# Risk management + Strategic planning

"IT TAKES AN ENTIRE ORGANIZATION"

# Background



- Technology has become the central component of business operations
- Businesses have become more vulnerable to risks associated with technology
- Data loss, corruption and inaccessibility, as well as system and infrastructure failures, can severely impact an organization's productivity.

# Types of risk



- Data driven
  - Virus
  - Data corruption
  - Disk failure
  - Worms
  - Data growth
  - Cyber attacks
- Business driven
  - Network problem
  - Compliance
  - Marketing campaigns
  - Audits
  - System availability failures
  - Application outage
  - Governance
  - New products

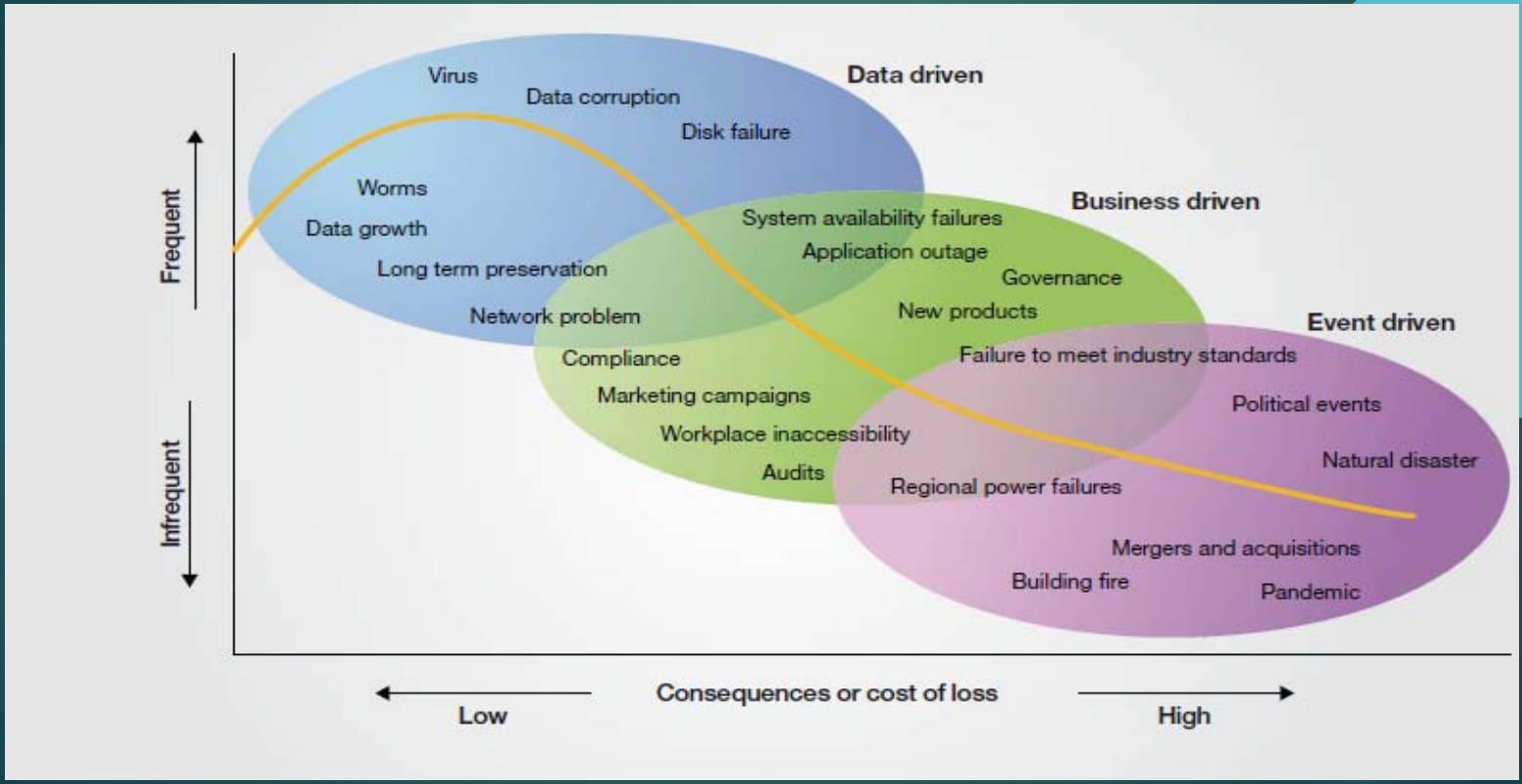
# Types of risk continued



- Event driven
  - Failure to meet industry standards
  - Political events
  - Natural disaster
  - Regional power failure
  - Mergers and acquisitions
  - Building/data center fires

