Design System for Employee Performance Evaluation Based on Competence by Using Key Performance Indicators (KPI)

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Abstract

The aim of this study was to determine how to design a system to access a performance of employees, in accordance with the vision, mission and strategy of the organization as well as to determine the measures of performance indicators in the form of Key Performance Indicators (KPI) in accordance with the vision, mission and strategy of the Institut Teknologi Adhi Tama Surabaya (ITATS). This study used a qualitative approach. Samples were taken based on certain considerations, which amounted to 6 people who already meet the requirements, namely as employees of Computer Center, and Information Systems from ITATS. This research use approach KPI (Key Performance Indicators). The results showed that the performance appraisal system could be designed to determine in advance of the vision, mission and goals of the organization. After identifying the vision, mission and goals of the organization then drafted strategic objectives. From the strategic objectives set performance goals and mapped out the role of each unit to achieve performance goals. After elaborated description of the authority and responsibility of the business unit, which is used to compile KPI relegated to a table that outlines the job description of each individual. Of each job description, then made a table with accompanying KPIs and size of each individual achievement against key indicators in certain periods.

1. Introduction

Performance Assessment System (PAS) are not only done and needed by the business world (manufacturing and services) but also by the world of education. In the framework of the importance of performance appraisal in education to make the Directorate General of Higher Education (Higher Education) inserts a performance assessment into the format of the new management to improve the quality performance assessment (accreditation) and the evaluation of the performance of a higher education both public and private (Agung, 2011).

Performance Assessment System (SPK) of National Accreditation Agency (BAN) is more emphasis on the implementation of the criteria for the assessment of higher education and licensing requirements so it is more Administration. In other words, emphasis on the external impact. In fact the introduction of quality performance to plan the functional activities is toward continuous quality improvement which is still not fully realized (Mulyadi *et al.,* 1999). So that formed SPK more emphasis on the impact of internal and not merely administrative as well as

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having a major role towards achieving the vision and mission and have a correlation with the strategy therefore SPK formed to be built on the vision, mission and strategy of college.

Research on how to assess the performance of a unit working with KPI method has been done by previous researchers among others by: David Parmenter (2010), Antolic (2011), Dragana *et al.* (2011), Gabcanova (2012), and Elita and Annike (2015). However, research on the assessment of the performance of the business unit in ITATS has never been done.

Institut Teknologi Adhi Tama Surabaya (ITATS) is a private university located in East Surabaya. The problem that occurs is that the performance appraisal system applied currently not in accordance with the competence of each employee so that the organization is difficult to assess whether these employees are on the right track in accordance with the job description (job description) of each of them or the employee's lose focus of the work so that it can become an obstacle in the growth of the organization. Institut Teknologi Adhi Tama Surabaya (ITATS) as one of the private universities in Surabaya is necessary to establish the new Performance Appraisal System for the creation of the vision and mission as part of a quality assurance system. Good Performance Assessment System should be integrated in all units and activities at the college. Therefore KPI method is a method that is appropriate for use.

This research was conducted at the Center of Computer and Information Systems ITATS who are considered to represent other work units that exist in ITATS. Based on the organizational structure of PUSKOMSI researchers identified there are 2 business process, in which each business process that has job specifications with each other's differences are quite obvious. So it seems obvious the limits of responsibility of each staff which will make it easier to measure the achievement of each individual.

The purpose of this study is to design a system of performance appraisal and lecturer in Institut Teknologi Adhi Tama Surabaya (ITATS) based competencies include:

1. Improve the existing DSS in order to obtain new and better system in accordance with the vision, mission and strategy ITATS.

2. Determine measures of performance indicators in the form of Key Performance Indicators (KPI) in accordance with

the vision, mission and strategy ITATS.

