



**32**<sup>nd</sup> Annual **INCOSE**  
international symposium

hybrid event

Detroit, MI, USA  
June 25 - 30, 2022

Panel 6

# **SE Leadership through Influence & Persuasion – An Art We Should All Master!**

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# Panel Outline

- Importance of Influence & Persuasion (I&P)
- Panellists share insights & perspectives on I&P in application
- Open Forum – Interaction with the audience
- Wrap-Up

~~CAN'T~~  
CAN



# The Panel



## Anne O'Neil

- Systems Catalyst & Strategist, AOC Systems Consortium
- 29yrs.experience mobility, infrastructure sectors
- Strategic guidance to implement tailored SE, deliver value, operational / business outcomes
- Build & enhance organizational SE capability
- Founding Chief SE for MTA NYC Transit
- [anne.oneil@aoc-systems.com](mailto:anne.oneil@aoc-systems.com)



## Melissa Jovic

- Director & founder “South Pacific Systems”
- National Registered Assessor Eng AUS
- More than 30years' experience in railway planning, governance, strategy, program management, technical design, system engineering and business case development
- [melissa@spsystems.com.au](mailto:melissa@spsystems.com.au)



## Brian Collins

- Emeritus Prof of Engineering Policy, UCL
- Created a £278M capital investment programme in 14 UK universities, supporting the £600B UK Infrastructure futures programme
- Held leadership/advisory roles at ministerial levels & continues to advise Governments on a global scale
- [brian.collins@ucl.ac.uk](mailto:brian.collins@ucl.ac.uk)



## Kerry Lunney

- Eng Director/Chief Engineer, Thales Australia
- Over 30 years experience in industry, across multiple industries, working in 5 countries, setting strategies, delivering system solutions & implementing governance programs
- Immediate Past President of INCOSE
- [kerry.lunney@thalesgroup.com.au](mailto:kerry.lunney@thalesgroup.com.au)



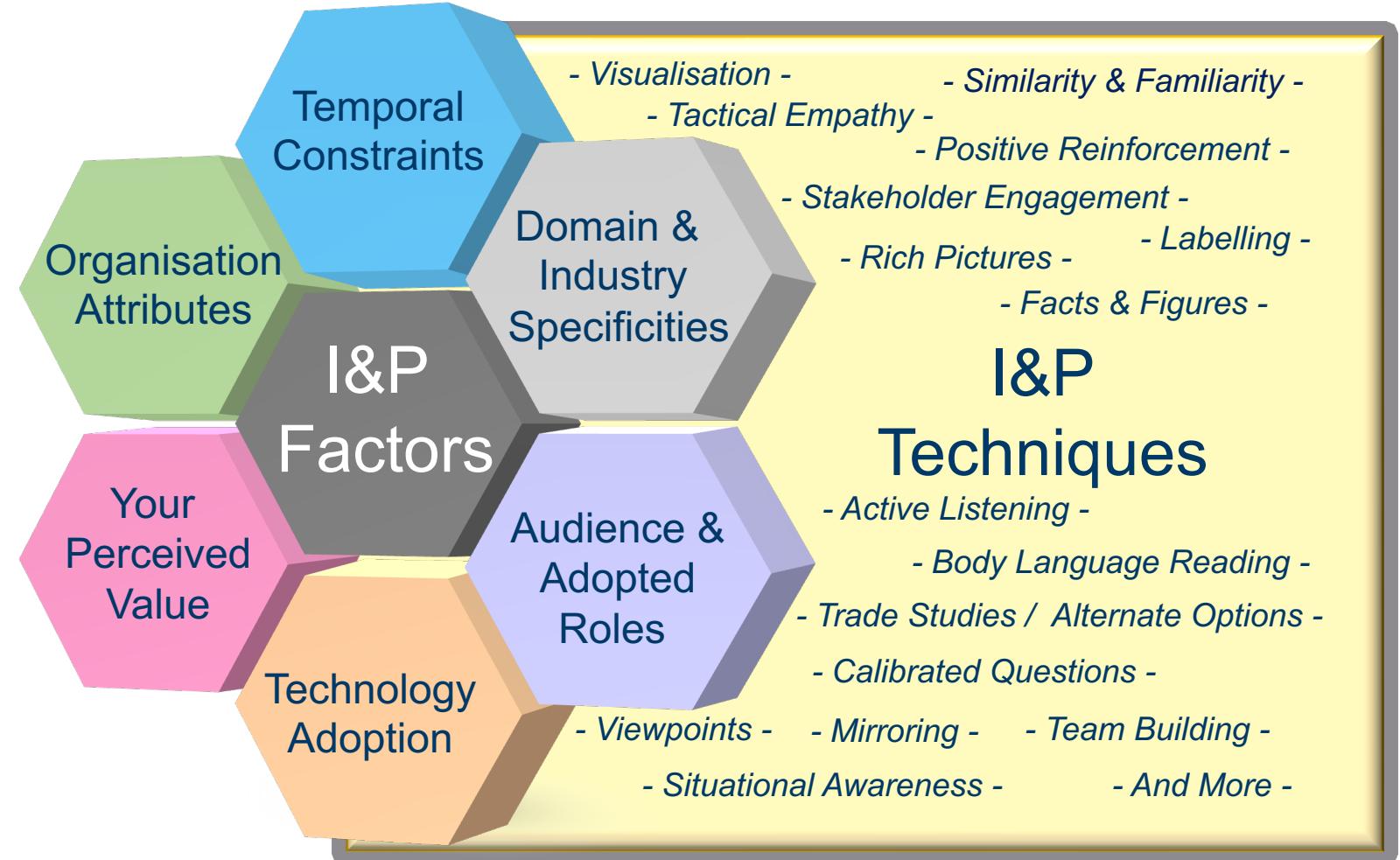
# Influence & Persuasion (I&P)

## Influence (I)

*Adopts a shared vision & works towards its realisation*

## Persuasion (P)

*Motivates action to a desired outcome*





# The Strategic Thread





Anne O'Neil

- Systems Catalyst & Strategist, AOC Systems Consortium
- [anne.oneil@aoc-systems.com](mailto:anne.oneil@aoc-systems.com)

Influence & Persuasion (I&P)

