THE ANALYSIS OF ORGANIZATIONAL ENVIRONMENT ON CIBINONG SCIENCE AND TECHNOLOGY PARK (C-STP)

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ABSTRACT

Cibinong Science and Technology Park (C-STP) is an organization with a business system that is open, therefore, the organization's relationship with the internal and external environment will affect business performance organizational C-STP. Organizational structure, personnel and leadership style are the basic components of the internal environment of the C-STP. Meanwhile, changes in the environment, the complexity and number of resources are the basic components of the external environment that consists of elements outside the organization who mostly cannot be controlled, but influential in managerial decision making of C-STP. The purpose of this study was to find solutions related to the organizational environment to C-STP business performance when connected to the business environment. This study is a theoretical test, particularly on the influence of the organizational environment to C-STP business performance. With the approach of the analysis of the Balanced Scorecard (BSC), the results showed that the dimensions of the internal environment of the organization from the perspective of financial performance is quite good, while on the customer perspective on the external environmental dimension of organizations on performance indicators, like user satisfaction, user profitability, user retention to show good results. Meanwhile, in the perspective of the business process with performance indicators in the process of operation is quite good, although the process of innovation seen still weak, while learning and growth perspective with performance indicators at the level of productivity of personnel, the level of retention of personnel, and the satisfaction of the personnel is good and shows the level of productivity personnel have increased. The most important problems within the C-STP organization is a matter of internal business processes, especially in the management of the budgeting related to various factors, be it regulation or delays in budget execution process. Thus, that can be recommended is an improvement on the design and planning of a better budgeting.

KEYWORDS: Organizational Environment, Cibinong Science and Technology Park (C-STP), Balance Score Card (BSC), Business Performance

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INTRODUCTION

Background

In general, the process of the development of Science and Technology Park (STP) is the activity that brings together in one space between the users and consumers of knowledge with the aim of provoking key synergies and facilitate the flow of knowledge and technology among all the organizations that are part of the community (Link, 2009). The Cibinong Science and Technology Park (C-STP) itself is an area in Cibinong, Bogor, West Java Province - Indonesia, which is designed to be a vehicle for the implementation of the technology transfer process intellectual property and research and development of Lembaga Ilmu Pengetahuan
Indonesia (LIPI)\textsuperscript{1} to the community in order to contribute for improving the economic and regional competitiveness. C-STP has a function as a center for the promotion of technology development, technology incubators and centers and information technology services. This shows that the C-STP tends to be referred to the definition of United Kingdom Science Park Association (UKSPA, 2012), which provides business support in the form of technology transfer initiatives to encourage start-ups through incubation innovation. In addition, C-STP provides support for knowledge-based businesses, providing greater business environment. C-STP can also be a specific interaction center and is central in the creation of mutual knowledge between organizations, users, stakeholders and shareholders. On the other side, C-STP has formal and operational relationships with centers of knowledge creation such as universities, institutions of higher education and research organizations that exist, and is part of the C-STP external environment organizational.

Meanwhile, the external environment organizational of C-STP associated with development policy Science and Techno Park (STP) in Indonesia that has been set in the “Rencana Pembangunan Jangka Menengah Nasional (RPJMN) 2015-2019" and "Presidential Decree No. 2 Year 2015 "as follows: (1) Development of Taman Sains dan Teknologi Nasional (National Science Techno Park, NSTP) is directed to function as: (a) The development center of advanced science and technology; (b) The growth of new entrepreneurship center in the field of advanced technology; (c) Centre of advanced technology services to business and industry; (2) Development of Science Parks in the Province directed to function as: (a) Provider of the latest technological knowledge to the public; (b) Provider of technology solutions that are not resolved in the techno park; (c) As an advanced technology application development center for the local economy. (3) Development of Taman Techno (Techno Park) in the District/City redirected to function as: (a) The application of the technology center to boost the economy in the Regency /City; (b) The training, internships, technology dissemination center, and business advocacy center to the public. Various technical programs, incentives and facilitation which will be developed by C-STP will accelerate the transfer of technology to industry and society. The technology will be transferred and disseminated not only from LIPI, but also from other sources in and outside of the country. Thus, the industry and the public access to the technology becomes easier and faster towards improving the competitiveness of industry and society. From the above description shows that can be understood clearly how much impact the organizational environment in C-STP becomes very important if it’s associated with the performance of the business, because C-STP business performance not only were influenced by the environmental dimension of the internal organization, but also external environmental dimensions of C-STP organizational split into several factors, namely; factors, economic, social and cultural factors, political and regulatory factors, technological factors, demographic factors, factors suppliers, consumer factors, substitution products /services, and factors of competitors. Nevertheless, it is important to understand whether the two dimensions of the organizational environment in C-STPs real implications on their business performance.

