

Information Technology (IT) Development Strategy of STIE INABA in the Perspective of IT Balanced Scorecard

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ABSTRACT: Strategic planning is a relatively new concept for non-profit organizations (Bryson (1995) and Nawawi (2000)). Strategic planning is needed in order that organizations can offer better service quality for their customers and for the sustainability of their organizations. Nonprofit organizations have people who are focused on achieving specific goals of their organizations (Ireland: 1999: 96-99). Their activities are indeed limited to the budget and a constant need to raise funds through donations and assistance. When discussing about quality, the first thing to consider is to get rid of the notions 1) that nonprofit organizations cannot work like business organizations, 2) that non-profit organizations cannot measure their performance, and 3) that quality improvement techniques cannot be applied to non-profit organizations.

This research was in the form of a case study with Sekolah Tinggi Indonesia Membangun (STIE INABA) as the research subject. The research method used was research and development. Research and development can be defined as a process or steps to develop a new product or improve existing products that are accountable.

Based on the results of the analysis of the data collected, it can be concluded that the performance measurements that had been applied produced less information and less effective strategic planning. IT Balance Scorecard was used to analyze the relevance of the performance measurement indicators that had been established with the Vision, Mission, and strategic objectives of STIE INABA. STIE INABA needs to build an information system in the form of E-learning to support teaching and learning activities.

KEYWORDS: Strategic Development, Information Technology, IT Balanced Scorecard

I. INTRODUCTION

Today, it cannot be denied that information is one of the main resources for an organization to increase competitiveness against its competitors. Therefore, every organization tries to implement a system or information technology to improve efficiency and effectiveness in the business processes, as well as to be able to provide added value in the form of competitive advantage in business competition.

The application of an information technology system will be useful if the application is in accordance with the objectives, vision, and missions of the organization by establishing business strategies and information technology system strategies. Therefore, it is needed an analysis of various factors influencing the formation of the system strategic planning or the information technology that is adaptable and in line with the business strategy. The development of dynamic information technology certainly impacts on those who are not able to follow these changes. One example of a company that has failed to keep up with the development is Nokia. For dozens of years, no one could compete with the success obtained by Nokia. Yet, being once the first is not a guarantee and a justification that it will continue to exist in the world of technology that is advancing today. This is one of the reasons why Nokia became a manufacturer that failed and was unable to compete with others and ended in bankruptcy, as that was the cause of bankruptcy. Nokia's biggest failure was the reluctance to accept drastic changes. Nokia did not make changes for fear of losing customers, so that it ended in a chaos of operating system that was not suitable for the future. Nokia was very aware of the threat of competitors more daring to make changes. That was the reason and the cause of the bankruptcy of the Nokia company.

Millennials cannot be separated from changes. As one of Indonesia's human resources, they can't escape the changes brought by the industrial revolution 4.0. This generation born in the mid 1980-1999 should be prepared for this condition because Indonesia's future is in their hands. They not only have to be smart and master the theories, but also, have high learning ability to keep up with the rapid changes. To be able to have a high level of learning ability, they should train it early on when they are in colleges. In this case, it is educational institutions that play an important role in making millennial generation have high learning abilities. This means that education institutions should be able to hone their students' learning skills to be able to follow the rapid changes. Thus, they can answer the challenges coming with the industry 4.0.

The development of technology has greatly influenced the way of life of the millennial generation, including the use of e-learning in the field of education, where learning activities have begun using this concept. Along with the development of information technology and the demands of globalization of education and distance learning, various concepts, including e-learning concept, have been developed to replace traditional learning methods. E-learning can be used as an alternative to problems in the field of education, either as an additional, complementary or substitute element for the existing learning activities.

To be able to compete in the industry, an organization should have competence for competitiveness. Today, it is not only profit organizations that are demanded to possess the competitiveness. Nonprofit organizations are also required to work professionally like private organizations. An organization is required to have a clear mission (Drucker, 1993), and to be able to survive the changes in its environment (Armitage, 1992). Thus, organizations that are engaged in education like STIE INABA need to make strategic planning in running their organizations. Strategic planning is a process used to evaluate opportunities and risks and determine strengths and weaknesses in the effort to define the company's mission, form long-term goals, and formulate its strategies (Durbin & Ireland (1993) and Hellriegel & Slocum (1992)).

