

Managing University IT Risks in Structured and Organized Environment

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Abstract: In this digital era, most universities rely heavily on Information Technology (IT) to process their information for better support of their visions and missions. However, with this reliance, IT is facing different types of risks under expansions and complexities as experienced by most universities these days. IT risk is not bounded to only information systems and security, but unbounded to encompass the risk to financial, strategic, technological, as well as reputational. All these types of risk are prevalent in universities and hence the need to implement an effective risk management process including but not limited to IT. The best opportunities for managing IT risks can be achieved through managing it within an integrated approach and not to be carried out separately from managing risks of the organization. Such approach ensures that IT is achieving the goals and objectives of the organization by providing a reasonable basis for strategic planning and improves decision making for top management based on risk management value. This study identifies the current implementation of risk management at one Malaysian university to face all risks. The main findings of this study are: (1) The majority of staff supports the fundamental objectives of risk management; (2) The necessity to improve and enhance some procedures of risk management at the university. This study provide recommendations and improvements in some procedures of risk management to increase the awareness of risk management among all the university staff.

Keywords: Awareness of risk management, higher education sector, Information Technology (IT), IT risks, risk management procedures

INTRODUCTION

In this digital era, organizations rely heavily on Information Technology (IT) to process their information for better support of their visions and missions. However, with this reliance, IT is facing different types of risks under expansions and complexities as experienced by most organizations these days. IT risk is not bounded to only information systems and security, but unbounded to encompass different types of risks (Westerman and Hunter, 2007). All these types of risk are prevalent in organizations and hence the need to implement an effective risk management process including but not limited to IT.

The best opportunities for managing IT risks can be achieved through managing it within an integrated approach and not to be carried out separately from managing risks of the organization. Such approach ensures that IT is achieving the goals and objectives of the organization by providing a reasonable basis for strategic planning and improves decision making for top management based on risk management value. Effective risk management plays a critical role in protecting the assets of the organizations and therefore, IT risk should be part and parcel of that process (Westerman and Hunter, 2007; Abram, 2009).

Nowadays, most of the higher education institutions and universities have been facing numerous difficulties and daily challenges, resulting from various sources such as external pressures from higher authorities, the competition to provide the best services, internationalization and the most important is the increasing uncertainties or risks (OECD, 2009; Huber, 2011). Lately, there is a tendency among leading universities and educational institutions to utilize all available resources and capabilities so as to reduce and control risks that they face in order to be assured and remain at an acceptable level (PMA, 2010).

Any institution or company regardless of its size or specialization has to take advantage of all available possibilities to avoid and manage risks to ensure its interests (Fraser and Simkins, 2010; Hopkin, 2010). In higher education sector, the process of risk management has to be incorporated into all the daily activities of the university, to ensure that the delivery of the corporate objectives and goals are correctly and accurately (Huber, 2011). To achieve this, all managers and decision makers at the university have to take into account the process of risk management as an integral part of all their duties and tasks. Risk management presents all the opportunities for

managers and staff to improve and enhance their performance (OECD, 2009; Tufanu, 2011).

The importance of this study is to evaluate the current development of the implementation of risk management at one Malaysian university to outline clear instructions and adding the necessary improvements or changes when implementing an integrated risk management. In addition, the study aims to increase the awareness of risk management among all the university staff in order to improve their decision making and enhance their responsibilities. This will provides a reasonable basis for strategic planning, helps to reduce costly surprises and leads to better outcomes. All of these will ultimately enhance and improve the reputation of the university both locally and globally.

BACKGROUND ON RISK MANAGEMENT

What is risk? There is no unified definition for the term “risk”. This term is used in our daily life and each and every one has their own understanding of the term. Generally, this term is always negatively associated by general public. However, the experts might define the term based on their perspective in the context of a specific situation. It is noteworthy that most of the organizational processes associated with risks which might bring negative consequences. Interestingly, organizations might also experience positive risks, such as escalating sale targets and overachieving objectives (Shortreed, 2010).

