

Webinar Series on the Viable System Model (VSM)



Session 1: Introduction to the Viable System Model

Session 2: Applications of VSM in Public Health

Dr Tim Forsyth, Dr Natalie Clewley
Complex Systems Group, Cranfield University

18th February 2026, 10:30-12:30



Session Aim

To introduce the Viable System Model as a practical governance lens for strengthening viability in complex public health systems.

Who is it for?

- Researchers, students and practitioners working in complex environments who are interested in applying systems thinking to public health contexts.
- Public health professionals working in complex, multi-stakeholder environments.
- Community partners and practitioners engaged in health-systems improvement.
- Anyone curious about using systems approaches to support critical reflective inquiry.

Complexity:

Why it matters in Public Health systems.

The Viable System Model (VSM)

The VSM in Practice



A Definition of Viability:

The ability of a system to maintain its identity while responding and adapting to change in the environment to achieve its purpose.

The Challenge of Viability in Complex Environments

Public health systems must remain viable across political, ideological, temporal and geographic boundaries.

The core challenge in global public health is not simply technical delivery. It is maintaining viability across boundaries.

- **Political boundaries:** different mandates, power structures, funding models.
- **Ideological boundaries:** different beliefs about governance, authority, equity and intervention.
- **Temporal boundaries:** short-term reporting cycles versus long-term health outcomes.
- **Geographic boundaries:** local, regional, national and global layers interacting simultaneously.

These boundaries are real.

They shape power structures, decision-making, resource allocation, and accountability.

Question:

Within your organisations, what boundaries are you seeing, feeling and experiencing?

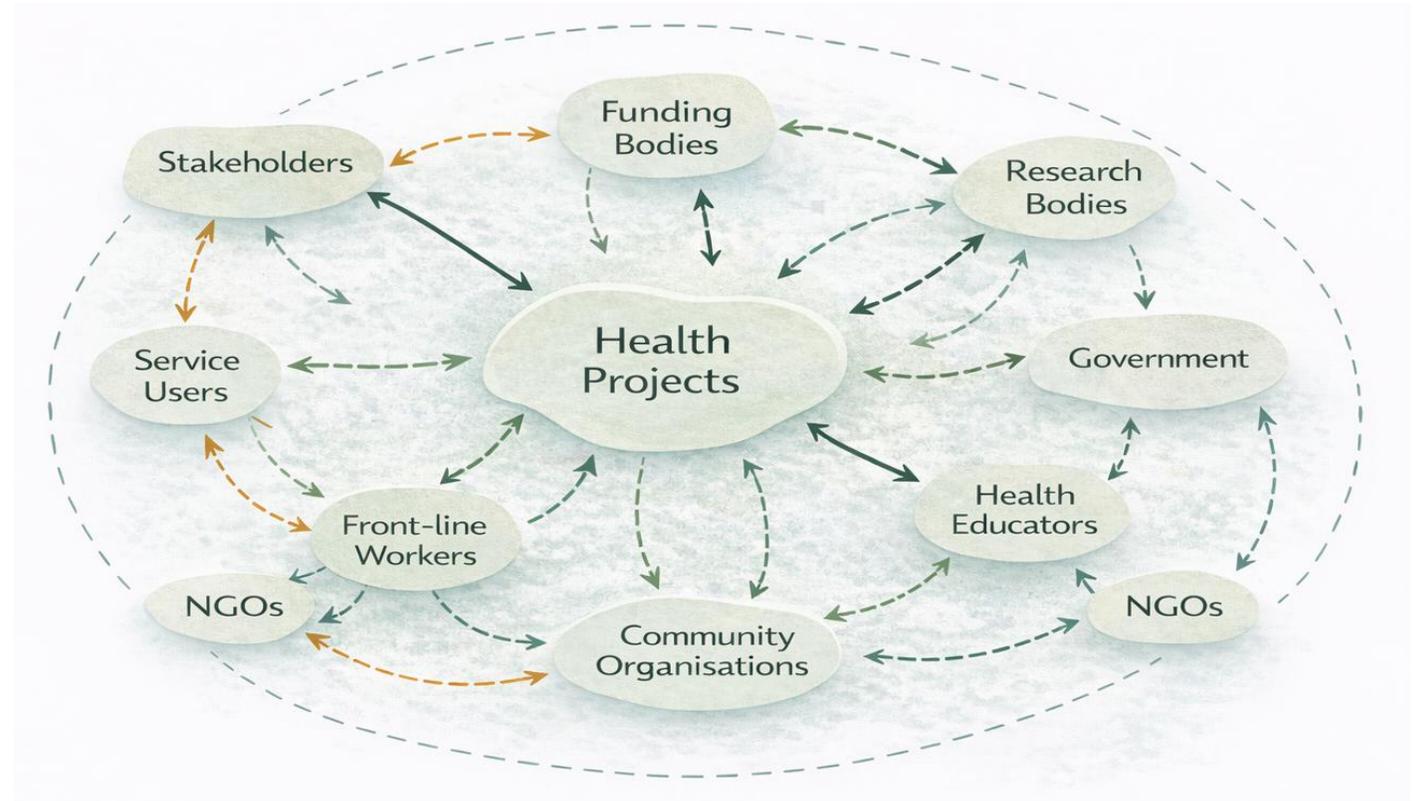
(You may have some not in my list)

