Values and Networks – Steps toward Exploring their Relationships

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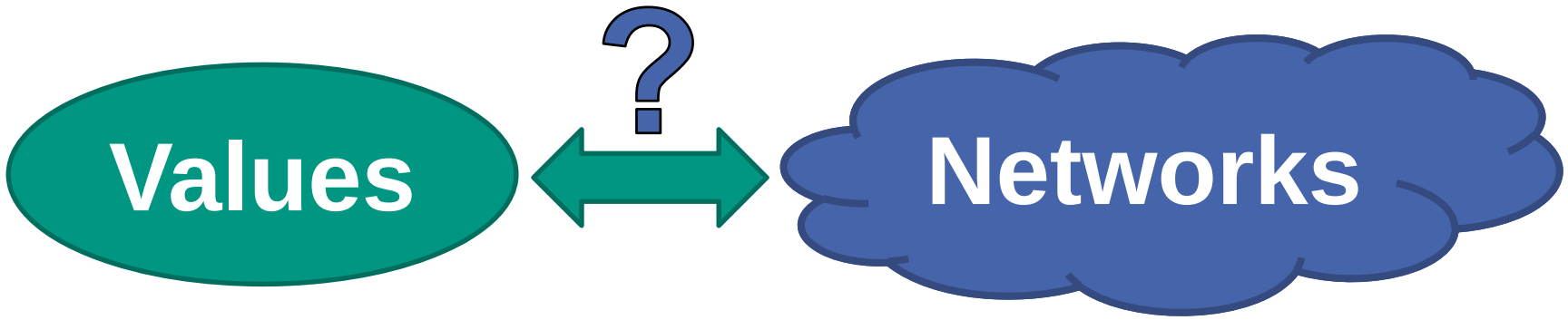
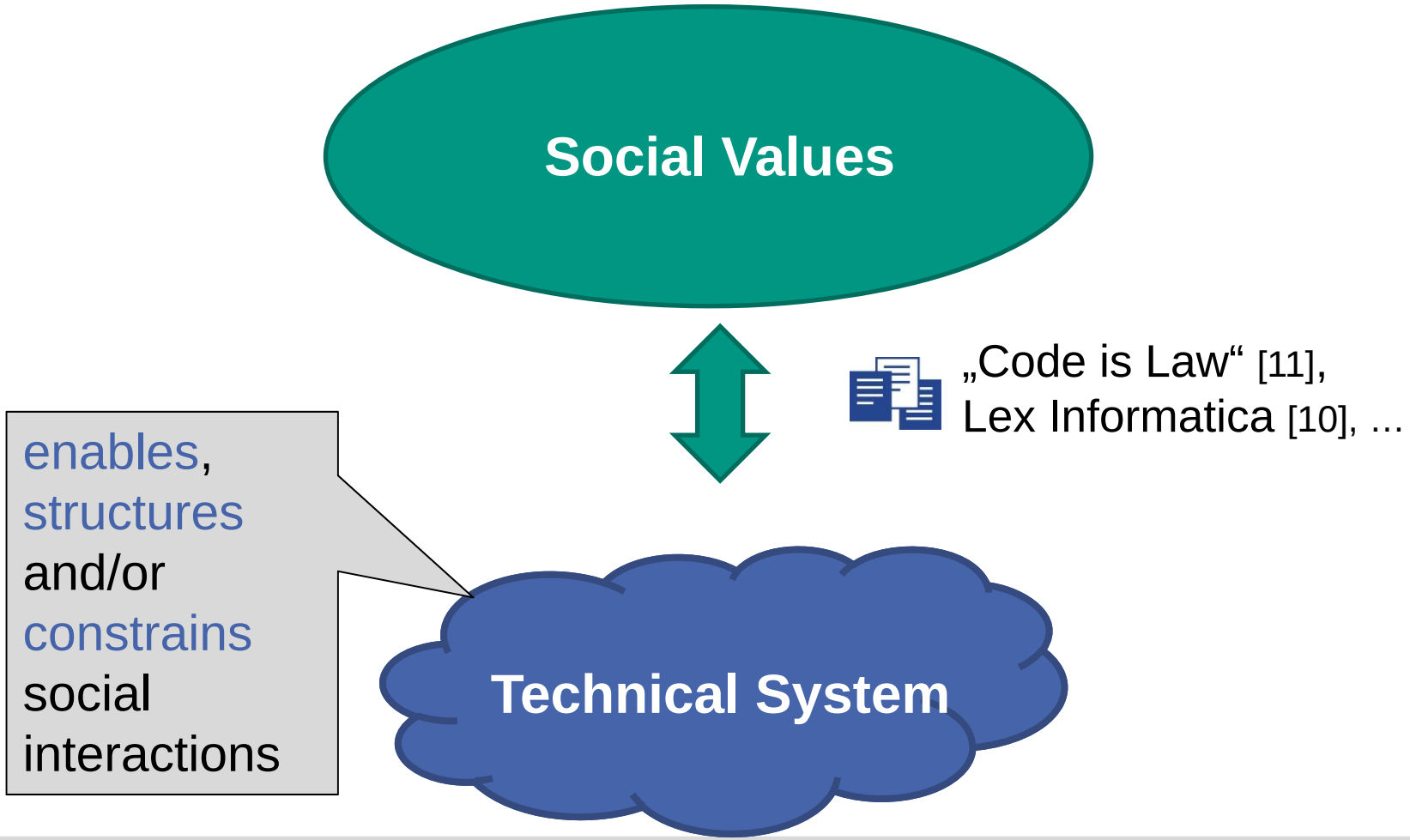