Risk means uncertainty surrounding a potential event. It indicates the possibility of something will happen (Steinberg, 2011). Also, the International Organization for Standardization (ISO) has defined risk as the “effect of uncertainty on objectives”; this standard is intended to help solving the problems of risk and risk management (ISO, 2009).

Due to the separate views on risk in different areas, there exist several definitions. Some definitions by different organizations can be seen in Table 1 (Hopkin, 2010).

Correspondingly, a common description of risk is that, it is an amalgamation of the prospect of an incident and its consequences. According to this view the risk can be illustrated as a product of probability and consequences, taking into account that, the risk increases with higher probability and higher consequence.

Types of risk: Evaluation of risk commences with instituting a common risk language. Employing a general definition of risk and classifying the different kinds of risks facilitates authorities of companies in conceptualizing and diagnosing the risks, which are momentous to their business processes. Risks can be classified as follows TAMU (2009) and Huber (2011):

- **Strategic risk:** This type of risk involves long-term malfunctions in the organization’s precaution services. Strategic risk is an occurrence that affects the organization’s ability to accomplish its goals and objectives over time.
- **Operational risk:** This type of risk is focused on managing the risks that emerge during day-to-day activities of the organization. It is an occurrence that influences ongoing management processes and procedures of the organization.
- **Financial risk:** This type of risk relating to financial management or transaction events that affect profitability and efficiency of the organization, including loss of assets, conflict of interest and technology risks.
- **Reputational risk:** Is often seen as a significant risk. Reputational risk is an occurrence that influences the institutions reputation and its public perception, including political issues and unconstructive occurrences.
- **Technological risk:** This type of risk is associated with the activities that influence the flow of electronic information and communications such as: electronic commerce, storage, adversity revival, interfaces and development cycle.

What is risk management? Why is it important?

Regardless of its constructive opportunities and/or depressing intimidations, risk needs to be measured and dealt by everyone. Moreover, risk management should be an essential part of the culture of an organization, which reflects in a range of strategies, constitutions and procedures used to guarantee solid financial management and well-organized and effectual service. As public sectors have started employing more sophisticated approach to develop and deliver services, it has become essential to have a methodical risk management approach. This is mainly because the

Table 1: Definitions of risk

Organization	Definition of risk
ISO guide 73	Effect of uncertainty on objectives. Note that an effect may be positive, negative, or a deviation from the expected. Also, risk is often described by an event, a change in circumstances or a consequence.
ISO 31000	
Institute of risk Management (IRM)	Risk is the combination of the probability of an event and its consequence. Consequences can range from positive to negative.
“Orange Book” from HM treasury	Uncertainty of outcome, within a range of exposure, arising from a combination of the impact and the probability of potential events.
Institute of internal auditors	The uncertainty of an event occurring that could have an impact on the achievement of the objectives. Risk is measured in terms of consequences and likelihood.

traditional risk management approaches have become absolute (Shortreed, 2010; VMIA, 2011).

VMIA (2011), has stated that risk management is the combination of organizational systems, processes, procedures and culture that facilitate the identification, assessment, evaluation and treatment of risk in order to protect the organization and assist in the successful pursuit of its strategies and performance objectives.

Risk management concentrates on recognizing, assessing, administering and managing risks. It is not a restraining conception. Risk management involves the process of refraining or alleviating losses. It enables the organizations to search and take advantage of prospects to accomplish and enhanced results by making sure that any risk taken, is based on apprehensive decision-making, sensible and quantifiable objectives and solid analysis of potential results (ISO, 2009; Hopkin, 2010).

The aim of risk management is to control the consequences of any risky event. There are some benefits of risk management that helps to ISO (2009):

- Recognize, evaluate and grade risks to make them unambiguous.
- Manage the indecisive features of construction projects.
- Recognize the prospects to augment the performance of projects.
- Ascertain a consistent foundation for decision making and planning.
- Improve the confidence and trust of stakeholders.

