

Helping the Internet to Age Gracefully

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Architecture and IETF

- Heard around IETF:

We don't do any <insert your favorite explicative> architecture!

- Heard around 3GPP:

IETF doesn't do architecture, they do philosophy!

Internet Architecture Historically

- Architecture historically:
 - Articulation of broad design principles
 - Development of consequences in protocol design.
- Example: end to end principle (Saltzer, Reed, and Clark, circa 1988) :

The function in question can completely and correctly be implemented only with the knowledge and help of the application standing at the end points of the communication system.

- Still a vital place for traditional approach going forward, but we need more.

What is the Problem?

- Need some way of maintaining design consistency in Internet protocols as the Internet ages.
- New components must be well integrated with existing system.
- Removing or extending old components must honor existing interdependencies.
- Sometimes these interdependencies extend across Working Groups and even across Areas.
- Catching them at IESG Review is too late to affect the base design.
- Is architecture the wrong word?
 - Maybe system design (John Klensin).

Possible Consequences of Ignoring the Problem

- More drafts returned to WG during IESG review due to conflicts between the new or extended design and existing infrastructure.
- Occasional missed interdependencies turning up after draft has gone to PS.
 - Interoperability problems.
 - Delays in successful deployment.
- Increased lack of transparency and understandability in Internet design.