# Frequency vs. consequence





# Issues



- The ability to anticipate opportunities and effectively respond to threats is critical for organizations to grapple with new challenges.
- In today's globally interdependent environment, risks to businesses, no longer isolated by industry or geography, are becoming complex in nature and global in consequence.
- Managing and mitigating risk is a necessity for survival, driving a company's success in this diverse, competitive and fragile marketplace.
- An integrated risk management approach is required and it must be tied into the strategic planning exercise
- Organizations need to be flexible and agile to respond and be ready
- Companies quantify the average potential financial risk of a data breach at $163 million.
- Cyber security breaches cost companies an average of $9.4 million for one or more incidents.
- Cyber security insurance can help a company guard against future losses, and 70 percent of companies that experienced an incident in the past 24 months say it raised their interest in cyber security insurance.

# Top 10 risks



- The 2013 *Aon Global Risk Management Survey identified the following as top 10 risks:
  - 1. Economic slowdown / slow recovery
  - 2. Regulatory / legislative changes
  - 3. Increasing competition
  - 4. Damage to reputation / brand
  - 5. Failure to attract or retain top talent
  - 6. Failure to innovate / meet customer needs
  - 7. Business interruption
  - 8. Commodity price risk
  - 9. Cash flow / liquidity risk
  - 10. Political risk / uncertainties

*Aon Global Survey: Conducted in the fourth quarter of 2012, the survey has gathered the input from 1,415 respondents, which represent companies of all sizes around the globe, both public and private*

