Operational Risk

Warm up 1

In the 1990s, **Nick Leeson**, who worked at **Barings Bank**, had a mandate to arbitrage between Nikkei 225 futures quotes in Singapore and Osaka. Instead he found a way to make big bets on the direction of the Nikkei 225 using futures and options, losing $1 billion and destroying the 200-year old bank in the process.

This case highlights that **Operational Risks** are often inter related with market risk and an **Operational Risk** failure during stressed market conditions can potentially be very costly.

Please refer to In-House Case Study on the same.

Warm up 2

Runaway algorithms produce streams of *unintended orders* that result from *programming mistakes*. The problems sometimes occur when programmers do not anticipate some contingency. The *Knight Capital* trading failure on 1 August 2012 may be the most extreme example of a *runaway algorithm* incident. Owing to a software *programming mistake*, *Knight* sent millions of orders to the markets over a 45-minute period when it intended only to fill 212 orders, some of which normally might have been broken up but none of which would have generated so many orders. These orders produced 4 million executions involving 397 stocks. *Knight* lost $400 million in the incident.

*The losses suffered by *Knight Capital* clearly highlights the risks involved in automated trading - may be on account of fat finger or *programming error*.*

Operational Risk definition and scope

A common business adage is that you cannot manage what you cannot measure. In the case of operational risk, there is another step:

You cannot' measure what you cannot define. Unlike market and credit risks, the definition of operational risk represents a challenge for most companies.

In the early stages, operational risk was defined in negative terms, as the collection of risks that are not credit or market risks. Over time. industry sources converged to a more common definition:

As per Basel II "Operational risk is defined as the risk of loss resulting from inadequate or failed internal processes, people, and system or from external events."

While this definition presents a common ground, there is still considerable debate as to how it should be applied. **For example,** many organizations differ on whether strategic risk and reputational risk (e.g., tarnished brand, loss of market confidence) should be included in the definition of operational risk. While both of these risks were explicitly excluded in Basel II, both risks are important risk management issues and key drivers of expected loss.

Individual companies should establish an overall definition of operational risk, as well as its subcomponents. In this chapter, we will apply the above definition that includes **process risk**, **people risk**, **system risk**, and **event risk**. We'll define each of these in turn.
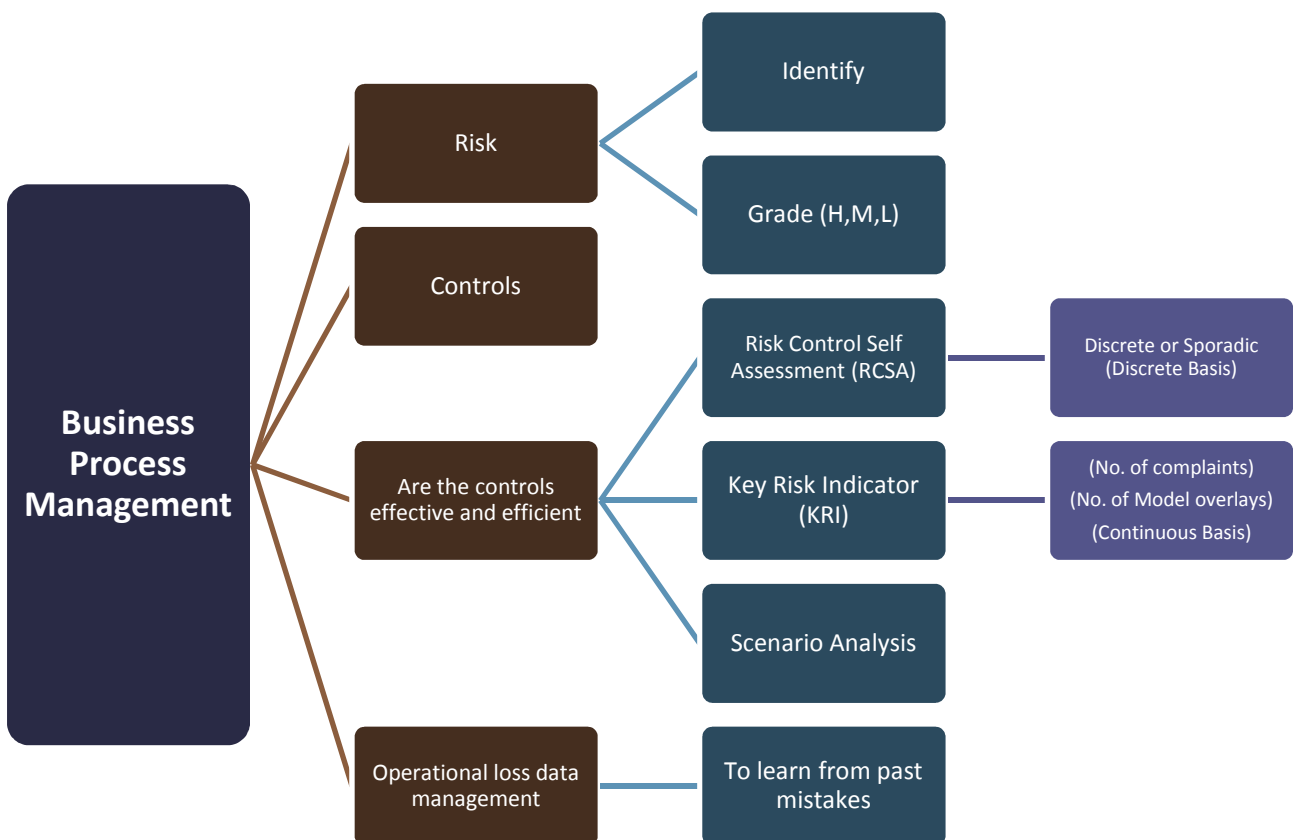
Chapter Layout