Values and Technical Systems



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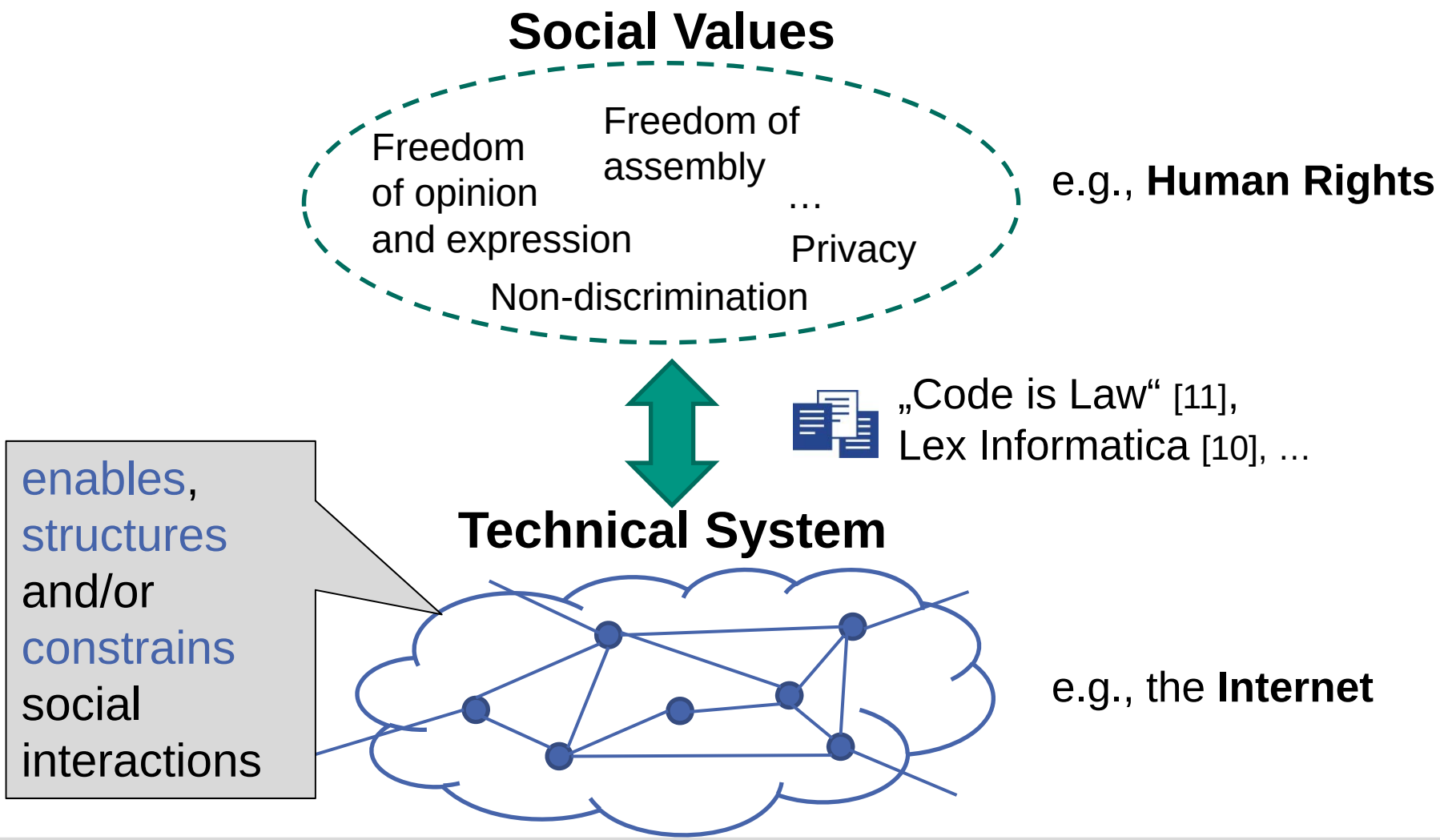
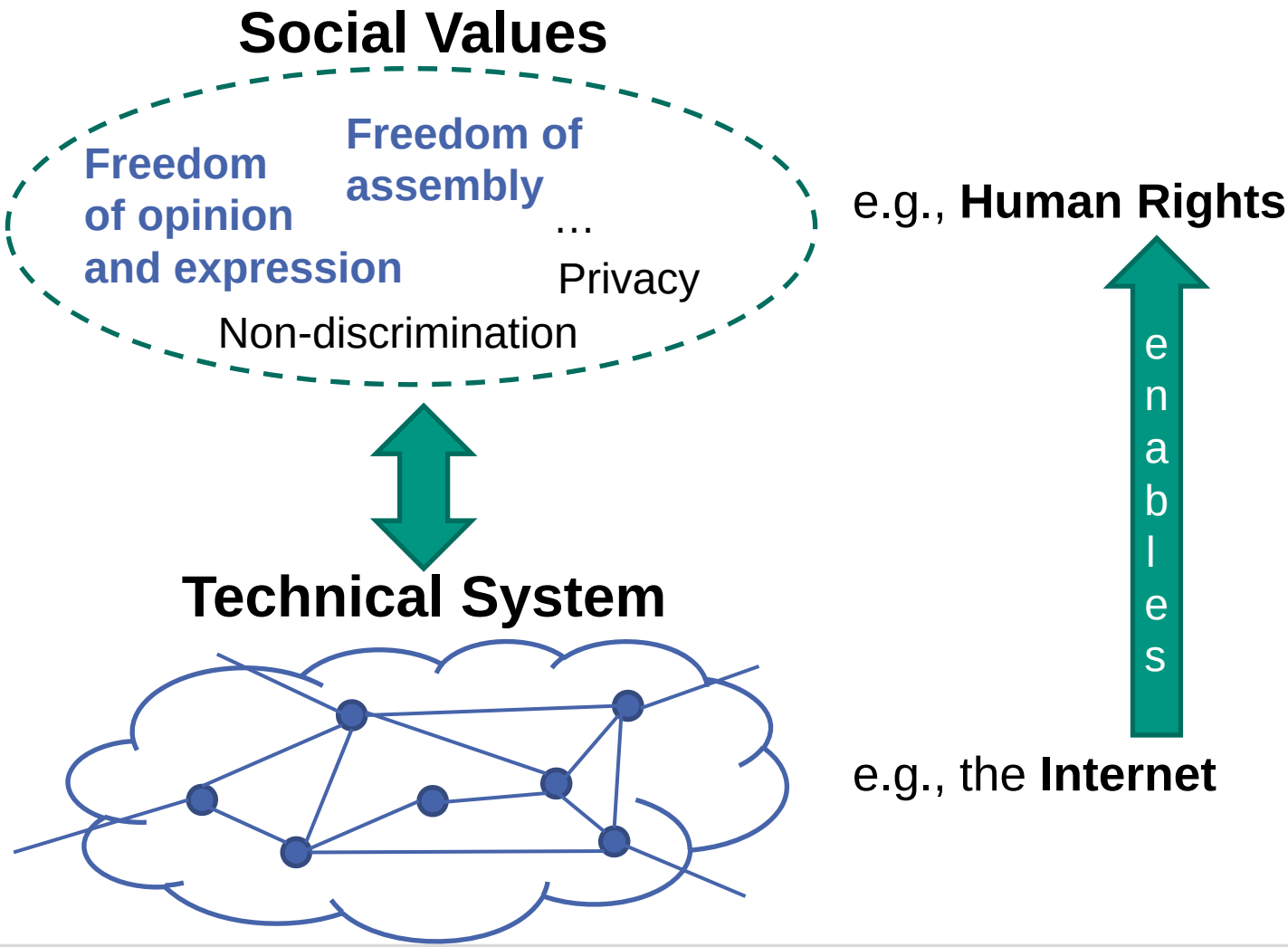
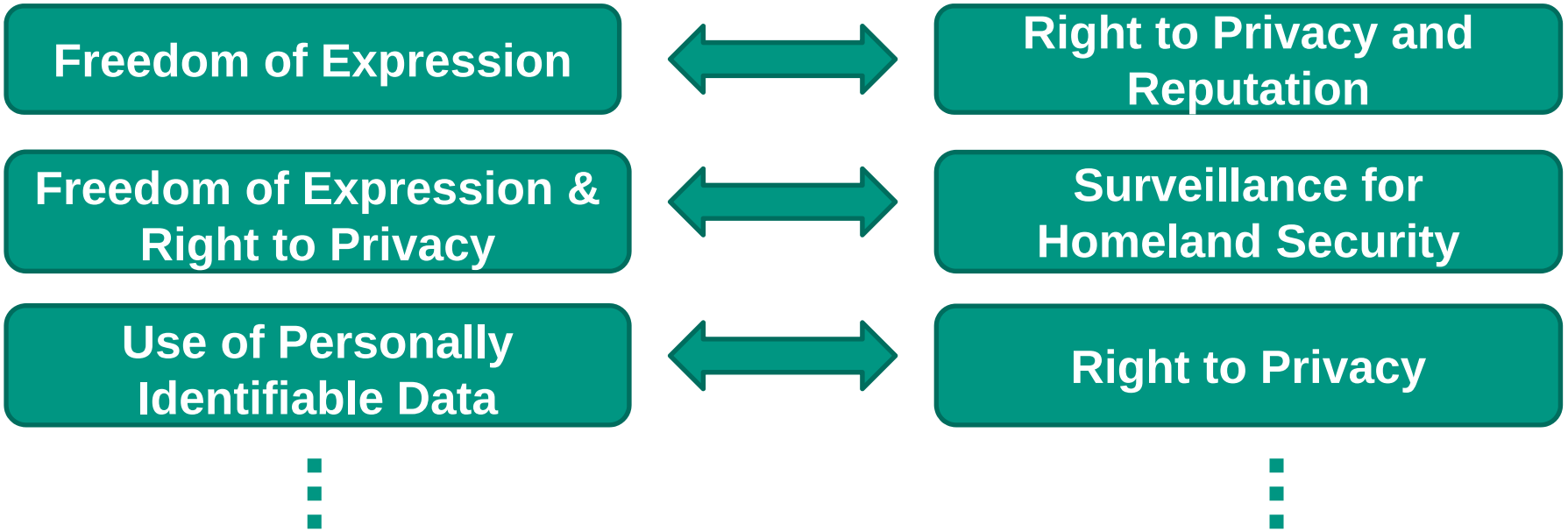