# How to prepare and respond? Integration of risk and strategy

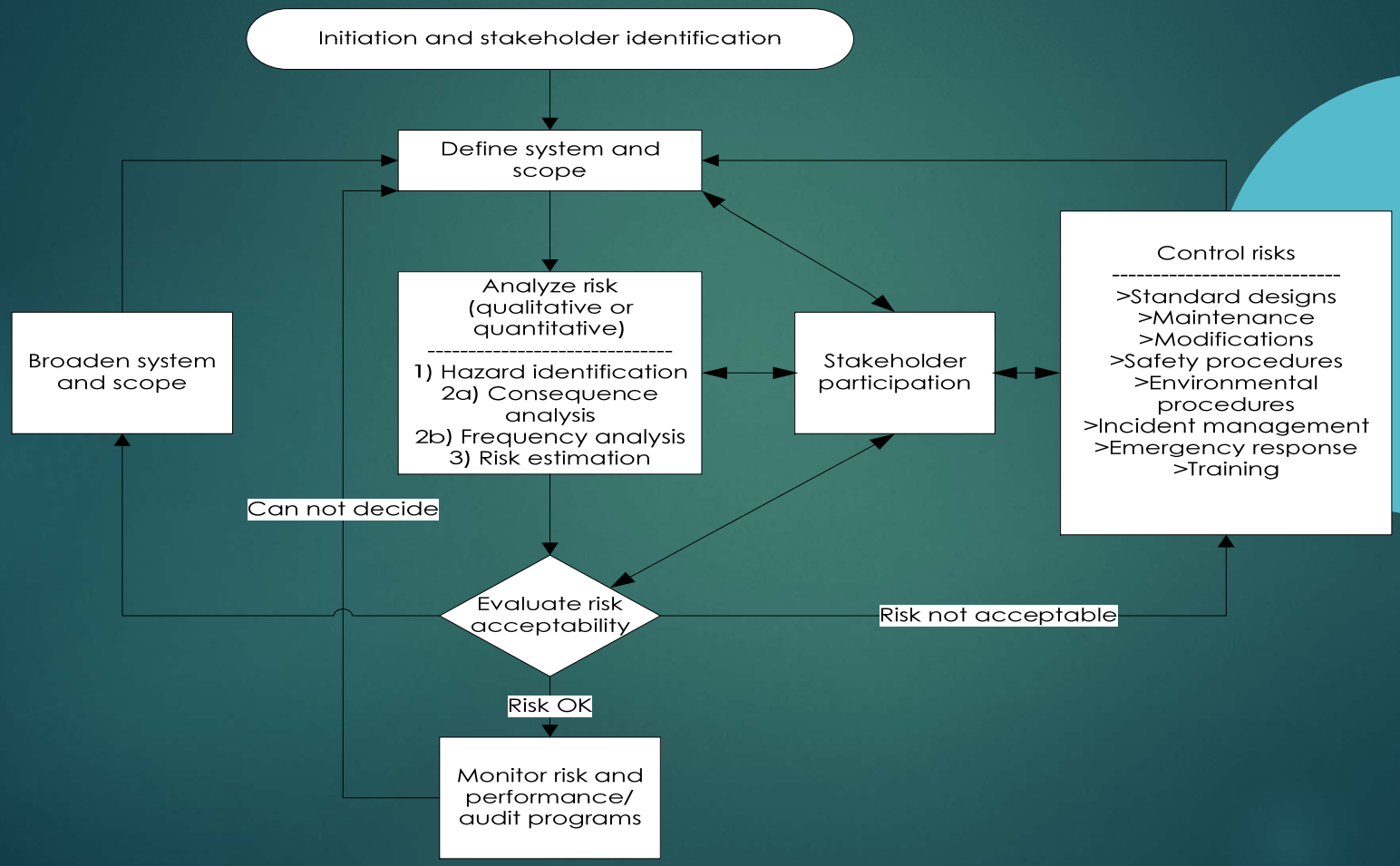
- The 2013 Aon Global Risk Management Survey also confirms the primacy of strategic risks in terms of their overall importance and performance impact.
- The top three risks — economic slowdown/slow recovery, regulatory/legislative changes and increased competition — represent strategic risks that cannot be easily transferred with financial instruments.
- These risks must be analyzed and managed as part of the strategic management process. Proper response typically involves strategic levers such as changes in corporate scope, business model, or key activities and capabilities.

# Proposed approach: Implement an integrated risk management process in concert with the strategic planning process/exercise

- Existing risk management processes need to be redesigned to ensure integration with strategic planning processes (continuous process). The process shall examine corporate capabilities and flexibility.
- A team that is lead by an expert that “has been there” & “done that before” appointed by the CEO must be created
- Members of the team to be selected by the team leader (expert)
- The team will develop scenarios (data driven, business driven, and event driven)
- The scenarios will have to be analyzed and if the risks are acceptable , they shall be monitored (by a special team), if not acceptable, there shall be mitigation
- Overall integrated risk management process should touch all phases of projects, programs, and portfolios
- The mitigation projects shall be done immediately, the process of assessing risks is continuous
- Do not forget residual and secondary risks

# Risk management process





# Risk assessment/analysis



- During the analysis scenarios shall be analyzed with their impacts to the following areas:
  - Finance
  - Public perception
  - Regulatory compliance
  - Loss of delivery
  - Quality of life
  - Employee and public
  - Business interruption

# What does integrated risk management mean?

- Integration means analyzing each scenario and assessing its impact on the following areas (the areas may vary based on type of business):
  - Finance
  - Public perception
  - Regulatory compliance
  - Loss of delivery
  - Quality of life
  - Employee and public safety
  - Business interruption

- Then using a severity matrix adding the total risk points for a total risk point.

# Example: Data center fire



- Scenario: A data center fire that started in the HVAC system, causes 3 days outage (assume 1 fire in the past 10 years for frequency and company owns 10 data centers):
- Risk= Frequency X Σ(Probability of Consequences)
- Risk= 1/10*10 X Σ((100%*1)+(80%*1+20%*3)+ (100%*9) + (100%*9)

  Safety: First aid; Quality: Detection + Short Term; Loss of delivery: 1-3 days; Public: Media coverage

  (100%*9) + (80%*3+20%*5) + (80%*5+20%*7)) = 3.82 risk points (N/A)

  Bus. Impact: Critical; Regulatory: Official + inquiry; Financial: Considerable + Destructive

- This scenario risk is unacceptable and requires mitigation (i.e. above 3). The organizations shall establish acceptable risk limits.