2. Theory

Richard E. Boyatzis (2008) argued: competences are knowledge and skills, as well as relevant autonomy and responsibility of a person basic characteristics of a person. According Zurnali Cut (2010) the determination of dimensions of competence that is often used in research competence is based on the opinion of Boyatzis (2008) which summarizes the expert opinion as follows: Boyatzis (1982); Spencer and Spencer (1993); Goleman (1997), and Goleman *et al.* (2002) which classified competence it into three dimensions namely:

a. Cognitive competencies (cognitive competencies); this dimension emphasis on systems thinking and pattern recognition of the workers / employees to do the job.

b. Emotional intelligence competencies (emotional intelligence competencies); The emphasis of this dimension, the self-awareness and self-management competencies of workers / employees in the form of emotional self-awareness and emotional self- control in carrying out its work.

c. Social intelligence competencies (social intelligence competencies); this dimension emphasis on social awareness and relationship management competencies of workers / employees in the form of empathy and teamwork should have in running a job.

3. Research Methodology

Key Performance Indicators (KPI) or also known as Key Success Indicators (KSI) is a quantitative measurement tool for the improvement of the performance of an activity that is becoming a key factor in the success of an organization (Neely and Adams, 2000). According to David Parmenter (2010) in his book entitled" Key Performance Indicators (Development, implementation and use of KPI Selected)", KPI presents a set of measures that focus on aspects of organizational performance is the most important thing for the success of the organization at this time as well as for the future. Scheme of plot preparation of KPI in the organization is there must be a relationship (link) between the vision, mission, strategies, and KPI. Scheme of plot can be explained in Fig. 1 below:
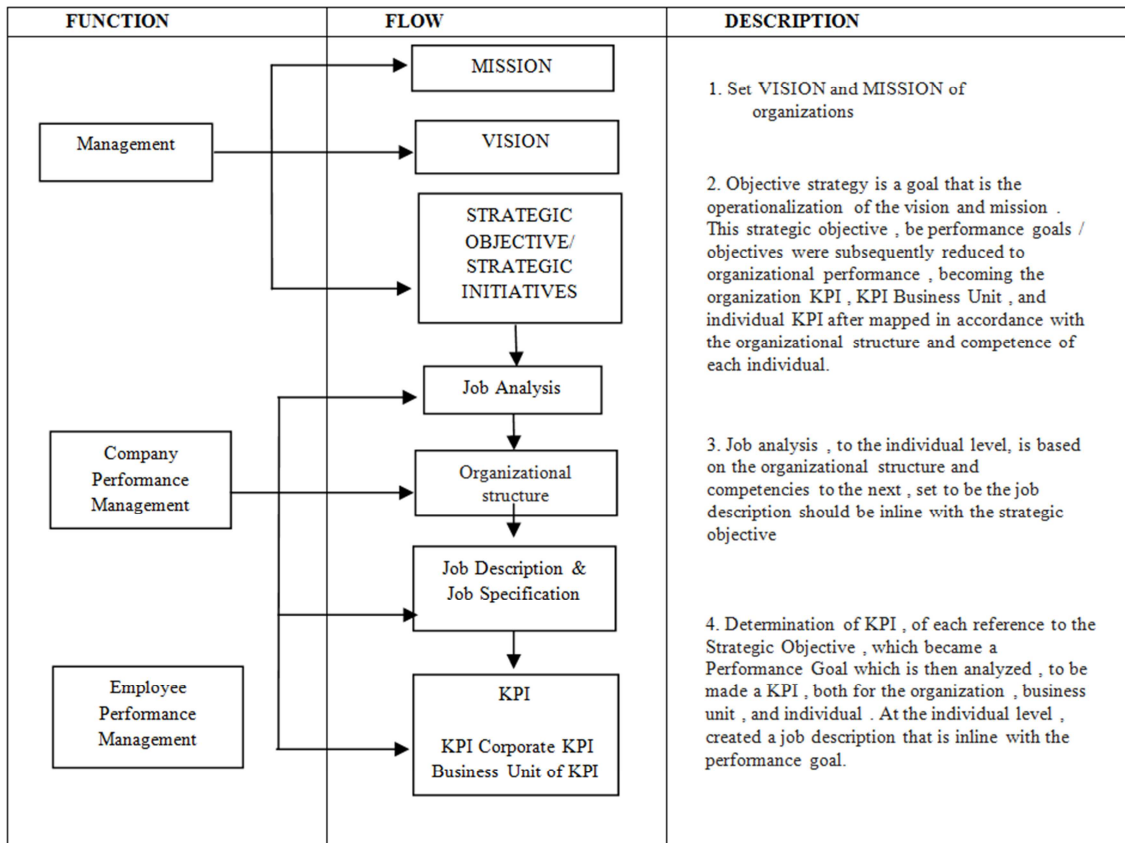
Fig. 1. Plot for the preparation of KPI.

