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# Internet Architecture and Values

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## Debate topic

A fundamental disagreement in the Future Internet debate concerns architecture design and value. Should an architecture incorporate inherent values that have been widely accepted through societal debate or be adaptable once deployed to a wider range of stakeholder values put forward within an evolving societal context?



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## My position

- **The Internet architecture should not be expected to reflect or support a particular value set, however robustly debated in societal context**
  - Nor should it be expected to reflect a multiplicity of human values
  - The architecture should be agnostic to values.

## Exposition – what is “Internet”?

- Technology
  - For which specifications are built to ensure interoperability
- Operational system
  - Deployed reality
- Experience
  - What most people think of as “the Internet”
    - social networking
    - on-line banking
    - communicating with others
    - shopping
    - et cetera

## Exposition – Architecture?

- Applies to technology or deployment
- Experience is where societal values are displayed and experienced

## Exposition – Internet Architecture

- Internet technology is defined in terms of *building blocks*
  - specifications define how these fit together (connectors)
  - Like – Lego blocks
- Deployed reality of the Internet reflects different ways in which those standard building blocks have been put together
  - What people have built with those building blocks
  - Some structures are more sound than others

## Position – Future Internet

- Some scenarios
  - <http://www.isoc.org/tools/blogs/scenarios/>
- Tussles between
  - Command & Control or Distributed & Decentralized
  - Reductive or Generative
- The ideal
  - Generative, Distributed & Decentralized

## Position – Current & Future Internet Architecture

- Generative technology means that the properties of the network and its use are emergent
  - not defined in advanced
  - not controlled
- Bug or feature?
  - Feature: allows adaptation to new circumstances
  - Feature: allows support for wide-scaled innovation
    - innovation, by definition, is not pre-defined



## Argument: Value systems are not absolute

- Aligning architecture with value systems, or requiring an architecture to support a particular value system in the experience of the Internet is challenged by the fact that, even widely debated and accepted value systems are not absolute.
  - interpretations may vary from country to country, culture to culture

## Argument: Technology is not the only tool in play

- No technology system can define the totality of the user's experience.
- Laws and norms govern behaviour, as well
- Pushing water up the pipe doesn't work
  - e.g., “controlling” content by blocking DNS entries

## Argument: Value Systems are Enforced/Supported through Control Points

- The natural control points for any value system are defined by cultural, societal, and geographic boundaries.
- The natural control points for a functioning technical system are defined by the technical system's boundaries
- These rarely align cleanly
  - And forcing alignment causes inefficiencies in the operational system

## Wrap up: The value system of Lego blocks?

- Back to the building blocks analogy:
  - Does it make sense to require Lego blocks to incorporate a particular value system?
- From yesterday's keynote address – Lego mindstorms technology hacked by users. Lego's choices:
  - Sue their customers for breaking agreement
  - Embrace their customers' innovation and build on it
- The power of generativity opens more futures and supports more realities than can be captured for enforcement through any given architecture.



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**Thanks!**

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