# I&P Strategies for Organizational Change

# Applying I&P to Organizations

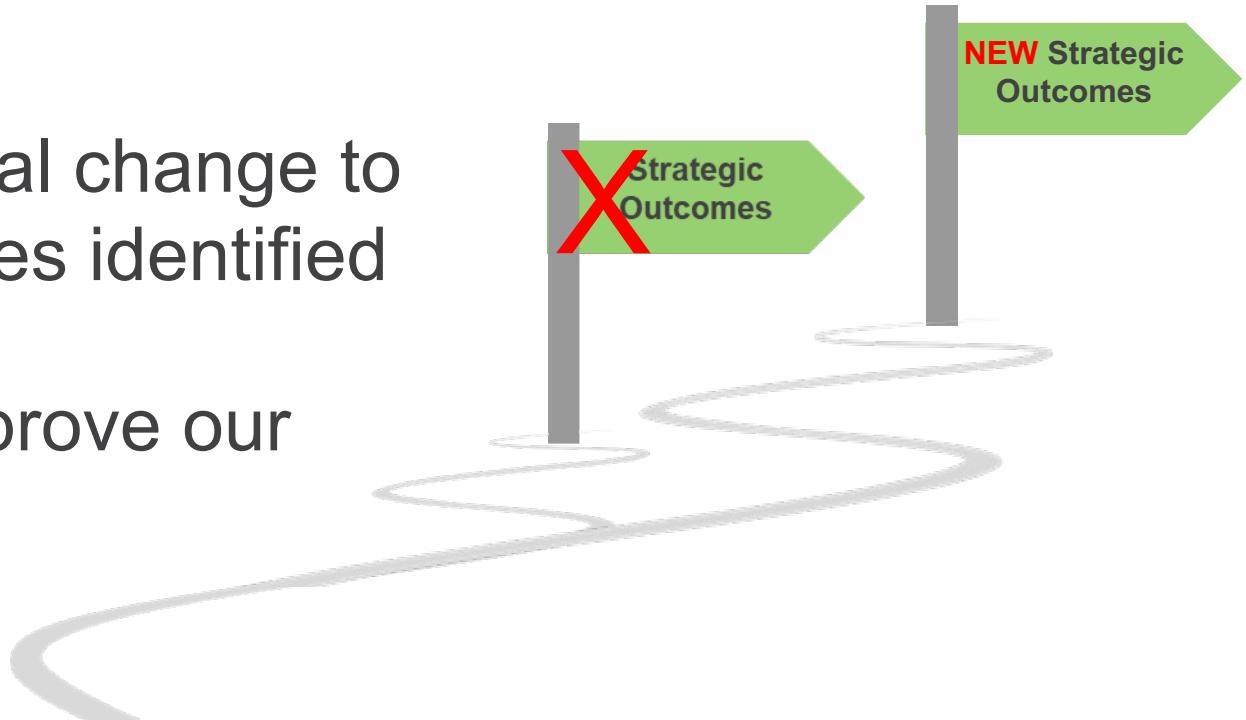
## – in a dynamic time of change & innovation



As SE leaders consider –

our role in enabling organizational change to  
re-align to new strategic outcomes identified

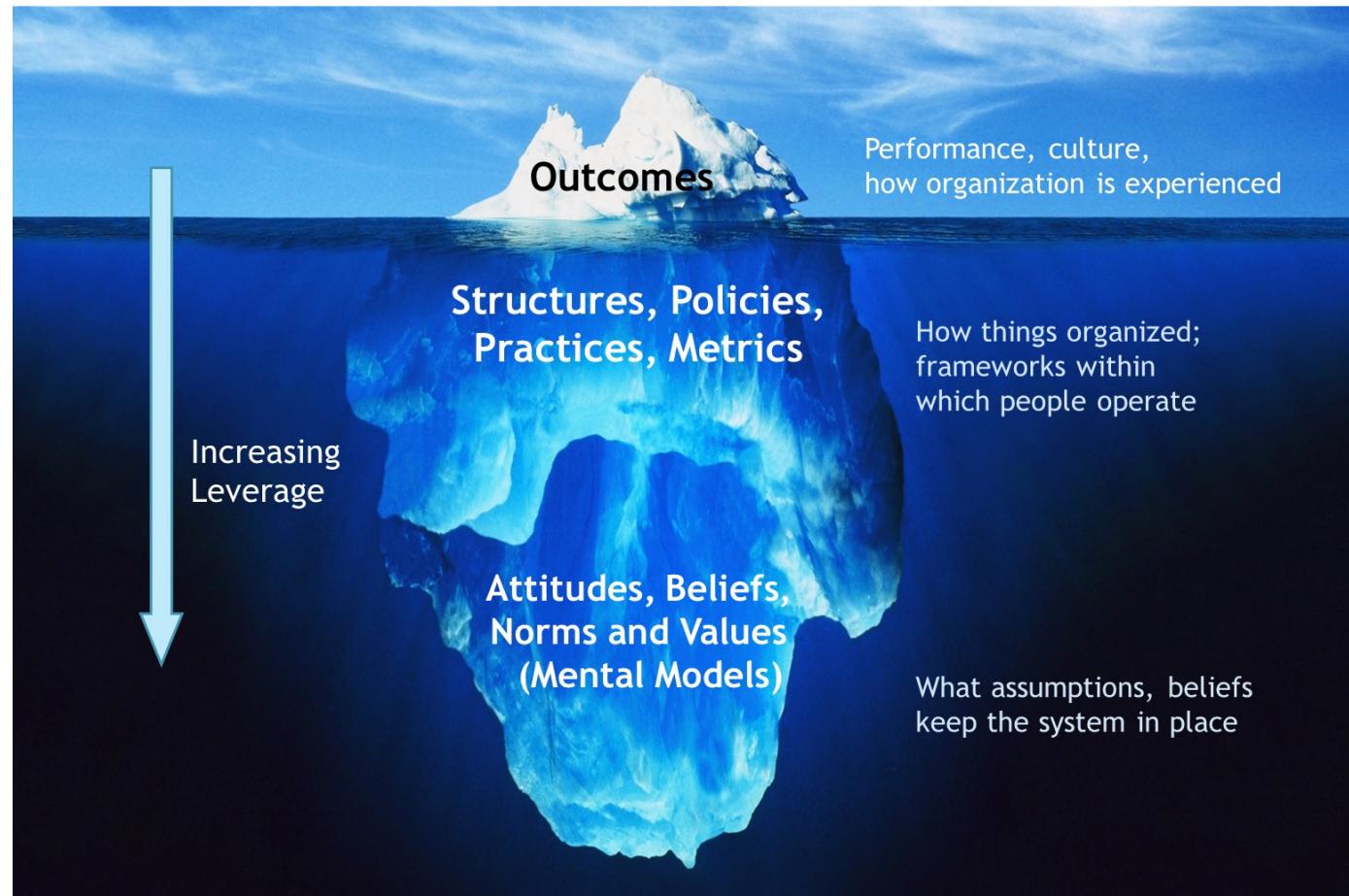
And honing I&P strategies to improve our  
effectiveness





# Consider Your Leverage Points, Opportunities

Organizational culture change – systemic approach



Iceberg Model as metaphor for:

- Where to intervene
- Taking systemic actions

Adapted from Lycia Harper [futureconsiderations.com/iceberg-model/](http://futureconsiderations.com/iceberg-model/) (30 Jan 2018); original by Linda Booth Sweeney, Dennis Meadows (2010). The Systems Thinking Playbook, Chelsea Green Publishing.

# Influencing changed outcomes – by enabling leaders to SEE + Own the Whole



Intentionally engage diverse Stakeholders.  
Enable them to “see” differently

“Simple answers make us feel safer, especially in disruptive and tumultuous times. But rather than certainty, modern leaders need to consciously cultivate the capacity to see more – to deepen, widen, and lengthen their perspectives.” —Tony Schwartz

**Complex** environments are, by definition, too complicated for any one person to grasp fully.. Each of us then draws conclusions based on incomplete pictures.  
[W]hen faced with complexity, ..the better approach...[is] to focus...on **techniques to deal with combining different viewpoints.**

**Ed Catmull, Co-founder Pixar Animation Studios**

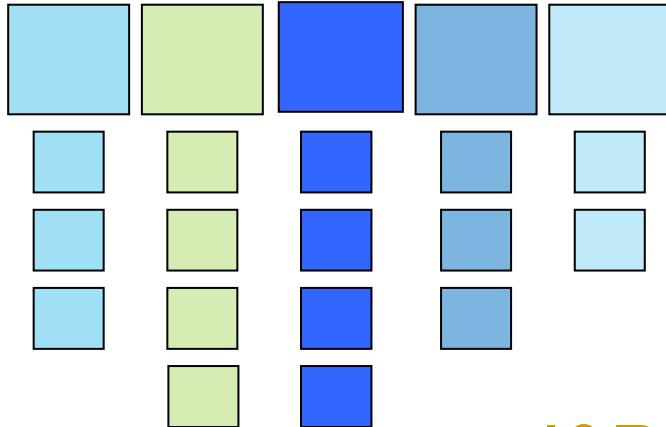
Tony Schwartz, president/ CEO of The Energy Project; <https://hbr.org/2018/05/what-it-takes-to-think-deeply-about-complex-problems>

Catmull, Ed and Wallace, Amy. 2014. *Creativity, Inc.: Overcoming the Unseen Forces that Stand in the Way of True Inspiration*. Random House



# Challenges - Changes for Less SE Mature Domains

Silos. Traditional practices at odds with achieving successful outcomes.