4. Result & Discussion

4.1. ITATS Vision

To construct a strategic goal then should be identified first vision, mission and goals of ITATS. From this strategic goal then is determined performance goals and mapped out the role of each unit to achieve performance goals.

Vision of ITATS is that ITATS as a trusted institution in the education and development of science and technology which supports the industrialization and sustainable development.

4.2. Strategic Goals

Strategic goal is a goal that is the operationalization of the vision and mission. ITATS strategic objectives of the Operational Plan for 2007-2012. Program to 4 is to provide the infrastructure that supports the quality of the institute according to the vision ITATS.

4.3. Develop KPI Individuals

Having described for each job description then made the KPI by using the following format:

Tabel 1. Format for Performance Assessment (Performance Appraisal).

Performance Goal/Strategic Objectives	KPI	Weight	Target	Realization	Score	Perform. Real
Profesional employee Job Description: Conduct research and training development and administration of information systems with the aim to increase the knowledge and ability of the head and staff of Puskomsi	The amount of research and training already held	15	number is 2 in 1 semester			
Handling complaint: Job Description: Conducting surveillance the staff working on the implementation of the EDP and JII & TS with the aim to minimize the complaints of students and other business units in ITATS.	(%) Success rate of employment of staff EDP and JII & TS	15	100%			
Service Job Description: Evaluate the performance of the Internet and intranet on ITATS environment with the aim of improving services to students and faculty.	(%) Remain and smooth access to Internet networks and information systems on campus during the first semester	20	100%			
Environment Job Description: Control and supervise the use of information systems and internet / intranet network in ITATS for the	(%) The need for an information system and	15	100%			

Performance Goal/Strategic Objectives	KPI	Weight	Target	Realization	Score	Perform. Real
purpose of smoothness and safety in the spread of the Internet network in ITATS.	internet / intranet network of business units is fulfilled					
Productivity Job Description: Evaluate the performance of staff Puskomsi according to the job description of each staff with the aim to increase productivity.	Percentage of job completed on time	20	100%			
Competence Job Description: Prepare a work plan for the annual / half related to the development management and implementation and operation of information systems with the aim to increase staff competence in Puskomsi.	The amount of work plan reached	15	Number is 5 in 1 semester			
Amount		100				Total

Heading: PUSKOMSI
Supervisor: Foundation & Rector
Level: Full

Tabel 2. The format of Performance Assessment (Performance Appraisal).

Performance Goal/Strategic Objectives	KPI	Weight	Target	Realization	Score	Perform. Real
Profesional employee Job Description: Following training on networks and information systems with the aim to increase the professionalism of employees.	Number of training followed	15	2/ 6 month			
Handling complaint: Job Description: Assist departments in terms of academic data connection process with the aim to resolve complaints from students or faculty.	Percentage issues resolved	20	100%			
Service Job Description: Do the installation of internet and intranet networks with the aim of improving services to students.	Percentage installed of the internet & intranet network in each business unit	20	100%			
Environment Job Description: Maintain availability of the source network system with the aim to smooth administrative processes and information systems in each business unit in the environment ITATS.	Percentage of the network can be accessed smoothly without interruption in the first semester	30	100%			
Productivity Job Description: To collect data regularly and repair the right when computers were damaged with the aim to increase productivity.	The percentage improvement of the computer device timely	15	100%			
Amount		100				Total

Heading: PUSKOMSI – Internet Network Staff & Technical Support
Level: Full
Supervisor: Head of PUSKOMSI

Tabel 3. The format of Performance Assessment (Performance Appraisal).

