Supporting Experimentation in the Decentralization of Internet Resources

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Abstract

In parallel to its discussions about the future of centralized Internet resources, NETmundial participants should support continued experimentation with peer-to-peer technologies that could potentially decentralize some of those resources in the future.

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Much of the debate over Internet governance is a consequence of the fact that some resources, especially the Domain Name System (DNS), are centralized and hierarchical. These resources raise questions of fairness, accountability, and power that are not easily resolved. This contribution does not directly address these difficult questions.

Rather, this contribution urges NETmundial participants to support continued experimentation in the decentralization of critical Internet resources through peer-to-peer systems. Such systems have the potential to improve name resolution security, provide censorship-resistance, and protect end-user privacy online. In addition, as peer-to-peer technologies mature, they raise the possibility of cutting the Gordian knot with respect to questions of control raised by centralized resources.

Existing peer-to-peer decentralized name systems use pseudo Top-Level Domains (TLDs) (such as .onion, .bit, and .gnu) that do not yet exist in the DNS in order to avoid any unintended conflicts. Over 100,000 domain names are already in use in the .bit space alone. An Internet-Draft RFC by Grothoff et al. entitled “Special-Use Domain Names of

Peer-to-Peer Systems" proposes to normalize the use of some pseudo-TLDs by reserving them for special use in the DNS per the procedure defined in RFC 6761.

While the Internet community must ultimately face the thorny questions relating to centralized Internet resources, we should also, on a parallel track, support continued experimentation in the decentralization of those resources through peer-to-peer technologies. One way to do this would be to express support, in principle, for the normalization of some peer-to-peer pseudo-TLDs as envisioned in the Grothoff Internet-Draft.