

Strategic/Policy Implications of Measurement Data Sharing Under the OIO

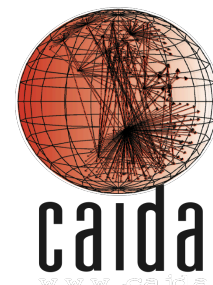
nee, “The Road to an Open Internet is Paved With Pragmatic Disclosure & Transparency Policies”

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1



(2) Catalyst- Broadband Network Management Policies

- **OIO D&T provisions** play central role: '10 OIO – struck down, *except* for D&T. Court recognized authority of FCC to issue such rules (all else potential wobblers)
- **Includes** : info disclosure obligations, performance measurement and reporting platforms and practices, & processes for enabling multi-stakeholder participation in decision-making
 - Interpretation & implementation challenges
 - Induce intervention tools
- **Range of D&T intervention tools:**
 - FCC orders and consent decrees
 - transparency & market research reports
 - consumer complaints
 - Emergent capabilities: edge measurement tools (*net.info*), adapt models such as the Key Facts Indicator, ISP Censorship Transparency Reports, FCC NORS reporting

2

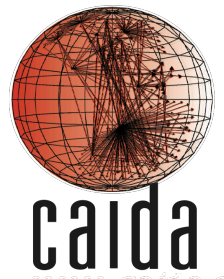
(2) Catalyst- D&T Policies

- **2015 OIO hybrid nature** = source of authority + seeds of dispute re: info sharing
 - Principles: flex, universality, discretion v. application ambiguity, outcome uncertainty, ex-post remediation
 - Rules: ex-ante compliance specificity, certainty v. rigid decisions, less adaptable to evolving markets & tech
- **Provides raw materials for D&T policies, NOT a blueprint for how** applied to the myriad network management scenarios and considerations
- **Bright Line**
 - ISP Transparency of *Performance, Practices, Terms*
 - Disclosure process for *Safe Harbor* compliance
 - *No traffic blocking, throttling, or paid prioritization* of lawful content, applications, services, or devices for BB access
- **Light Touch**
 - *General Conduct Standard* prohibits practices that unreasonably interfere with or disadvantage Consumers or Edge Providers;
 - *Reasonable Network Management exception*
- ***BOTH* have decision, application and evaluation gray zones that warrant intervention tools to address ambiguous and emergent interpretations.**

(2) Catalyst- D&T Policies

- **E.g., Fading bright lines**
 - OIO requires specific and detailed performance disclosures for users and edge providers (actual speed, latency, packet loss)
 - Performance metrics are far from standardized or settled
 - OIO does not indicate HOW loss should be measured or THAT diff loss measurement methods yield diff answers
- **E.g, Internet traffic exchange not-so-forbearance**
 - OIO explicitly forbears application interconnection, BUT FCC retains discretionary authority to govern interconnection via prohibition on unjust and unreasonable practices standard (caseXcase)
 - QoS degradation: owing to users w/ Gpbs packet binging OR ISP nudging for surcharge/higher tier?
 - Is throttling protected IA/RNM or discoverable artificial congestion?

