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Interoperability Network for the Energy Transition

From Technological Interoperability to Interoperability Governance

The Role of Society and Networks

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Beyond technical perspectives

- Interoperability is not just about machines working together - it’s about people, systems, and institutions collaborating effectively
- Interoperability governance = designing for alignment across societal, technical, and institutional domains

The societal dimension

- Technical progress and the technical potential for interoperability does not directly translate to societal acceptance

→A rollout of a new technology can simply fail because people reject to install it

Examples & Research

- Idea: Technology given to social housing tenants for free and they can keep the savings
- **BUT:** Baseline uptake rates were only around ca. 60%
- **RESEARCH:** People who got social norm information were much more likely to get the technology installed

Examples & Research

- **PROBLEM:** India faces a wave of protests and activism against Smart Meters across the country

- **RESEARCH:** Large-Scale Field Study & additional online experiment with participants from Delhi, Jaipur and Jodhpur showed: **Trust in the organization is they key factor for adoption**

Mass protest in Vijayawada against smart power meters and tariff hikes

The protesters accused the government of betraying public trust by imposing ₹15,485 crore worth of adjustment charges within a year of coming to power, despite promises to reduce electricity costs

Updated - July 04, 2025 06:35 pm IST - VIJAYAWADA:

THE HINDU BUREAU

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The CPI(M) activists staging a protest against smart meters in front of the CPDCL office in Vijayawada on Friday. | Photo Credit: G.N. Rao

Beyond technical perspectives

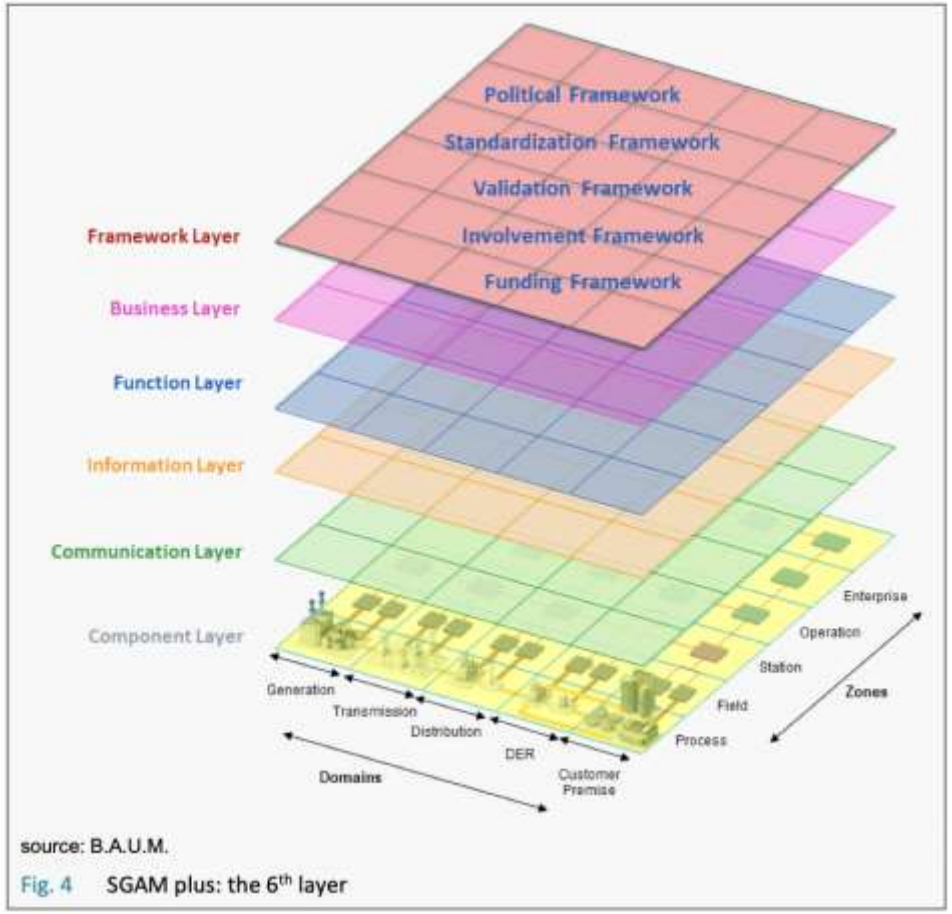
- Societal acceptance is key for Interoperability
- It *not* just about machines working together - it's about people, systems, and institutions collaborating effectively
- Interoperability governance = designing for alignment across societal, technical, and institutional domains

Systemic Governance – We need all dimensions

- Interoperability governance is only possible when all spheres collaborate:
  - Government can decide, but needs legitimacy.
  - Technology alone can't solve social resistance.
  - Academia is needed for foresight but it needs strategic funding.