Which type of boundary feels most dominant in your context at the moment?

Complex Systems in Public Health

Produce:

- Interdependencies
- Non-linearity
- Discontinuity (sudden shifts)
- Emergence
- Adaptation
- Resilience



Question: What relationships in your context feel strained?

Complexity Expands Possibility

Benefits	Challenges
Resilient	Non-linearity
Self-organisation	Oscillations
Adaption	Unintended Consequences
Emergence (collective intelligence)	Delayed or Distorted Feedback
Innovation	Conflicting Interpretations of Purpose

If These Problems Feel Familiar (the VSM can help)

- Coordination breaks down across agencies, sectors or levels of governance.
- Local teams feel constrained, while central leadership feels exposed or overwhelmed.
- Short-term pressures repeatedly override long-term system goals.
- Information flows are inconsistent, delayed or filtered across levels.
- The system reacts to change but struggles to anticipate it.
- Purpose is stated clearly but interpreted differently across the organisation.
- Operational reality diverges from declared strategy.

These are not failures of individuals; they are properties of complex social organisational systems.

Pressure (strain) in Complex Systems Is Structural

- Pressure is inevitable.
- Persistent breakdown is not.
- Organisational structure matters.



Complexity:

Why it matters in Public Health systems.

The Viable System Model (VSM)