Values and Technical Systems



Value Conflicts

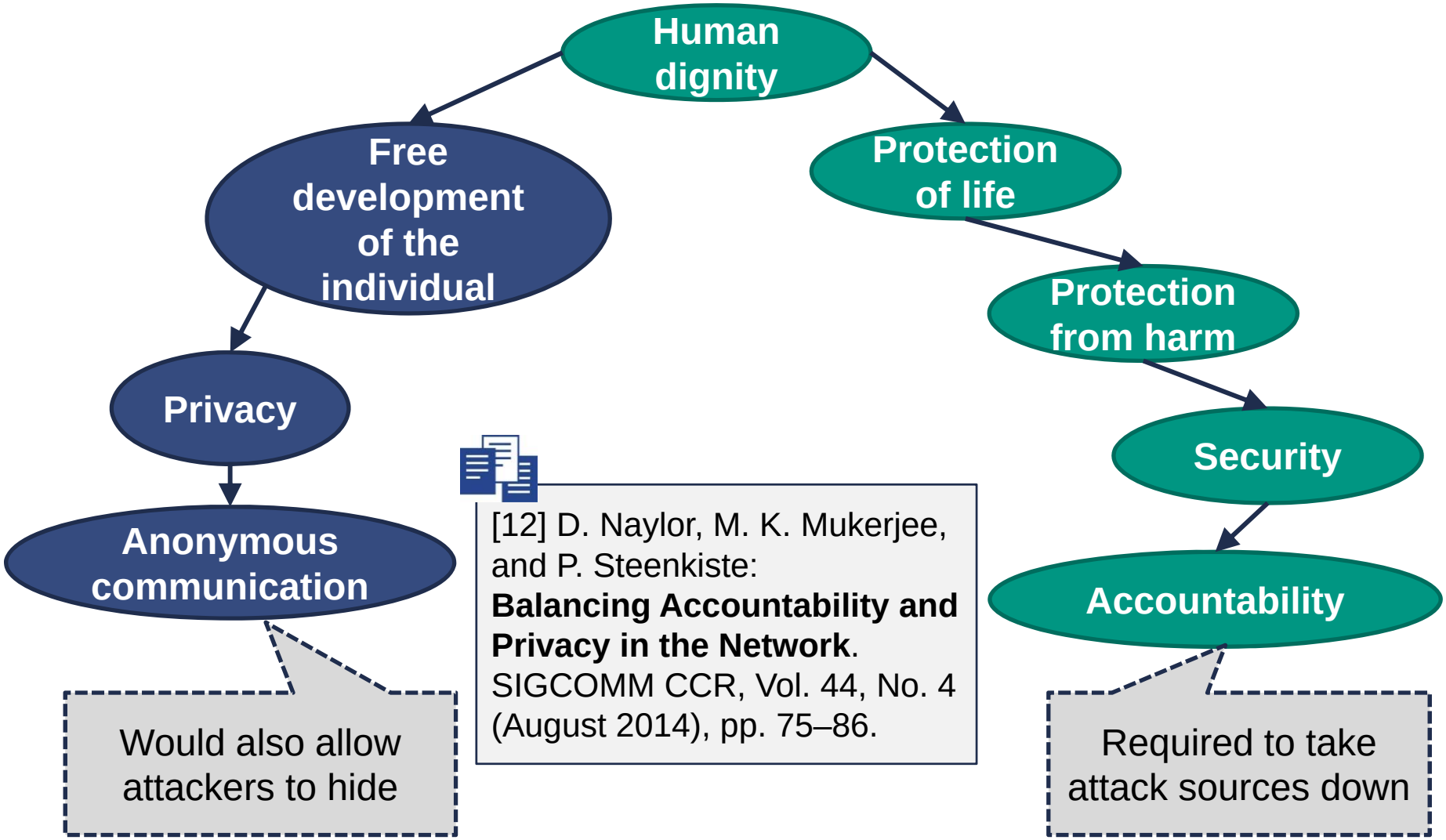
- Conflicts between values are natural



- Value-aware communication architectures?
- Value-oriented network design?