„The future energy system will be way more complex."

How do we navigate this complexity?
→ SGAM Layer 6



source: B.A.U.M.

Fig. 4 SGAM plus: the 6th layer

Systemic Governance – We need all dimensions

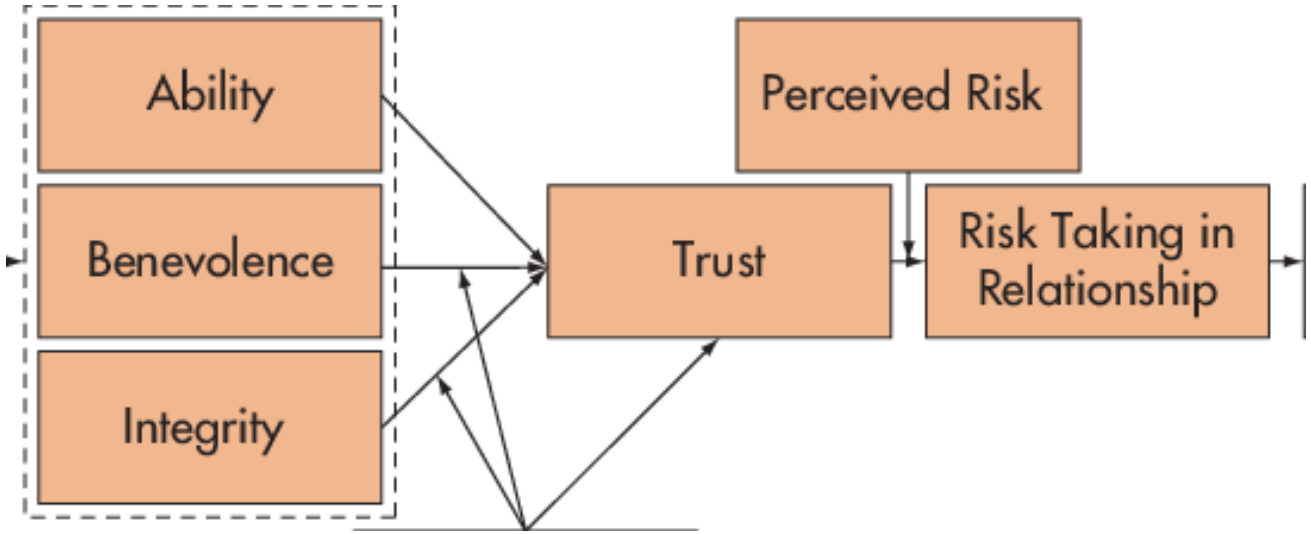
- Role of norms and networks:
  - Norms: What do others do? What is socially acceptable?
  - Networks: Who do I trust? Who do I act with?

- “Networks” = webs of cooperation among actors (civil society, academia, NGOs, municipalities, SMEs) → not just tech networks, but **relational infrastructures**

- **Interoperability of a broad range of stakeholder groups**

Systemic Governance – Coordination, Trust, Communication

- Systemic governance and networks require coordination, trust, and accessible communication
- What do we know about trust and coordination in organizations?



Summary - The Role of Society and Networks

- **Interoperability governance goes beyond technology**
  - It requires active societal engagement — machines can be interoperable, but systems fail without human and organizational alignment.
  - Governance = Coordination + Trust-building + Communication

- **Trust, governance and networks are essential**
  - Trust in technology and institutions (e.g., smart meters) influences adoption.
  - Networks (between actors like citizens, municipalities, academia) enable collaboration and legitimacy.
  - Governance and frameworks to enable interoperability between multiple stakeholders is needed and should be formally defined → e.g. SGAM Layer 6

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Thank you for your attention.