# Severity matrix



| Definitions | Likelihood, Given Current Mitigation Initiatives in Place | | Impact, If It Occurs | | Impact, If It Occurs | | Impact, If It Occurs | | Impact, If It Occurs | | Impact, If It Occurs | | Impact, If It Occurs | | Impact, If It Occurs | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Measure | Score | Public & employee safety | Score | Quality of Life | Score | Loss of delivery | Score | Public perception | Score | Business Interruption | Score | Regulatory compliance | Score | Financial | Score |
| 9 - Very High | Expected - An event you can expect to happen (More than once per year - 70% +) | 9 | 1 Fatality | 9 | N/A | 9 | 1-3 day outage | 9 | Public / Media outrage (demand for public enquiry) | 9 | Critical impact/business closed | 9 | Penal sanction | 9 | Catastrophic - Very substantial impact on profitability or shareholder value ($10M - $50M) | 9 |
| 7 - High | Probable - An event that can be anticipated to happen and this area or a similar organization have experienced such an event (1 in 3 year event - 33%) | 7 | Long term disability | 7 | Long-term chronic discomfort | 7 | 1 hr. outage | 7 | Public / Media concern (civil action against organization) | 7 | Serious impact | 7 | Prosecution | 7 | Destructive - Major impact on profitability or shareholder value ($1M-$10M) | 7 |
| 5 - Medium | Possible A rare event that can be envisaged but has not occurred in this area or in this organization (1 in 5 year event - 20%) | 5 | Short Term disability | 5 | Long term chronic neusiance | 5 | 20 Min. Outage | 5 | Adverse external publicity | 5 | Adverse impact | 5 | Public inquiry/regulatory order | 5 | Considerable - Significant impact on profitability or shareholder value ($100K-$1M) | 5 |
| 3 - Low | Unlikely - An event that can be envisaged but hasn't occurred in the company history (e.g. requires a combination of two or more events to occur) (1 in 10 year event -10%) | 3 | Restricted work-Medical Aid | 3 | Short-term nuisance | 3 | 5-10 Min. Outage | 3 | Adverse internal publicity | 3 | Minor impact | 3 | Official investigation | 3 | Material - Moderate impact on profitability or shareholder value ($10K-$100K) | 3 |
| 1 - Very Low | Remote - An event that can be conceived but is considered to be very difficult to realize (e.g. require a combination of several events to occur) (1 in 50 year event - <2%) | 1 | First Aid | 1 | Detection | 1 | 1-4 Outgae | 1 | Minimal impact on image | 1 | Incidental occurance | 1 | Reportable incident | 1 | Moderate - Minor impact on profitability or shareholder value (Less than $10K) | 1 |

# Residual and Secondary Risks



- After mitigation measures are implemented, it's also important to identify residual and secondary risks.
- **Residual risks** are risks that remain after all of the response strategies have been implemented.
- **Secondary risks** are a direct result of implementing a risk response.

# Conclusion



- Risks must be analyzed and managed as part of the strategic management process. Proper response typically involves strategic levers such as changes in corporate scope, business model, or key activities and capabilities.
- When strategic risk management is embedded as an integral part of the strategy process, the strategies can become more robust to uncertainty, and more flexible.
- This a very promising area for research and for development of best practices.

