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

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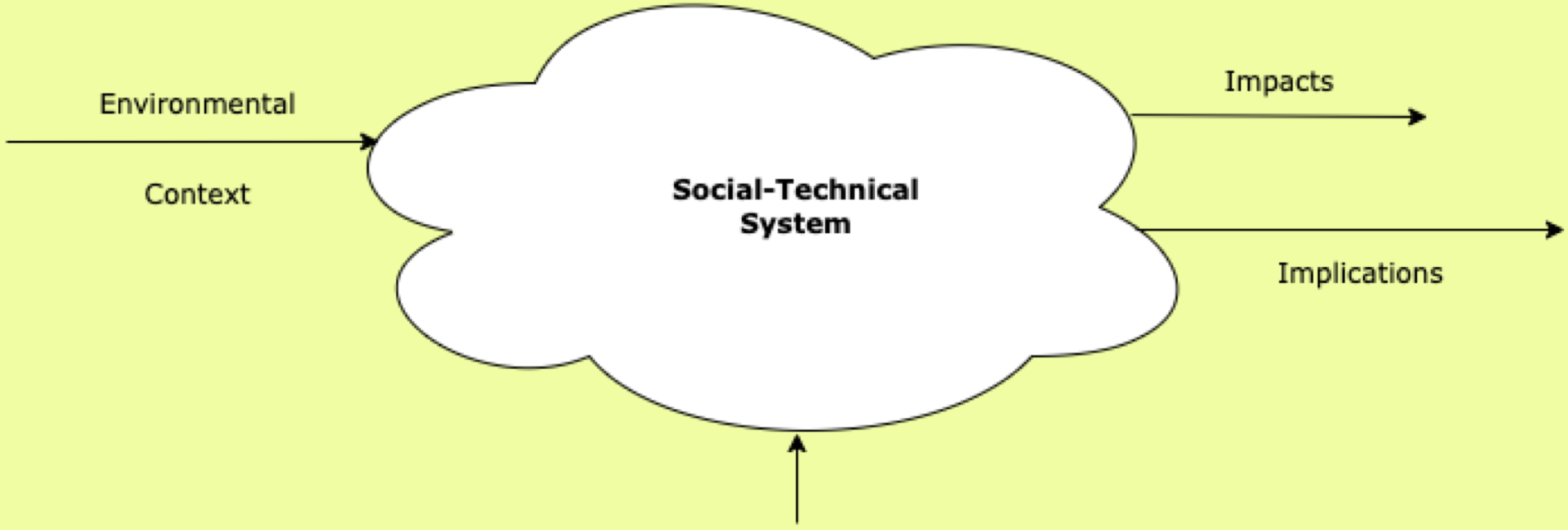
Interventions Affect Digital Society



- Legislative
- Other Regulatory
- Institutional Infrastructure
- Business Processes
- Technological

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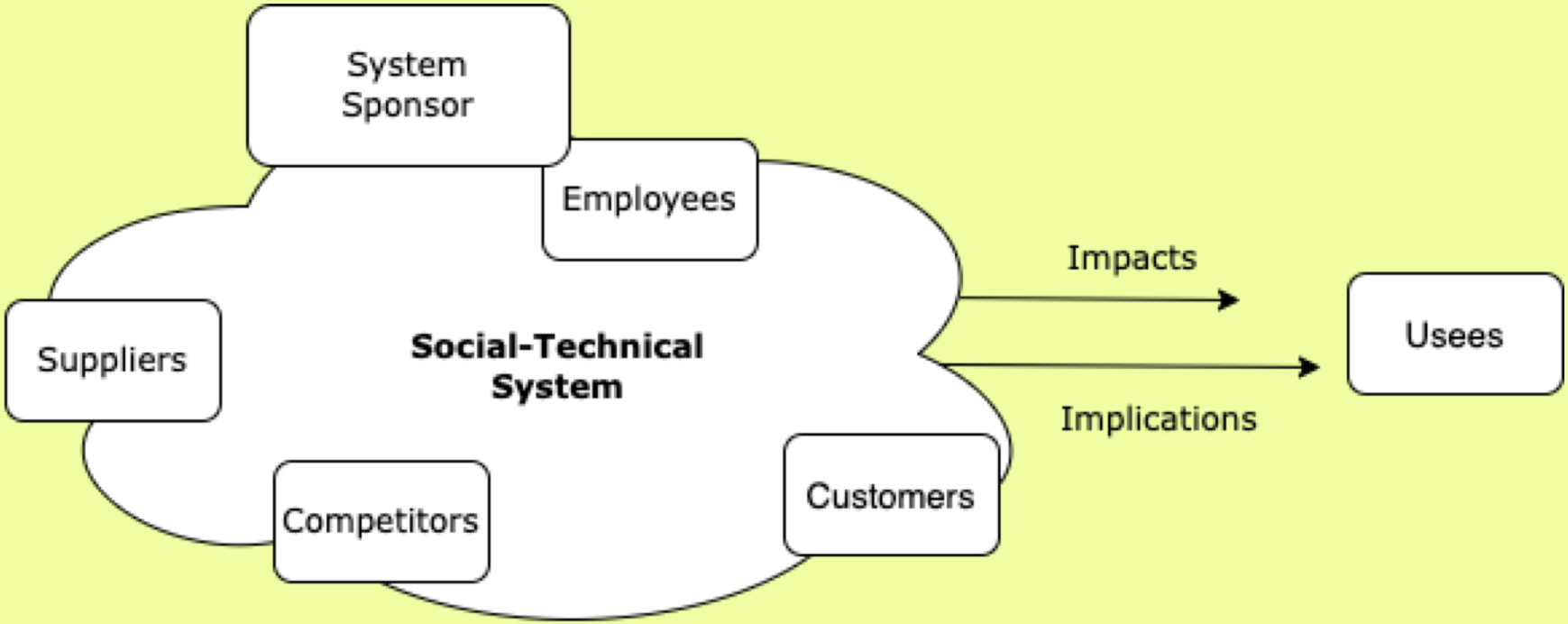
Stakeholders in a Socio-Technical System



