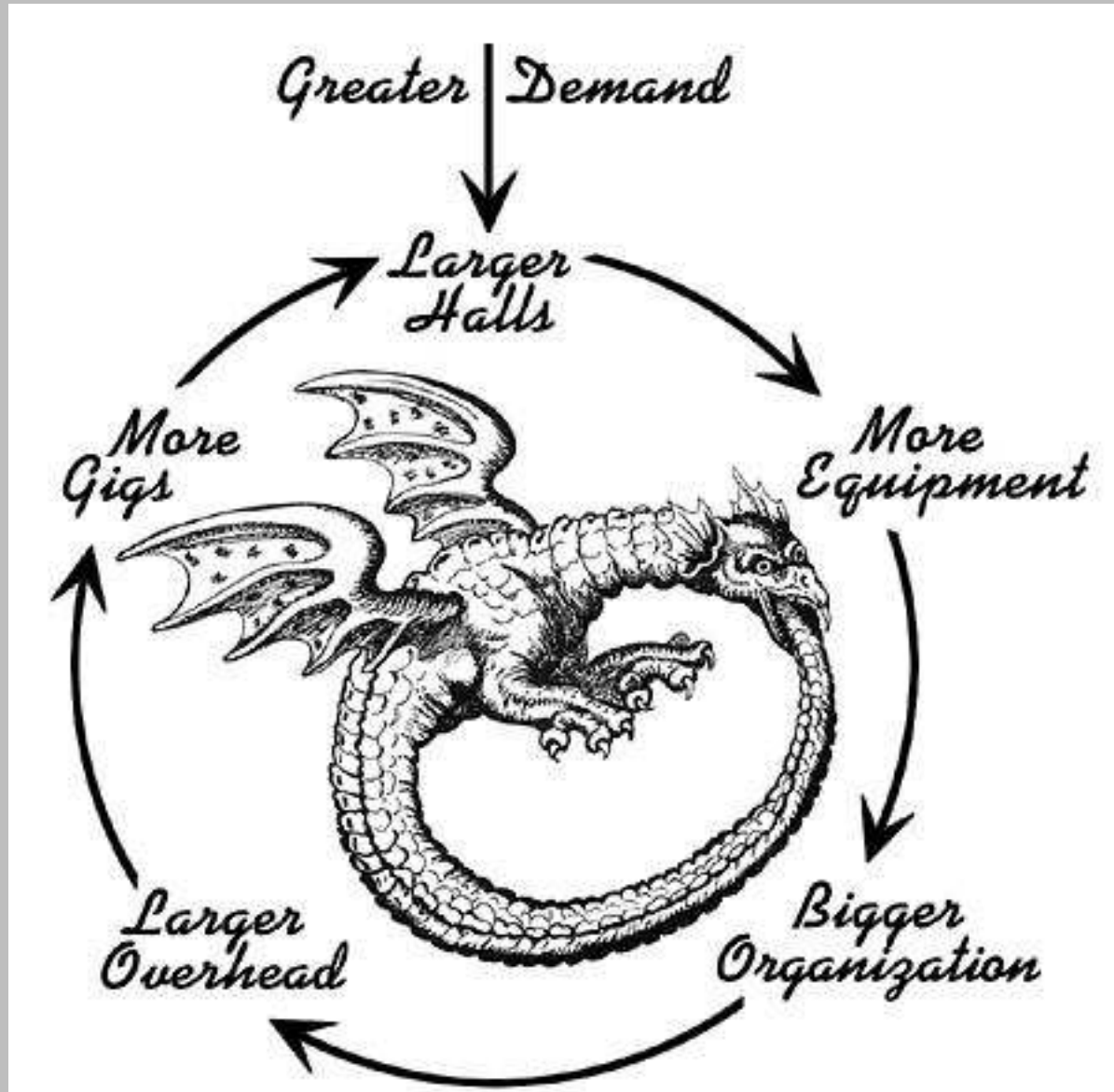# Issues from the NANOG 35 BOF

Agenda

- **Issue 1: End-System Complexity**
  - All (10 minutes)

- **Issue 2: DNS Latency**
  - All (10 minutes)

- **Issue 3: Inbound Traffic Engineering**
  - All (10 minutes)

- **Issue 4: IPv6 Routing and Addressing Architectures**
  - All (10 minutes)

Issue 1: End-System Complexity

■ The issue here, articulated by Vijay Gill, is basically that assuming an industry standard 2% churn/month on low margin customers, one support call can destroy the margin on that customer for the expected lifetime of the customer.

■ The concern here is that the dynamically changing ULIDs and locators will cause new and harder to diagnose problems, resulting in an increased frequency of calls to the help desk.

● Which in will either hurt or destroy the margin on the customer

Issue 2: DNS Latency

- Several content providers expressed the concern that shim6 will require sifting though the DNS looking for viable ULID/locator pairs.

- In reality, shim6 doesn't require this. Rather, client connects to the server just like today.
  - i.e, the application tries connect to each IPv6 address in turn until one succeeds. Nothing new for shim6 here.
  - At some (later) point in time, shim6 at either end of the communication determines that some heuristic applies (e.g., number of packets between the pair of IP addresses; NOTE: not per TCP connection).
  - That point in time could be *never*

Issue 3: Inbound Traffic Engineering

- First off, in a shim6 context, inbound TE won't be solved by shim6 itself but by an extra component that dynamically manages shim6's preferences.

- And that component can use a site wide policy set by the site's operator.

- Future work item for the shim6 WG

- That being said...

Issue 3: Inbound TE, cont

- Issues raised at NANOG 35 included:

- Current multi-homing is site based not host based. Host based multi-homing does not lend itself to current operational processes, as there are
  - A large number of hosts,
  - Complex routed network, and
  - End users do not own network/traffic engineering preferences

- Note also that TE decisions are currently made and configured at the network level
  - As opposed to in all end hosts

Issue 3: Inbound TE, continued

- The Internet facing routers and end hosts may not be managed same group of operators

- Operators want to manage the inter-AS TE policy in a few well defined places in their networks
  - As opposed to in every host

- Transit AS TE capabilities may be a requirement

Issue 3: Inbound TE, continued

- **Finally....**

  - There was some concern that TE (as practiced in IPv4) won't scale in any event, so the lack of a TE solution for shim6 was seen by some as an unfair criticism

- **Jason Schiller has a nice set of slides on this topic**

  http://www.nanog.org/mtg-0510/pdf/schiller.bof.pdf

- **Issues In Traffic Engineering with SHIM6**
  - draft-meyer-shim6-and-te-00.txt
  - Not yet finished; Please see me later if you'd like to help/contribute

Issue 4: IPv6 Routing and Addressing Architectures

Note that shim6 was designed for the currently available routing and addressing architecture, and therefore doesn't require innovation in that area.

Questions?

Thanks!