Strategic planning is a relatively new concept for non-profit organizations (Bryson (1995) and Nawawi (2000)). Strategic planning is needed in order that organizations can offer better quality of services for their customers and for the sustainability of their organizations. Nonprofits have people who are focused on achieving their organization's specific goals (Ireland: 1999: 96-99). Their activities are indeed limited to the budget and a constant need to increase funds through donations and assistance. When discussing quality, the first thing to consider is to get rid of the notions 1) that nonprofit organizations that cannot work like business organizations, 2) that nonprofit organizations cannot measure their performance, and 3) that quality improvement techniques cannot be applied to nonprofit organizations.

II. LITERATURE REVIEW

IT Balanced Scorecard

In 1997, Van Grembergen and Van Bruggen adopted Balanced Scorecard (BSC) for use in the Information Technology Department of the organization. In their view, as the Information Technology Department is an internal service provider, the perspective used should be changed and adjusted. By seeing that their users are internal employees and their contributions are assessed based on the views of the management, they propose changes as shown in Figure 1 below, from Traditional BSC to IT BSC.

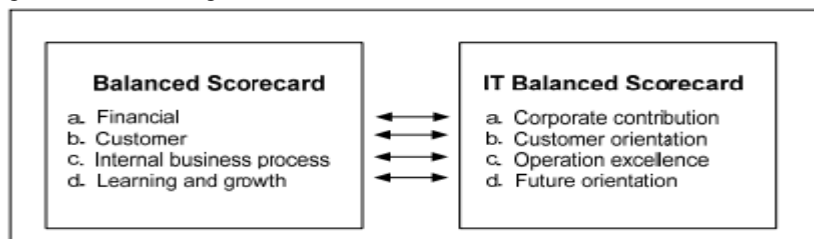


Figure 1. Changes in the perspective from Traditional BSC to IT Balanced Scorecard



Figure 2. Traditional BSC perspective

IT Balanced Scorecard is a modification of the traditional Balanced Scorecard. The reason they made these changes was that the IT units in a company usually serve the internal needs of the company and the projects are usually carried out for the benefit of overall units of the company. (Keyes, 2005: 94). The four perspectives of the Balanced Scorecard are then modified into corporate contribution, user or customer orientation, operational excellence, and future orientation.

The advantages of using the IT Balanced Scorecard are:

1. That companies can develop their IT performance analysis broadly and specifically, including several perspectives of customer or user orientation, corporate contributions, operational excellence and future orientation;
2. Increasing the effectiveness of IT projects to meet strategic needs of companies;
3. Improving the relationship and dialogue between IT and companies and customer business units;
4. Providing broader understanding and acceptance of IT initiatives through clear and comprehensive communication;
5. Positioning the technology more in the increase of competitive advantages.

The perspectives in IT BSC performance evaluation are:

1. Corporate Contribution

This perspective is based on the view of the executive management, the shareholder directors. The IT evaluation consists of:

- a. Short-term financial evaluation, and
- b. Long-term evaluation of IT projects and functions.

The added value of information technology involves risks in its achievement. The use of financial benchmark as the only measure of organizational performance has several weaknesses, including:

- a. potentially encouraging managers to take short-term actions at the expense of long-term interests, which can result in increased financial performance in the short run, but can be detrimental in the long run;
- b. the neglect of the non-financial measurement aspects, including intangible assets and intangible benefits, that, in general, can give incorrect views for managers regarding the conditions of the organizations in the present and in the future;
- c. the obsolete financial performance benchmarks that not fully guide the organization towards future goals.

2. User Orientation

This perspective evaluates IT performance based on customers' perspective on the existing business units. In this case, the company should identify the customers and the targeted market segments to be able to harmonize the various customer measures, such as satisfaction, loyalty, retention, acquisition, and profitability, to the customers themselves and to the company's market segments. Thus, if customers as the users do not feel satisfied, there can be many complaints, or even it can lower their performances in the future. In general, this perspective has two measurement groups as follows:

- a. main group, consisting of the measures of market share, customer retention, customer acquisition, customer satisfaction, and customer profitability;
- b. performance driving group, the customer performance driving factors that offer the customers value proposition provided by the organization; this value proposition expresses the attributes that the organizations give to their products and services to create customer loyalty and satisfaction.
 - *Product / Service Attributes* include functionality, price, and quality of the products or services.
 - *Customer Relationship* includes customer feelings towards the transaction process of the products offered by the organizations. This is very much influenced by the organizational responsiveness and commitment to customers regarding the issue of delivery time. Time is an important component in organizational competition. Customers usually consider a fast and timely order settlement as an important factor for their satisfaction.
 - *Image and Reputation*; the strategic planning of the measurement information system describes intangible factors that attract a consumer to relate to the organizations.