Performance Goal/Strategic Objectives	KPI	Weight	Target	Realization	Score	Perform. Real
Profesional employee Job Description: Following training Dbase and Academic Information System with the aim of increasing the professionalism of employees.	Number of training followed	10	2 in 1 semester			
Handling complaint: Job Description: Monitoring guardianship online Intranet with the aim to handle complaints from students or faculty.	Percentage of success of the process, a guardianship, of all students during the first semester	20	100%			
Service Job Description: Perform data entry and printing of data output according to the schedule which has been determined the completion time which is appropriate to the purpose for the smooth administrative processes of students faculty and department.	Percentage of entridata, printing and distribution of output are completed on time	30	100%			
Environment Job Description: Conducting the process of uploading the data to the SIA website in order to facilitate all business units in ITATS accessing data requirements via the SIA website.	The percentage of data that has been uploaded to the website SIA	20	100%			
Productivity Job Description: Evaluate the process of data entry and printing output data in accordance with the instructions and directives from the leadership with the aim of improving productivity.	The percentage of each job completed according to the specifications	20	100%			
Amount		100				Total

Heading: PUSKOMSI – Data Entry staff and Processing
Level: Full
Supervisor: Head of PUSKOMSI

On the KPI tables weights and the target is determined by the leadership of the business unit in this case is the Head Puskomsi. Realization of the KPI table shows the actual achievement in the period of assessment. Scores obtained from the calculation:

As for the real performance is obtained from the calculation:

1. $\frac{Realization}{Target} \times 100\%$

2. $\frac{Score \times Weight}{100}$

4.4. Calculation from Final Value of Performance

For the final assessment point of performance not only use the KPI scores alone but uses the value of competence. Competence according Zurnali Cut (2010) are grouped into three dimensions namely: Cognitive competence, Competence of emotional intelligence and Social intelligence competencies. Based on the theory, the researchers describe and classify some individual competence in PUSKOMSI as follows:

a. Cognitive competencies: is a problem-solving and decision-making, innovation, planning, management and technical knowledge / profession according to his position

b. Emotional intelligence competencies: customer orientation and orientation on quality

c. Social intelligence competencies: cooperation and communication

To calculate the value of competence then compiled the assessment table as follows:

Tabel 4. Format competency assessment for head of Puskomsi.

No.	Competence Assessed	Weight	Ideal value	Actual value	Rating	Score
1.	Customer orientation: the ability to provide the best service to students.	10	5			
2.	Cooperation: the ability to work in groups to achieve organizational goals.	10	4			
3.	Orientation on quality: the ability continuously to make improvements.	10	5			
4.	Innovation: ability to provide creative solutions, with new methods and better solve the problems of work.	15	3			
5.	Planning and management: the ability to perform work planning and resource management.	15	4			
6.	Communication: The ability of expression both oral and written are systematically clear and understandable.	10	4			
7.	Problem solving and decision making: ability to analyze problems and identify the source of the problem formulate a solution and execute decisions based solutions.	15	4			
8.	Technical knowledge / profession corresponding position.	15	5			
	Amount	100	29			total

Heading: PUSKOMSI – Head of PUSKOMSI
Level: Full
Supervisor: Foundation (YPTS)/Rector

Tabel 5. The format of assessment competence of staff of Puskomsi.

No.	Competence Assessed	Weight	Ideal Value	Actual Value	Rating	Score
1.	Customer orientation: Ability to provide the best services to students.	20	5			
2.	Cooperation: The ability to work in groups to achieve organizational goals.	15	4			
3.	Orientation on quality: the ability continuously to make improvements.	15	5			
4.	Innovation: the ability to provide creative solutions with new methods better in solving the problems of a job.	10	3			
5.	Planning and management: the ability to perform work planning and resource management.	5	4			
6.	Communication: The ability of expression both oral and written systematically clear and understandable.	10	4			
7.	Problem solving and decision making: ability to analyze problems and identify the source of the problem formulate a solution and execute decisions based solutions.	10	4			
8.	Technical knowledge / professions in accordance with its position.	15	5			
	Amount	100	29			STK

