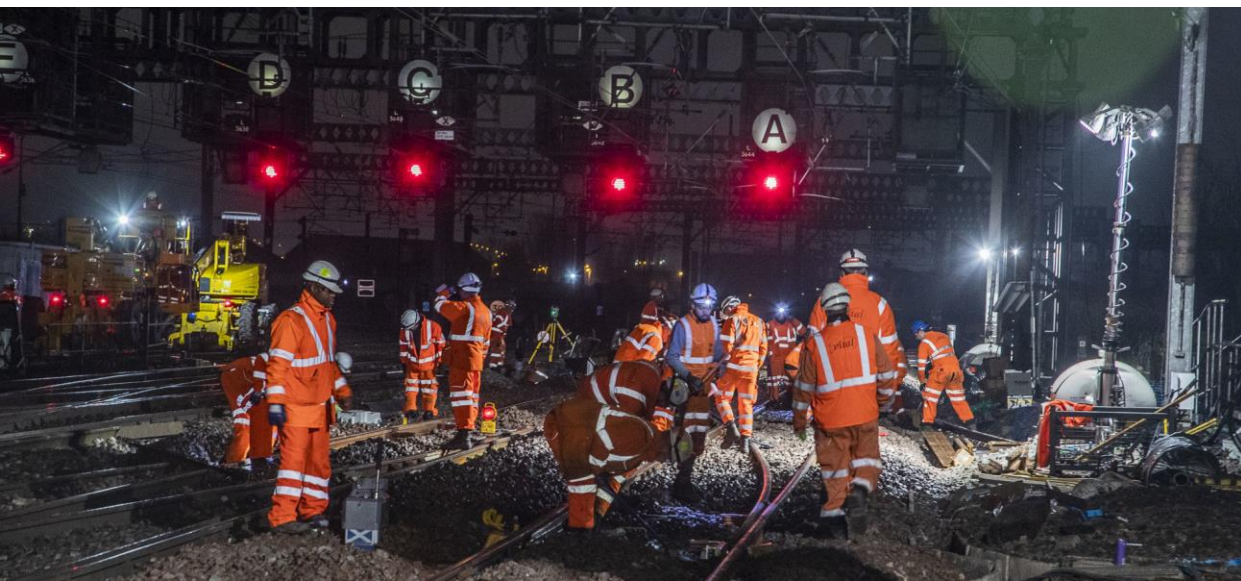


Applying STAMP at an Enterprise Level to Improve Human Factors Integration

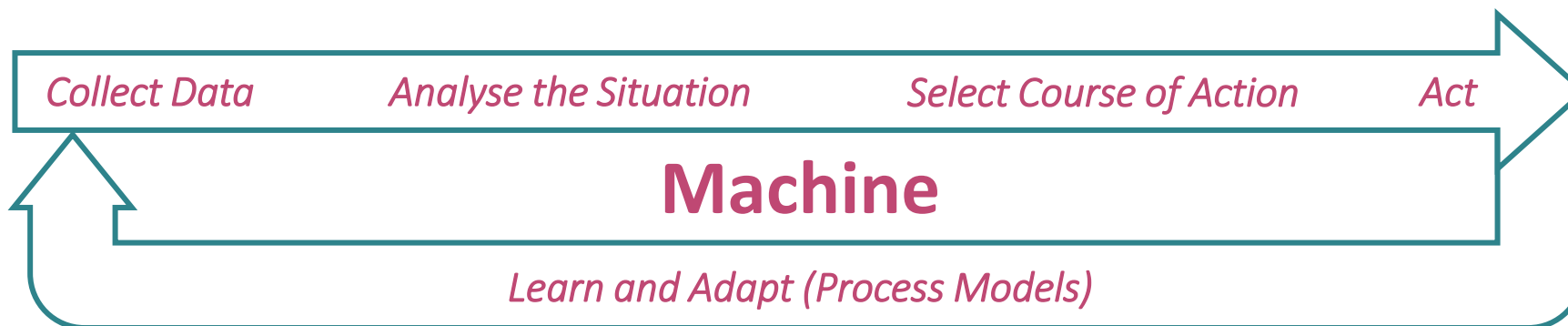
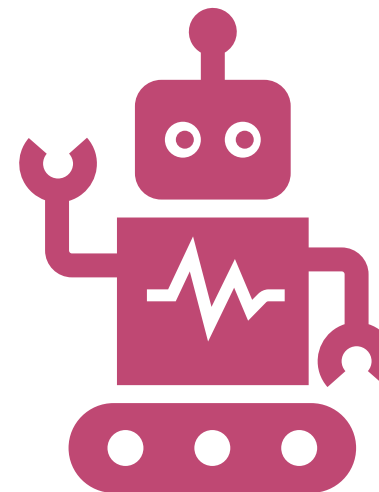