3. Operational Excellence

This perspective assesses IT performance based on the perspective of IT management itself, and furthermore that of the party related to the audit and the parties that determine the rules used. The operational excellence of an organization can be seen in the running internal business operations, which can be divided into:

- a. Innovation

In this case, business units explore understanding of the latent needs of customers and create the products and services they need. The innovation process is then carried out, and after going through a series of tests, fulfilling marketing requirements, and being able to be commercialized, the products or services are then introduced to the customers. This activity is an important activity that lasts for the long term so that it determines the success of the organization in the present and in the future.
 - b. Operation

This is a process of making and delivering products or services. In this process, the measurements related can be grouped based on time, quality, and cost.
 - c. After sales service

This process starts when products or services have been sold or used. Organizations can measure whether their efforts in this process are in line with customer expectations. Measurements in this process can use benchmarks of quality, cost, and time.
4. Future Orientation
- This perspective evaluates IT performance based on the perspective of the department itself. In this perspective, organizational infrastructures that allow goals to be achieved in three other perspectives will be prepared. The ability of an organization to be able to produce products or services in the future with satisfying service capabilities should be prepared from now on. The management should be able to predict trends in the future and make preparatory steps to deal with them. There are three categories that can be specifically considered in handling in the future:
- a. Capability of Employees

Planning and implementation of the retraining of employees who can guarantee their intelligence and creativity can be mobilized to achieve organizational goals. The three main generally accepted measurements are:

 - a) Employee satisfaction;
 - b) Employee review;
 - c) Employee productivity.

The important driving factors are:

 - a) Staff Competence; the need for retraining can be seen in two dimensions, i.e., the level of training needed and the percentage of employees who need retraining. If the level of retraining of employees is low, training and normal education will be sufficient for the organization to maintain work capabilities. In this case retraining is not a priority in the IT Balanced Scorecard. Different things apply to the opposite situation, where employees need special training.
 - b) Technology Infrastructure; this reflects the appropriate strength and goals of the technology used by the organization in achieving its objectives. Factors that can be included in this category include: the use of strategic technology, the use of strategic databases, experience owned, and patents or copyrights.
 - c) Science to act; these driving factors are usually caused by certain situations and conditions created in the implementation of business processes as well as in achieving the organization's strategic goals. The factors in this category include: strategic focus, staff empowerment, employee morale, and teamwork.
 - b. Information System Capability

For workers to work effectively, it is needed the support of data and information generated by the system used such as the matters relating to customers, market conditions, internal processes, and financial consequences of organizational decisions.

Information System Strategy

According to Ward and Peppard (2002: 44), information system strategy is a strategy that defines the needs of an organization or company for information and systems that support the overall business strategy of the organization. Ward and Peppard (2002: 28) also defined that information systems strategies are supporting operations or management processes that provide companies with strategic products, services, and capabilities for competitive advantages.

Information System Strategic Planning

System can be defined as a set of integrated elements that are operated, and each of which, with predetermined and limited explicit capabilities, works synergistically to provide added value, and allows users to vision-oriented operational needs in the operating environment, and determined by certain results and the probability of success. (Wasson, 2006: 11). Each system usually has several goals divided into subsystems which overall contribute to the achievement of system goals.

Whitten and Bentley (2007: 6) described that a system is a collection of interconnected components that function together to achieve desired results. Turban (2005: 56) stated that system based on the image below is divided into three different parts: input, process, and output. These parts are surrounded by an environment and often involve a feedback mechanism. In addition, the decision makers are also considered part of the system.

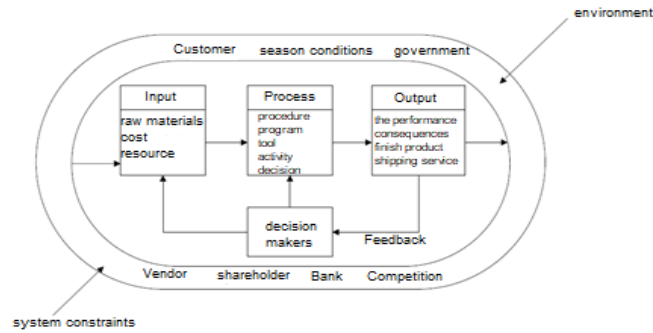


Figure 3. system and environment

III. RESEARCH METHODOLOGY

This research was in the form of a case study with the subject of research STIE INABA. The research method used research and development. Research and development can be defined as an accountable process or accountable steps to develop a new product or improve the existing products.