Stakeholder Attributes

- **P-O-W-E-R**
- Legitimacy
- Urgency

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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

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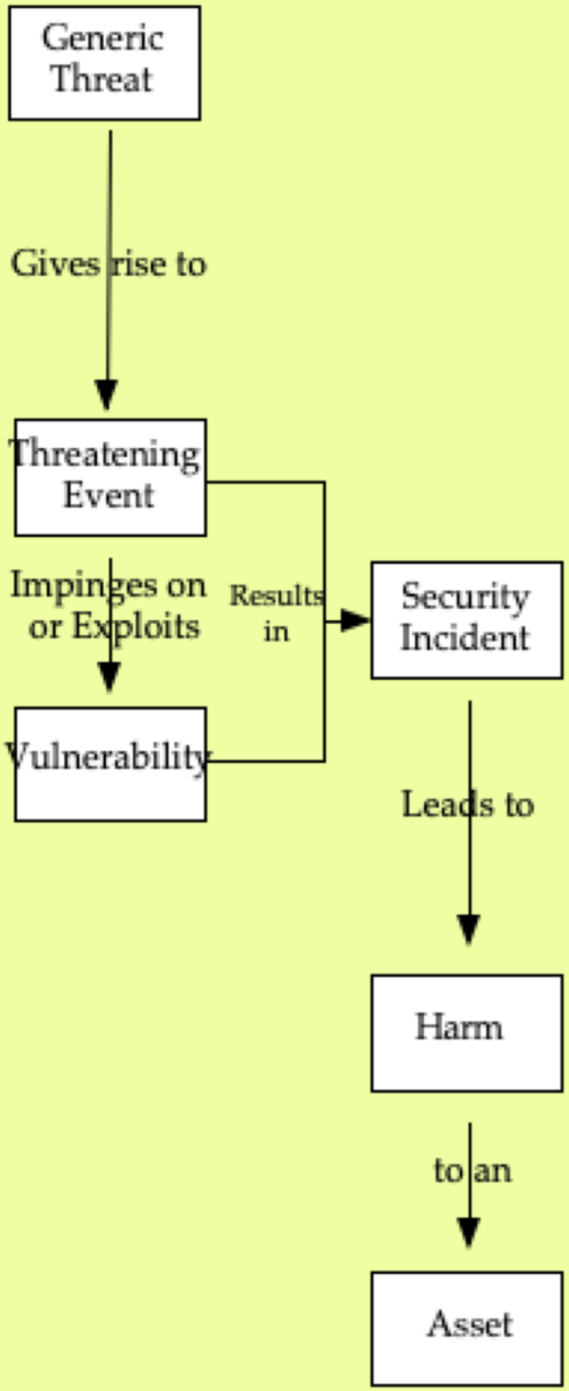
Foundations of Risk Assessment