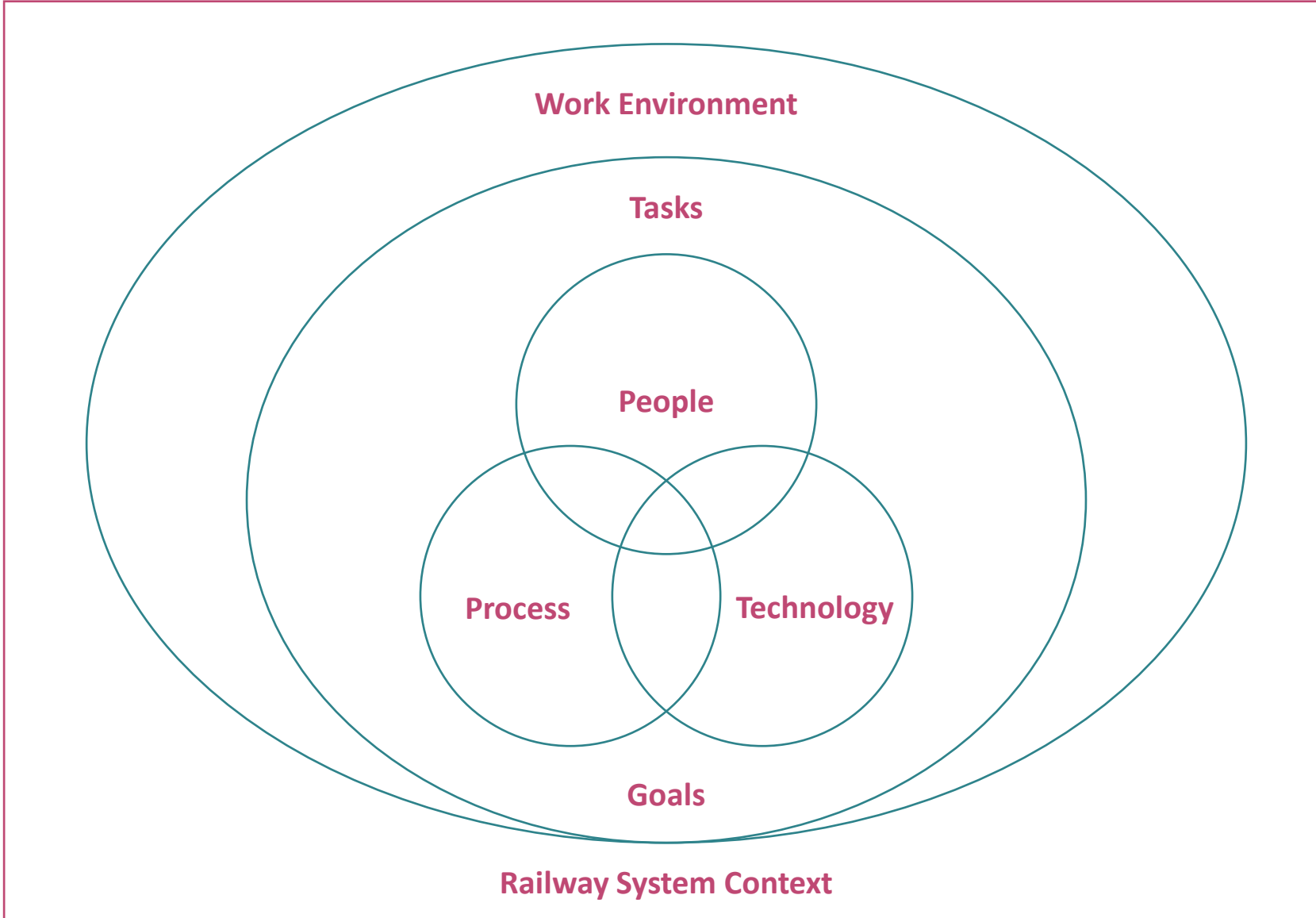






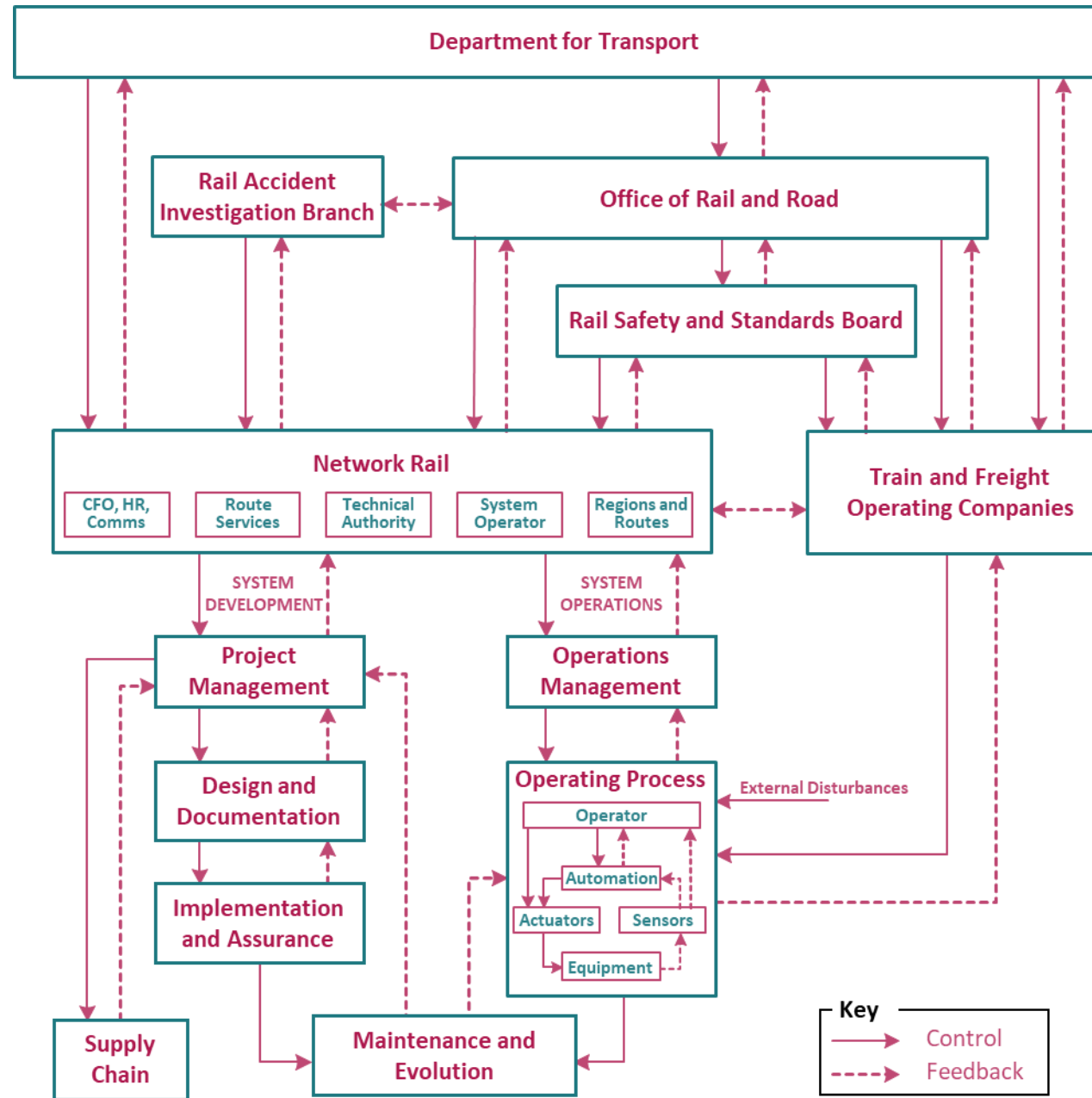
Legal and Regulatory Frameworks

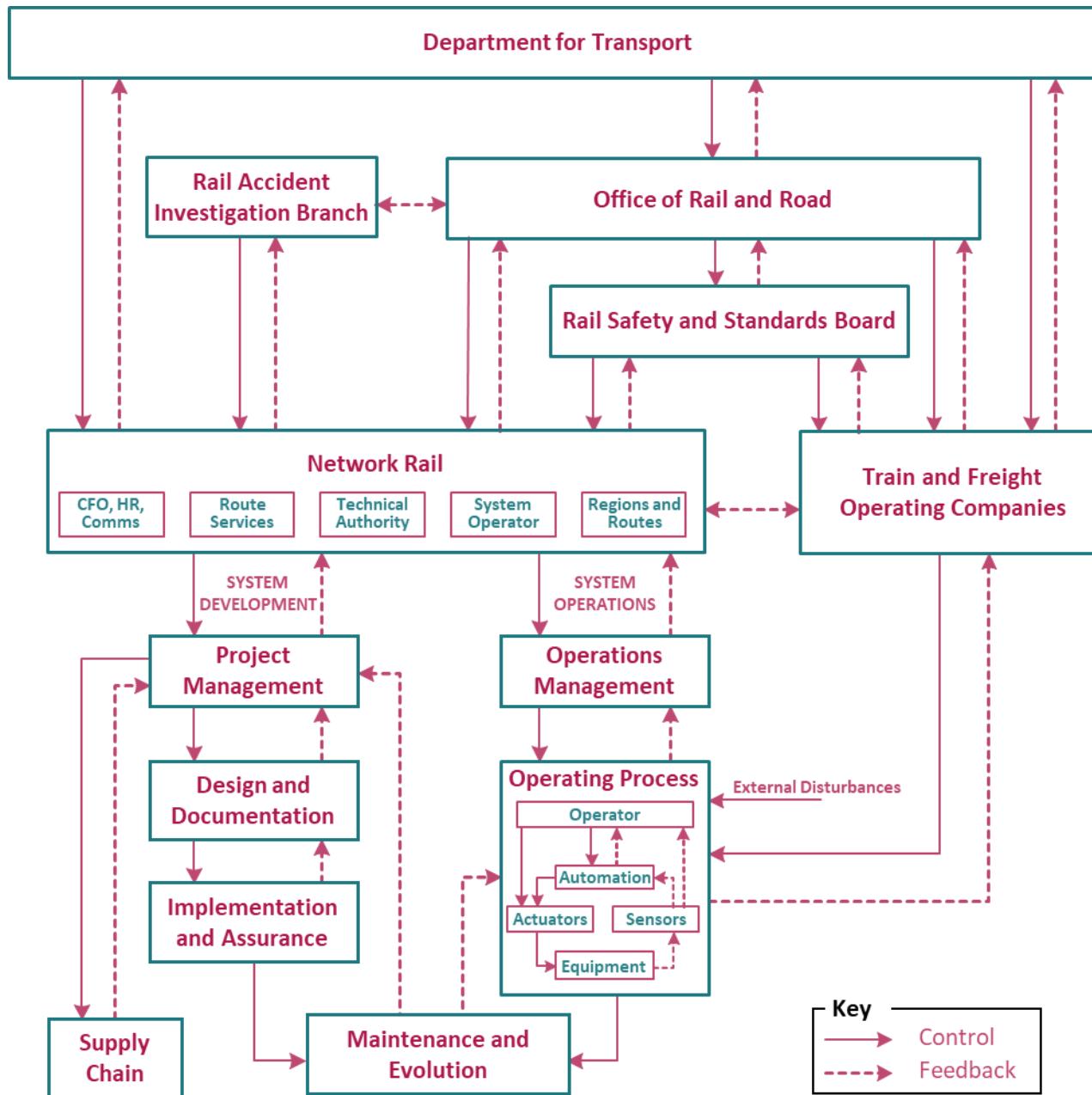
Financial Constraints and Priorities



Technical Developments and Capabilities

Social Influences, Expectations and Norms





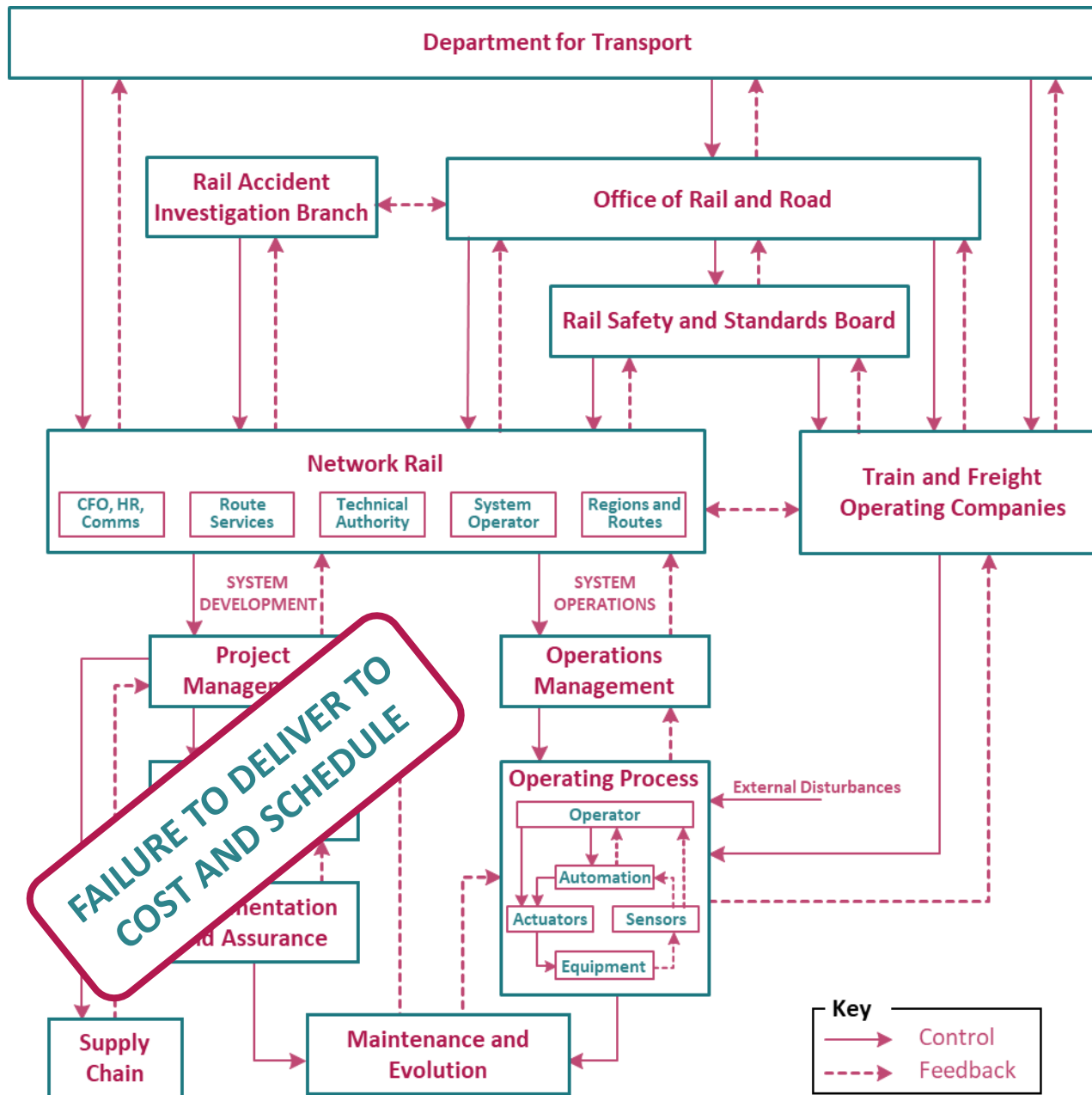
L-1
Financial loss