\textsuperscript{1}Lembaga Ilmu Pengetahuan Indonesia (LIPI): Indonesian Institute of Sciences is a non-ministerial government institution of the Republic of Indonesia which is coordinated by the Ministry of Research, Technology and Higher Education which is responsible to the President. LIPI carry out government duties in the field of scientific research in accordance with the provisions of the legislation in force, while the functions of LIPI is; (1) Study and formulation of national policies in the field of scientific research; (2) The fundamental scientific research; (3) The implementation of inter and multi-disciplinary research focused; (4) Monitoring, evaluation of progress, and review of the tendency of science and technology; (5) Coordination of functional activities in performing the tasks LIPI; (6) Fostering of activities of government agencies in the field of science; (7) To provide guidance to public administration.
METHODS

Data Collection

The method used is descriptive quantitative analysis method, an analysis of the data can be calculated to produce quantitative interpretations covering performance measurement dimension-based C-STP business environment in each perspective. Once the data is processed, and analyzed to obtain a conclusion of the existing problems. Before taking measurements must first be determined weight or importance level management of C-STP against each perspective balanced scorecard. The target and measure of the results is the weighting criteria to do so that performance measurements provide an indication of a more detailed and is directly related to the organization. Kinnear in Hermanto (2009:59) argues that the more important a perspective, the greater the weight given. Giving weight is done by using the method of Paired Comparison. This method is used to determine the weight of each indicator on the four perspectives of the balanced scorecard based on the level of interest or influence on the organization. Weighting is done by filing an identification with management or experts.

Balanced Scorecard Approach

- Financial Perspective

Mulyadi and Setiawan (2001:347) explains that the financial performance measures indicate whether the strategy, goals, strategic initiatives and implementation is able to contribute in generating profits for the organization. Financial measures generally expressed in profitability, growth and value for shareholders. Financial perspective can be measured through financial ratios appropriate to the financial statements profitability ratio, which is a tool to analyze or measure the level of business efficiency and profitability achieved by the companies concerned. Generally, the ratio used is: (1) Return on Assets (ROA). This ratio is used to measure the ability of management to gain overall, and (2) Return on Investment (ROI). This step is used to align the revenue generated by the level of investment. Measurements used can be very different at every stage of the business life cycle. Kaplan and Norton (2000:42-43) divide the business life cycle into three stages, namely; (1) Growth Phase, this is the initial stage of the business life cycle. In this phase of business organizations usually have negative cash flow and return on capital are low, then the measurement used is the rate of growth in sales or revenue; (2) Maintain Stage, this stage of the business organizations is expected to maintain existing market share, and gradually grows every year. Most business organizations at this stage would set financial goals related to profitability. (3) Stage Harvest, is the final state in which the business of investment profit organization that has been planted. This stage is achieved by the organization in producing the products/services have reached saturation point. Overall financial objectives for the business at this stage is the operating cash flow (before depreciation) and saving various working capital requirements.

From the above description, the financial perspective in the organizational environment in C-STP include economic ratio’s, the ratio of the efficiency and effectiveness on the dimensions of the internal environment, while the external dimension factors include financing from government sources and existing business partners.