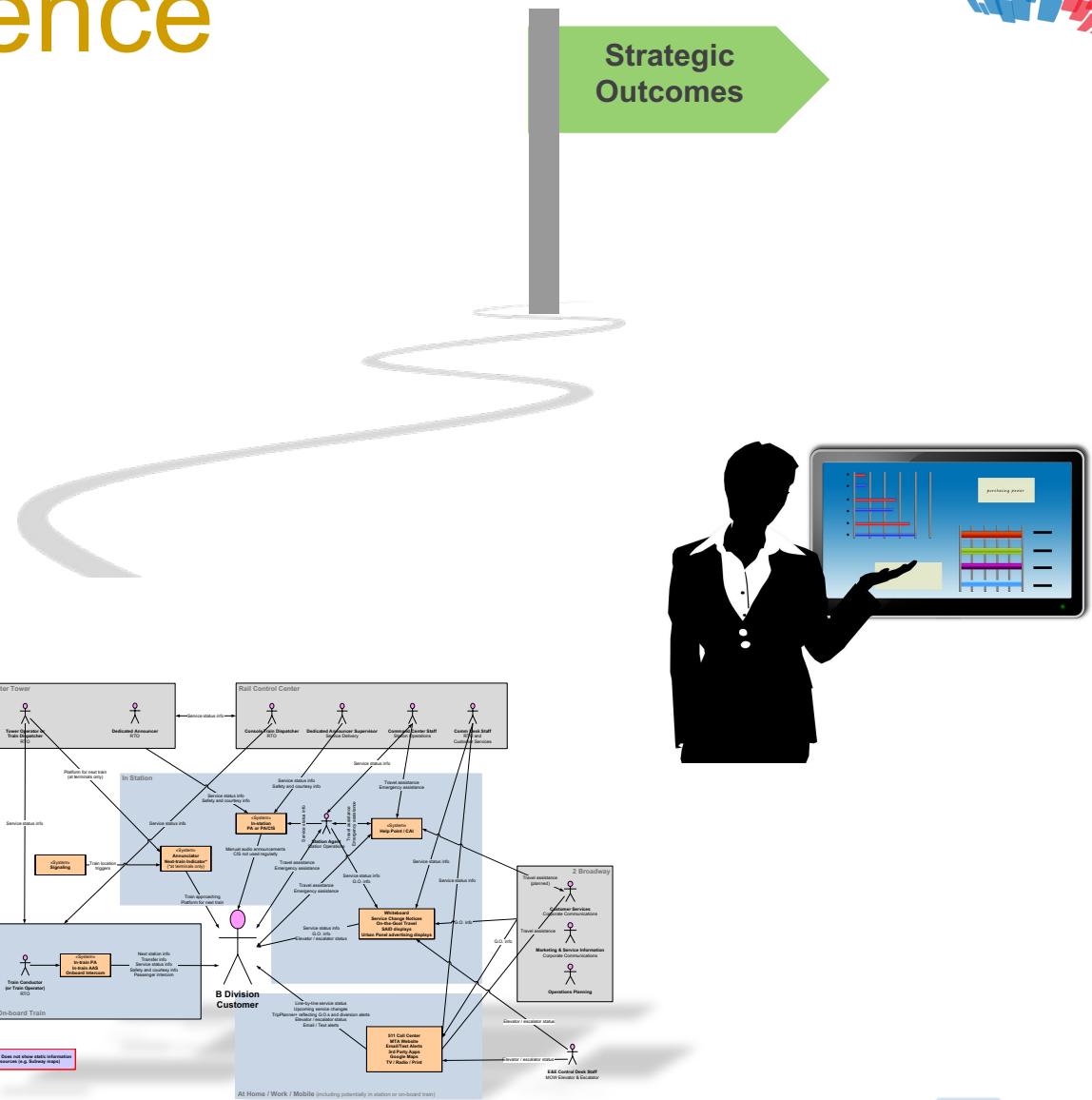
## I&P Strategies

- Emphasize emerging 'good practice'
- Will play more of a Translator, Educator role
- Leverage Top down and Bottom up I&P
  - Must cultivate, inform Executive Sponsors



# Calibrating to the Audience

- Executives
- Policymakers
- Project Managers
- Organizational peers
- Supply chain partners





**Melissa Jovic**

- GAICD, NED, EngExec & Systems Thinker  
South Pacific Systems
- [melissa@spsystems.com.au](mailto:melissa@spsystems.com.au)



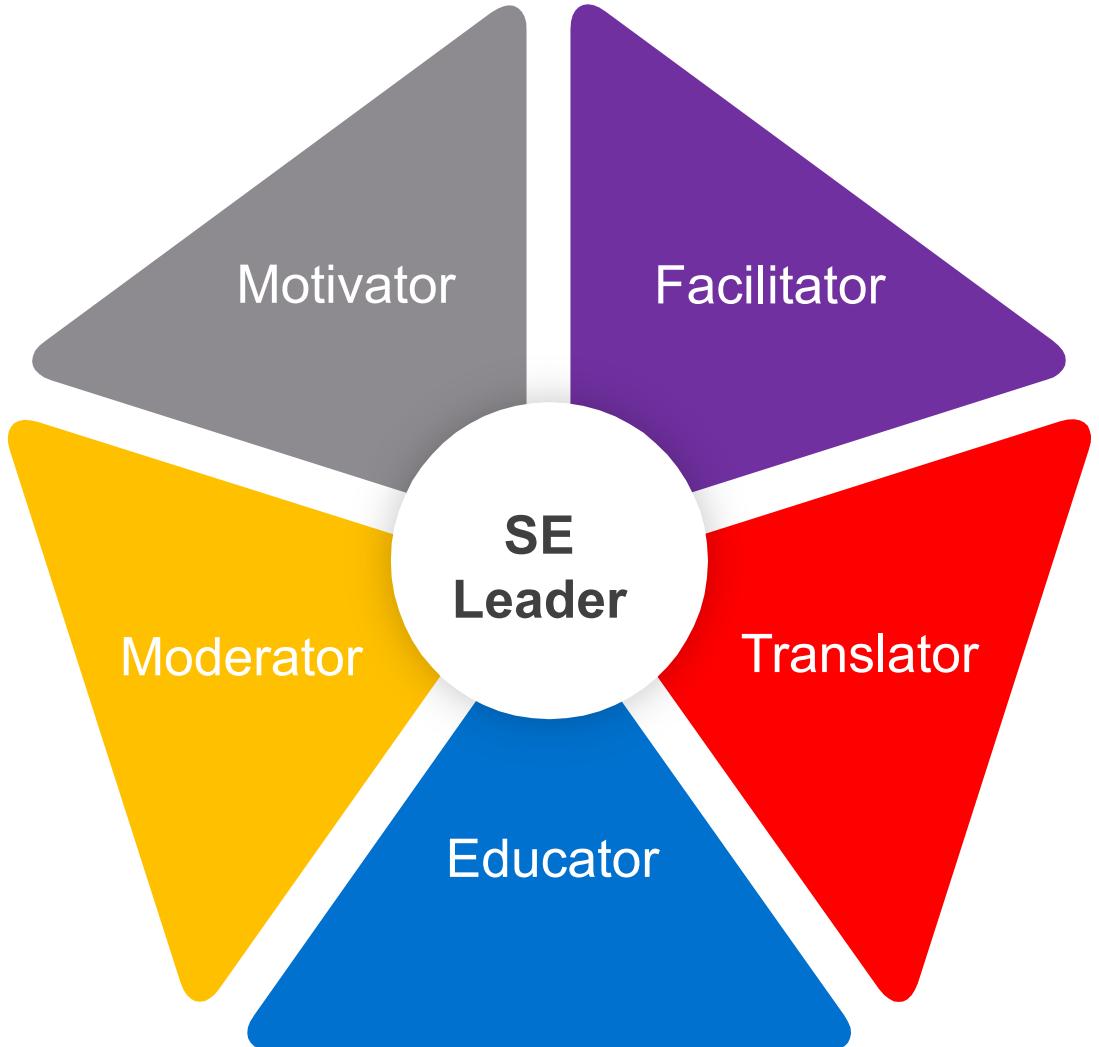
Influence & Persuasion (I&P)

