

## OPERATIONAL RISK IDENTIFICATION IN ADMINISTRATION SERVICES OF HIGHER EDUCATION

Robby Anzil Firdaus<sup>1</sup>, Rahmat Nurcahyo<sup>2</sup>, Anafi Yuan Septiari<sup>3</sup>, Supriadi<sup>4</sup>

<sup>1</sup>Industrial Engineering Departement, Universitas Indonesia, Indonesia

<sup>2</sup>Industrial Engineering Departement, Universitas Indonesia, Indonesia

<sup>3</sup>Industrial Engineering Departement, Universitas Indonesia, Indonesia

<sup>4</sup>Vocational Education Program, Universitas Indonesia, Indonesia

e-mail addresses: robby\_anzil@yahoo.com

### ABSTRACT

*The main objective of this research is to identify risk in administration services of higher education. Risk identification is needed to fulfill the new requirements of Quality Management System ISO 9001:2015. A framewrok from Risk Management ISO 31000:2009 is used. The result shows there are 64 risks from 18 administration service procedures. Analysis shows there are 18 low-level risks, 35 medium-level risks and 11 high-level risks.*

*Key words: Administration Services, Higher Education, Risk Identification.*

## 1. INTRODUCTION

ISO 9001 is useful for an organization which wants to increase customer satisfaction by applying a system effectively, including continuous improvement, customers, legal requirements and applicable regulations suitability guarantee. ISO 9001 has been revised for four times in 1994, 2000, 2008 (The British Assessment Bureau, 2015) and the fourth revision was started in the middle of 2013, ISO Technical Committee 176 (Quality Management System and Quality Assurance). The revision has been published in September 2015, named ISO 9001:2015. According to Technical Committee 176 (TC 176) ISO's statement in their official website, the change done in this revision is an improvement on leadership involvement; language, structure and simplified terms; synchronization of Quality Management System (QMS) policy and objectives with organization's strategy; and a new concept called risk based thinking. (ISO/TC 176, 2015). Risk based thinking concept in ISO 9001:2015 requires an organization to do a risk management as one of quality management system standard requirements.

Administration services is one of supporting activity in higher education organization such as vocational program. In order to improve quality management system, an Indonesia vocational program institution is going to do an ISO 9001:2015 certification. Since risk based is integrated in ISO 9001:2015 requirements, the institution must identify any risks associated with the administration services. This underlies this research which focuses on risk identification in administration services as one of QMS' requirements in ISO 9001:2015.

## 2. THEORETICAL BACKGROUND

### 2.1 Quality Management System

Quality Management System (QMS) is a set of documented procedures and standard practices for system management which aims to ensure a synchronization between a process or a product (goods and/or services) and specific needs or requirements. There are some main characteristics of Quality Management Systems, such as:

- a. Quality management system focuses on the consistency of working process.

- b. Quality management system is based on mistake prevention which makes it proactive instead of mistake detection which is reactive.
  - c. The biggest proportion should be aimed on early attempt of mistakes prevention.
  - d. Quality management system is consisted of the following elements: objectives, customer, outputs, processes, inputs, suppliers, and measurement for feedback and feedforward.
2. The possibility of loss
  3. Uncertainty
  4. The dispersion of actual from expected result
  5. The probability of any outcome different from the one expected

Risk is a condition which occurrence is caused by uncertainty with a possibility of unfavorable consequences. Looking at the definitions stated above, the types of risk could be classified into a few groups. Frame & Davidson (2003) classified the risks into a few sections, namely pure risk, business risk, project risk, operational risk and technical risk.

## 2.2 ISO 9001 – Quality Management System

ISO 9001 is a Quality Management System (QMS) standard. ISO 9001 is applied on an organization which needs to demonstrate its ability in creating products which meets the customers' demand and the applicable legal requirements in order to improve customers' satisfaction. ISO 9001 focuses more on the process and customers' satisfaction than the procedures, therefore ISO 9001 could also be implemented in all types of organization, both service and manufacture. According to ISO 9001:2015, the main requirements are:

- Context of the organization
- Leadership
- Planning for the Quality Management System
- Support
- Operation
- Performance evaluation
- Improvement

Each of the requirements above has its own sub points. Risk based thinking is addressed in one of the sub points included in Planning for the Quality Management System. This sub point addresses risk management as one of ISO 9001:2015 requirements.

### 2.3 Risk Concept

As stated by Arthur J. Keown (2000), risk is a prospect of an unwanted result. And as believed by Emmaett J. Vaughan and Curtis M. Elliott (1978), risk is defined as;

1. The chance of loss

According to Santosa (2009), the source of risk could be classified into internal risk source which takes place in a specific control field because it happens in internal environment, and external risk source which comes from beyond the organization and is out of control because it is often affected by the outer environment.

### 2.4 Operational Risk

Operational risk has a wide and complex dimension, which source is a combination of various sources in an organization, technology system processes and policies, users, and other factors. According to Crouhy, Galai & Mark (AA Risk Book, 1998) operational risk is a risk of external events, or a weakness in internal control system, which causes loss for the company.