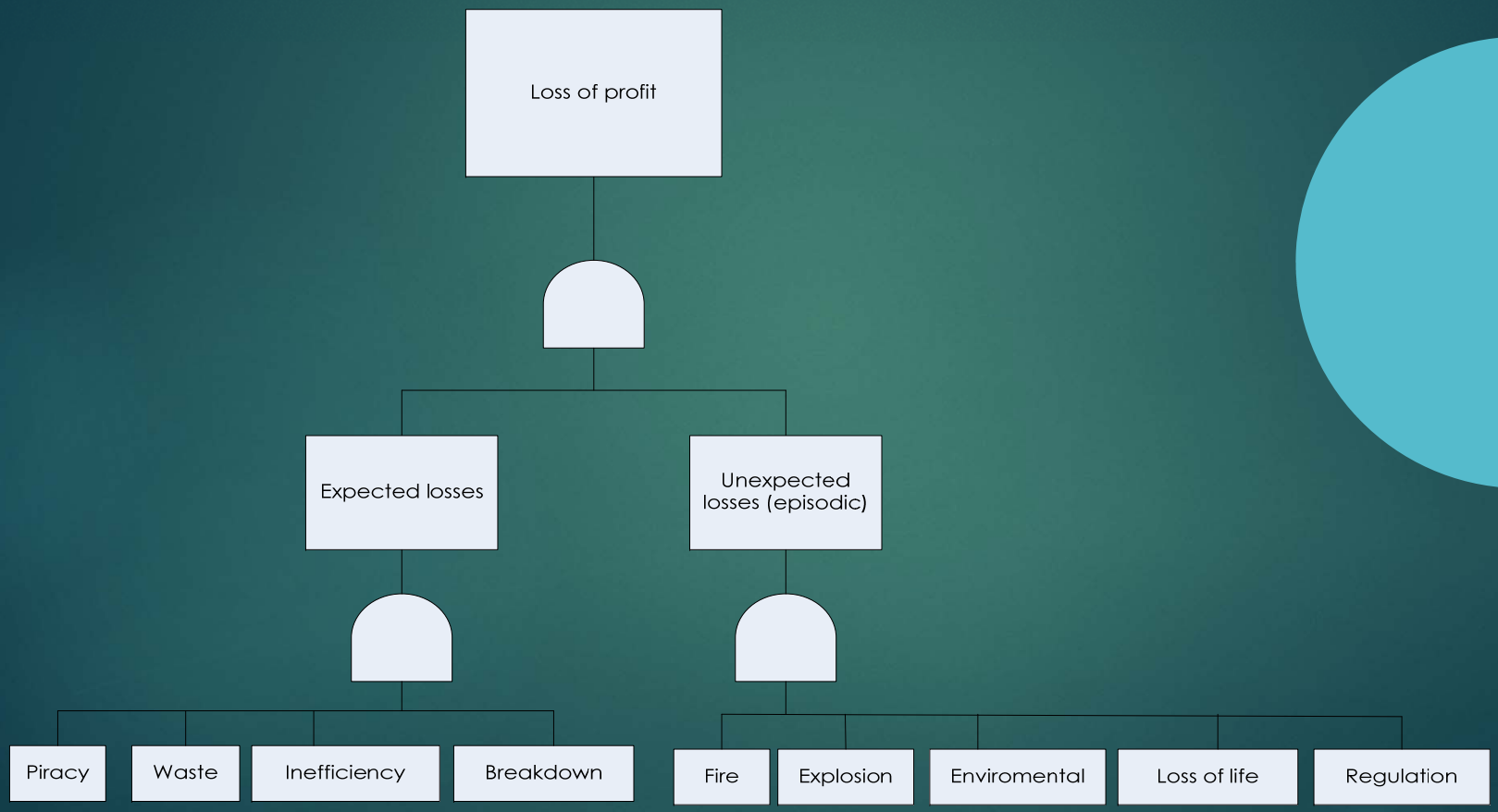
# Questions/comments

# Back up slides

# Integration of risk and strategy



- The predominance of strategic risks does not mean that they cannot be mitigated. But managing these risks often involves changing the strategy, requiring a close integration of the risk management process with the strategic planning process of the companies.
- The practice in many companies is still sequential: strategy development comes first, with a focus on opportunities, and risk management takes strategy as given and manages the ensuing risks. That may lead to strategies that are not sufficiently flexible or adaptive.
- When strategic risk management is embedded as an integral part of the strategy process, the strategies can become more robust to uncertainty, and more flexible and exploratory.
- Strategic risk management has important implications for the strategy process and the governance of risk. It brings more responsibility for risk management directly to the general managers in charge of strategy and, ultimately, to the board.
- As part of the board responsibility to endorse and monitor strategy, directors should gain intimate understanding of the major strategic risks, possible scenarios, and how the strategy allows the exploration of uncertainties and mitigation of strategic risks.
- Given the results of Aon's 2013 Global Risk Management Survey, developing capabilities for strategic risk management by top management teams and boards should be an important priority in these uncertain times.
- This a very promising area for research and for development of best practices.