The Conventional Security Model

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



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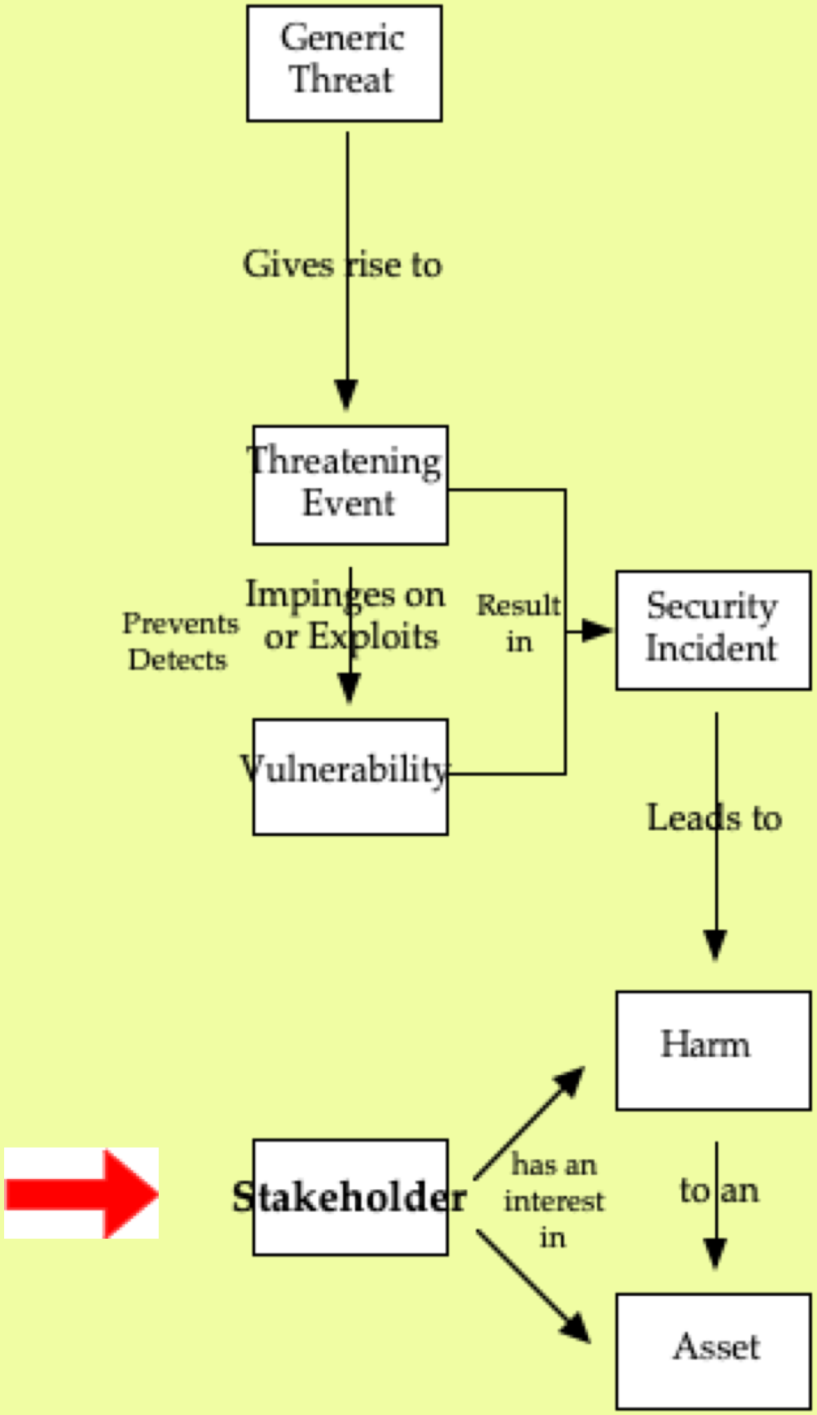
Categories of Threat