## Adaptive Leadership Roles over the Project Life



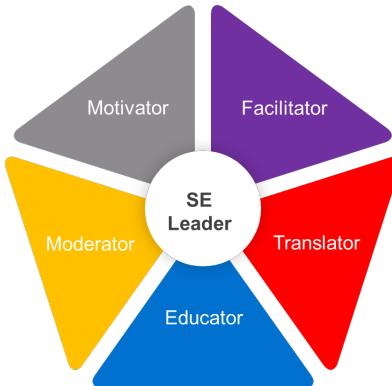
# SE Theatre - Roles Adopted by SE Leaders

- Transferable – from my experience to your domain
- Application - at every stage of life cycle
- Invitation - to consider and leverage



# Facilitator

## From “Chaos” to Structured Space



**Operational Concept Definition -**  
sensitivity tests and understanding of  
needs through justification

**“Why”** - a corridor area establishment  
incl lessons learned impact analysis  
(environmental, economical, social, etc.)

**Stakeholders consultations - internal &  
external**

# Translator

## From Business Needs to Sustainable Outcomes



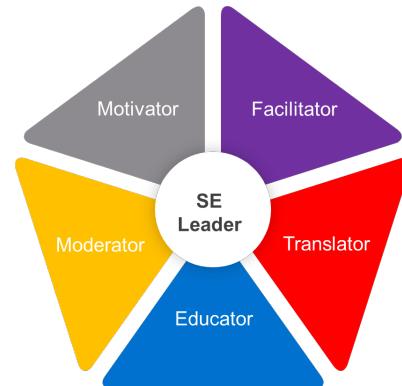
Business/Final User Needs



Assets (Infrastructure and Systems)



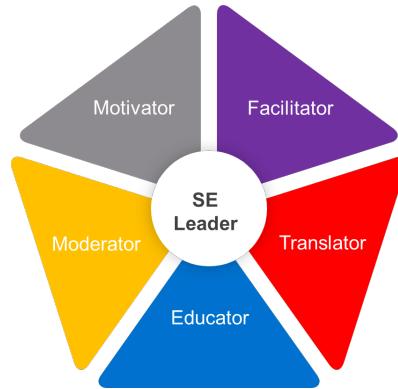
Progressive Options / Alternatives Assessment



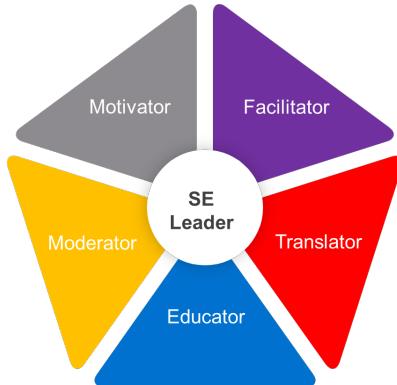


## Example - Mode Agnostic Rail Corridors

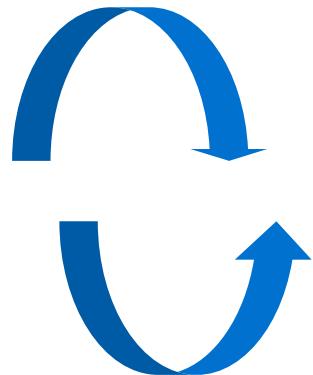
- **Function** - connect population, freight and employment growth centres
- **Flexibility** - enable different modes in different time e.g., buses in first 20 years, heavy rail later
- **ESG** – Environmental, Sustainable/Social, Governance



# Moderator Scenario Playing Stage - Trade-offs



**Risk Appetite defined Qualitatively**

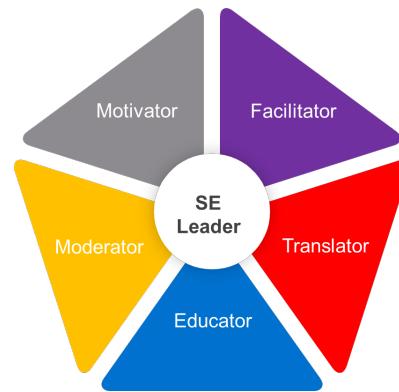


**Risk Tolerance built from Quantitative**



# Motivator

## From the Beginning to the End



- 1. 15% scope vs. 85% investment commitment**
- 2. Traceability & Cohesion**
- 3. Clear economic rationale**
- 4. Investment Sustainability**
- 5. Future Proofing**



**Kerry Lunney**

- Eng Director/Chief Engineer, Thales Australia
- [kerry.lunney@thalesgroup.com.au](mailto:kerry.lunney@thalesgroup.com.au)



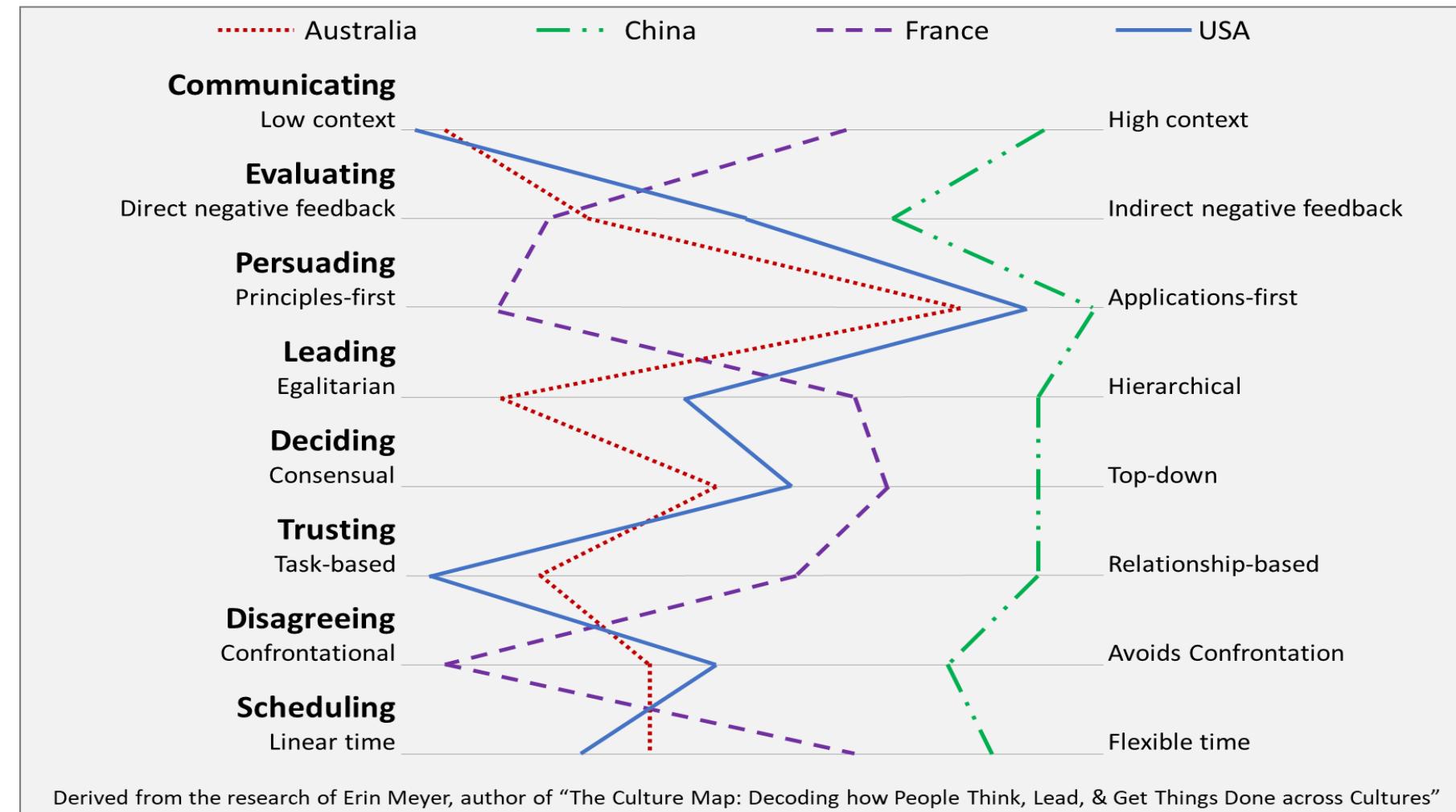
Influence & Persuasion (I&P)