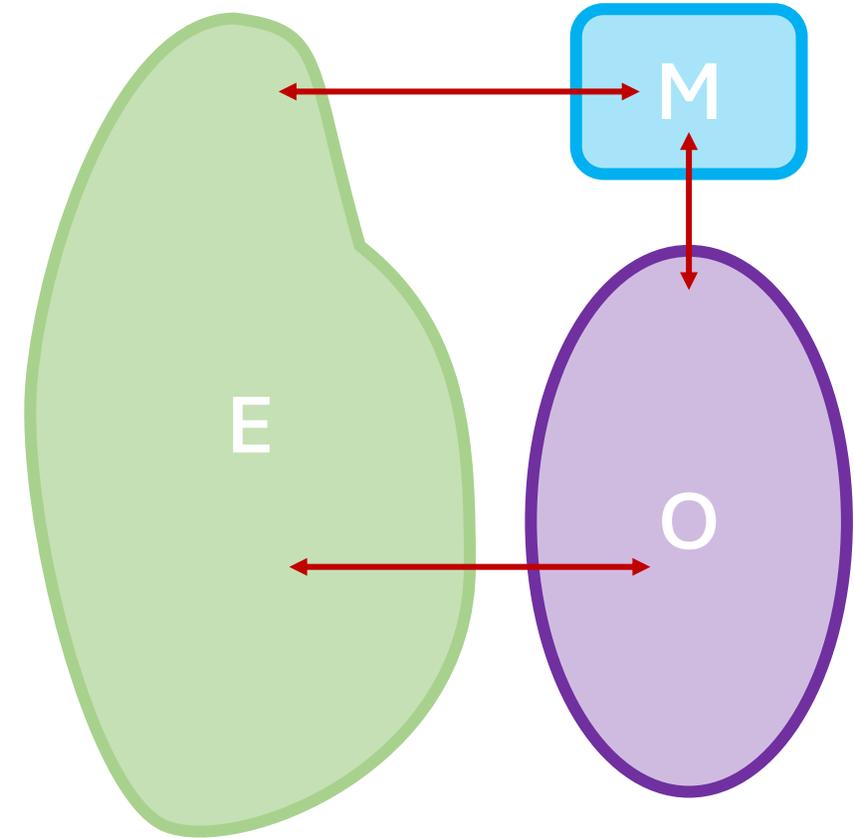
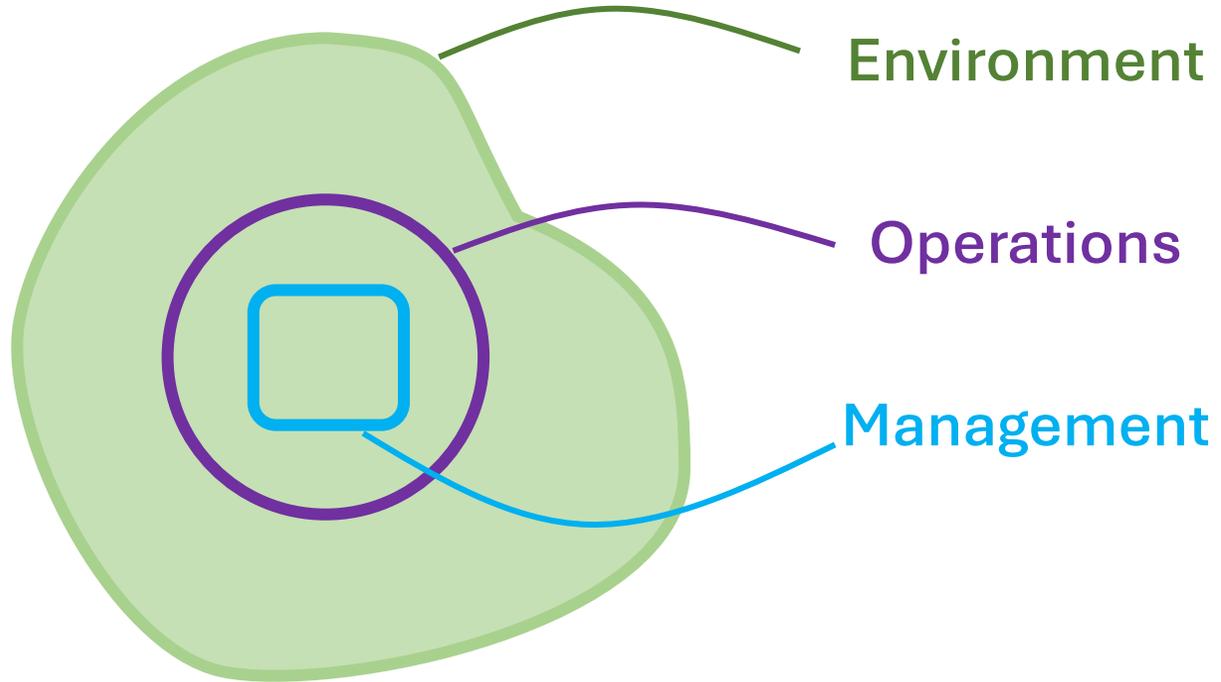
The VSM in Practice



What Does Viability Require

- A clear sense of identity and purpose
- Capacity to respond to environmental change
- Effective and meaningful coordination of internal activity
- The ability to **adapt** and **learn** over time

The Three Main Structural Elements of the VSM



In your context, which of these three feels most under pressure and why?