The products do not have to be in the form of objects or hardware such as books, modules, and learning tools, but can also be software such as computer programs. In this research, research and development method was used to produce information system strategic planning models of STIE INABA.

IV. DISCUSSION

Information Technology System Strategic Planning

Information technology system strategic planning has the following stages:

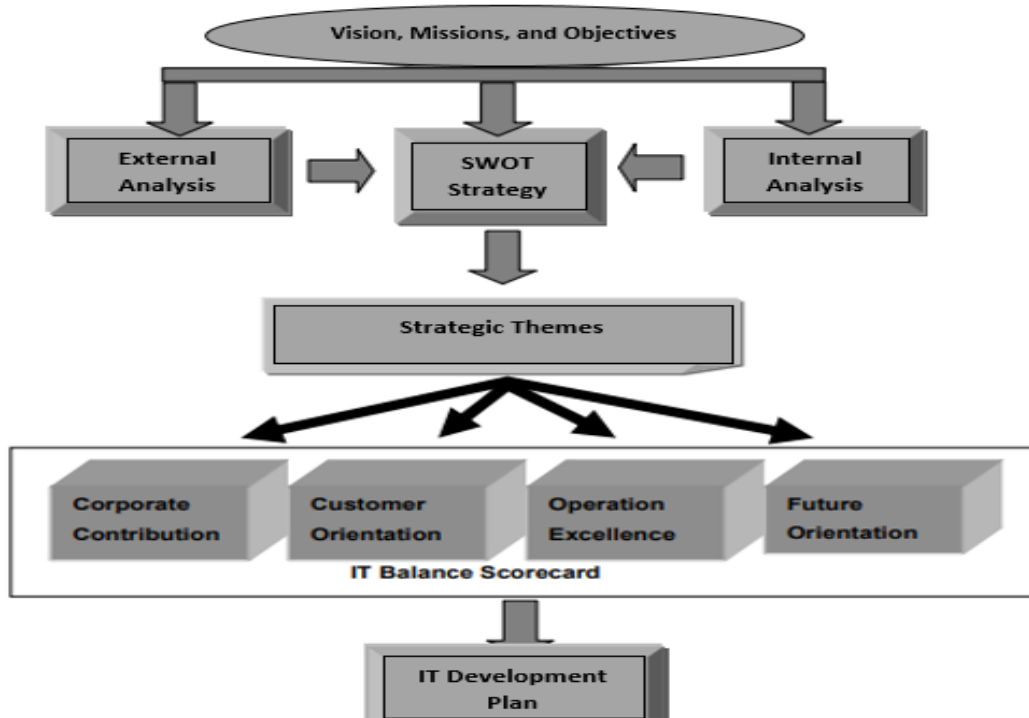


Figure 4. Information Technology System Strategic Planning Process

The stages or flow of research that have been carried out, can be seen in Figure 5.

