

# The Impact of Digital Interventions into Social Systems: How to Balance Stakeholder Interests

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<http://www.rogerclarke.com/DV/MSRA-VIE.html>  
<http://www.rogerclarke.com/DV/MSRA-VIE.pdf>

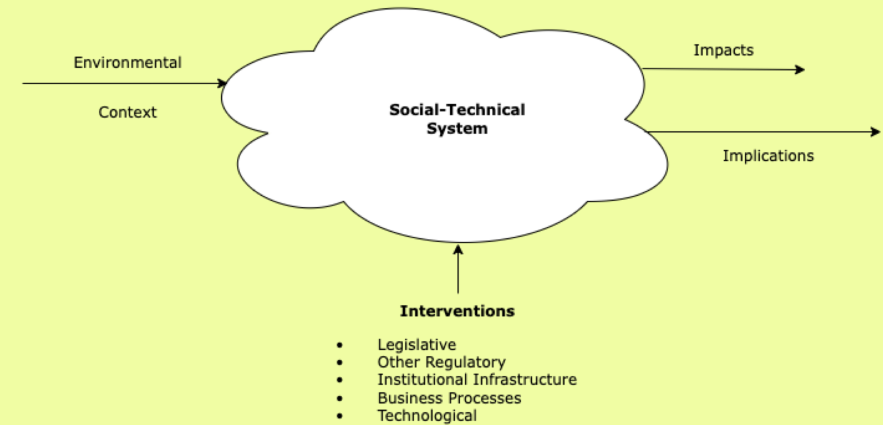
**IDSF22 – Vienna – 1 June 2022**

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## Interventions Affect Digital Society

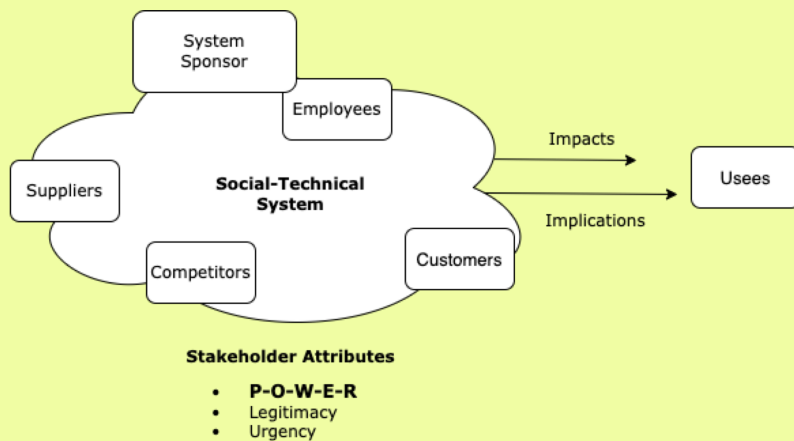


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## Stakeholders in a Socio-Technical System



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## Organisational Evaluation Techniques

- With a Focus on **Quantitative Data**:
  - Business Case Development (BCD)
  - Discounted Cash Flow Analysis (DCF)
  - Net Present Value Analysis (NPV)
  - Financial Sensitivity Analysis
  - Financial Risk Assessment
- Plus '**Non-Quantifiable**' / '**Qualitative**' Data:
  - Internal Cost-Benefit Analysis (CBA)
  - **Risk Assessment (RA)**

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## Evaluation Techniques within a Broader Frame of Reference

- Technology Assessment (TA)
- Environmental Impact Assessment (EIA)
- Privacy Impact Assessment (PIA)
- Social Impact Assessment
- Surveillance Impact Assessment

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But Board directors must serve the interests of shareholders

## Foundations of Risk Assessment

### The Conventional Security Model

<http://www.rogerclarke.com/EC/SSACS.html#App1>



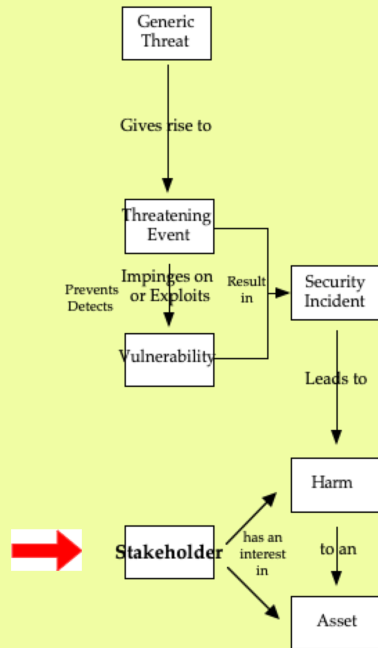
## Categories of Threat

- **Environmental Events** (Acts of Gods or Nature)
- **Accidents**, caused by:
  - Humans who are directly involved
  - Other Humans
  - Artefacts and those Responsible for them
- **Attacks**, by:
  - Humans who are directly involved
  - Other Humans
  - Artefacts and Designers, Owners, Operators