# I&P Adaptations Across Industries & Technologies



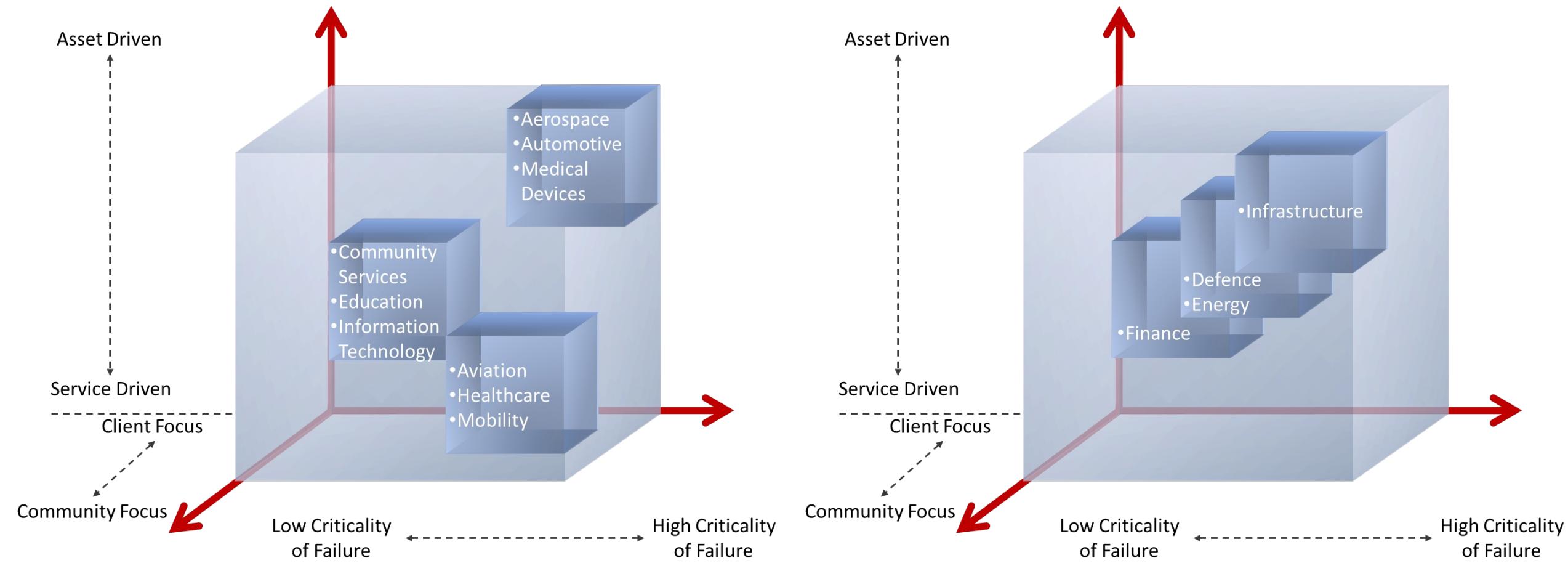
# Cultural Differences

- Remember-  
We all process  
& react  
differently to  
information



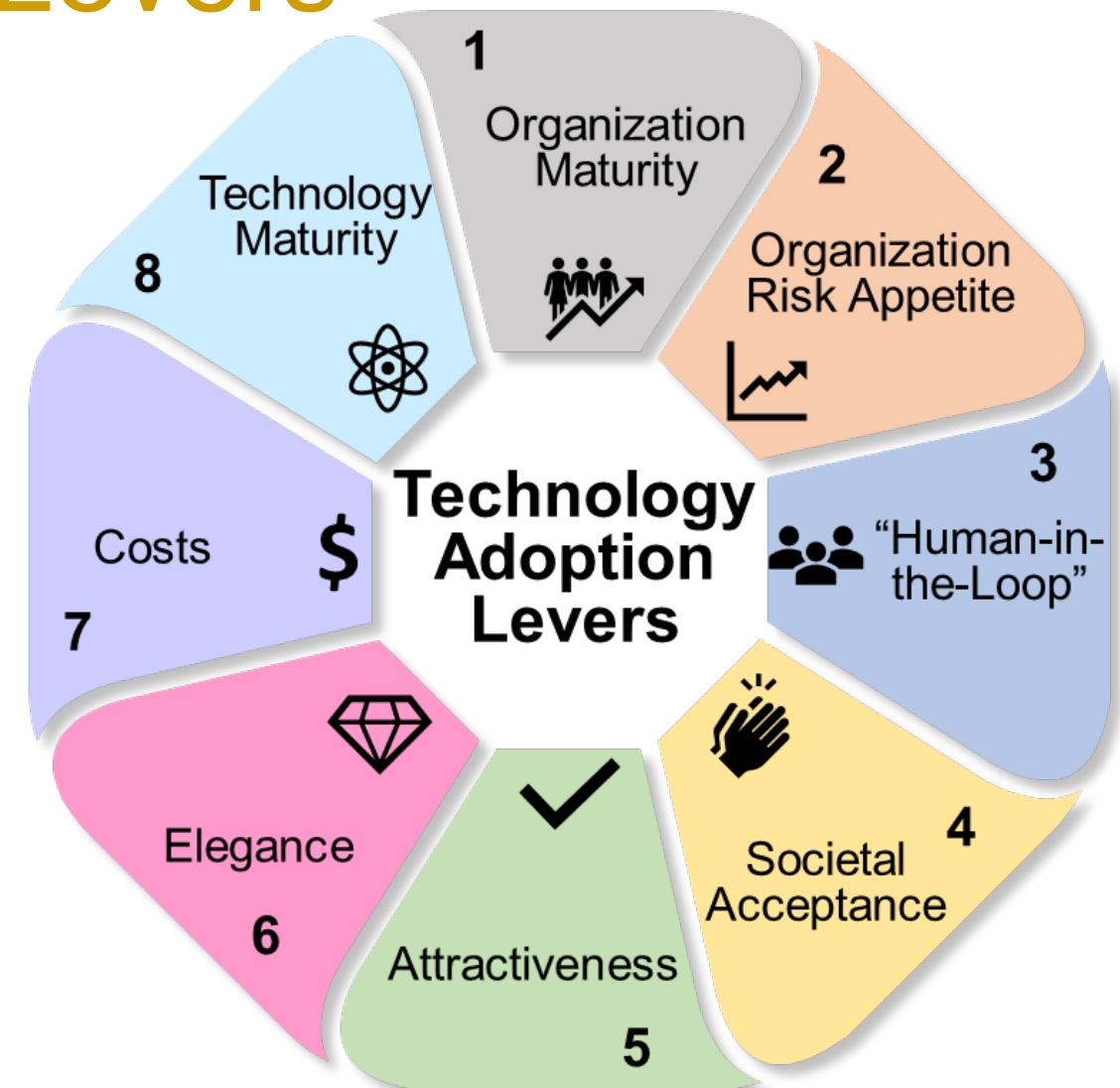


# Challenges & Uniqueness Across Industries

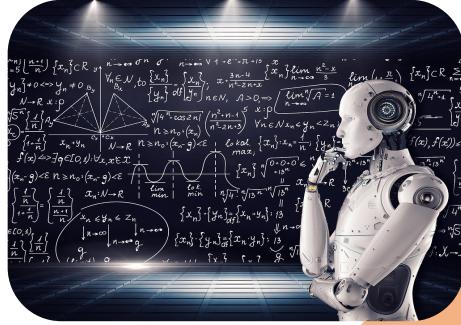