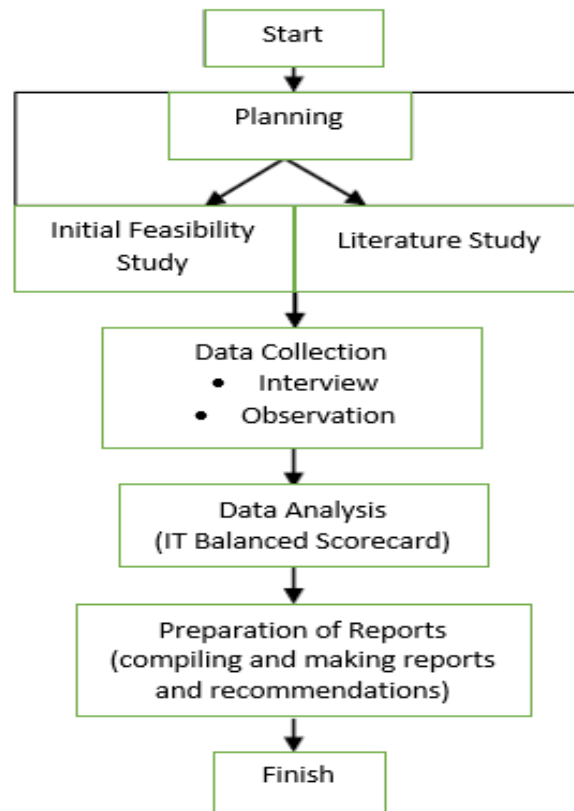


Figure 5. Stages of Research

The initial stage of this research was beginning with the researcher determining the topic that becomes the question or problem, i.e., the performance analysis of IS and IT. The researcher then determined the place of the case study or the object to be studied. The second stage was planning, which includes initial feasibility study and literature study. The initial feasibility study was to analyze initially the condition of the object under study in order that the researcher would be able to determine and prepare the needs during conducting the research. Literature study was a process of collecting literature related to the performance analysis of IS and IT using a literature study method to support employee performance with the aim that researchers would be able to understand the case study. The literature was obtained through books, journals, related internet articles, and electronic books. The next stage was the collecting field data based on the case study. In the field data collection, there were two activities carried out, i.e., and interviews. Observation is a technique of collecting data by observing directly the object under study, whereas interview is that by conducting question and answer to informants who are related to the research with the aim of getting the information needed. And to process the interview data, the researcher used the benchmark from the 4 perspectives of the IT Balanced Scorecard outlined in the results and discussion, which were described as follows:

Strategic Goal	Key Performance Indicator (KPI)
Corporate Contribution Perspective	Learning Quality Index
<ul style="list-style-type: none"> Institutional Quality Increase 	Attendance Index Compliance with the Learning Event Units and Syllabi Quality of teaching materials Information technology increase
User Orientation Perspective	Learning Quality Index
<ul style="list-style-type: none"> Institutional Satisfaction Lecturer Satisfaction Student Satisfaction 	Attendance Index Compliance with the Learning Event Units and Syllabi Quality of teaching materials Timeliness of Learning Event Units creation and submission Timeliness of submission of exam questions

	Timeliness of submission of exam result scores
	Utilization of Information Technology
Operational Excellence Perspective	Learning Quality Index
<ul style="list-style-type: none"> Lecturer Performance 	Attendance Index
	Compliance with the Learning Event Units and Syllabi
	Quality of teaching materials
	Timeliness of Learning Event Units creation and submission
	Timeliness of submission of teaching materials
	Timeliness of submission of exam questions
	Timeliness of submission of exam result scores
	Number of research result publications
	Number of publications of community service results
	Information technology that can improve lecturer performance
Future Orientation Perspective	The increase of the quantity and quality of IT facilities and infrastructure to support e-Campus activities.
<ul style="list-style-type: none"> Better learning quality More effective and efficient learning 	Information Technology that controls the Attendance Index
	Learning Quality Index supported by Information Technology
	Information Technology that controls the Attendance Index
	Information Technology that helps suit Learning Event Units with the Syllabi
	Information technology that improves the qualities of teaching materials

1. Corporate Contribution Perspective

Every organization should strive to realize its Vision and Mission, so that it can have clear objectives. The existing vision and mission are expected to be one of the indicators towards good direction ahead. Vision and Mission are the reference, so that the organization knows where they must move, and what they will produce should also be clear.

VISION

To become an excellent School of Economics in the fields of Accounting, Management, and Entrepreneurship.

MISSION

1. Organizing quality and relevant higher education;
2. Creating an academic atmosphere conducive to the development of economics;
3. Providing good services to all stakeholders.

OBJECTIVE

1. Characteristic and highly competitive human resources;
2. Contributions to economics;
3. Healthy and independent colleges;
4. A reputable college in Indonesia.

Seeing the Vision and Mission, STIE INABA acknowledges that good performance provides good results. Surely, it always tries within the limits of its abilities. STIE INABA realizes that the advancement of Information Technology until now is very rapidly developing and the competition is getting tougher, and that information technology is one of the important assets for the progress of the company. Therefore, as a college, it should follow the developments and be ready to carry out new innovations in the field of information technology. STIE INABA's daily activities need to be helped by using technology to make it easier for them to work.

To facilitate and help the performance of STIE INABA, it needs application assistance, as the function of one of the applications that it uses is to encourage teaching and learning performance there.

2. User Orientation Perspective

The users referred to in this perspective are all stakeholders. As explained in the perspective of the corporate contribution, the performance of STIE INABA is necessary with the help of an application system. After the application has been made, they get training and learning for the use of the application. The application needs to be monitored in order that the problems will not occur, and if problems occur they must be addressed immediately, so that users will not feel disappointed. That is why, STIE INABA needs to prioritize the quality of the application that will be built in order to create comfort for users of the STIE INABA community. The applications that are built will strongly support their work, but quality assurance should always be not only for the convenience of stakeholders but also for the convenience of the employees themselves.