| Consequence Matrix (Revision 13) | | | | | | |
|---|---|---|---|---|---|---|
| Severity Factor | Fatality/Injury Illness | Exposure | Quality of Life | Financial Impact | Adverse Environmental Change | Regulatory Intervention |
| 100 | >10 Fatalities | | | 1 Billion$ | Critical Environmental Change | |
| 90 | | | | 900 M$ | | |
| 80 | | | | 800 M$ | | |
| 70 | | | | 700 M$ | | |
| 60 | | | | 600 M$ | | |
| 50 | | | | 500 M$ | | |
| 40 | | | | 400 M$ | | |
| 30 | | | | 300 M$ | | |
| 20 | | | | 200 M$ | | |
| 10 | 3 to 10 Fatalities | | | 100 M$ | | |
| 9 | | | | 90 M$ | | |
| 8 | | | | 80 M$ | | |
| 7 | | | | 70 M$ | | |
| 6 | | | | 60 M$ | | |
| 5 | | | | 50 M$ | | |
| 4 | 2 fatalities | | | 40 M$ | | |
| 3 | | | | 30 M$ | | |
| 2 | | | | 20 M$ | | |
| 1 | 1 Fatality | | | 10 M$ | Serious Environmental Change | Penal Sanctions |
| 0.9 | | | | 9 M$ | | |
| 0.8 | | | | 8 M$ | | |
| 0.7 | Permanent Disability | | | 7 M$ | | Prosecution |
| 0.6 | | | | 6 M$ | | |
| 0.5 | | | | 5 M$ | | |
| 0.4 | | | | 4 M$ | | Stop Work Order |
| 0.3 | | | | 3 M$ | | |
| 0.2 | | | | 2 M$ | | |
| 0.1 | Lost Time Injury | | | 1 M$ | Adverse Environmental Change | Public Enquiry |
| 0.09 | | | | 900 k$ | | |
| 0.08 | | | | 800 k$ | | |
| 0.07 | | | | 700 k$ | | |
| 0.06 | | | | 600 k$ | | |
| 0.05 | | | | 500 k$ | | |
| 0.04 | | | | 400 k$ | | |
| 0.03 | | | | 300 k$ | | |
| 0.02 | | | | 200 k$ | | |
| 0.01 | Restricted Work | | | 100 k$ | Minor Environmental Change | Official Investigation |
| 0.009 | | | | 90 k$ | | |
| 0.008 | | | | 80 k$ | | |
| 0.007 | | | | 70 k$ | | |
| 0.006 | | | | 60 k$ | | |
| 0.005 | Medical Aid Injury | | Long Term Chronic Nuisance | 50 k$ | | |
| 0.004 | | | | 40 k$ | | |
| 0.003 | | | | 30 k$ | | |
| 0.002 | | | | 20 k$ | | |
| 0.001 | First Aid Injury | Reaches Exposure Limits | Short Term Discomfort | 10 k$ | Incidental Occurrence | Reportable Incident |
| 0.0001 | | | Detection/Short Term Nuisance | | | |
| | | | | | | |
| | | | | | | |
| Notes: | | | | | | |
| 1. Financial Impact includes Market Share, Liability, Environmental Cleanup, Property Damage, Business Interuption, Decommissioning, Increased WCB Assessment, Increased Insurance Premium | | | | | | |
| 2. Multiply by 10 for Fatality/Injury/Illness/Chemical Exposure/Quality of Life if the public is involved (an involuntary risk). | | | | | | |
| 3. Multiply by 5 for Environmental Degradation if the species is endangered or 'cute and fuzzy'. | | | | | | |
| If more than one individual is affected for Quality of Life multiply by (1+log n) where n is the number of individuals affected. | | | | | | |
| Permanent Disability may fall in the range 0.2 to 1.0 depending upon the severity of the disability. | | | | | | |

Loss of profit is a derivative of expected and unexpected losses. To maximize our profit we must minimize loss of profit. We must have risk management processes to minimize/manage/mitigate the unexpected losses.