

Effects and Taxonomy

Two Drafts on Centralization and Consolidation

IETF 121; Dublin, Ireland

From the DINRG Charter

DINRG's main objectives include the following:

- Investigation of the root causes of Internet centralization, and articulation of the impacts of the market economy, architecture and protocol designs, as well as government regulations;
- Measurement of the Internet centralization and the consequential societal impacts;
- Characterization and assessment of observed Internet centralization;
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Two Drafts With DINRG History

- On the Effects of Internet Consolidation
 - <https://datatracker.ietf.org/doc/draft-mcfadden-cnsldtn-effects/>
- A Taxonomy Of Internet Consolidation
 - <https://datatracker.ietf.org/doc/draft-mcfadden-consolidation-taxonomy/>

draft-mcfadden-cnsldtn-effects-04

- Last presented in San Francisco at IETF 117
- Updated for IETF 118 and IETF 120
- Some comments on mailing list and some comments directly to authors
- Not intended to duplicate material in RFC 9518
 - Instead, it is intended to answer the objection: “centralization and consolidation are economic effects; we aren’t economists at the IETF; there is no need to talk about consolidation at the IETF”

Is There a Relationship Between Protocols and Centralization

- Some claim not, but it seems that there are clear examples where protocol design “bakes in” centralization
- The purpose of this draft is not to duplicate RFC 9518, but instead show that there is a clear relationship between protocol design and centralization
 - Examples include the draft including Privacy Pass and DoH
- Response at IETF 117: economics of scale is the primary driver of consolidation, not protocol design
 - Perhaps, but protocol design not only makes centralization possible, but (in some cases) enforces it

Comments and Changes

- Draft has changed in -04 based on comments
 - Change the discussion around economic centralization to centralization of power (and, not just market power)
 - This allows a wider set of centralization symptoms and causes to be discussed
 - What we did: left the economic discussion in place, but added the idea that centralization leads to imbalances in power in other ways
 - What's the difference between centralization, consolidation, and similar terms
 - What we did: left Section 5 in place and tried to address this in another draft
 - You can't tell if things are getting worse if you can't measure consolidation
 - What we did: Section 6 on Metrics and Measurement is completely new
 - Lot's of other editorial changes plus changes to the section on the ed-to-end principle

draft-mcfadden-consolidation-taxonomy-05

- Last presented in Prague at IETF 119
- Once again, comments on the mailing list and some directly to the author
- Purpose of this draft:
 - Completely different from RFC 9518 and the effects draft
 - Intended to point out that people mean different things when they talk about consolidation and perhaps provide a taxonomy for that conversation
 - Divides the consolidation discussion into economic; traffic and infrastructure; architectural; and service and application consolidation

Remembering RFC8890

- RFC 8890 states “Inappropriate concentration of power on the Internet has become a concerning phenomenon -- one that protocol design might have some influence upon”

Comments?

- Comment: it is ALL about economics; nothing else.
 - Response: revised to try to show that isn't the case. Economics is incredibly important, but it's not the only part of the centralization picture
- Comment: you seem to use consolidation and centralization interchangeably
 - Response: Expanded Section 2 which talks about the terms and then added a completely new Section 2.1 which tries to distinguish between these terms: consolidation, centralization and concentration
- Comment: economic centralization should be an example of consolidation of power in the hands of a few
 - Response: made changes in the text of Section 4 to try to address this comment
- Other: redrafted Section 6.3 on Standards Development to give examples

What's Next for These Two Drafts

- Happy to have further comments
- References have been reorganized in both drafts but updates are possible
- Changes and improvements have been made but the drafts are relatively stable
- Research group adoption?
 - Effects draft has been presented twice and is on -04
 - Taxonomy draft has been presented twice and is on -05

Thanks! & Questions?