

## A Conceptual of Relational Framework of Information Technology Strategic Risk Management Factors, Digital Assets and Market Value

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*Abstract*—This research aims to analyze and design a conceptual framework of relationship between strategic risk management in information technology, Information assets and Market Value. The information technology strategic risk management is the element in the COSO Enterprise Risk Management 2017 framework but COSO model primarily interested on enterprise strategic factors more than focus on information technology strategic risk factors. Digital Assets is the new assets

*Keywords: IT Strategic Risk Management Factors; Digital Assets; Market Value*

### I. INTRODUCTION

All business organization aims to create the most profit for the organization. Increase competition efficiency and create increased market value. Under the circumstances of the business competition make the organization stronger and more competitive with other businesses. It is important that the organization has good, systematic and effective risk management.

The Committee of Sponsoring Organizations of the Treadway Commission (COSO) established a corporate risk management standard called The Committee of Sponsoring Organizations of the Treadway Commission - Enterprise risk management (COSO-ERM). One of the key elements of COSO ERM2017 is strategic risk management.

Information Technology Strategic Risk Management (called IT Strategic risk management) is a key factor in any competitive organization. Because a good strategy for the organization will result in the organization having clear operational directions, clear procedures, processes, monitoring and measurement. And lead the organization to success

After the world was adversely affected by the catastrophe of the COVID virus. Digital assets are the new

global focus of assets. Digital assets are intangible assets, but they are even more valuable than tangible assets. Today, there are many companies and businesses around the world interested in and investing in digital assets. And including in Thailand Digital assets have begun to play a role in Thai businesses such as cryptocurrencies, token technology, bitcoins, and data - driven.

When digital assets become more valuable to a business The risks to digital assets increase as well. Therefore, strategic risk management in information technology is becoming more and more important to the organization. If any business organization is good at managing the strategic risks of information technology to digital assets. The more chances that the business organization will generate profit for the organization or the market value of that business will also be more valuable. On the other hand, if any business organization does not good manage its strategic IT risks to digital assets, the opportunity for that business to generate profits for the organization or the market value of that business will become less valuable and there was a chance that the information assurance crisis followed.

One of the most important measures in measuring the success of the management of a business entity is its market value. Because the market value indicates the profit and loss and the competitiveness of the business organization. And can also indicate the potential of the organization's executives Needs and strategies of that business organization as well.

Therefore, this research focus on analyze and design the relational framework of information technology strategic risk management factors, digital assets and market value for the business on the time after the disaster of the COVID-19 epidemic.

## II. LITERATURE REVIEWS

In the research Effect of Strategic Risk Management Factors in Market Value of Companies in Stock Exchange Thailand had study on relevant past researches and review of relevant important literature as follows:

### A. COSO ERM2017

The Committee of Sponsoring Organizations of the Treadway Commission; COSO) is a joint initiative of the five private sector organizations listed on the left and is dedicated to providing thought leadership through the development of frameworks and guidance on enterprise risk management, internal control and fraud deterrence.

COSO was organized in 1985 to sponsor the National Commission on Fraudulent Financial Reporting, an independent private-sector initiative that studied the causal factors that can lead to fraudulent financial reporting. It also developed recommendations for public companies and their independent auditors, for the SEC and other regulators, and for educational institutions.

The National Commission was sponsored jointly by five major professional associations headquartered in the United States: the American Accounting Association (AAA), the American Institute of Certified Public Accountants (AICPA), Financial Executives International (FEI), The Institute of Internal Auditors (IIA), and the National Association of Accountants (now the Institute of Management Accountants [IMA]). Wholly independent of each of the sponsoring organizations, the Commission included representatives from industry, public accounting, investment firms, and the New York Stock Exchange.

The mission of COSO is to provide thought leadership through the development of comprehensive frameworks and guidance on enterprise risk management, internal control and fraud deterrence designed to improve organizational performance and governance and to reduce the extent of fraud in organizations.

COSO have design the Enterprise Risk Management framework model in year 2017 (called COSO-ERM2017). COSO ERM 2017 framework integrated the evolution of enterprise risk management and the need for organizations to improve their approach to managing risk to meet the demands of an evolving business environment. and highlight on the strategy-setting process and in driving performance.



Figure 1. The COSO ERM 2017 Framework

The figure1 shown the compositions of framework follow;

**1. Governance and Culture:** Governance sets the organization’s tone, reinforcing the importance of, and establishing oversight responsibilities for, enterprise risk management. Culture pertains to ethical values, desired behaviors, and understanding of risk in the entity.

**2. Strategy and Objective-Setting:** Enterprise risk management, strategy, and objective-setting work together in the strategic-planning process. A risk appetite is established and aligned with strategy; business objectives put strategy into practice while serving as a basis for identifying, assessing, and responding to risk.

**3. Performance:** Risks that may impact the achievement of strategy and business objectives need to be identified and assessed. Risks are prioritized by severity in the context of risk appetite. The organization then selects risk responses and takes a portfolio view of the amount of risk it has assumed. The results of this process are reported to key risk stakeholders.

**4. Review and Revision:** By reviewing entity performance, an organization can consider how well the enterprise risk management components are functioning over time and in light of substantial changes, and what revisions are needed.

**5. Information, Communication, and Reporting:** Enterprise risk management requires a continual process of obtaining and sharing necessary information, from both internal and external sources, which flows up, down, and across the organization.