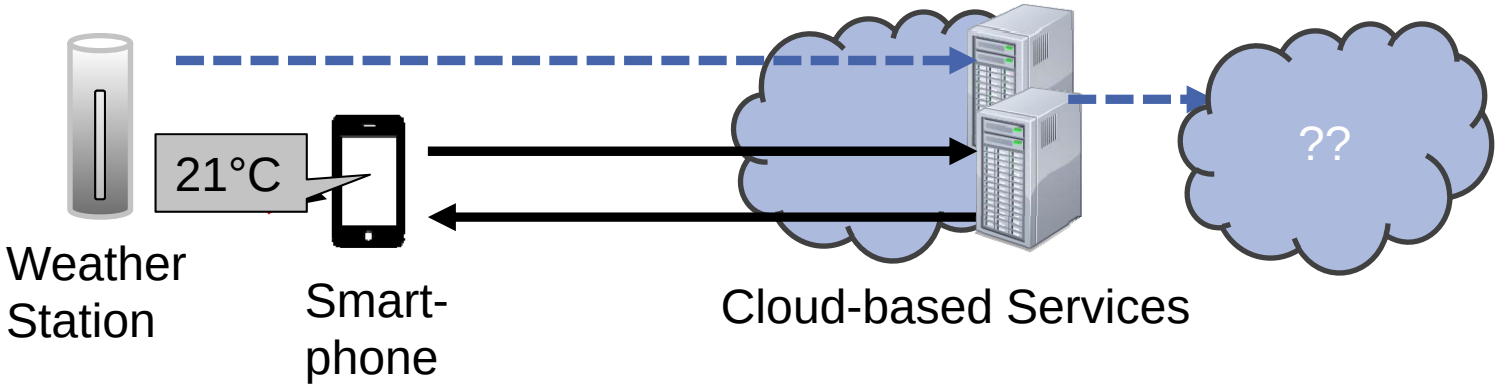
Tussle in Cyperspace [7], …

Value Conflicts – Example



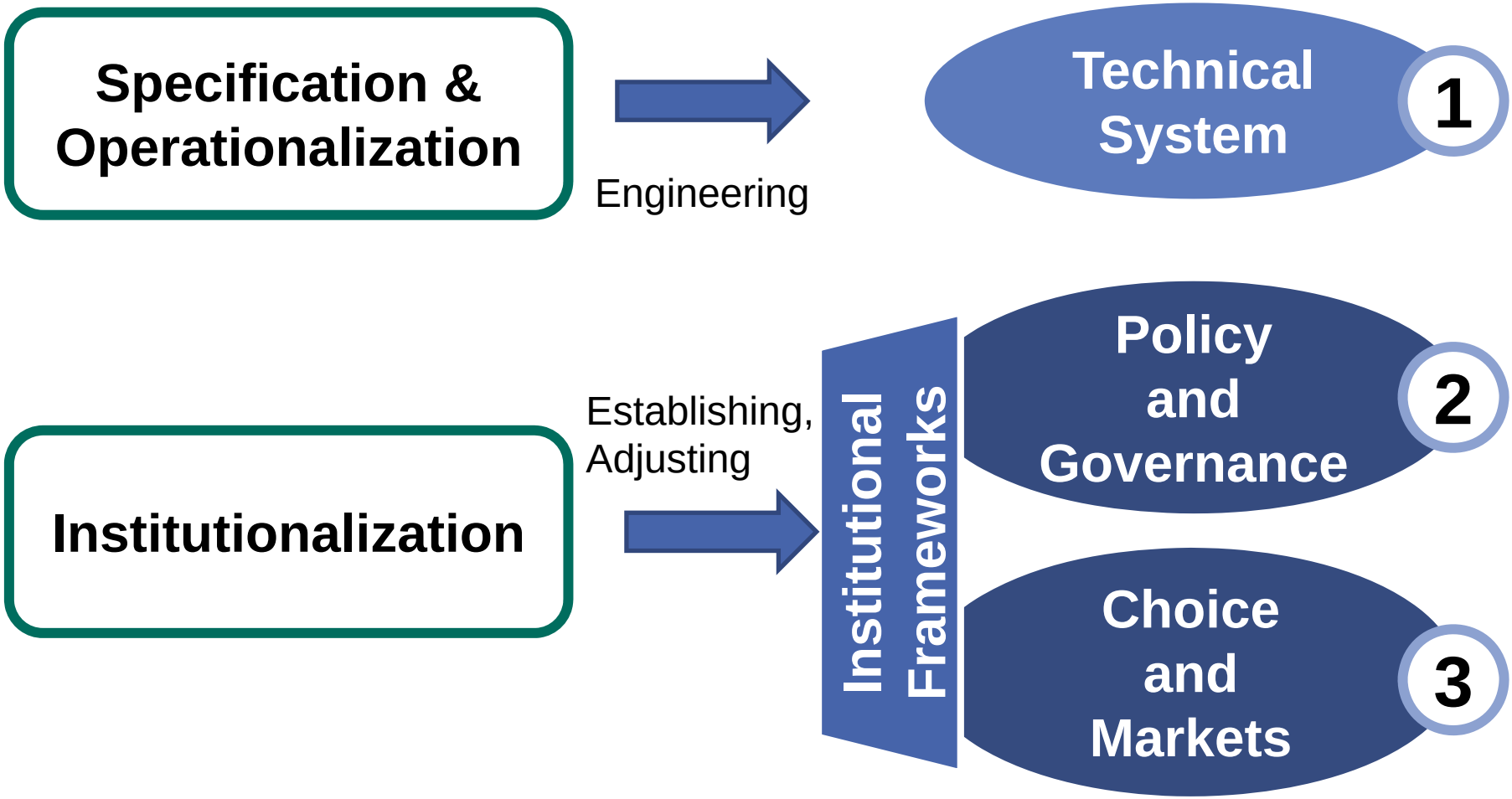
Further Challenges

- Trend of connecting everything
  - Internet of Things, Smart Objects, Internet of Everything
    → deeper impact on nearly all areas of life
- Strong binding between devices and services



- More and new value conflicts?
- How to handle value conflicts?

Inter-related Ways to Handle Value Conflicts



Operationalization

- Values in Design, Value-sensitive design, Constructive Technology Assessment, …

- Technical implementations are assertive and rigid
- Specification: Standards
  - IETF: Pervasive surveillance is an attack → End-to-end encryption
  - IRTF: Human Rights in Protocols Considerations Research Group → can protocols enable, strengthen or threaten human rights?
- Accountability: Certified Globally Unique IDs → Privacy?
- Privacy: Hornet [15] as new Network Layer → Accountability?

