BUSINESS RISK MANAGEMENT LTD

Advanced ERM & KRI's
2 days
On-line

Day 1 The broad range of risk evaluation techniques

Ishikawa (fishbone) analysis

- Very effective in evaluating risks with multiple causes
- Steps in fishbone analysis
  - Problem identification
  - Primary and secondary causes
  - Establishing priority criteria
  - Preparing fishbone diagram
  - Analysing the output
- Uses of Fishbone analysis
  - Product failure analysis
  - Loss of key personnel
  - Errors in invoicing
  - Customer complaint handling

Exercise 1 - Ishikawa exercise - loss of key personnel

Root Cause Analysis

- Identifying causes and effects
- Evaluation of potential failure modes for processes
- The likely effect on outcomes and/or performance
- The 5 why process
- Example of the 5 why process
- Risk reduction measures to eliminate, reduce or control the potential failures
- Impact, probability and detection criteria
- Failure Mode and Effect Analysis (FMEA)

Exercise 2 – FMEA analysis

Monte Carlo simulations

- **Mathematical technique that allows people to account for risk in quantitative analysis and decision making.**
- **Provides a range of possible outcomes and the probabilities they will occur**
- **Determines a probability distribution**
- **The types of distribution**
  - **Normal(bell curve)**
  - **Uniform**
  - **Triangular**
- **Uses of Monte Carlo simulations**
  - **Pricing strategies**
  - **Determining the optimum duration of a project**
  - **Determining demand patterns of customers**
  - **Food safety analysis**

Exercise 3 - Monte Carlo exercise

Bayesian networks

- **Bayes theorem**
- **The risk events where the probability of one event is conditional on the probability of a previous one**
- **Adding more data to an original idea to enhance decision making**
- **Use of Bayesian networks**
  - **Advanced Spam filters**
  - **Customer surveys**
  - **Website usability**
  - **IT Network failure**
  - **Medical diagnosis**

Exercise 4 - Bayesian network exercise

Delphi (expert analysis)

- **Getting consensus from experts of different backgrounds and perspectives**
- **Comparing the opinions of qualified experts from different fields**
- **Determining acceptable risk by using experts to assess e.g. total credit given versus credit available or to establish creditworthiness criteria**
- **Worked example**
- **Uses of Delphi**
  - **Predicting demographic changes**
  - **Assessing patterns of adverse weather**
  - **Predicting economic trends**

Exercise 5 –Delphi analysis – the mystery

Identifying the emerging risks

- There is no clear boundary with other types of risk
- Emergent Risks cannot often be easily anticipated
- At early stages they are often low probability / high impact
- Areas for consideration
    - Political
    - Regulatory
    - Legal
    - Security
    - Technology
    - Environmental
    - Knowledge

Exercise 6 – Identifying the emerging risks

Day 2 - Key Risk Indicators

The fundamentals of KRI's

- What are KRI's?
- KRI's provide an early warning system
- They add value to the overall ERM process
- Providing perspective through benchmarking.
- Predicting new scenarios — especially within high-risk areas
- Enabling timely and ongoing actions to minimise risk
- Enabling leaders and key personnel to receive alerts of potential risks in advance.
- How effective KRI's help in the achievement of strategic objectives
- Providing time to develop the appropriate and effective risk responses and action plans.
- Establishing objectivity within the risk management process.

Exercise 7 - The challenges of establishing KRI's

An effective method for developing KRIs

- Types of KRI's
    - coincident indicators
    - causal indicators
    - control effectiveness indicators
    - volume indicators
- Analyse a risk event that has affected the organization in the past (or present)
- Then work backwards to pinpoint intermediate and the events that led to the ultimate loss or lost opportunity.
- Management can then use that analysis to identify information associated with the event that can serve as a key risk indicator
- The goal is to develop key risk indicators that provide insight that risks may be emerging.

Exercise 8 – Select 5 key risk events and identify the KRI's

Cause and effect risk indicators

Causes

- Number and type of causes identified in loss event or near miss data collection
- Examples

  - Staff turnover as a % of staff
  - Staff morale (collected from staff surveys)
  - Number of IT patches not implemented
  - Number of attempted IT hacking attacks
  - Number of overdue internal audit actions
  - Number of manual interventions to correct automated process failures

Effect indicators

- The indirect costs of operational loss events (e.g. lost market share, fines, etc.)
- Duration of staff absence due to health and safety incidents
- Customer satisfaction impact
- Number and duration of disruptions to processes and systems
- Number of negative press reports following a negative event
- Number of negative social media posts following a negative event

Exercise 10 – Determining the cause and effect indicators

Developing a KRI Dashboard

- A KRI dashboard is a visual display of risk data
- By tracking KRIs over time, you can identify trends and take action to mitigate risks before they become problems
- Trend data for each KRI over time
- Threshold values for each KRI
- Links to relevant reports or tools
- Actions to reduce near misses
- Set threshold values for each KRI
- Review and update regularly

Exercise 11– Developing a KRI dashboard

KRI tracking and trend analysis

- Once the KRIs are in place, they must be tracked regularly
- Use of data analytics is an excellent approach
  - Comparisons between systems that are not linked together
  - Fuzzy matching
  - Real time exception reporting
- Building trend analysis into the process – to ensure risk owners spot the trends

- **The frequency depends on what the KRI represents.**
- **These should be reported to the top management and escalation procedures must be established and communicated to personnel handling these metrics.**
- **Not all KRIs have the same levels of escalation,**
- **It is imperative to follow the hierarchy of reporting and not overwhelm the management with too much information.**

Exercise 12 – KRI monitoring – the ERM process