewan Perwakilan Rakyat Daerah–DPRD), Regional Apparatus Organization (Organisasi Perangkat Daerah–OPD), public and community consultation forums, which are expected to improve the quality of services to District heads, regional apparatus organizations, other government agencies, academics and the society.

Other than that, in economic terms, Bappelitbangda as a government agency is not focused on profit-search. Still, it has a target in allocating budgets to regional development by utilizing their resources that may improve the community welfare (community income, employment opportunities, business opportunities, access towards the policy-making, competitiveness and increasing the index of human development).

The budget issues also need to be paid attention by the Bappelitbangda Batu City because the budget revisions might occur due to the pressure on the state budget by the government to control the deficit.

If this risk occurs, Bappelitbangda is required to cut the budget. When it comes to technology, as the regional apparatus organization that is directly related to the entire regional apparatus organization in Batu City, Bappelitbangda does not have adequate technology yet. Since all work is still done manually, there is no integration and any system that may facilitate the Bappelitbangda's goals.

The Bappelitbangda should use information systems and technology to maximize the strategic plan maximally due to the evaluation of SPBE assessments that have been carried out, which Bappelitbangda is getting a low value.

From the results of the evaluation, the SPBE team provides some recommendations that can be used as a basis for better improvement.

4.4 SWOT Analysis

The results of the SWOT analysis owned by Bappelitbangda Batu City are mapped into four strategies consisting of SO (Strength and Opportunities) strategy, WO

(Weakness and Opportunity) strategy, ST (Strength and Threat) strategy and WT (Weakness and Threat) strategy.

The SWOT strategy analysis is described as follows.

Table 1. SWOT Strategy Analysis

Strategy Analysis	Code
The government policy makes Bappelitbangda able to carry out its duties and functions to the maximum because the work guidelines have been outlined in detail	SO1
Bappelitbangda can perform the technology facility improvement as needed because there is a budget to support the Bappelitbangda performance	SO2
Controlling the vision and mission achievement as Bappelitbangda tasks which can be used to improve the quality of community services	SO3
High employee commitment makes it easy for Bappelitbangda to conduct training on IS/IT so it can increase employee insight and competence	SO4
Bappelitbangda, as a regional apparatus organization is in charge of collecting data in the Batu City Government related to the vision and mission achievement. This data can be used as a basis for urban planning in the future	SO5
The assessment recommendations from the SPBE team can be used as a basis for the utilization and basis for IS/IT improvement	SO6
There is still no guidelines for IS/IT developing so it should be done with the support of government policies	WO1
By conducting IS/IT training, it should be able to add insight and competence so the existing problems can be solved by adding competent human resources in the IS/IT field	WO2
Many reporting activities are carried out without the support of information systems which causes inaccurate data and take a long time for the result. Even though the report is used as the basic information for the future development of Batu City	WO3
The recommendations given by the SPBE assessment team can be used as a basis for improvement for the substandard	WO4
Bappelitbangda must be responsible for the achievement of the overall target of the OPD, but in some cases with the amount of OPD which is not small, the data obtained is not accurate	ST1
The main tasks and functions that have been explained in detail should maximize the tasks that have been given, one of them is the evaluation	ST2
One of the Bappelitbangda tasks is to supervise the vision and mission achievement, but this task does not get enough attention	ST3
There is still no guidelines for the IS/IT development, so it causes less optimal use of IS/IT	WT1
The coordination between the department and between the regional apparatus organizations is not maximal, so one of the Bappelitbangda tasks which are the evaluation is not carried out optimally	WT2
Less optimal use of IS/IT in Bappelitbangda performance causes no integrated database	WT3
Evaluation is not carried out optimally because the achievement monitoring process is still carried out with a questionnaire, so the data processing requires a long time, and it must be reported immediately	WT4

Strategy Analysis	Code
The reports that are worked out manually have an impact on inaccurate data because it takes a long time and it must be reported immediately	WT5

4.5 IS Business Strategy

According to the main and supporting activities of Bappelitbangda Batu City, the information requirements needed are:

Table 2. Business SI Strategy Formulation

Activity	Information Requirement	IS/IT Solution
Performance Planning	Planning Data	<i>e-Planning</i>
Performance Implementation	Activity Implementation Data	<i>e-Monitoring</i>
Performance Measurement	Goal Achievement Data	<i>e-Achievement</i>
Performance Reporting	Vision and Mission Achievement Data	<i>e-Reporting</i>
Performance Evaluation	Evaluation of Data	<i>e-Evaluation</i>

Based on the SO, WO, ST and WT analysis, the applications needed by Bappelitbangda are:

Table 3. Proposed Strategy Formula

SWOT Analysis	IS/IT Solution
SO1	The Implementation Audit of the Main Task and Function
SO2	Optimizing the Use of Technology
SO3	<i>e-Monitoring</i>
SO4	IS/IT Insight Training
SO5	<i>e-Monitoring</i>
SO6	Formation of SPBE Team
WO1	Guidelines for developing IS/IT
WO2	IS/IT insight training
WO3	<i>e-Reporting</i>
WO4	Formation of SPBE Team
ST1	SOP and <i>e-Monitoring</i>
ST2	SOP and <i>e-Evaluation</i>
ST3	SOP and <i>e-Monitoring</i>
WT1	Guidelines for developing IS/IT
WT2	SOP and <i>e-Evaluation</i>
WT3	Integrated database development
WT4	<i>e-Monitoring, e-Evaluation</i> and SOP
WT5	<i>e-Reporting</i>

4.6 IT Strategy

The IT strategies proposed for Bappelitbangada are:

1. Optimizing the use of technology
2. *Upgrade e-Planning* application
3. *e-Monitoring* development
4. *e-Achievement* development
5. *e-Reporting* development
6. *e-Evaluation* development
7. Integrated database development

4.7 IS/IT Management Strategy

Based on the analysis that has been carried out, the results show that the proposed IS/IT management strategies are as follows:

1. Implementation audit of the main task and function
2. IS/IT insight training
3. Guidelines for IS/IT development
4. Formation of SPBE Team
5. *e-Monitoring* SOP application
6. *e-Achievement* SOP application
7. *e-Reporting* SOP application
8. *e-Evaluation* SOP application

4.8 Strategy Formula Analysis based on SPBE

The target to be achieved now is to reach a minimum value of 3. In the previous explanation, to obtain the value of 3, indicator ten must fulfil some conditions related to internal policies that support the regulation of all planning and budgeting management system requirements.

In this research, there is a strategy formulation that will meet these indicators, which begins by proposing SOPs for each information system that will be made, so it is expected to support all of the management and budgeting system needs.

For indicator 27, the Central Agency or the Regional Government already has a planning management system that provides transaction services where users can download or upload budgeting information, and the system can respond to users such as the approval and the validation planning activities mechanisms.

In this research, there is a proposed strategy formulation that may comply for achieving the desired value, that is by developing the applications in every activity in Bappelitbangda such as e-planning, e-Monitoring, e-Achievement, e-Reporting and e-Evaluation.

5. Strategy Formula Evalution

The evaluation was conducted using questionnaire and interview method. In the questionnaire, 12 questions intend to find out the Bappelitbangda's acceptance of the proposed strategy formula. Then the interview method is used to dig deeper into the proposed strategy formula which covers four criteria; consistency, suitability, competitive advantage and feasibility. Based on the assessment results of the questionnaire and interview, the proposed strategy formula has been well accepted by Bappelitbangda. However, some factors need to be recked in implementing the strategy formula. One important thing that must be considered is the regulations or the rules because, in a government, all the policy and action taken must go along with the applicable rules.

The selection of participants in this study using purposive sampling. Through purposive sampling, samples are taken from members of the population with certain considerations according to data needs. The sample used to conduct the survey in this study were three people, namely people who understand the condition of technology and business processes at Bappelitbangda. Tehy are Head of the Sub Division of Information Studies and Technology Utilization of Bappelitbangda, Head of Data and Reporting, and Head of the Sub Division of Programs and Reporting.

From the difficulties in implementing the proposed strategy formula, several points exist in the IS/IT management strategy, so it needs to be socialized. After the socialization, some points are observed. If nothing has changed after the socialization,

it means that process is not successful. So the strategies involving employees are more difficult to be applied because they are not familiar with the IT-based work. All this time, usually filling out the data involving information systems is only a formality. Hence, it is necessary to have quality socialization and also supported by the regulations/rules that can force the employees to do it. That means if the strategy that focuses on the application when the developers or programmers who handle the application are available, it may go right ahead. But this IS/IT management strategy is involving all private sectors; many requirements need to be prepared and a long process.

6. Conclusion

Based on the information systems analysis and strategic planning in Bappelitbangda Batu City, it can be concluded there is still minimum use of technology to support the performance. Only one from all five main activities of Bappelitbangda that has been supported by the existing information system and even there are still many that are not suitable with the needs. Therefore, several things need to be repaired for improving the Bappelitbangda performance, such as by adding the human resources that are competent in IS/IT as well as maximizing the use of technology in the Bappelitbangda activities so the good results of business objectives can be obtained, especially the data obtained can be more accurate and integrated. The proposed strategy formula is also expected to help SPBE assessment to achieve the target value. Furthermore, the assessment results given by Bappelitbangda to the proposed strategy formula showed a good acceptance, it can be seen from the assessment in the questionnaire that showed the most respondents' answers were "very agree" and "agree".

However, there is a strategy that needs to be reconsidered when it is going to be implemented, which is at the IS/IT management strategy because that strategy needs to involve the internal sector of Bappelitbangda. Also, there are a lot of things that need to be prepared, and it requires a long process.

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