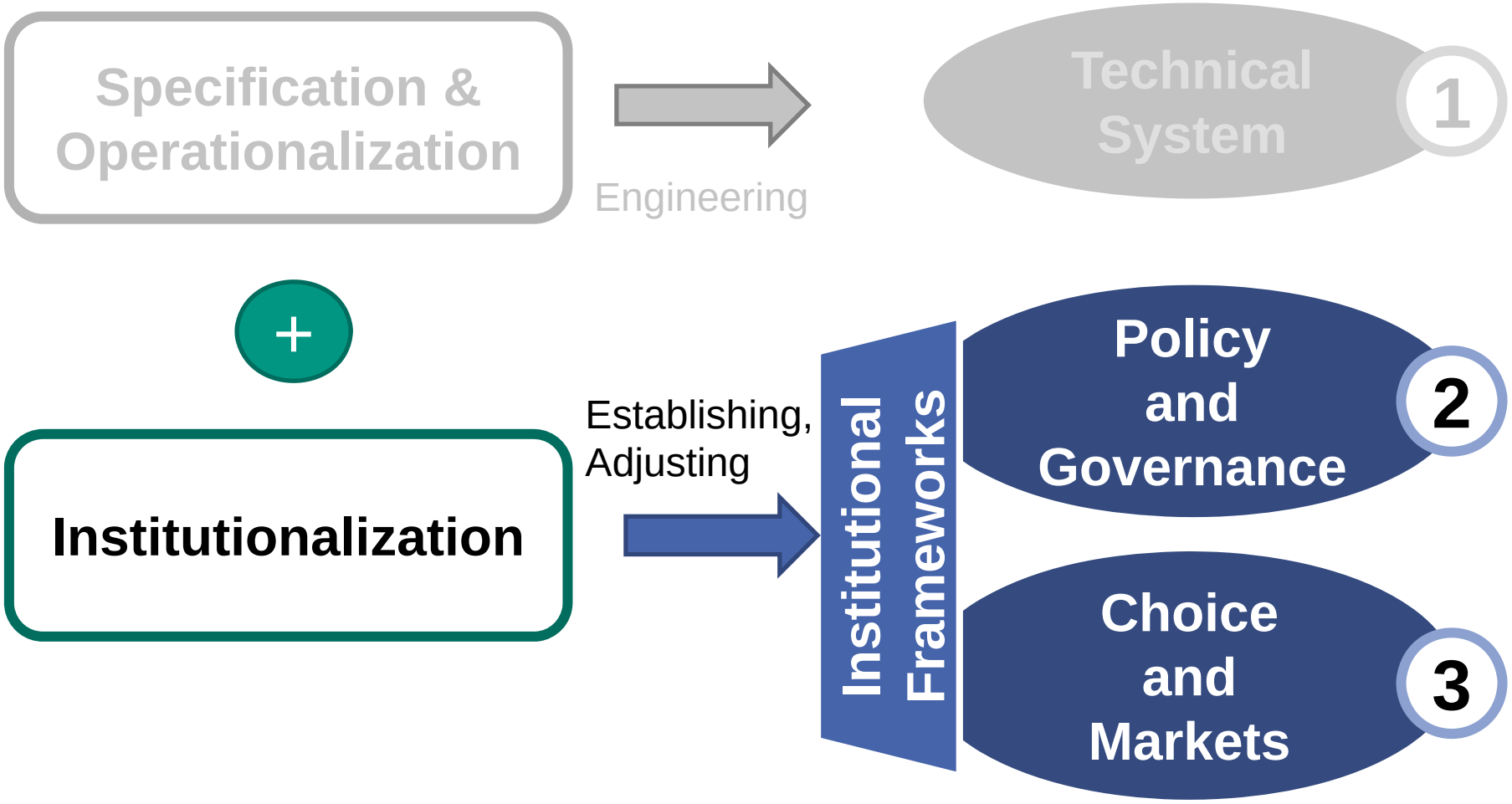
Operationalization – Limitations and Drawbacks

- Technical implementations of values
  - have impact on other values
  - may be complex
  - are assertive and rigid

- No room left for interpretation
- No flexibility – exceptions from rules?

- Example:
  - Law to technically block illegal content
    - Secret black list with server names (DNS)
    - Not really effective, danger of over-blocking
    - Better solution: deletion instead of blocking

Additional Considerations Necessary…



Institutionalization – Policy and Governance

- Political and juridical actors
  - societal decision- and rule-making
  - juridical procedures
  - regulation and oversight
  - “checks and balances”
- Technical implementation of values has impact on such processes
- Realization of values is then
  - somewhere “hidden” in the code
  - hard to assess

Institutionalization – Limitations and Drawbacks

- Regulatory capture by partial interests
  - E.g., European Directive on Net Neutrality (contradictory in itself), European Copyright Directive (protection against DRM circumvention)
- Unjustified dominance of state interests possible
  - E.g., Mass surveillance of all citizens vs. targeted surveillance