### B. Digital Asset Management

A digital asset is an asset that exists only as a numeric encoding expressed in binary form. Such as images, music, video and computer software distributions are all examples of digital assets. Digital assets are important asset in digital age because they are the base of data for analytic, prediction, planning and support the decision of the committee board of business organization to control the business and road to the future. If digital assets do not have the good management process maybe they will lost to the external organization that have been crisis for organization. So, the Digital Asset Management (called DAM) is the most important process must be set up on organization. The enterprise DAM is about gaining maximum value from these valuable resources, with the key aims being to:

- Maintain a record of ownership and location of digital assets;

- Protect the economic value of digital assets and rights;

Digital Asset Management can provide far more than basic control and management. Digital media services can facilitate the fluid use and exchange of digital materials. Analysis services can peer into the content itself and extract text to be used as metadata for search and retrieval. These analyses include such feats as voice-to-text, optical character recognition, facial recognition, sound recognition, and scene change detection.



Figure 2. DAM Framework

The figure2 shown the activities of digital asset management follow;

**1. Storage and Retrieval of digital information**

Digital information resources are increasing in volume. Therefore, the organization needs to procure the equipment to store the data sufficiently to support the large volumes of data. Which will require the organization to invest at an expensive price Therefore, the use of reliable methods for storing and disseminating information. And lower hardware costs, but better performance.

**2. Digital Content Preservation**

Planning, allocation, and the application of necessary storage methods and technologies to ensure continually valuable digital information remains accessible and usable.

**3. Hardware / Software Management**

Servers that collect digital machines and other peripherals need to have the functions of administration can usability and network libraries.

**4. Backup and Recovery Policies**

The data that is acquired over a period of time is a big asset. Digitizing the contents may go in vain if they are not backed up periodically.

**5. Authenticity and Security of Document**

Information is no longer bound by the physical restrictions. It can be accessed anytime and anywhere. But It is necessary to authenticated and authorized access to

contents for their security. Authentication and identification is important to prove who access the data.

**6. Information Description (Metadata)**

Metadata is structured description of and information object or collection of such information objects. They must collect in the form that can right to prove and reference.

III. RESERCH METHODOLOGY

A. Remodel on COSO ERM2017 and Digital Asstes

First, studying and understanding the COSO ERM2017 framework and Digital Asset Management Model. Second, learn about advantages, disadvantages and limitations of framework. Third, Improve the model in the context of Thai business organizations that focus on the term of market value. Market value, focus on Stock Exchange Thailand and New normal style, business form on Covid-19 epidermis.

B. Create New Framework

After finish researching the COSO ERM2017 and Digital Asset Management model will be the next process to create the new framework from applied the knowledge of information assurance and the strategic risk of enterprise risk management to be the information strategic risk factors. The strategic risk factors are security, governance and compliance. Selection the factor of DAM for applied, that are recovery, authentication, identification and retrieval.

IV. RESULT OF RESEARCH

The new framework creates on mixed conceptual COSO ERM2017, Digital Asset Management and the market value of business are Relational Framework of Information Technology Strategic Risk Management Factors, Digital Assets and Market Value shown on figure3

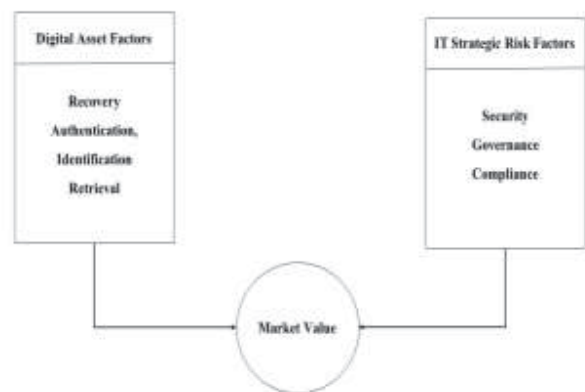


Figure 3. Relational Framework of Information Technology Strategic Risk Management Factors, Digital Assets and Market Value

The figure3 shown the components of Relational Framework of Information Technology Strategic Risk Management Factors, Digital Assets and Market Value. The objectives of Digital Asset factor are the prove of users who access on asset of business organization. The clear of accessible users will support administrator and the committee board on the proving, controlling and planning the data driven on assets. And before the users access the digital asset must be allowed by administrator every transaction on process will be show on pool system and can tracking the activities of any asset on organization.

The IT Strategic Risk Factors are the assurance process to secure the security system on digital assets storage and processes. All of process must do on internal security system of business organization maybe the process do accessibility on remote system far from internal server but they always must have been allowed by administrator team before access or do anything on the digital assets. The important thing must mind is governance or called in the information technology governance. The governance is not the rules or laws but it is the ethics on users of organization even external users. The governance must be verifiable by all of users in the system such as proof of stake or proof of work on blockchain concept. In stock exchange of Thailand, the governance is the most important component on companies. So, the governance is the one key on risk strategic factors of information system. The last factors, compliance is the procedure and obligation that all user, stakeholders even administrator or committee board will do on agreement.

## V. CONCLUSION

The Digital Assets Factors and IT Strategic Risk Factors, that setting up and agreement on organization systematically will affected on the volume of market value. The Systematic operation, efficiently work on the framework concept will change the process form of organization and the good practice. But the framework of Relational Framework of Information Technology Strategic Risk Management Factors, Digital Assets and Market Value is only a concept that the researcher has come up with from the study. There must be some proof of actual operation results in the future.

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