- Customer Perspective

The customer perspective enables business organizations to identify and quantify the proportion of the value to be given by the organization to customers and target markets. Mulyadi (2001:238) states that the size that can be used to measure success in achieving the target of strategic customers are: (1) market share; (2) customer acquisition; (3) customer
loyalty; (4) customer satisfaction; and (5) profitability customer. The market share reflects the proportion of businesses owned by business organizations in these market segments. Customer acquisition reflects the business organization's ability to attract or winning new customers or business. Customer loyalty reflects the organization's ability to sustain or maintain relationships with existing customers. Customer satisfaction reflects the business organization's ability to satisfy customers based on certain criteria (such as quality, time, price). Customer profitability reflects the ability of services to customers or specific market segments in generating profits.

From the above description, then the customer perspective on organizational environment in C-STP is including customer satisfaction, customer profitability, customer retention and customer acquisition on the dimensions of the external environment, while the internal dimensions include internal customer satisfaction and internal customer profitability.

- Internal Business Perspective

This perspective refers to the operations conducted within business organizations. In this perspective, the organization's performance is measured on how the organization is run, and whether the business organization can operate in the production or service effectively and efficiently. Kaplan and Norton (2000:83) explains that the internal business perspective, there are three main components, namely (1) the process of innovation; in the process of innovation, business unit researching emerging customer needs or are still hidden, and then create products or services that will meet those needs, (2) operational processes; Business organization operating from receipt of customer orders and ending with delivery of products or services to customers, and (3) the service process; This process is service activities to the customer after the sale of products or services performed.

From the above description, the perspective of internal business processes at the organizational environment in C-STP includes the operating process, the process of innovation, leadership and organizational structure on the dimensions of the internal environment, while the external dimension factors include government regulation and competition.

- Growth and Learning Perspective

Growth and Learning Perspective is related to the perspective of human resources. There are three dimensions that must be considered in this perspective, namely: (1) The ability of Employee. Measurements were made at three main points, namely the measurement of employee satisfaction, measurement of employee turnover in the organization, and employee productivity measurement; (2) Capability Information Systems. Measurements can be done by measuring the percentage of availability of the information required by the employees of the customer, the percentage of availability of information on the cost of production or services and others; (3) Motivation. A form of empowerment and authority limits for employees. Measurements can be done through several dimensions, namely: (a) the measurement of the advice given contribution to the organization and implemented; (b) Measurement on increasing and improving employee performance; and (c) measurement limitations of individuals in the organization.

Balanced scorecard emphasizes the organization's efforts to implement an investment for the future, including investment in human resources, systems and procedures. Human resources need to be given regular training to improve their skills or abilities to meet the needs, wants and expectations of customers who are always changing in the environment business organizations. This system needs to be improved by applying information technology. In this perspective to measure the importance of a business organization in order to continue to pay attention to their employees, to monitor the welfare of employees and increase employee knowledge of the organization itself.
From the above description, the business perspective of internal processes at the organizational environment in C-STP is personnel satisfaction, personnel retention and productivity of the personnel on the dimensions of the internal environment, while the external dimension includes human resources and member participation capital.

Beside 4 (four) the balanced scorecard perspectives, this study will also be excluded social perspective as one measure of organizational performance. This is done because the object of this research is the C-STPs which is a program of government institutions in general one of the indicators of institutional success in question is the ability to encourage community empowerment efforts, especially for entrepreneurs and small and medium enterprises.

