

Design of Information System Development Strategy

Based on The Conditions of The Organization

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Abstract— The growth of information technology systems caused changes in the role of information technology systems. Now, the role of information technology system is not only for efficiency and effectiveness, but also for the strategy to win the competition. Good design of information system planning development strategy will help The XYZ Credit Union to survive and to compete with competitors, both of the provinces in Indonesia as well as from Southeast Asia. A proposed design of information system planning development strategy that will be discussed in this research is using the BSC analysis method, with CSFs to analyze strategy objective and Critical Factors Influence Of Organizational Strategic Goals, along with gap analysis and Mc Farlan to measure the current information system and the new information system planning that proposed. Results of this research is design of information system planning development strategy to help The XYZ Credit Union business process forward.

Keywords—information system planning; BSC; CSFs; Mc Farlan; gap analysis

I. INTRODUCTION

The growth of Union in Indonesia is now increasing rapidly in its management and there is a change of paradigm in the concept of service. From focusing only on service oriented and now changing to profit oriented. Union organizations are required to enhance the development of management including human resources, assets, financing, logistic, budgeting, and information systems for the independence of Union as integrated public services organizations. To be independent union and to face the changing paradigm of the union from social functions into the socio-economic (profit-oriented), is a necessity for facing *ASEAN Free Trade Area* (AFTA). AFTA is a form of agreement from ASEAN countries to establish a free trade area, in order to enhance ASEAN's regional economic competitiveness by making ASEAN a world production base and creating regional markets for its residents.

The XYZ Credit Union is one of the credit unions in West Kalimantan, Indonesia, which is currently developing. The XYZ Credit Union should be able to see competitors and the world of modern technology to survive and to compete with competitors, both of the provinces in Indonesia as well as from Southeast Asia. Good design of information system planning

development strategy will help The XYZ Credit Union business process forward.

Information system planning is used to align the needs of the business strategy and the strategy of IS / IT to get the added value of an organization in terms of competitive advantage. According to Ward and Peppard, the implications that an organization or company does not have an information system strategy are as follows: [1]

1. The investment system that has been made objectively is not able to support the organization's business
2. Loss of control of the information system
3. Unintegrated systems, causing duplication of efforts and data that impact on the inaccuracy of information resources
4. There is no beneficial effect of priority scale for information systems and can constantly decrease productivity
5. The absence of a mechanism to determine the maximum level of system distributor
6. Management information produced was not good, less consistent, less rigorous or too slow.

To decrease the gap, it requires a paradigm in planning, designing, and managing information systems (Yunis dan Surendro, 2009). According to Arwa et al (2014), successful planning is important to realize the strategic impact of information systems. The main guidance of information system planning is the planning process that must be done in alignment with the organization's plan [2]. Draw up a framework or a portfolio of information systems development, it needed a suite of tools and techniques that can be used as a frame of reference in the development (Ward dan Peppard, 2002). [1]

In a research conducted by Merlina Ivoletti Walukow and Shane Anneke Pangemanan, prepared a suitable alternative strategies, with the aim to be able to meet the targets to be achieved by Handicrafts Ceramic Industry in Pulutan Minahasa Regency [3]. Research conducted using two methods namely SWOT and QSPM. SWOT method is used to measure the condition of the research object and emerged eight alternative strategies that can be implemented. Furthermore, the QSPM method used to define the proposed strategic priorities based on the SWOT analysis results and then a value is generated to determine the priority of implementation. The weakness of this method is the result of strategic alternatives is still

common in the grouping, consequently the focus of implementation is only based on measurement values rather than on clear objective targets. In the BSC method, the results of the analysis show the objective target groups the organization wants to achieve, and the CSF method is used to measure the success of the goal achievement process generated by the BSC method analysis.

II. RESEARCH OBJECTIVE AND METHODOLOGY

The main objective was to get design of information system development strategy for XYZ Credit Union. Subordinate research objectives were identification internal and external environment and help align the direction priorities IT / IS with organizational strategy. Strategic planning of information systems discussed is only to provide potential solutions IS. We used BSC and CSF analysis to analyze strategy objective and measure the capability, profit gained, and other factors that arise in the process of achieving the organization's strategic goals from The XYZ Credit Union, and then mapped into McFarlan and GAP analysis.