Part I :

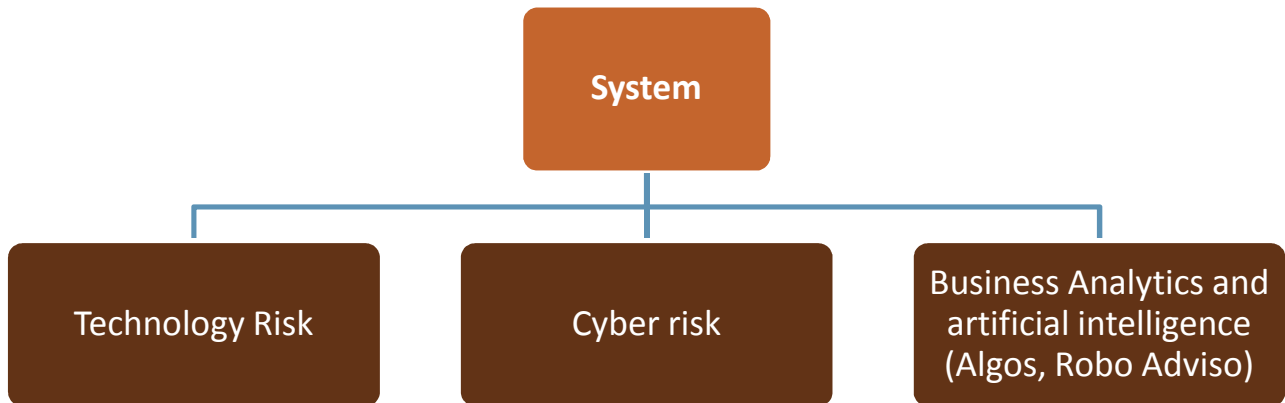**Introduction, relevance and Governance of "Operational Risk"**
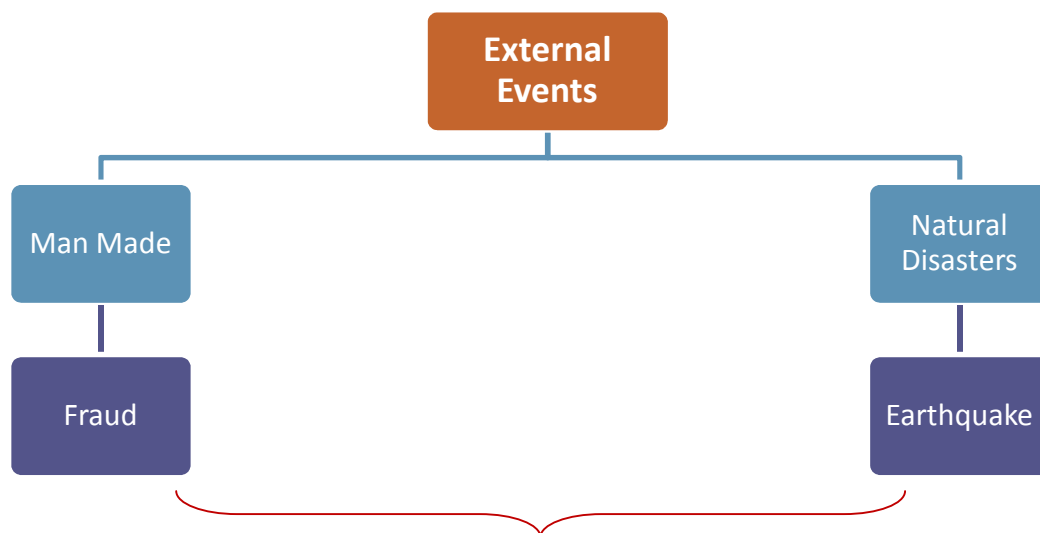
Part II :

Business Process Management

Part III :

System

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         ┌─────────────────┼─────────────────┐
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│ Technology Risk│ │  Cyber risk  │ │ Business Analytics and│
│                │ │              │ │ artificial intelligence│
│                │ │              │ │ (Algos, Robo Adviso)  │
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Part IV :

External Events

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                    │   Events    │
                    └──────┬──────┘
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  │   Man Made   │                    │   Natural    │
  │              │                    │  Disasters   │
  └──────┬───────┘                    └──────┬───────┘
  ┌──────────────┐                    ┌──────────────┐
  │    Fraud     │                    │  Earthquake  │
  └──────────────┘                    └──────────────┘
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Insurance

Business Continuity Planning (BCP)

➢ Business Impact Analysis (BIA)
➢ Functional Recovery Plan (FRP)

Part V :

Residue

Residue → People Risk → outsourcing Risk