

Chapter 7

Imperatives of Risk Analysis and Asset Management on Cyber Security in a Technology–Driven Economy

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ABSTRACT

As the relevance of the digital economy increases, the need for secured cyberspace increases. Cyber threats are inescapable in digital progress. In the growth of cyber dominance, cybersecurity is necessary and very essential. Risk analysis is the process of assessing the likelihood of an adverse event occurring within the corporate, government, or environmental sectors. This chapter, therefore, explores the imperatives of risk analysis and asset management on cyber security in a technology-driven economy from the existing body of knowledge in the field. The chapter is divided into five sections, where the first section has to do with the introduction. The remaining four sections deal with the concepts of risk and risk analysis, asset management, factors determining attainment of continuous improvement of an asset performance management (APM) solution, cyber-crime and cyber-security, and conclusion and recommendations.

INTRODUCTION

Most companies are subject to millions of cyber-attacks as a result of the prevailing diversity of cyber-crimes and unethical project risk analysis which has hindered the economy from being technology-driven. Asset management and cyber security strategy put in place must help to prevent most attacks and recover quickly from any that might have succeeded. Understanding risk as a possibility of loss in a scenario is a critical concept in Asset Management and is a key function and area of competence. The idea that

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the productivity of capital is determined by the rate of return we anticipate receiving over some future period serves as the foundation for evaluating capital investment projects. Cyberspace needs to be more secure as the importance of the digital economy grows.

The threat of cyberattacks is unavoidable as technology advances. Cybersecurity is essential as cyber domination increases. A national policy is created to provide the framework and infrastructure needed to protect cyberspace so that nations can profit from and prosper in the digital economy. A key component of national security is cybersecurity. Nations must strike a compromise between ensuring the dependability and security of cyberspace and the needs of digital economies. Nations around the world now place a high focus on protecting themselves from cyber-attacks.

The connected world offers amazing opportunities as the global population is shifting to cyberspace, related risk analysis, and asset management. Businesses must innovate and be online if they want to remain relevant and competitive in the digital economy. Technology and the economy came together to change how businesses operate so they may reach new markets and generate money. Information is a catalyst for business innovation and an agent of integration. It is time to embrace innovation and disruptive technologies because they are unheard of in business.

The linked world is changing our social fabric in terms of politics, economy, technology, and culture as the social transformation takes place right now. This digital revolution has a wide range of effects on the world, from e-economy, social movements, government elections, and awareness of global issues swiftly. This chapter critically examines the imperatives of risk analysis and asset management on cyber security in a technology-driven economy and makes some recommendations in the concluding part.

RISK AND RISK ANALYSIS

Risk is an exposure to the possibility of loss, injury, or other adverse or unwelcome circumstances; a chance or situation involving such a possibility. Management of risk within asset management is critical because asset managers are responsible for optimizing outcomes for the good of their organization, and therefore need to make judgements about which actions best achieve the right blend of outcomes based on organizational objectives.

To make these judgements, they need to predict how their actions will impact the future performance of the assets. They need to quantify both the probability of their actions (or inactions) causing a change in performance and then they need to determine the impact or consequences of that change in performance.

$$\text{Risk} = \text{Probability} \times \text{Consequence}$$

(of failure) (of failure)

Risk analysis is the process of assessing the likelihood of an adverse event occurring within the corporate, government, or environmental sector. A project's likelihood of success or failure, the variation of portfolio or stock returns, the likelihood of future economic conditions, and the uncertainty of predicted cash flow streams are all examples of fundamental uncertainties that are studied through risk analysis.

To reduce potential unfavorable unanticipated outcomes, risk analysts frequently collaborate with forecasting experts. All businesses and people take risks; rewards or gains are less likely to occur without risk. The issue is that taking on too much risk can fail. By using risk analysis, it is possible to strike a balance between incurring risks and minimizing them. When considering risk, the following factors could be considered:

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