RESULTS
The Influence of Organizational Environment on Business Performance

Temtime and Pansiri (2004), in research on 203 small and medium enterprises (SMEs) in Botswana entitled "factors of success and failure is critical in developing economies" questionnaire as a tool for gathering research data, and analyze the data by using descriptive and inferential statistics. The results of these studies indicate that the development of human resources, organizational development, the background of the manager, leadership and competitive strategy are important components that affect the performance of the organization. The main criticism of this research is the research question still contain fundamental flaws in the design aspects of research, conceptualization and operationalization of the factors that become important aspects of SME business success and failure. Thus, more needs to be re-exploration in the study to incorporate external factors, such as government regulation, competition, and so on. In addition, research conducted by Muniziu (2010) with the title of "the influence of external and internal factors on the performance of micro and small enterprises in South Sulawesi - Indonesia", which involved 300 respondents. Next, Mappingau&Maupa (2012), in empirical studies of small food processing company in South Sulawesi, Indonesia, conducted research on 137 small business units in the snack maker. The study using stratified random sampling and questionnaire as techniques and tools to collect research data, and data analysis with block-way engineering analysis. Results were documented empirically internal factors (the availability of start-up capital, the desire to be independent, family support, a model of entrepreneurship, personal skills, and work experience) and external factors (the availability of help and support from the government, availability of processing technology, the availability of raw materials and options market) that simultaneously and positively affect the growth of small businesses. The criticism may be issued for such research is the conceptualization of the organization's growth has not been clearly defined, so that further studies of the study was to be developed a variable performance of the organization more scalable. Furthermore, Herman (2011), in the study of the influence of the character and the business strategy of the organization's performance. The study uses questionnaire involving 200 respondents, and data analysis using descriptive analysis approach and Structural Equation Modeling (SEM). The study concluded that government regulation, competition and business location significantly affect on business strategy, while the performance of small businesses are significantly affected by government regulation, competition and business characteristics through business strategy. The criticism may be made to the study is the uncertainty of the environment variable in examining the relationship between business strategy and organizational performance, so that in future studies it must be ensured that the variables considered as one of the dimensions of the variable business strategy. From a partial picture of the influence of each variable that consists of the external environment, internal environment, and the performance of business organizations, it can be set up as a research paradigm that can be shown in Figure 1.below. This study attempts to explain and predict the impact of the external and internal environment to the organization of C-STP business performance.
Figure 1: Theoretical Framework

From the figure 1., it can be arranged a matrix that can describes the elements of the organizational environment in C-STP which selected for the analysis of business performance with Balance Scorecard method as shown in the following table 1.:

Table 1: Selection Matrix Elements of Organizational Environment on the Balance Scorecard

<table>
<thead>
<tr>
<th>Balanced Scorecard Perspective</th>
<th>Organizational Environment</th>
<th>Internal Environment</th>
<th>External Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial Perspective</td>
<td>Economic Ratio</td>
<td>Government Funding</td>
<td></td>
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<tr>
<td></td>
<td>Efficiency Ratio</td>
<td>Financing Business Partners</td>
<td></td>
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<tr>
<td></td>
<td>Effectivity Ratio</td>
<td>Customer Satisfaction</td>
<td></td>
</tr>
<tr>
<td>Customer Perspective</td>
<td>Internal Customer Satisfaction</td>
<td>Customer Profitability</td>
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<tr>
<td></td>
<td>Internal Customer Profitability</td>
<td>Customer Retention</td>
<td></td>
</tr>
<tr>
<td>Internal Business Perspective</td>
<td>Operation Process</td>
<td>Competitor</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Innovation Process</td>
<td>Government Regulation</td>
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<td></td>
<td>Leadership</td>
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<tr>
<td></td>
<td>Organization Structure</td>
<td></td>
<td></td>
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<tr>
<td>Growth and Learning Perspective</td>
<td>Personnel Satisfaction</td>
<td>Human Resources Capital</td>
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<tr>
<td></td>
<td>Employee retention</td>
<td>Member Participation</td>
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<td></td>
<td>Personnel Productivity</td>
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Measuring performance of the financial perspective in the framework of the organizational environment in C-STP using a benchmark value for money which was developed by Mardiasmo (2002), which consists of 3E ratio, namely; ratio of economy, efficiency and effectiveness ratio. Economic ratios used to determine how closely the organization manages the budget available and there is no wastage. The operational activities are said to be economical when able to eliminate or reduce the appearance of costs unnecessarily. Value ratio of C-STP economy in 2015 amounted to 65.46%, but in 2016
increased by 29.37% to 94.83%. This indicates that the better economic performance ratio, although not maximized. This is because in principle the achievement budgeting budget of less than 100% indicates that the preparation of the implementation of the budget less careful planning. An agency is said to successfully perform the duties and functions if it can absorb 100% of government budgets, management of C-STP need to review in budgetary matters are set to be not too big nor too small for further spending.