Haviluddin and Rayner Alfred used BSC in their research to conducting performance measurement for the management of Information Technology (IT) at Mulawarman University, Samarinda, East Kalimantan, Indonesia [4]. The BSC model was considered a more appropriate research model for evaluating performance and translating the organization's strategic goals into a set of performance indicators. Furthermore, Jaroslava et al described BSC is not only a strategic measurement system and also a strategic strategy that can align departmental and personal goals with strategy [5]. BSC translates the mission and strategy of the organization into a series of comprehensive steps provide a framework for a strategic measurement and management systems. Scorecards and strategy maps show performance information for key performance indicators (KPI) in four main areas or perspectives: [6]

- **Financial perspective** : productivity, revenue, growth, usage, and overall shareholder value
- **Customer perspective** : customer acquisition, customer satisfaction rates, market share, and brand strength
- **Internal perspective** : resource usage, inventory turnover rates, order fulfillment, and quality control
- **Learning and growth perspective** : employee retention, employee satisfaction, and employee training and development

CSF implies the present situation and future potential of the organization, and contributes to a strong strategic planning framework. An enhanced strategic planning framework links the elements of each methodology and improves the depth of analysis and strategic thinking [7].

After BSC and CSF analysis, we mapped into McFarlan and Gap Analysis. In McFarlan analysis, we used the matrix to view the condition of SI / IT today (current application portfolio) as well as the condition of SI / IT planned (future application portfolio). Application Portfolio Matrix can be seen in figure 1.

Strategic	High Potential
Application which are critical to achieving future business strategy	Application which may be important in achieving future business success
Application upon which the organization currently depends for success	Application which are valuable but not critical to business success
Key Operational	Support

Fig. 1. Application Portfolio McFarlan

Each quadrant in the McFarlan portfolios have their respective roles, namely [1]:

- 1) Strategic
- 2) Key Operational
- 3) Support
- 4) High Potential

And then, a Gap analysis is benchmark to develop a technology and information systems needs to observe the current condition of the organization and the future desideratum, with organization's internal and external analysis as the consideration. Aksorn and Hadikusumo told The gap analysis consists of determining the current state and the desired state or target, and hence the gap between the two [8]. In their research, McChain et al. used gap analysis to provide a useful approach to identifying critical practices that can contribute to improving the quality of service [9].

Research methodology include: objectives, place of the research, a technique or order of execution of the study. Research did in The XYZ Credit Union in West Kalimantan, in the beginning of the year until mid 2015. Research began with a literature review, collection and classification of the results, and a summary as well as a model for the presentation of research results.

III. ANALYSIS AND RESULT

The result of this research is design of information system development strategy. Stages of design of information system development strategy can be seen in figure 2. Design implementation of information systems development is in the form of a matrix according to the needs of the organization to business processes and services undertaken. Organizational analysis conducted as a foundation for preparing the development strategy to determine the conditions and objectives of the organization. The data used in this research is a Strategic Plan of The XYZ Credit Union.

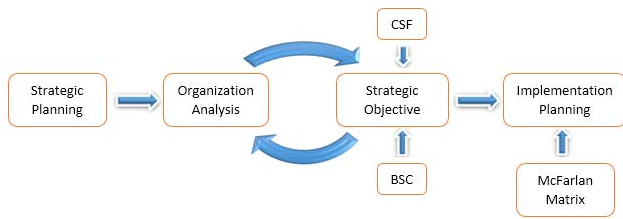


Fig. 2. Stages of Design of Information System Development Strategy

The used of methodes BSC and CSF analysis is to analyze strategy objective and measure the capability, profit gained, and other factors that arise in the process of achieving the organization's strategic goals. Then mapped into McFarlan and GAP analysis, so that we can know more clearly the needs of current and future technology and information systems

A. Strategic Objectives

The strategic objectives of the company, is a description of the desire or goal to be achieved and have strategic value to the company. The XYZ Credit Union strategic objectives forward using Balance Scorecard (BSC) approach. Here are the perspectives of the Balanced Score Card:

- 1) Finance (F)
 - F1. Health Improvement Finance
 - F2. Increased profitability
 - F3. Increased Revenue
 - F4. Decrease in Operating Costs
- 2) Customer (C)
 - C1. Increased savings and loan credit
 - C2. Improved Image The XYZ Credit Union
 - C3. Increased Member Satisfaction
- 3) Internal Process (I)
 - I1. Provision of reliable resources and qualified
 - I2. Quality Improvement of User Friendly applications and integrated online system.
 - I3. Asset optimization
 - I4. Increased Operating Efficiency
 - I5. Increased Efficiency Investments
- 4) Learning and Growth (L)
 - L1. Quality and Quantity of Human Resources Improvement
 - L2. Effectiveness of Organizational and Human Resources System
 - L3. Increased Implementation of Good Corporate Governance, IT Governance and Law
 - L4. Increased utilization of IT

B. CSFs Influence Of Organizational Strategic Goals

Subsequent analysis is done to measure the ability that is owned, benefits gained, and other factors that arise in the process of achieving the organization's strategic goals. Results of this analysis can be seen in the Table I.