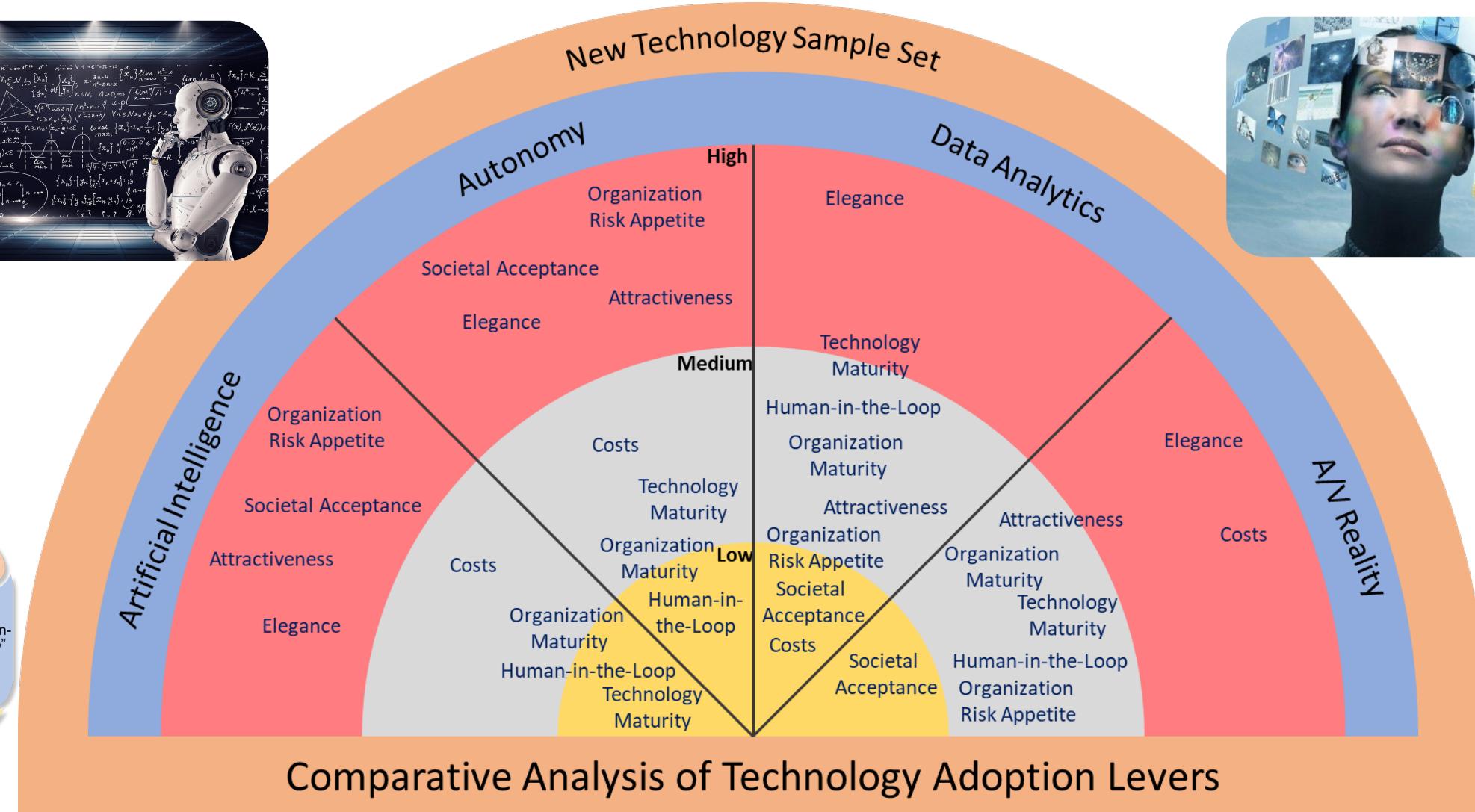
# Technology Adoption Levers



# Four Technologies – Comparative Analysis



New Technology Sample Set





**Brian Collins**

- Emeritus Professor of Engineering Policy, UCL
- [brian.collins@ucl.ac.uk](mailto:brian.collins@ucl.ac.uk)