Risk management in higher education institutions:

Risk managers of universities experience the intimidating confront of recognizing and administering the intricate risks across their universities. Fortunately, loss rates of universities are lower than the industrial sector. Nevertheless, the charge of claims of universities both, financially and publically can be important (PMA, 2010). Universities need to protect students, faculty, administration, support workers, contracted workers, the public and their school's reputation. A risk management program will dictate how institutions decide to actively manage and respond to their primary risks (PMA, 2010; Huber, 2011).

The Higher Education Funding Council for England (HEFCE) has stated that risks can occur at a number of various levels in higher education institutions: corporate or strategic, faculty, departmental and personal level (HEFCE, 2005). It warns that risk management should not be viewed as a process for evades risk. In the well established organizations, risk management is synonymous with good management and good governance. Therefore, the effective employment of risk management can dynamically

enable an institution to undertake activities to minimize the level of risks.

All universities face various types of risks; the following are the types of risk that the higher learning institutions are faced (UC, 2011; SCU, 2012):

- Failure of an education program to attract students
- Failure of a research or business project to reach objectives
- Incapable to meet recognized operations and goals
- Failure of essential services or business/administrative systems
- Unable to maintain consistency in level of funding or grant
- Unable to reach targets of students enrolment
- Academic and research reputation
- Professional vulnerability, injuries etc
- Insufficient strategies to administer academic and non-academic processes
- Failure of IT systems

Of late, higher learning institutions such as universities experience more risks. Moreover, the risks range from low prospect to high risk events such as: financial, learning and teaching, strategic and reputational (Huber, 2011). University board leaders and administrators need effectual risk management solutions, require access to training their staff, scrutinize and manage risk mitigation strategies to ensure the protection of the institutions people, assets and ultimately its reputation (PMA, 2010).

IMPORTANT RESULTS AND DISCUSSION

Mixed method of combining interviews and online questionnaire is used to collect the necessary data for this research study. The following sections represent the most important findings of online questionnaire and interviews.

Background of respondents: The percentage in Fig. 1 implies that 70.7% of the respondents are within 'management' category. This means that the choice for these people from the top management and the Office of Risk Management at the university is acceptable because they have background knowledge in administration; so it helps them in managing risks. However, there is a lack in the number of coordinators with an academic background and lecturers with only 7.3% of the coordinators. These people will have an important role in supporting and enhancing the implementation of risk management in the university through providing the academic and research studies in risk management field.