- **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



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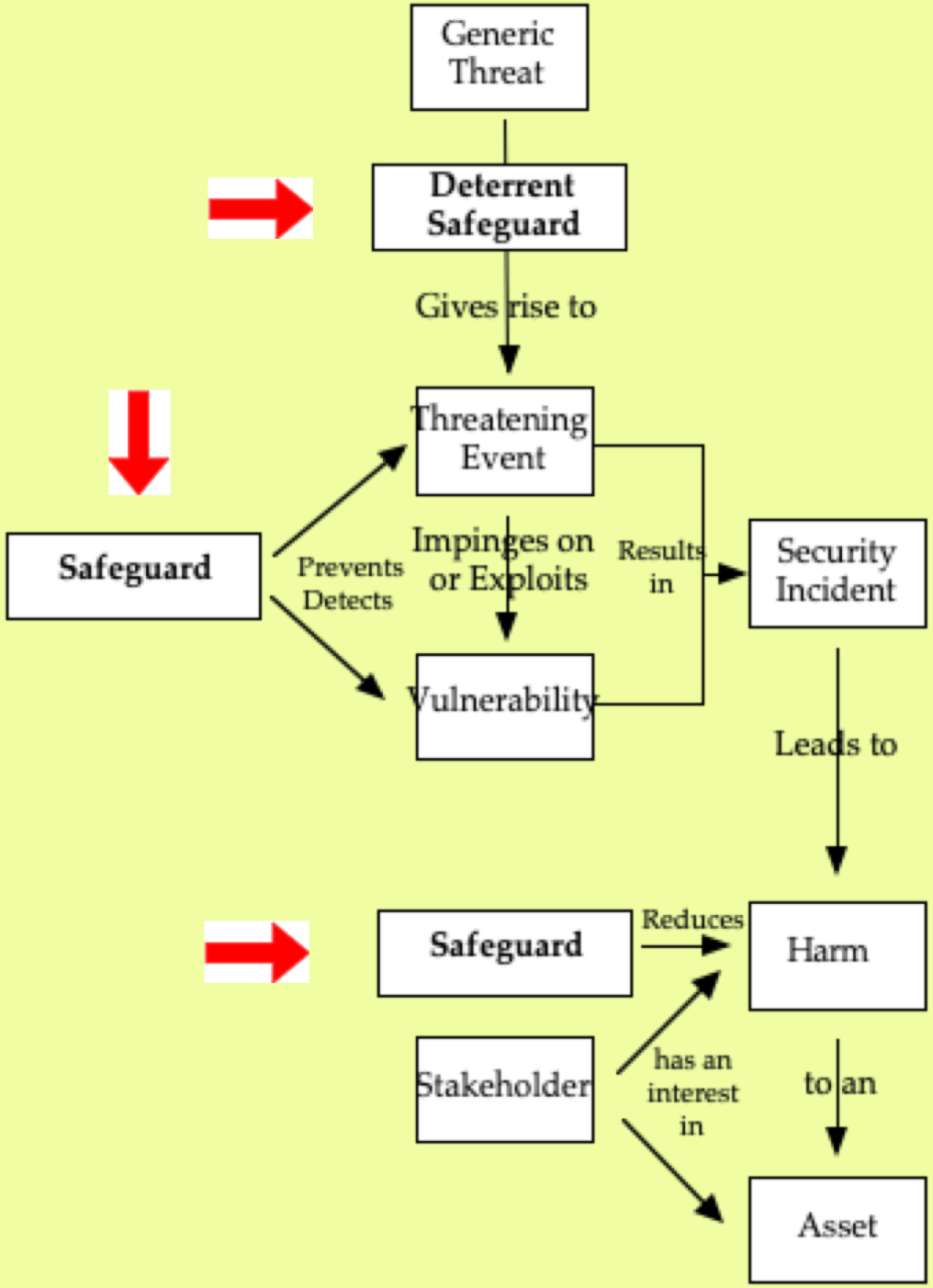
The Conventional Security Model + Safeguards



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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

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 Consolidate into a Multi-View

2.2 Consider Alternative Designs, Additional Safeguards and Mitigation Measures

2.3 Evaluate against **all Stakeholders' Objectives and Constraints**

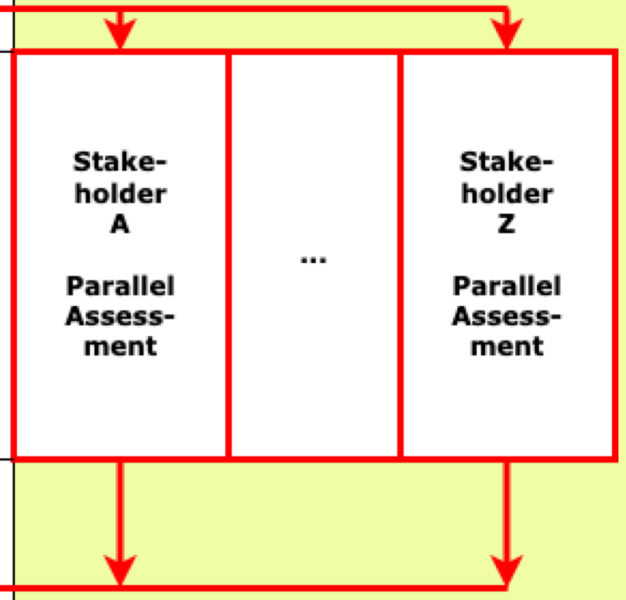
2.4 Select / Adapt / Refine the Design

3. PERFORM RISK MANAGEMENT (The Implementation Phase)

3.1 Plan the Implementation

3.2 Execute the Implementation

3.3 Review the Implementation



Stakeholder Participation

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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 Marketspace**
- Balancing Interests in a **Networked Industry Sector**
- The **Platform-Based Business Sector**

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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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