Frame J. Davidson (2003) classified operational risk sources into a few things, such as the weak procedure implementation, lack of labor training, incompetent workers, lack of concern, and insufficient software handling.

### 2.5 Risk Management Based on ISO 31000:2009

Risk management is a structured approach to manage uncertainty regarding threats, which comprises the activity of risk assessment, strategy development in dealing with risks, and risk mitigation using

available resources (American National Standard, 2004). The main objective of risk management is to mitigate possible potential risks. According to PMBOK (Project Management Body of Knowledge) guidebook published by PMI (Project Management Institute), risk management comprises five phases (American National Standard, 2004), which are: planning for risk, risk identification, risk analysis, risk follow-up, and risk monitoring and control. By doing risk management, an organization could develop strategy to mitigate the probability of risky occurrence and its negative impacts.

According to ISO 31000:2009, risk management process is consisted of three main processes, which are:

1. Establishing the context
2. Risk assessment
  - a. Risk identification. Some method that could be used are:
    - Documentation Evaluation
    - Information Collection Techniques (brainstorming, Delphi technique, interview, root cause identification, SWOT analysis)
    - Checklist analysis
    - Assumption analysis
    - Diagram method
  - b. Risk analysis
    - Qualitative analysis
    - Quantitative analysis
  - c. Risk evaluation
3. Risk treatment
  - a. Tolerate/Acceptance, This strategy is used for appetite risks, which treatment is limited, or which handling cost is higher than the benefit received.
  - b. Avoidance This strategy is usually used for high impact risks. There is no other way to treat this risk than avoiding it.
  - c. Transfer, This strategy transfers negative impacts of risk threat and its responsibility to the third party.
  - d. Mitigate/Treat, This is the most common strategy for risk

treatment. This strategy aims to mitigate the probability and impact of risk to a reasonable level. According to Orange Book of Risk Management, risk mitigation could be analysed using 4 different types of control, namely preventive control, corrective control, directive control and detective control.

The three main process mentioned above are assisted by two processes such as: (1) Communication and consultation; (2) Monitoring and review.

### 3. RESEARCH METHODOLOGY

#### 3.1 Data Collection

A context determination is done before this phase to identify and reveal target of the organization, target's environment, involved stakeholders, and the variety of risk's criteria. Two main activities are done in this phase. These include:

- Risk identification with interview method to The interview is done with some members from a few fields in administration services which is directly related to the Vocational Program business process, such as head of academic administration section, head of public facilities section, head of student affairs section, and head of human resources section. There are 18 administration service procedures in academic administration, public facilities, student affairs and human resources.
- Distributing questionnaire to obtain likelihood data assessment and the effects of risk rating to find out risk priority level in planning risk management.

#### 3.2 Data Analysis And Processing

Data processing is done by calculating risk rating from the questionnaire results using the following equation:

$$\text{Rating} = \frac{\sum(A_i \times \text{likelihood value } i)}{C} \times \frac{\sum(A_i \times \text{Impact value } i)}{C}$$

Description:

A<sub>i</sub> = number of respondents who chose i probability value

B<sub>i</sub> = number of respondents who chose i effects

C = total number of respondents

i = 1, 2, 3, ... , 16

From the equation above, we can find out the level of each risk as in Table 1.

Table 1. Risk Level Summary

Risk Level	Field	Risk Count	Total Risk
Low	Academic Administration	8	18 Risk
	HR	10	
Medium	Academic Administration	14	35 Risk
	Public Facility	3	
	Student Affair	2	
	HR	16	
High	Academic Administration	1	11 Risk
	Public Facilities	1	
	Student Affair	4	
	HR	5	

After risk level of each risk calculation, then the next step is calculating the overall risk level. To get an overall risk rating score, the formula is:

$$\begin{aligned}
 \text{Overall risk rating} &= \frac{\text{Total Risk Rating}}{\text{Total Number of Hazards}} \\
 &= \frac{719.30}{64} \\
 &= 11.24
 \end{aligned}$$

The overall risk rating point of the administration services in the vocational program institution is 11.24 from 64 risks in total. According to Project Risk Management Handbook (2003), with such point, the overall risk level is medium.

### 3. RESULTS AND DISCUSSION

Risk identification by interviewing the head of each sub-section resulted in a total of 64 risks. Where 31 risks from human

resources section, 23 risks from academic administration section, 6 risks from student affairs section, and 4 risks from public facilities section. According to the earlier data processing, we can determine risk priority to create risk treatment strategy plan. Risk treatment strategy plan is created by using some theories from literature study, benchmark method, and doing a discussion with risk management experts.

Most risks are came from human resources section where some of the service procedures of human resources section related with the evaluation of remuneration as sub-activity process. The big amount of risk in human resources section is caused by some of the service procedures in the human resources section has are associated with third party and it often makes human resources section needs to wait until the third party do its job so that the human resources can start their service procedures. In addition the human resources service procedures associated with the remuneration are definitely associated with money which makes the emergence of alot of risks.