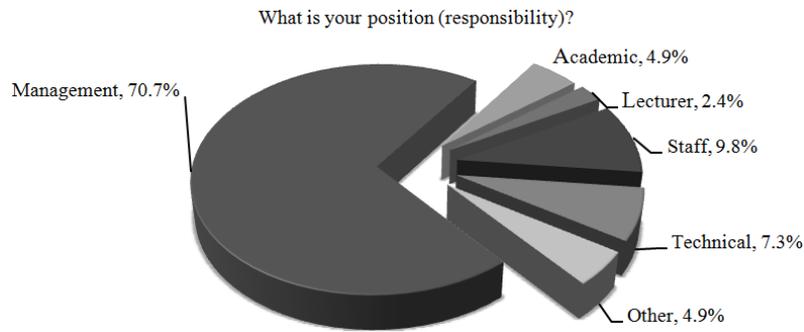


Fig. 1: Background of respondents

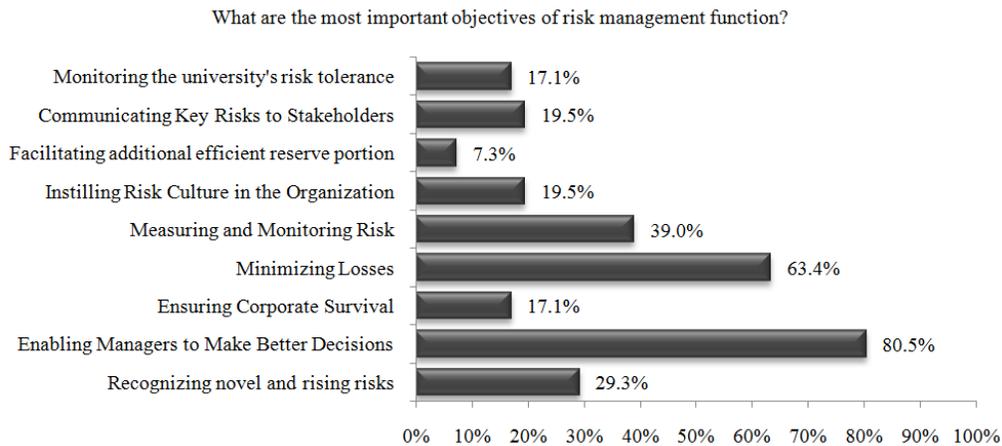


Fig. 2: Objectives of risk management

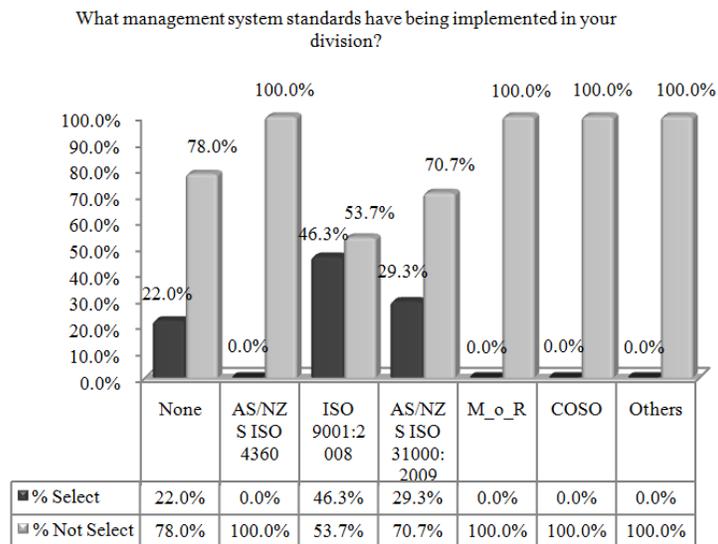


Fig. 3: Adopting standards of management systems

Objectives of risk management: According to Fig. 2, the majority of respondents indicate that the three most important objectives of risk management to the university are:

- (80.5%) to enable managers to make better decisions
- (63.4%) to minimize losses
- (39%) to measure and monitor risks

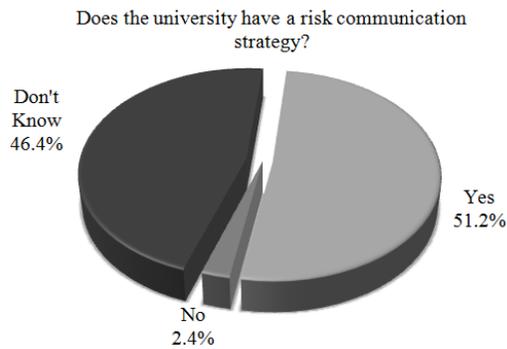


Fig. 4: Percentage of risk communication strategy

Therefore, most respondents consider that the important objectives of risk management are to allow the managers to make better decisions, measure and control all risks in their workplaces to minimize costs and reduce risks.

Adopting standards of management systems: The results on the use of management systems standards are shown in Fig. 3. The results indicate that 48.8% has adopted ISO 9001:2008 for quality management and 29.3% adopted ISO 31000 for risk management. The remaining is 22% of the respondents reveal that these standards are not implemented in their workplace. From these results, it seems that these standards are not being applied extensively in the entire university. The Office of Risk Management and the staff responsible for risk management in the university are required to work harder on implementing these standards, especially ISO 31000:2009 for risk management. It is clear that the implementation of this standard is not extensive and it needs to be extended to the rest of the university in order to uniform the coordinators works and duties of risk management.

