Standards-Based Governance for AI: Promises and Limitations

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Overview

- Overview of standards, especially as applied to AI

- The standards development process

- The case for standards-based governance for AI

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Overview of standards

- Emergence as the dominant form of technology governance
- Types of standards
  - Governance and management standards: organizational decision-making, risk management, ethical principles, etc.
  - Technical standards: system behavior, interface designs, information structure, validation benchmarks, etc.
  - Scope: general vs. domain specific (e.g., IEEE 2846-2022)
- Distinction from the rules vs. standards debate

AI standards

- Requirements: disclosure, validation, in-market testing
- Stages: pre-processing, model selection, post-processing
- Roles of standards (harm prevention + value creation)
  - Basis for liability (tort liability, criminal law, EU AI Act)
  - Basis for auditing
  - Support for implementation (especially in a distributed stack)
    - Allocation of functions (modularity, cathedral/bazaar)
    - Enablement of multi-party provision

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The standards development process

- Standards Development Organizations (SDOs)
  - Geographic scope (national, regional, international)
  - Composition (industry consortia, multistakeholder bodies)
- Examples
  - ISO/IEC – earliest international AI standardization effort
  - IEEE-SA – global multistakeholder body, multiple series
  - Nat'l bodies – NIST (US), CEN/CENELEC (EU), BSI (UK)
  - Other initiatives – Global Partnership on AI, Frontier Model Forum, MLCommons

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The case for standards-based governance

- Evaluation of both strengths and weaknesses
  - Exercise in comparative second-best (avoid Nirvana fallacy)
  - Importance of comparing best versions of both
- Rationales for standards governance to be discussed
  - Bottom-up, decentralized nature
  - Stakeholder expertise and participation
  - Agility and adaptability
  - Coordination scale

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Bottom-up, decentralized governance

- Decentralization of choice (GSM/CDMA, WiFi/Bluetooth)
  - Alternative to classic state-centric regulatory models
  - Literature finding flaws in government-set standards
- Potential for multiple approaches by different SDOs
  - Room for experimentation (esp. if environment is varied)
  - Enablement of ex ante competition (both across and within)
  - Change in the role of government to enforcing commitments
  - Fostering of SDO responsiveness/prevention of stagnation

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Bottom-up, decentralized governance, cont'd

- Second-best considerations
  - Possibility of market failure/capture
  - Incompleteness of any solution/need for ongoing governance
  - Race to the bottom/tradeoff between venue quality & success?

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Stakeholder expertise and participation

- Access to specialized knowledge that regulators often lack
    - Information about the current cutting edge
    - Input from different stakeholders (incl. rivalry among them)
    - Opportunity for continuous feedback
- Second-best considerations
    - De jure/de facto barriers to stakeholder participation
    - Potential for industry capture and implications for legitimacy

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Agility and adaptability

- Ability to keep up with rapid pace of AI innovation
  - Info. lag re new developments (GPAI, Deepseek, 10^{26} FLOPs)
  - Procedural friction from formal bureaucratic processes
- Second-best considerations
  - Both agencies and SDOs are charged with ossification
  - A degree of friction is a necessary concomitant to legitimacy

Coordination and scale

- Standards' potential for transnational impact
    - Facilitation of access to scale
    - Reduction in compliance costs
    - Facilitation of knowledge sharing and deployment
- Second-best considerations
    - Underlying degree of homogeneity/interactivity
    - Susceptibility to geographic rivalry (esp. membership/voting)
    - Subversion of public authority
    - Potential for harmonization

The path forward

- Debate over the proper scope of standards
- Need to conceptualize technical components of standards
- Timing of standards adoption, esp. re technical standards
- Importance of SDO design (participation/voting/ongoing)
- Protection against geographic rivalry
- Framework for balancing speed and inclusion/legitimacy
- Relevance of compliance costs and benefit/ cost analysis