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91. Risk management

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Introduction: In ideal risk management, a prioritization process is followed whereby the risks with the greatest loss (or impact) and the greatest probability of occurring are handled first, and risks with lower probability of occurrence and lower loss are handled in descending order. In practice the process of assessing overall risk can be difficult, and balancing resources used to mitigate between risks with a high probability of occurrence but lower loss versus a risk with high loss but lower probability of occurrence can often be mishandled.

These risks can reduce the productivity of knowledge workers, decrease cost-effectiveness, profitability, service, quality, reputation, brand value, and earnings quality. Intangible risk management allows risk management to create immediate value from the identification and reduction of risks that reduce productivity.

Resources and methods: For the most part, methods consist of the following elements, performed, in the following order.

- identify, characterize threats
- assess the vulnerability of critical assets to specific threats
- determine the risk (i.e. the expected likelihood and consequences of specific types of attacks on specific assets)
- identify ways to reduce those risks
- prioritize risk reduction measures based on a strategy

Results: Risk management is the identification, assessment, and prioritization of risks followed by coordinated and economical application of resources to minimize, monitor, and control the probability and/or impact of unfortunate events or to maximize the realization of opportunities. Risks can come from uncertainty in financial markets, threats from project, legal liabilities, credit risk, accidents, natural causes and disasters as well as deliberate attack from an adversary, or events of uncertain or unpredictable root-cause. Methods, definitions and goals vary widely according to whether the risk management method is in the context of project management, security, engineering, industrial processes, financial portfolios, or public health and safety.

The strategies to manage threats typically include transferring the threat to another party, avoiding the threat, reducing the negative effect or probability of the threat, or even accepting some or all of the potential or actual consequences of a particular threat, and the opposites for opportunities (uncertain future states with benefits).

The International Organization for Standardization (ISO) identifies the following principles of risk management. Risk management should:

- be an integral part of organizational processes
- be part of decision making process
- be systematic and structured
- be based on the best available information

- take human factors into account
- be dynamic, iterative and responsive to change
- be capable of continual improvement and enhancement

Risk management is simply a practice of systematically selecting cost-effective approaches for minimizing the effect of threat realization to the organization. Therefore, all organizations have to accept some level of residual risks.

Conclusions: The essence of risk management is not avoiding or eliminating risk but deciding which risks to exploit, which ones to let pass through to investors, and which ones to avoid or hedge. In this chapter, we focused on exploitable risks by presenting evidence on the payoff to taking risk. To exploit risk, we need an edge over our competitors, who are exposed to that same risk. There are some possible sources. One is having more timely and reliable information when confronted with a crisis, allowing us to map out a superior plan of action in response. A second is the speed of the response to the risk, because not all firms, even when provided with the same information, are equally effective at acting quickly and appropriately. A third advantage may arise from experience weathering similar crises in the past. The institutional memories as well as the individual experiences of how the crises unfolded may provide an advantage over competitors who are new to the risk. The fourth advantage is grounded in resources, because firms with access to capital markets or large cash balances, superior technology, and better trained personnel can survive risks better than their competitors. Finally, firms that have more operating, production, or financial flexibility built into their responses, because of choices made in earlier periods, will be better able to adjust than their more rigid compatriots.

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