The Viable System Model

Operations (1): generating the core services and products.

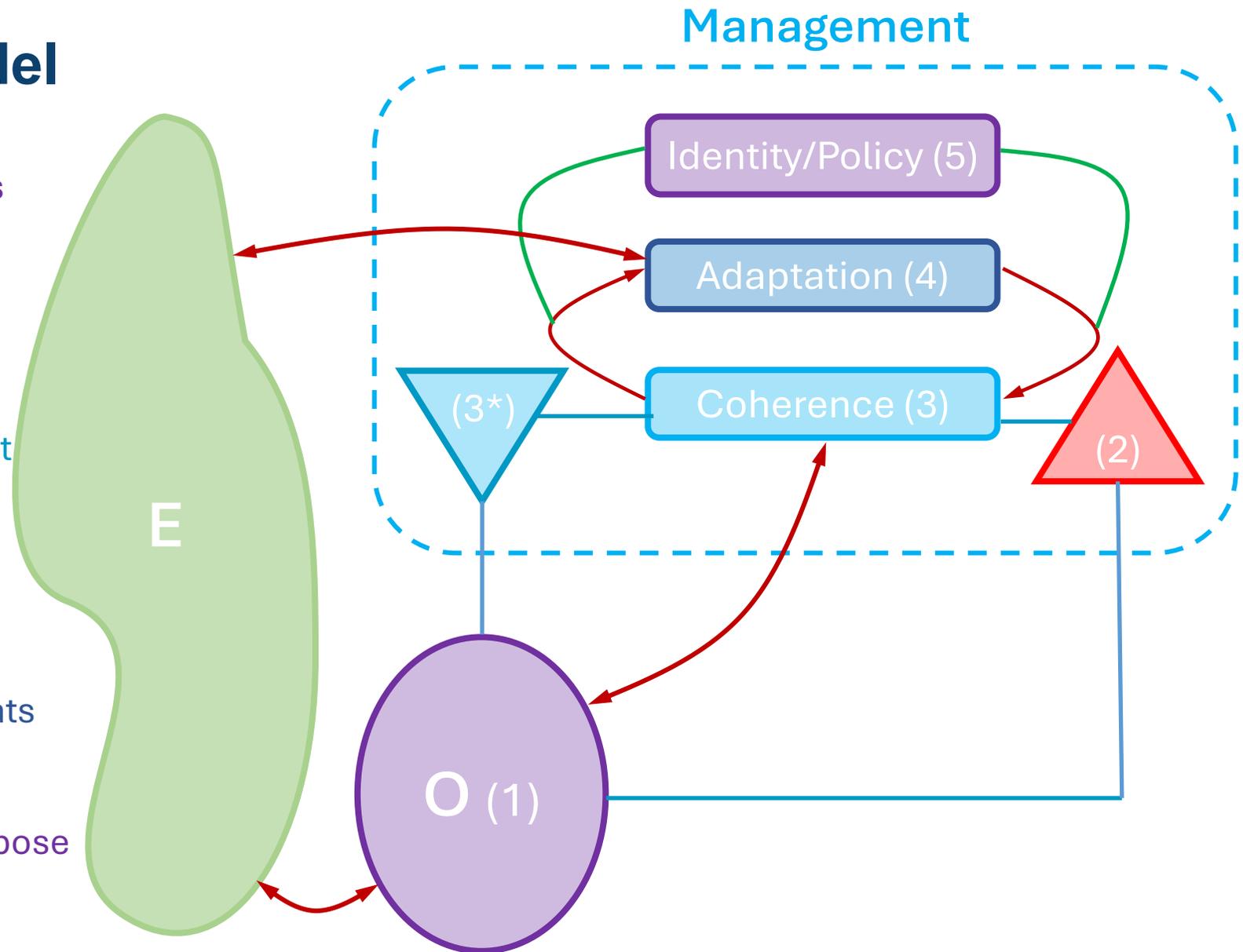
Coordination (2): planning, scheduling, resource allocation.