Heading: PUSKOMSI – Staf
Level: Full
Supervisor: Head of PUSKOMSI

Format competency assessment of these individuals researchers used the same competence between the head and the staff Puskomsi the difference is a supervisor or assessor. Head of Puskomsi assessed by Foundation (YPTS) or Rector while staff Puskomsi assessed by the head of Puskomsi. Weights and ideal values the format competency assessment is determined by the supervisor or the assessment team. The actual value is the actual individual achievements during the assessment period. Rating obtained from calculations:

While the final score of competence obtained from

3. $\frac{\text{Actual value}}{\text{Ideal value}} \times 100$

4. $\frac{\text{Rating}}{100} \times \text{Weight}$

From the value of performance and competence can be obtained a final score of performance appraisal by the formula:

5. $\text{PA} = (C + P)/2$

where:

PA = Performance Appraisal

C = Competence

P = Performance (Source: Agung Riksana, 2011)

5. Conclusions

From the results of research and discussion are used to answer the problem formulation it can be concluded as follows:

1. To design and develop appraisal system performance employees in accordance with the vision, mission and strategy of Institut Teknology Adhi Tama Surabaya (ITATS) then was composed of the performance appraisal system based on individual competence through KPI approach. From the results of the final assessment of performance (performance appraisal) it can be seen whether the performance of the institution, business unit performance and individual performance is appropriate or not in accordance with the objectives of the organization.

2. To determine the measures of performance indicators such as Key Performance Indicators (KPI) in accordance with the vision, mission and strategy of the Institut Teknologi Adhi Tama Surabaya (ITATS) the first step is determined first strategic goal is a goal that is the operationalization of the vision and mission. From the strategic objectives set

performance goals and mapped out the role of each unit in achieving the goals of performance because in order to achieve one aspect of the performance goal unit. Where it certainly has a role and responsibility full and partial or support. After elaborated description of the authority and responsibility of the business unit, then compose KPI which is derived in a table which is a derived from the job description and KPI of each individual. Having described the job description of each KPI then made of each individual.

References

[1] Agung R. 2011. Literature Study: *Key Performance Indicators* (KPI) and Performance Assessment on Educational Institutions. (Agung.blog.stisitelkom.ac.id) accessed on September 9, 2012.

[2] Antolic Z, 2011. *An Example of using key performance indicators for software development process efficiency evaluation*, Internal Ericsson Documentation, Stockholm, Swedia.

[3] Boyatzis, RE. 2008. *The Competent Manager: A Model for Effective Performance*, John Wiley & Sons Inc.

[4] David Parmenter. 2010. *Key Performance Indicators, Developing, Implementing, and Using Winning KPI,* PT. John Wiley & Sons, New Jersey, Canada.

[5] Dragana V, Milan V., and Rude S, 2011. *Role and importance of key performance indicators measurement*, Serbia Journal of Management, Vol. 6 (1), pp. 63-72.

[6] Elita A, and Annike L. V., 2015. *Key performance indicators for sustainable manufacturing evaluation in cement industry*, 12th Global Conference on Sustainable Manufacturing, Procedia CIRP 26, pp. 19-23.

[7] Gabcanova Iveta, 2012. *Human resources key performance indicators*, Journal of Competitiveness, Vol. 4, Issue 1, pp. 117-128.

[8] Goleman, D. 1997. Emotional Intelligence: Why it can matter more than IQ. Bantam Books, New York.

[9] Neely, A. D., and Adams, C. A. 2000. *The Performance Prism Can Boost M & A Success,* Centre for Business Performance, Cranfield School of Management, UK.

[10] Spencer, Lyle. and Singe M. Spencer. 1993. Competence At Work Models For Superior Performance. John Wiley & Son, Canada.

[11] Zurnali Cut. 2010. *Learning Organization, Competency, Organizational Commitment, dan Customer Orientation: Knowledge Worker - Kerangka Riset Manajemen Sumberdaya Manusia di Masa Depan*. Unpad Press: Bandung.