L-2
Loss of life or injury

L-3
Loss of trust or reputation

L-4
Loss or damage to property or the environment

L-5
Failure to deliver the rail service



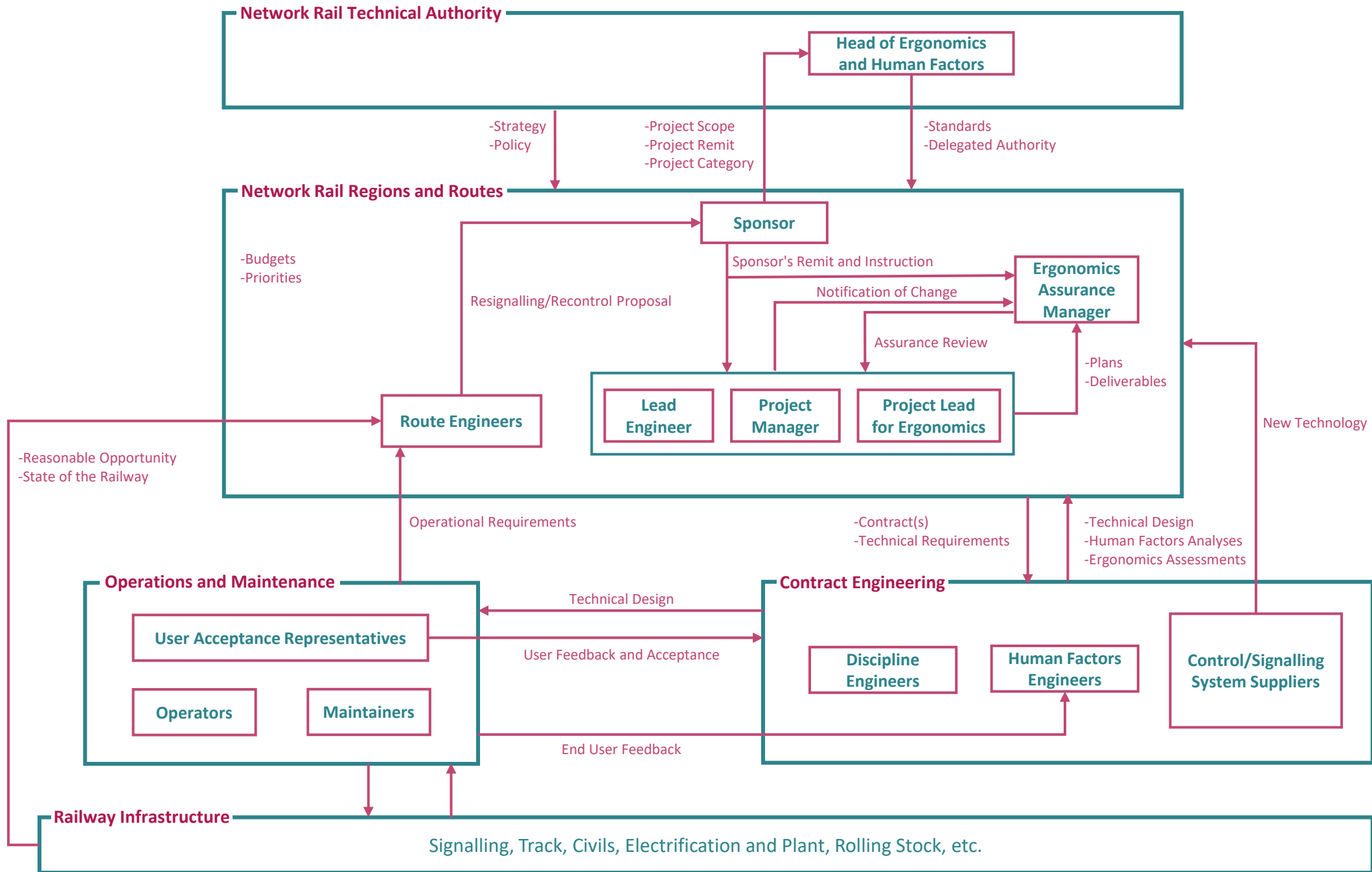
L-1
 Financial loss

L-2
 Loss of life or injury

L-3
 Loss of trust or reputation

L-4
 Loss or damage to property or the environment

L-5
 Failure to deliver the rail service





MIND THE GAP

Control Structures – Commonly Observed Challenges

- Cyber-physical systems
 - *Sensors are often identified as controllers*
 - *There is a tendency to map the physical system*
- Enterprise applications
 - *Documents are identified as controllers*
 - *There is a tendency to map processes*
- Variants and dynamics may be overlooked
 - *Mode differences*
 - *Drift/changes over time*

Control Structures – Commonly Observed Challenges

- Judgement required to determine appropriate level of abstraction
- Feedback
 - *Often missing or inadequate*
 - *'Dashboard view' to make key information visible to multiple controllers*
- Hindsight bias
 - *Once seen, insights often seem obvious – it's hard to unsee!*
- STPA is complementary – it's not a replacement or a silver bullet
 - *Systems engineering, human factors, safety culture*



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facilitation for STPA and CAST*



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