The next level of efficiency ratios is used to see how efficiently organizations manage expenses to earn income. C-STP performance is said to be efficient if the ratio achieved is <100%. The smaller the value of the efficiency ratio, the better of the C-STP performance. The value of the efficiency ratio in 2015 amounted to 11.93%, but in 2016 increased to 12.86%, this indicates that the performance of the C-STP is good, because the value of the efficiency ratio less than 100%, this means that C-STP has managed using funds efficiently, but the performance of the efficiency ratio in 2016 decreased compared to 2015. Furthermore, the ability of C-STP in performing the task is said to be effective if the ratio reached a minimum of 100%. The higher the value achieved effectiveness ratio describes the ability of C-STP getting better. Value-effectiveness ratio in 2015 amounted to 86.84%. This shows that the performance of the C-STP is not good, because the ratio value obtained is less than 100%. 2016 C-STP managed to meet revenue targets to be achieved, the value-effectiveness ratio in 2016 amounted to 107.40%, indicating that the C-STP performance is getting better, because the ratio obtained value exceeds 100% and revenue C-STP has exceeded its revenue target desired.

Furthermore, measurements of C-STP user satisfaction is measured by distributing questionnaires to the user as much as 76 respondents to identify how much the C-STP user satisfaction with the services provided by the organization. Based on the results obtained by descriptive analysis illustrates that the C-STP obtain user satisfaction index of 74%, this indicates that the C-STP is able to provide services to the user properly. The organization's ability to address the dimensions of service assurance, responsiveness, empathy, reliability and direct evidence. Based on the five aspects to prioritize the aspect of empathy is an important part of the environmental dimension of the internal organizational. Meanwhile, the profitability of the user is used to measure how much revenue achieved of C-STP services deals. The higher value of profitability demonstrates the profitability of service offerings better. Based on the analysis of the obtained user profitability of 99.88%, which indicates the service offer made of C-STP is getting better. This means that the quality of services provided by C-STP is good. Next is a user retention that shows how much C-STP can maintain a relationship with the user. The higher user retention rate showed that the better performance of the C-STP in maintaining relationships with consumer/user. Based on the analysis shows that the retention of user on C-STP is increased. In 2015, the value of user retention amounted to 70.18% and in 2016 the value of user retention increased to 71.48%.

User retention value in 2016 were higher than in 2015 indicates that the C-STP has a maximum in maintaining user trust of the organization. Meanwhile, user acquisition shows how much C-STP is able to attract customers or new user. The greater level of user acquisition indicates that the C-STP performance is getting better either. Based on the analysis it appears that the acquisition of the user on C-STP has decreased, in 2015 the value of the user's acquisition is 30.09% and in 2016 decreased to 28.52%. The declining value of the acquisition of the user indicates that the C-STP performance in attracting new users is still not good. This is because in 2016 the C-STP bit to offer new services (lessinnovation process).