Internal Coherence (3): managerial support operations

Assurance (3*): provides additional information not in normal reporting.

Adaptation & Foresight (4): identifying threats and opportunities in the environment.

Identity/Policy (5): develops the vision, purpose and policy.



Complexity:

Why it matters in Public Health systems.

The Viable System Model (VSM)

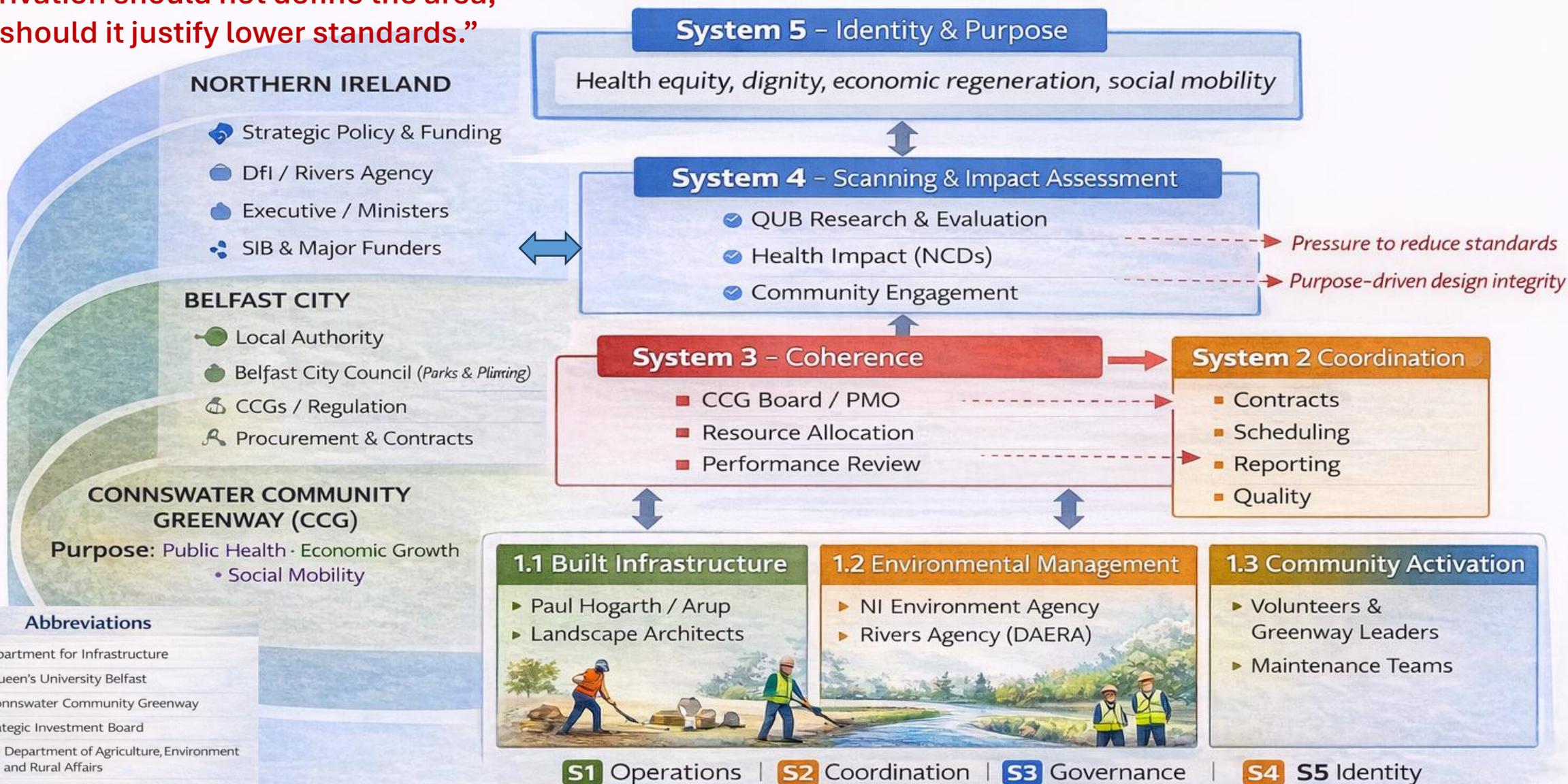
VSM in Practice



Connswater Community Greenway (CCG) - Phase 2: Construction & Development

Viable System Model - Governance Under Delivery Pressure

“Deprivation should not define the area, nor should it justify lower standards.”



Viable System Model – Cross Domain Comparison

System Label	Function	Human Body Analogy	Football Analogy	CCG Phase 2 Example
Identity & Purpose (5)	Defines ethos, values, long-term intent, and decision boundaries.	Prefrontal cortex / identity centre. Sense of self, long-term goals, moral frame	Club philosophy & board vision. “What kind of club are we?”	Commitment to dignity and quality. Refusal to reduce standards in a deprived area.
Adaptation & Foresight (4)	Scans environment, anticipates threats & opportunities, shapes future direction.	Sensory integration & imagination. Ability to anticipate and plan	Scouts, analysts, long-term strategy unit. Preparing for future seasons	Engagement with ministers, climate funding, health impact framing,
Coherence (3)	Internal regulation, resource allocation, performance integration.	Autonomic regulation & executive coordination. Maintains internal stability	Team manager ensuring cohesion, resource allocation, tactical discipline.	CCG Board / PMO balancing budget, delivery pressure, contractor oversight.
Coordination (2)	Damps oscillation, harmonises interactions between operational units.	Nervous system signalling between limbs. Prevents conflicting movements.	Training schedules, match-day coordination, communication between defence and midfield.	Contracts, reporting standards, schedules, inter-agency coordination mechanisms.