Risk communication strategy: As illustrated in Fig. 4, 51.2% responded with “yes”, 46.4% responded with “don’t know”, while 2.4% responded with “no”. Since the communication strategy is considered as the core of the implementation of risk management at the university, therefore, the responsibility of the people in charge of risk management in the university to inform those who do not know about the risk communication strategy in the university.

Necessity of an expert in risk management: Not having an expert (champion) with a full-time job for risk management will affect the overall process of risk management implementation within the university. The champion has an open mind and eagerness to understand risks and avoid or reduce them to an acceptable level.

Limited use of identifying and analyzing risk methods: Limited use of risk techniques in the

identification and evaluation leads to inability in determining the significance of risks; hence unable to take action to prevent or minimize risks.

CONCLUSION

This study concluded that the best opportunities for managing IT risks can be achieved through managing it within an integrated approach and not to be carried out separately from managing risks of the university. Such approach ensures that IT is achieving the goals and objectives of the university by providing a reasonable basis for strategic planning and improves decision making for top management and staff based on risk management value.

All managers and decision makers in the university have to take into account that implementing risk management is an integral part of all their duties and tasks. By following the correct procedures for risk management, this will provide the opportunity for all university staff to extend and promote an organizational culture based on a structured and organized environment. In addition, the study aims to increase the awareness of risk management among all the university staff to improve their decision making and enhance their responsibilities.

RECOMMENDATIONS AND IMPROVEMENTS

According to the results obtained from the statistical analysis of questionnaire and thematic analysis of interviews, as well as the literature studies of this research, the following recommendations and improvements are recommended to implement a structured and integrated risk management process at the university.

Recommendations to implement risk management in structured and organized processes: The recommendations include some important instructions to implement risk management such as:

- Consider risk management at all levels of the university.
- The identification and management of risk is linked to the achievement of the university strategic goals and objectives. Furthermore, business and IT units should identify and evaluate risks related with these goals and objectives.
- Risk management culture among the university staff must be seen as the core duty of their daily job and personal accountability.
- All the university top management including vice chancellors, deans and heads of institutions or centers are accountable for encouraging their staff to implement effective risk management practice.