TABLE I. CSF Formulation Perspective of BSC

Strategic Objectives	Measured	CSF
F.1. Health Improvement Finance	health	F.1.1. Credit payment by members run well
F.2. Increased profitability	ROR (return of Revenue) on operating asset before corporate tax	F.2.1. Keeping quality and member satisfaction
F.3. Increased Revenue	increase	F.3.1. Increasing the level of loan for each member with an appropriate credit limit F.3.2. Secured income
F.4. Decrease in Operating Costs	Decrease	F.4.1. Pressing cost with integrated and online system F.4.2. Increasing support from policymakers for tax purposes, land and investment provision F.4.3. Improved Financial Management to reduce costs F.4.4. Optimizing risk management to reduce the uncertainty of fluctuations in the cost
C.1. Increased savings and loan credit	Grows every year	C.1.1. Increasing the number of customers by conducting a selective membership
C.2. Improved Image The XYZ Credit Union	Image Index	C.2.1. Increasing the effectiveness of Public Relations and Corporate Image
C.3. Increased Member Satisfaction	Customer Satisfaction Index (CSI)	C.3.1. Innovation products as needed by members C.3.2. Expectation Management
I.1. Provision of reliable resources and qualified	Increased organizational performance	I.1.1. Improving communication with the government and local governments to support increased credit and cooperative I.1.2. Establishing ATM services in strategic places I.1.3. Applying the criteria of planning system
I.2. Quality Improvement of User Friendly applications and integrated online system.	meeting service standards	I.2.1. Implementing IT based customer management system
I.3. Asset optimization	Elimination of non-productive assets Optimization of productive assets (land and building productive)	I.3.1. Improving the asset portfolio I.3.2. Eliminating unproductive assets
I.4. Increased Operating Efficiency	Increased organizational performance	I.4.3. Improving administrative system and reliable transactions

I.5. efficiency Investments	Project investments	Cost	I.5.1. Transparent and accountable procurement process
L.1. quality and quantity of human resources improvement	The level of compliance to the values of the organization <i>Employee Engagement Survey</i> Malcolm Balridge Scores All KPIs can be monitored by Board of Directors through the web		L.1.1. Fulfillment of appropriate quantity of human resources to needs of the organization L.1.2. Fulfillment of appropriate quality of human resources to needs of the organization
L.2. effectiveness of Organizational and Human Resources System	The level of compliance to the values of the organization <i>Employee Engagement Survey</i> Malcolm Balridge Scores All KPIs can be monitored by Board of Directors through the web		L.2.1. Internalizing of corporate culture L.2.2. Implementing Competency-Based Resource Management L.2.3. Improving Performance Management System that is aligned with business strategy L.2.4. Implementing criteria for performance excellence to achieve world-class enterprise L.2.5. Preparing effective organizational structure and adaptive to the needs and demands of the business
L.3. Increased Implementation of Good Corporate Governance, IT Governance and Law	GCG and IT Gov implementation		L.3.1. Improving the implementation of GCG and IT Gov L.3.2. Increasing law compliance in the implementation of business processes
L.4. Increased utilization of IT	Network system Data warehouse Integrated info system coverage		L.4.1. Developing and implementing integrated IT

C. Master Implementation Plan

The final stage is a master implementation plan. At this stage, the recommended information system development projects are defined. Recommendations are potential solution of the information system needs based on analysis has been done. Then prioritization of defined projects, long-term plans, and allocation of SI / IT resources to support the proposed strategic planning.

D. McFarlan and GAP Analysis

Gap Analysis is based on the priorities of the dimensions and information systems based on the results of previous analyzes and other considerations such as the complexity of the proposed information system. Gap analysis of information systems at the XYZ Credit Union can be seen in Table II.

TABLE II. McFARLAN AND GAP ANALYSIS OF THE XYZ CREDIT UNION

Strategic	High Potential
***CRM (<i>Customer Relationship Management</i>) ** Financial Dashboard ***Geographic IS ***Business Intelligence	***Risk Management IS ***Executive IS ***Balanced Scorecard IS
Financial IS *Document Management IS ** Due Date IS ** Loan IS ** Taxation IS ***Logistics IS ***Human Resources IS	***Website (as a medium of socialization to the public) *** IS Governance
Key Operational	Support

Note :

- ** = System is available yet need to be optimized
- *** = System will be planned
- ***# = System will be planned and be priority
- # = Simulation is complete and will be operated

IV. CONCLUSION

- The preparation of a design and utilization of information system strategic plan required an analysis that measures the condition of the organization as a parameter of success of the implementation of the strategic plan.
- Measuring organizational conditions can also create a need for new information systems to support the business processes of the organization. It is raised through the BSC and CSF analysis.
- The emergence of the need for new information systems can also be measured the scale of its needs to the organization as a form of strategic approach of business targets to be achieved. McFarlan and Gap Analysis matrix methods are used to develop development strategies and measure organizational readiness on the application of the information system.
- In preparing the framework of the information system development strategy contained in the strategic plan of information systems required a measurement approach of human resource as another approach of gap analysis method in addition to maturity measurement IS.

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