Operations (1)	Delivers core activity; engages directly with environment.	Organs performing vital functions.	Players on the pitch executing the game.	Built Infrastructure Environmental Manage Community Activation

Summary

1. Public health systems operate across real boundaries.

- Viability requires navigating political, ideological, temporal and geographic differences.

2. Complexity is Structural.

- Adaptive element, feedback, delays and open boundaries generate both resilience and pressure.

3. Experiencing pressure is not failure.

- Persistent coordination breakdown signals structural imbalance.

4. Viability does not mean control.

- It is the capacity to maintain identity while adapting over time.

5. The Viable System Model.

- It does not provide answers, it structures disciplined discussion and judgement about coordination, adaptation and purpose.

Questions?

Next week's session:
Wednesday 25th February 10:30-12:30 GMT



Evaluation Survey



We would really appreciate a couple of minutes of your time to let us know how you found this session.

Please follow the QR code to access our evaluation survey.

References

- Beer, S. (1985). *Diagnosing the system for organizations*. John Wiley & Sons.
- Csikszentmihalyi, M. (2003). *Good business: Leadership, flow, and the making of meaning*. Viking.
- Espinosa, A., & Walker, J. (2011). *A complexity approach to sustainability: Theory and application*. Imperial College Press.
- Espinosa, A., & Walker, J. (2013). A complexity approach to sustainability—Stafford Beer revisited. *European Journal of Operational Research*, 227(3), 569–580.
- Hoverstadt, P. (2008). *The fractal organisation: Creating sustainable organisations with the viable system model*. John Wiley & Sons.
- Pérez Ríos, J. (2012). *Design and diagnosis for sustainable organizations: The viable system method*. Springer.