3. Operational Excellence Perspective

Employee performance assessment based on the IT perspective itself is a subject discussed in the Operational Excellence perspective. Employee performance, that can be seen in the project completion process requested by stakeholders as well as the rules in the work process, greatly influences the future progress of the company.

As explained earlier, the application made by STIE INABA needs to be monitored by competent human resources. Prioritizing stakeholder satisfaction is one of the supporting factors for organizational progress, and this is very much realized by STIE INABA. This gives added value to the institution itself and added value to stakeholders. STIE INABA always strives to solve problems on time, of course within the limits of their abilities.

Based on the perspective of the IT Balanced Scorecard, the effect of control and supervision of the performance of related parties can also greatly help good performance, especially for STIE INABA, who facilitates the system itself. Therefore, there should be clear and directed control. For STIE INABA itself, the software and hardware should also be maintained to keep supporting work. Moreover, network quality was good enough. Although there emerge problems, the employees always try to handle it.

4. Future Orientation Perspective

Speaking of future orientation, knowledge is one of the most influential assets for the growth and progress of an organization or a company. STIE INABA needs to keep up with technology. STIE INABA needs to build an information system that can improve the performance of the college. One that needs to be built is the teaching and learning system in STIE INABA. The availability of the advanced learning system can create learning activities that are interesting, easy, and efficient. To support a good system, support from reliable human resource is also needed. Employee recruitment based on ability and skill is also very influential for achieving what is desired by the company. The placement process according to job descriptions should also be considered and should be determined before the start of the work period. The job description given also should fit employees' abilities and expertise because this can affect their performance in the future. The division of tasks based on skills and abilities and experience should be very clear to STIE INABA employees.

STIE INABA always strives to provide good services. These are inseparable from the complaints from stakeholders. This can be felt from the level of satisfaction and complaints. Because of the importance of the presence of Information Technology, the security of office data and assets should always be carried out so that the company's assets are maintained properly. For the security of the company IT and company information, STIE INABA must do company data backup. Complaints from stakeholders cannot be addressed immediately and must wait 2-3 days.

V. CONCLUSION

From the results of the analysis of the data collected, it can be concluded that the performance measurements that had been applied produced less information. Strategic planning was carried out less effectively. IT Balance Scorecard was used to analyze the relevance of performance measurement indicators established with the Vision, Mission and strategic objectives of STIE INABA. STIE INABA needs to build an information system in the form of e-learning to support teaching and learning activities.

BIBLIOGRAPHY

Books

- [1]. Lonnie D. Bentley and Jeffrey L. Whitten, *Systems Analysis and Design for the Global Enterprise*, 7th Edition, International Edition (New York: McGrawHill, 2007).
- [2]. Andrew J. Durbin and R. Duane Ireland, *Management and Organization*. Second Edition (Cincinnati, Ohio: South-Western Publishing, Co., 1993).

- [3]. Charles S. Wasson, Interscience, System Analysis, Design and Development (New York: Wiley, 2006).
- [4]. Don Hellriegel and John W. Slocum, Management, Sixth Edition (Massachusetts Addison-Wesley Publishing Company Inc., 1992).
- [5]. Efraim Turban, et. al., Decision Support Systems and Intelligent Systems (Yogyakarta: Andi, 2005).
- [6]. Hadari Nawawi, Manajemen Sumber Daya Manusia Untuk Bisnis yang Kompetitif (Gajah Mada University Press, Yogyakarta, 2000).
- [7]. John M. Bryson, Strategic Planning for Public and Nonprofit Organization. Rev. Ed. (San Francisco: Jossey-Bass, 1995).
- [8]. John M. Ward and Joe Peppard, Strategic Planning for Information Systems (Great Britain: John Wiley & Sons Ltd, 2002).

Journal Papers

- [9]. Yoyo Sudaryo, Ade Salman Alfarisi, dan Astrin Kusumawardani, Customer Relationship Management Scorecard (CRM Scorecard) Model to Support Performance in Higher Education, Man In India (MII), 97 (24), 2017, 149-160.
- [10]. Yoyo Sudaryo, Method Analytic Network Process (ANP) Financing Performance for Measuring on the Higher Education, International Journal of Applied Business and Economic Research (IJABER), 15(6), 2017, 27-34.