In the academic administration section as a section that has most service procedures related to business processes, has fewer risks than the human resources section. The total risk in academic administration section are 23 risks. Although academic administrative section has the most service procedures which related to business processes, yet service procedures in academic administration section do not have a lot of relationship with third party that can hinder the passage of the procedures. In addition, the operational of academic administration service procedures has been aided by the information system owned by the University of Indonesia which help and reduce risks. And for student affairs and public facilities, the role of these two sections are more to the complementary section which service procedures have a fewer relation to business process than academic administration.

## 5. CONCLUSION

According to data processing and analysis result, regarding to this research's objective, we can conclude that:

1. There is 64 risks from 18 service procedures in academic administration, public facilities, student affairs and human resources fields. Those risks are operational risk.
2. There are 18 low level risks, 8 in academic administration field and 10 in human resources field. There are 35 medium level risks, 2 in student affairs, 3 in public facilities, 14 in academic administration and 16 in human resources. There are 11 high-level risks, 1 in public facilities, 1 in academic administration, 4 in student affairs and 5 in human resources. 3

## 6. REFERENCES

- (a) American Society for Quality. (n.d.). Quality Glossary - S. Retrieved 16 September 2015, from [asq:http://asq.org/glossary/s.html](http://asq.org/glossary/s.html)
- (b) Bangun, A. K. (2011, April 19). Penerapan manajemen risiko di perusahaan publik masih rendah. Retrieved 28 September 2015, from Kontan:<http://investasi.kontan.co.id/news/penerapan-manajemen-risiko-di-perusahaan-publik-masih-rendah-1>
- (c) Benabbou, L. (2013). Enterprise Risk Management: A Case Study of a Moroccan Financial Institution. *Enterprise Risk Management*, 1-18.
- (d) Bergmark, D., & Tattam, D. (2005). *Operational Risk Management*. JASSA(4)
- (e) Dillon, M and Griffith, C. 2001. *Auditing in the Food Industry*. CRC Press. England
- (f) Crouhy, M., Galai, D., & Mark, R. (2000). *Risk Management*. Amerika Serikat: McGraw Hill Professional.
- (g) Fahmi, I. (2010). *Manajemen Risiko, Teori, Kasus dan Solusi*. Bandung: Alfabeta.
- (h) Frame, J Davidson. (2003). *Managing Risk in Organizations, a guide for managers*. Jossey Bass. San Fransisco, USA
- (i) H. Besterfield, D., Besterfield-Michna, C., H. Besterfield, G., & Besterfield-Sacre, M. (2003). *Total Quality Management (3rd Edition ed.)*. New Jersey: Pearson Education.
- (j) International Organization for Standardization. (2015). About ISO. Retrieved September 1, 2015, from ISO:<http://www.iso.org/iso/home/about.htm>
- (k) ISO/TC 176. (2015). ISO TC/176/SC2 Home Page. Retrieved 30 September 2015, from [http://isotc.iso.org/livelink/livelink/fetch/2000/2122/8835176/8835848/8835872/8835883/customview%2Ehtml?func=ll&objId=8835883&objAction=browse#\\_1.\\_ISO/TC\\_176/SC](http://isotc.iso.org/livelink/livelink/fetch/2000/2122/8835176/8835848/8835872/8835883/customview%2Ehtml?func=ll&objId=8835883&objAction=browse#_1._ISO/TC_176/SC)
- (l) ISO. (n.d.). ISO 9001 Quality Management Systems. Retrieved 17 September 2015, from ISO Web site:[http://www.iso.org/iso/home/standards/managementstandards/iso\\_9000/iso9001\\_revision.htm](http://www.iso.org/iso/home/standards/managementstandards/iso_9000/iso9001_revision.htm)
- (m) Project Management Institute. (2004). *A Guide to the Project Management Body of Knowledge*. Pennsylvania: Project Management Institute, Inc.
- (n) Regan, S. T. (2003). *Risk Implementation and Analysis*. AACE International Transactions, 1.
- (o) Santosa, B. (2009). *Manajemen Proyek: Konsep & Implementasi*. Yogyakarta: Graha Ilmu
- (p) Scannell, T., Curkovic, S., & Wagner, B. (2013). Integration of ISO 31000:2009 and Supply Chain Risk Management. *American Journal of Industrial and Business Management*, 3, 367-377.
- (q) Summers, Donna C. S. (2005). *Quality Management, Creating and Sustaining Organizational Effectiveness*. New Jersey, Amerika Serikat: Prentice Hall.
- (r) Trieschmann, J. S., Hoyt, R., & Sommer, D.W. (2005). *Risk Management And Insurance (12th Edition ed.)*. South Western, Ohio, United State of America: Thomson.

- (s) The British Assessment Bureau.  
(2015).Retrieved 1 Oktober 2015,  
from[http://www.britishassessment.co.uk/  
services/isocertification/iso-9001-  
certification/iso9001-history](http://www.britishassessment.co.uk/services/isocertification/iso-9001-certification/iso9001-history)