Institutionalization – Technical Support

Policy and Governance 2

- Provide more means for monitoring, auditing, and assessing technical implementations
  - e.g., provide transparency mechanisms
    → evidences for bias or misbehavior

- Transparency to support disclosure of
  - Privacy violations
    (e.g., Smart TVs disclosing use to vendor)
  - Censorship (e.g., HTTP Response 451)
  - Hidden discrimination (e.g., Traffic Policing)

RFC7725 [14]

Institutionalization – Choice and Markets

- Markets can provide different products according to different values
- Certified products and services

- Market failures possible
  - Limited choices
  - Binding customers to platforms

- Often requires: Market law, consumer protection, privacy regulation, competition policy

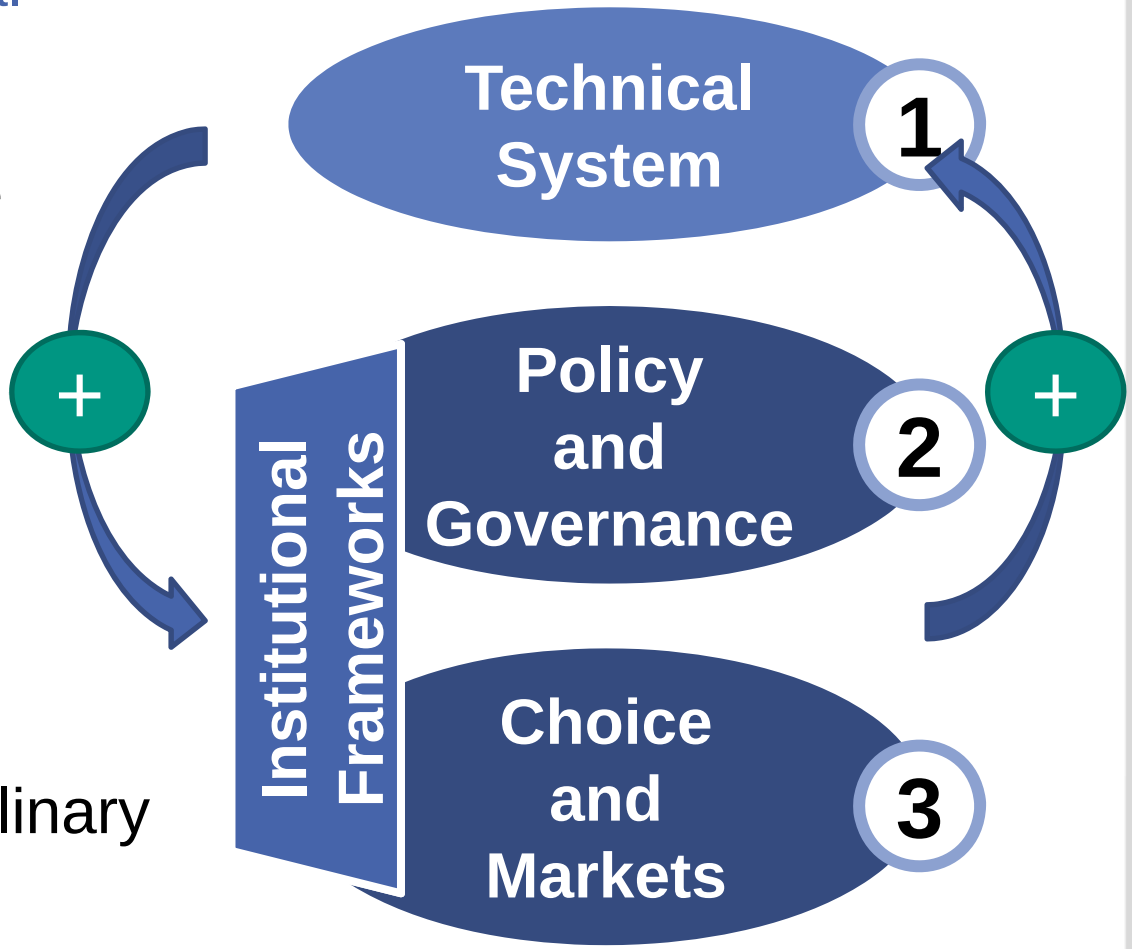
Institutionalization – Technical Support

- Facilitate conditions for markets that consider/support values

- Open standards (avoid vendor lock-in)
- Higher flexibility → providing adaption and choice for individual values
- Transparency measures → assessment of value realization

Conclusions

- Thinking in institutional frameworks
  - Technical implementations are only one part of the solution!
  - Think of markets and governance solutions
  - Technical support for institutional frameworks
- Need more interdisciplinary research!



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