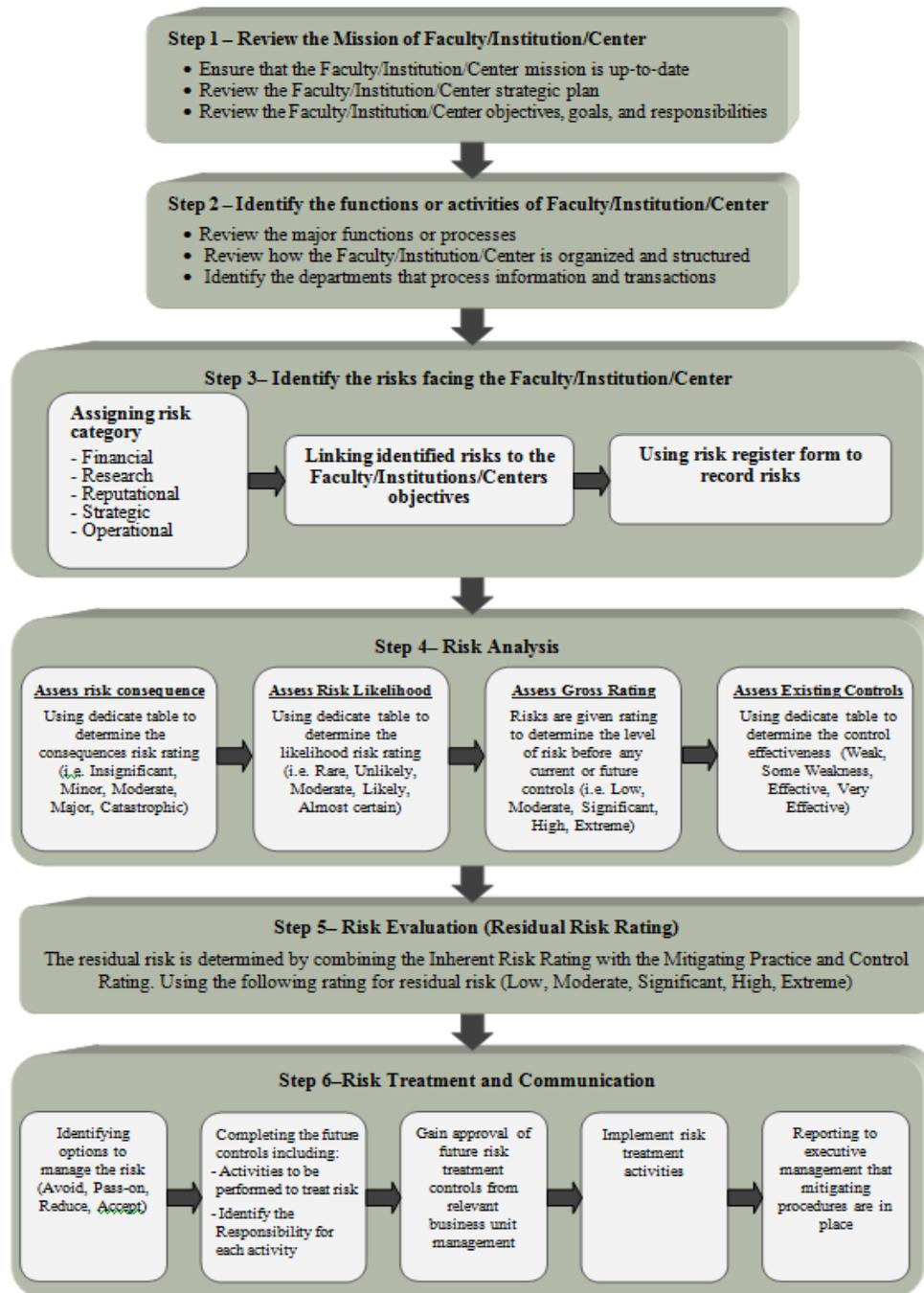


Fig. 5: Proposed steps to perform risk assessment

- Training and workshops are considered essential in increasing knowledge and skills in risk management of the university staff.
- Using communication channels is one essential aspect between top managements and staff and between business and IT units at the university.
- Effective management of risk requires an information system that communicates and reports on risk management.
- Formal mechanisms for reviewing and monitoring of risks to promote the effectiveness of risk management throughout the university.

Proposed steps to perform risk assessment: The improvements that incorporate the implementation of risk management including of formalizing a risk assessment to help and assist the university coordinators in implementing risk management in

structured processes. Risk assessment is an essential and important section of any risk management framework. Risk assessment include risk identification, risk analysis and risk evaluation. The steps for proposed risk assessment are:

- **Step 1: Review the mission:** This step will help and assist the university coordinators to understand the strategic plan, objectives, goals and responsibilities of their faculty or institution.
- **Step 2: Identifying functions and activities:** This step reviews the functions, processes and structure of the faculty or institution. Also, it helps to identify the departments that process information and transactions.
- **Step 3: Risk identification:** This step involves identifying the risk sources and links this risk to the faculty or institution objectives. Also, it involves the use of risk register form to record all risks identified by the coordinators and stored into a reliable database file.
- **Step 4: Risk analysis:** This step consists of determining the consequences if the risk arises, identifying the likelihood of a risk occurring, assessing risk rating to determine the level of risk before any current controls, then taking into account whether current controls exist and if so, the effectiveness of these controls.
- **Step 5: Risk evaluation:** This step reviews the level of risk that remains after risk treatment. After consideration of all existing mitigating controls, a residual risk rating is given that determines the level of management attention and treatment required.
- **Step 6: Risk treatment:** This step involves identifying options to manage the risk, completing the future controls, gain approval of future risk treatment from business unit and reporting to executive management.

The steps for risk assessment are illustrated in Fig. 5.

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