# Professor Brian Collins, CB, FREng

## Emeritus Professor of Engineering Policy

## University College London

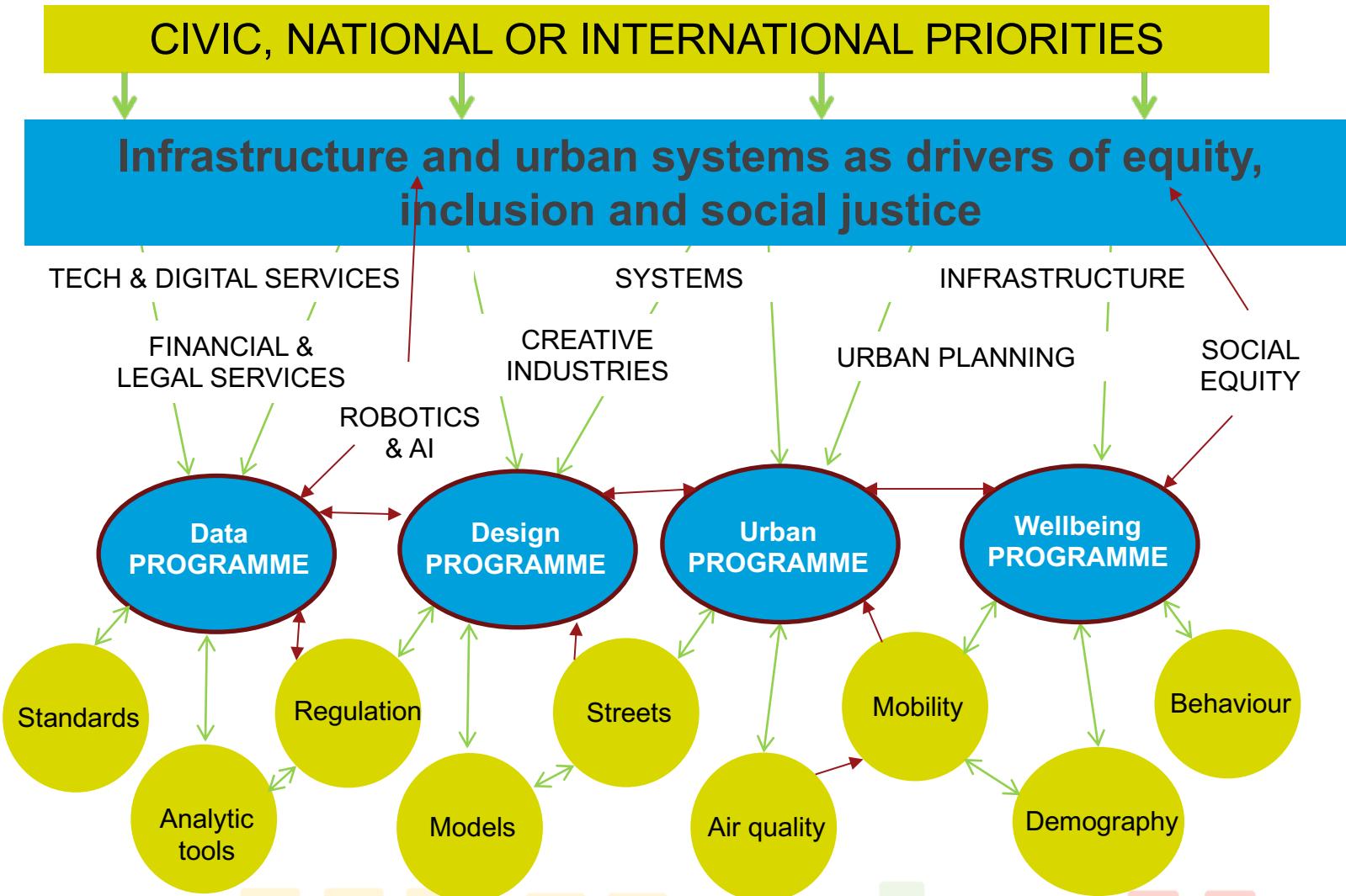


# Example of complex programme structure

Mission

C & C

P and I





# Key Enablers of Mission



## Transformational Infrastructure & Resilient Urban Systems for a Changing World

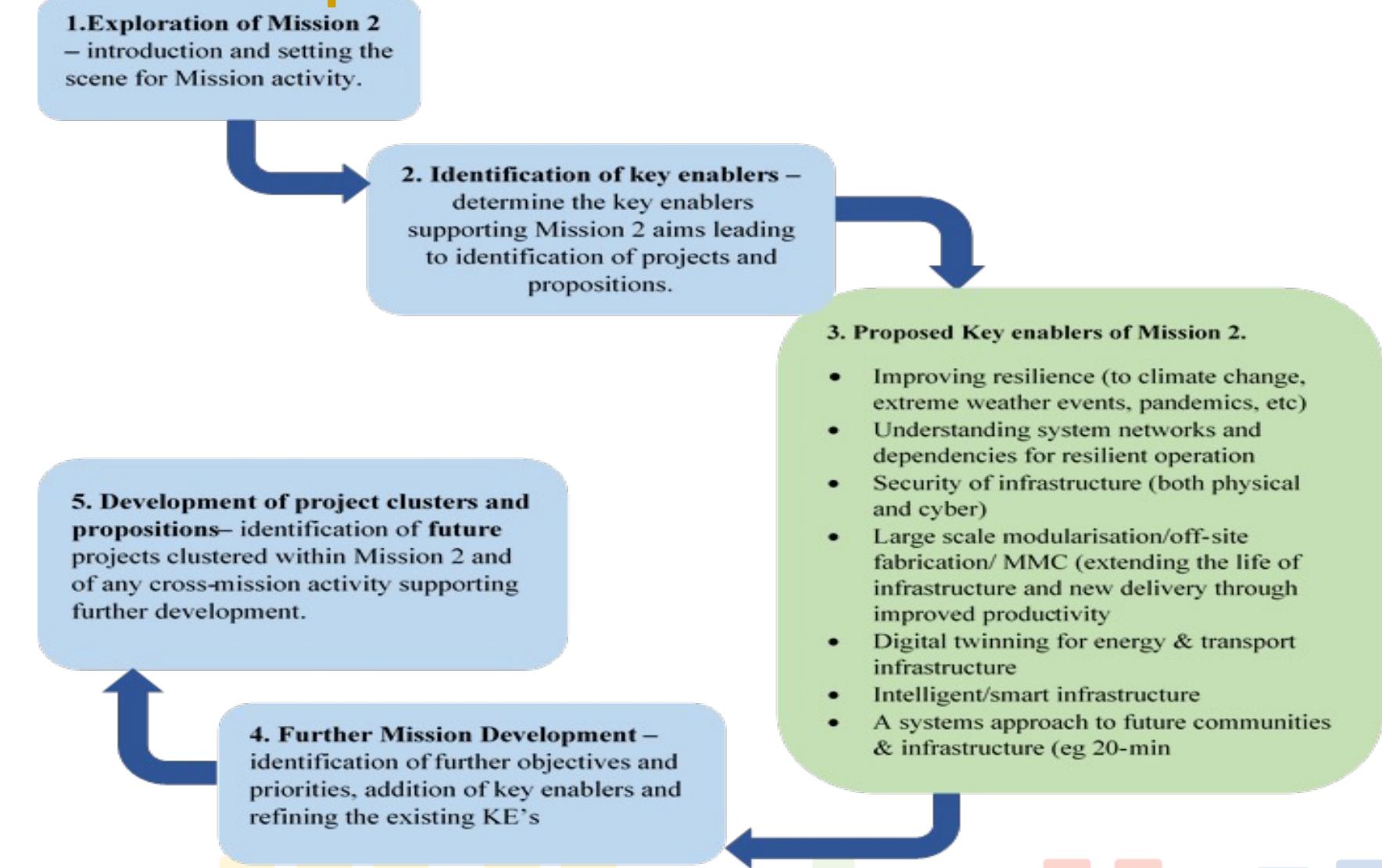
- KE1: Improving resilience (to climate change, extreme weather events including severe flooding, droughts, heatwaves, etc.,)
- KE2: Understanding system networks and dependencies for resilient operation
- KE3: Security of infrastructure (both physical and cyber)
- KE4: Productivity- Large scale modularization/ off-site fabrication/MMC (& extending the life of infrastructure)
- KE5: Digital twinning for energy & transport infrastructure
- KE6: Intelligent /Smart infrastructure

### Two Initial Priority Areas:

A - Resilience (soil and water); B – Digital Twin for Infrastructure



# Mission Development Flow Chart



# Programme alignment with national need



National Risk Register			UKRIC Mission 2 themes						
Risk type	sub-type	Consequences	Improving resilience (flooding, extreme climate change and pandemic) & Preparedness	Future communities & infrastructure (20-min neighbourhoods)	Understanding system networks & dependencies for resilient operation	Security of Infrastructure (Both physical & Cyber)	Productivity- Large Scale modularisation/ off-site fabrication/ modern methods of construction Extending the life of infrastructures	Future Digital, Energy & Transport Infrastructure	Upgrading Existing Infrastructure TO Intelligent/ Smart
Environmental	Flooding		Dark	Light	Light	Light	Light	Light	Light
	Severe weather / erosion (e.g. coastal)		Dark	Dark	Light	Light	Dark	Dark	Dark
	Poor air quality		Light	Light	Light	Light	Light	Light	Light
Human health	Pandemic		Light	Light	Light	Light	Light	Light	Light
Major accidents	Power outage		Light	Light	Dark	Dark	Light	Dark	Dark
	System failure		Light	Light	Dark	Light	Light	Light	Dark
	transport accidents		Light	Light	Light	Light	Dark	Light	Light
	industrial accidents		Light	Light	Light	Light	Light	Light	Light
Malicious attacks	attacks on transport system		Light	Light	Dark	Light	Light	Light	Light
	cyber attacks		Light	Light	Dark	Dark	Light	Light	Dark

National Risk Register  
2020 and their risk  
summaries mapped  
against UKRIC Mission2

National Risk Register 2020 is the public facing version of the National Security Risk Assessment (NSRA) and the NRR summarizes the NSRA's assessment of the most serious risks facing the UK.