Furthermore, internal business process perspective consists of the innovation process, operations, leadership, organization structure, competitors and government regulation. In the process of operation are instrument-level use of technology and patents by the user as well as the cooperation of business collaboration. In 2016 the level of use of
technology and patents have hit the target. This indicates that the C-STP managed to increase user confidence to utilize the technology and patents in C-STP. While the achievement scores of business cooperation is 1.58%, has reached the target and better than in 2015. This indicates the quality of the user in the adoption of technology is getting better. Meanwhile, the assessment of the performance of the C-STP in the learning and growth perspective in both the environmental organizational dimension by using measurements of productivity levels of personnel, personnel retention and satisfaction levels of personnel, human resources and member participation capital. Achievement scores of these five indicators on the learning and growth perspective in 2015 amounted to 17.42%, and in 2016 is 25.66%. Overall achievement scores have not reached of desired target, but increased. Thus, it can be said that the learning and growth perspective on C-STP on the year of 2015-2016 has been quite good. This indicates that the skills of personnel are better for their training from the organization. To improve the performance of learning and growth perspective should be improving the skills of personnel, operations and maintenance techniques through training programs that should always held the organization's personnel.

The relationship between the four perspectives above in business organizational environment in C-STP is a causal relationship, where the results of learning and growth perspective shows the average number of personnel productivity amounted to 11.33%; personnel retention of 2.81%; and satisfaction of personnel by 68%. The conditions such personnel support capabilities right strategy and efficiency through the business process perspective in providing services to the user, then it will affect the rate of diffusion of technology of C-STP to the business community. Meanwhile, internal business process perspective that will effectively able to submit a specific value to the user via the customer's perspective, which is the average level 74% user satisfaction; user profitability of 97.12%; user retention by 70.83%; and user acquisition amounted to 29.31%. The overall performance of the three perspectives (learning and growth perspective, internal business perspective, and customerperspective) will be reflected in the magnitude of the benefit obtained C-STP to meet the target set by the Government. It can be seen in the average effectiveness ratio of 97.12%; because C-STP is a program of the government agency funded from the state budget, it is required to reduce the cost of operations in order to achieve the revenue target that has been set. It can be known from the average efficiency ratio of 12.29% and an average economic rate of 80.15%.

CONCLUSIONS

Associated with the organizational environment influence on C-STP business performance, theories that already exist on the management and organization to make do with more emphasis on the influence of internal and external organizational environments to improve business performance. Based on the research that C-STP performance from a financial perspective as measured using research instruments value for money covering, economic ratio, the ratio of the efficiency and effectiveness ratios indicate that there are still large expenditures to generate revenue, making it less efficient, but the amount of expenditure is still under budget are set so that it can be concluded that the environmental dimension of the internal organization from the perspective of financial performance is quite good. While on the customer perspective on the external environmental dimension of organizations, the performance of the C-STP with customer satisfaction indicators (new businesses, small and medium enterprises, and other users), customer profitability, customer retention shows good results. This is reflected in the level of user satisfaction which shows that most users were satisfied, with satisfaction score of 74%, this indicates that the consumer/user is satisfied with the C-STP services provided, enabling it to maintain a relationship with the consumer/user and can attracting consumers/new user. Meanwhile the C-STP internal organizational environment is viewed from the perspective of business processes, with indicators of operating processes is
quite good, although in the second year of the program (year 2016) still looks weak for innovation process. Furthermore, the dimensions of the C-STP internal and external organizational in the perspective of learning and growth with the indicator level of productivity of personnel, the level of retention of personnel, and the satisfaction of the personnel is good, it can be seen that increased in the level of productivity of personnel, and a satisfaction survey of personnel that shows the value of 68%, the rate of retention of personnel in each year is relatively small.

RECOMENDATION

The most important problems within the C-STP organization is a matter of internal business processes, especially in the management of the budget related to various factors, be it regulation or delays in budget execution process. Thus, that can be recommended is an improvement on the design and planning of a better budget. Meanwhile the environmental issues related external factors of business organization including support market access for C-STP user really a problem. Thus, recommendations can be given is the improvement in the sector of information infrastructure information technology and support. Back in internal organization environment, it is becoming important to reward the achievement of personnel, multiply training and development of personnel in order to satisfaction of personnel. It is an effort in support of the motivation of the management of C-STP to improve quality of service C-STP personnel to the user for the better.

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