## The Conventional Security Model + Stakeholders

<http://www.rogerclarke.com/EC/SSACS.html#App1>

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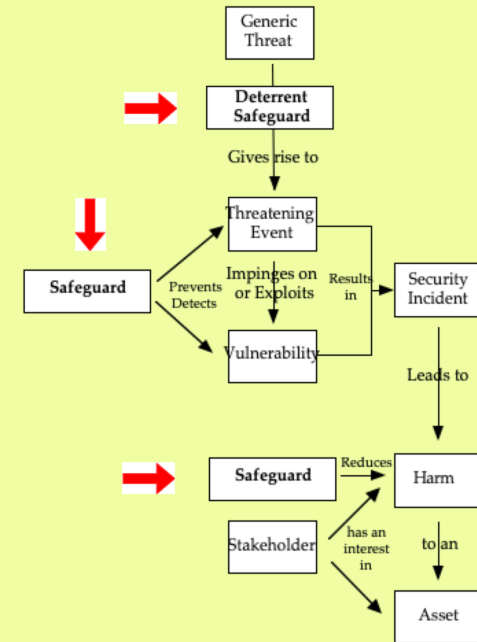


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## The Conventional Security Model + Safeguards

<http://www.rogerclarke.com/EC/SSACS.html#App1>

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## Risk

The perceived likelihood of occurrence of Harm arising to an Asset as a result of a Threatening Event impinging on a Vulnerability

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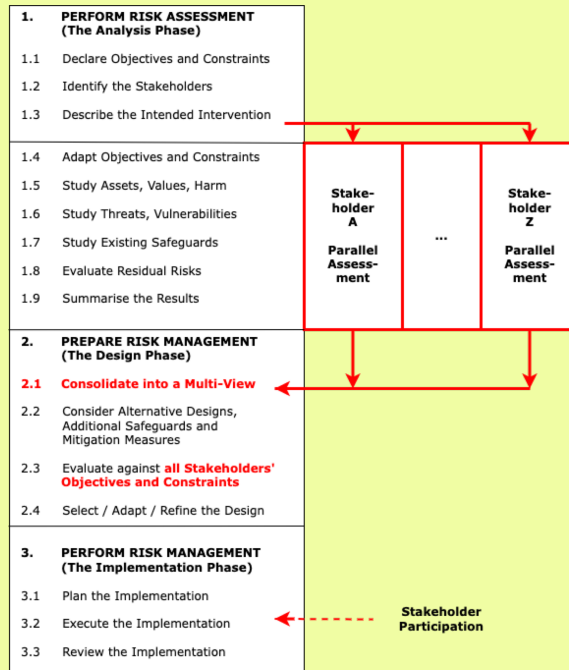
## Risk Assessment (& Risk Management)

1. **PERFORM RISK ASSESSMENT (The Analysis Phase)**
  - 1.1 Declare Objectives and Constraints
  - 1.2 Identify the Stakeholders
  - 1.3 Describe the Intended Intervention
  - 1.4 Adapt Objectives and Constraints
  - 1.5 Study Assets, Values, Harm
  - 1.6 Study Threats, Vulnerabilities
  - 1.7 Study Existing Safeguards
  - 1.8 Evaluate Residual Risks
  - 1.9 Summarise the Results
2. **PREPARE RISK MANAGEMENT (The Design Phase)**
  - 2.1 Consider Alternative Designs, Additional Safeguards and Mitigation Measures
  - 2.2 Evaluate against Objectives and Constraints
  - 2.3 Select / Adapt / Refine the Design
3. **PERFORM RISK MANAGEMENT (The Implementation Phase)**
  - 3.1 Plan the Implementation
  - 3.2 Execute the Implementation
  - 3.3 Review the Implementation

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## Multi-Stakeholder Risk Assessment & Risk Management



## Exemplars

- Small-Scale **Environmental** Impact Assessment
- **Corporate Access** to Mineral Ore-Bodies
- Closure of a Large **Regional Facility**
- Inherently **Dangerous or Intrusive Interventions**
- Overcoming Harmful **Monopolies**
- Creating an **Open Marketplace**
- Balancing Interests in a **Networked Industry Sector**
- The **Platform-Based Business Sector**

## Conclusions

- Interventions have short-term impacts, and later implications
- Impactful interventions need evaluation not just deployment
- Organisational techniques support System Sponsors
- **There are few drivers for multi-stakeholder evaluation**  
Exception: Stakeholders recognised as having enough power (Legitimacy and Urgency are irrelevant to System Sponsors)
- **Often, harm to stakeholder could be avoided or mitigated with limited compromise to the sponsor's objectives**
- Business Case Development is driven by the prospects of profit
- Impact Assessment variants are narrow (a category of impacts)
- Technology Assmt is broad (a technology, applied to anything)
- **Risk Assessment comes from rational enterprise management**
- **But Multi-Stakeholder Risk Assessment (MSRA) can work**
- Exemplars exist; experimentation and trialling is necessary

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