(Note: darker green represents higher ranking of priority within Mission 2 sub-themes)



# Emerging Principles

- C and C and P and I both have their place, both have to coexist in a programme and be able to communicate and respect each others' strengths and weaknesses
- Open discussion early in the life of a programme on what form of governance and management is needed for which elements is vital
- The ability to adjust as things progress is also necessary and should be permitted in any contractual framework but should be used with care.
- Continued examination of alignment with purpose should be institutionalized and carried out objectively.



# Leadership implications

- Being aware of and adapting to global context in which a programme sits – geopolitics, environment, equality and diversity
- Adopting styles suitable for the issue – many at once
- Perseverance to achieve mission goals
- Listening and delegating to creative minds
- Being well prepared in advance to adapt and communicate why
- Only using command decisions when persuasion has not worked or time is of the essence



Influence & Persuasion (I&P)

# Open Forum

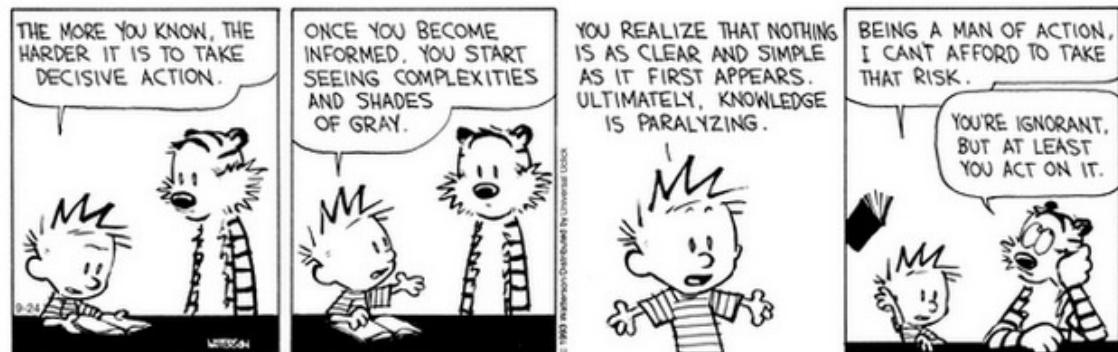
27-30 June 2022

[www.incose.org/symp2022](http://www.incose.org/symp2022)

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# Open Discussion Time



Watterson, Bill. *There's Treasure Everywhere: A Calvin and Hobbes Collection*. Kansas City: Andrews and McMeel, 1996. Print.

Interact by –

- Raising your hand
  - In person, or
  - Remotely
- Using “chat”
- Politely interjecting “if hand is missed”



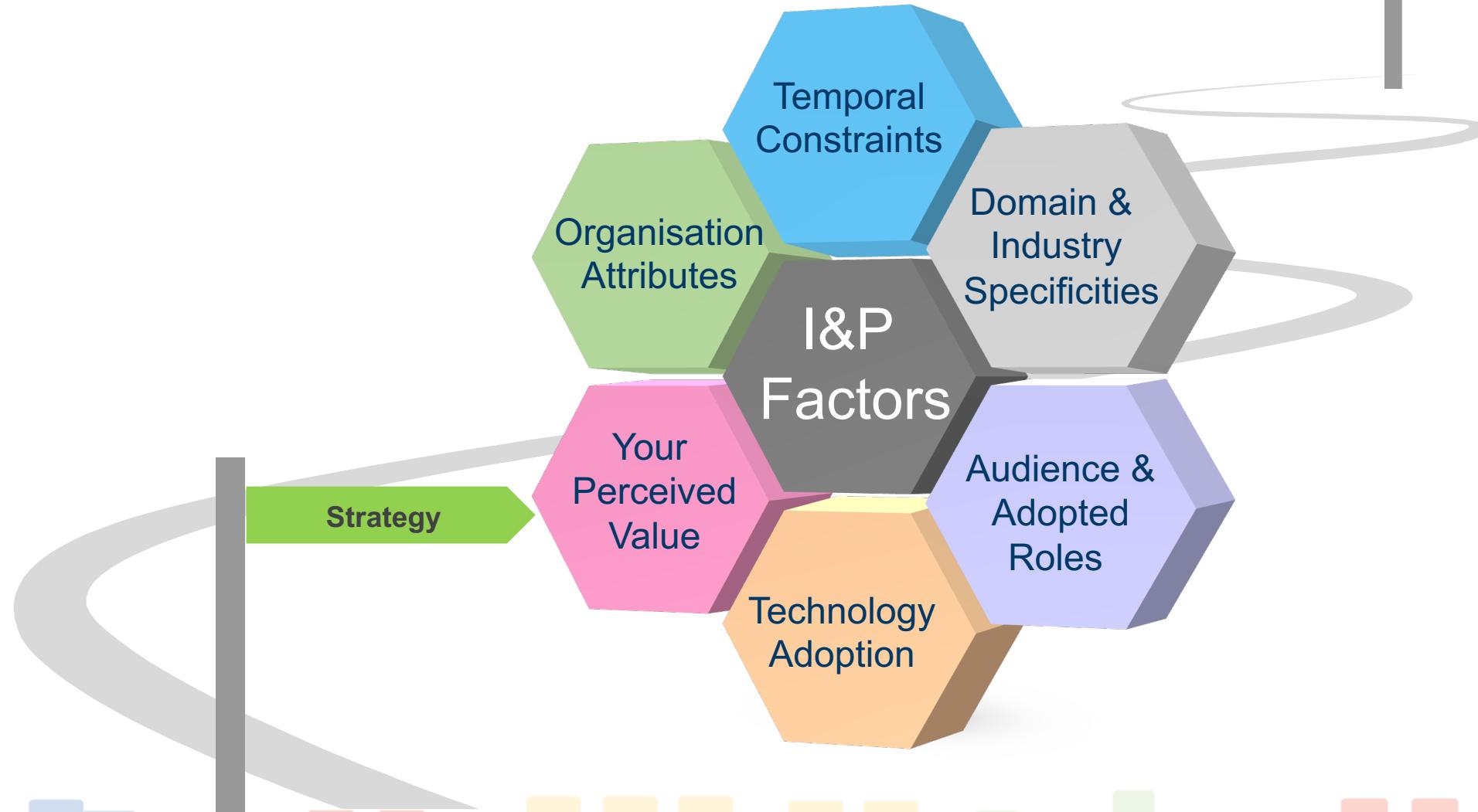
Influence & Persuasion (I&P)

# Panel Session Wrap-Up



# Preserve the Strategic Thread

Optimum  
Solution



# And For Now



Thank  
you

For more information or to share ideas, contact

- Brian Collins, [brian.collins@ucl.ac.uk](mailto:brian.collins@ucl.ac.uk)  
Melissa Jovic, [melissa@spsystems.com.au](mailto:melissa@spsystems.com.au)
- Kerry Lunney, [kerry.lunney@thalesgroup.com.au](mailto:kerry.lunney@thalesgroup.com.au)
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