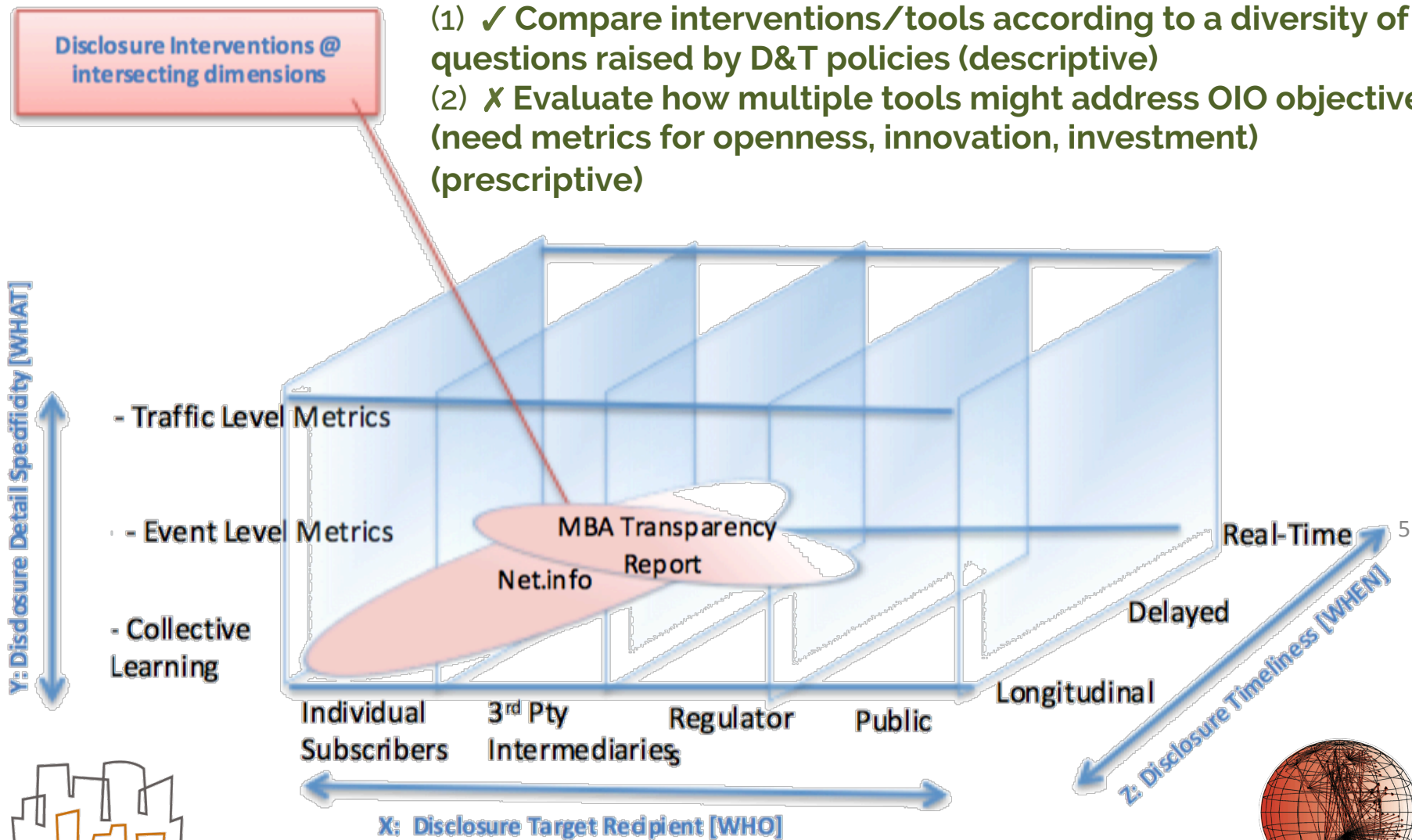
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(3) Coordinator Tool for D&T Interventions

Visual model to conceptually :

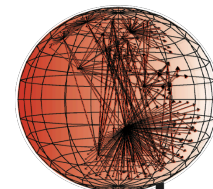
- (1) ✓ Compare interventions/tools according to a diversity of questions raised by D&T policies (descriptive)
- (2) ✗ Evaluate how multiple tools might address OIO objectives (need metrics for openness, innovation, investment) (prescriptive)



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(3) Coordinator Tool for D&T Interventions

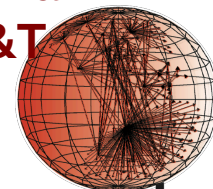
- **Need multiple D&T to address knowledge gaps**
 - Various sources of BB mgmt information
 - value of existing sources
 - impact on stakeholders
 - how to improve info asymmetries (correct or find new sources),
 - how to integrate and share the information
 - what intervention strategies effectively protect Internet openness, promote innovation and investment.
- **Little consensus on best-practices for BB net management**
 - Are traffic level metrics to individual subscribers >/< effective than collective learning disclosure strategies?
 - What's the relative effectiveness for consumer protection between disclosure to regulators and disclosures to the public or 3rd parties?
 - What is a successful strategy for measuring congestion?
- **Ultimate issue: whether stakeholders have the info they need and trust in provenance; no one-size-fits-all approach given the 5 D&T Policies and application discretion**



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(3) D&T Interventions- Transparency Reports

- **Measuring Broadband America (MBA)**
 - Participating ISPs eligible for safe harbor compliance with the OIO transparency requirements
 - **D&T profile:** traffic level data and event level measurements (WHAT-axis); primarily targeted for the FCC and 3rd party (WHO-axis); results in periodic (delayed) reporting of results (WHEN-axis)
 - **What it accomplishes:**
 - **(a)** specificity meets Safe Harbor and reduces regulatory uncertainty for ISPs
 - **(b)** network effects and accountability among ISPs, may enhance data quality, metrics consistency and reporting standards
 - **(c)** better informed technique comparison (apples::apples)

(4) Applying Coordinator to Use Contexts – Packet Loss

- **Spoiler Alert:** : specific edge measurement intervention is more effective than a type of transparency report in disclosing certain required performance metrics and practices (loss, security) because of the level of detail, timeliness and targeted recipient.
- **(A) MBA**
 - **D&T profile:** What: traffic-event; Who: FCC-3rd pty; When: delayed
 - **Deficiencies**
 - (a) different measurement methods for loss may give very different answers (“loss” as UDP/ICMP/VOIP packet; down/upload speed and latency under load)
 - (b) loss depend on other network performance (how TCP is managed, which ISP don't control)
 - (c) released 1x/yr for 1mo period
 - (d) not just active msrmt, router interface

IMAGE→

(4) Applying Coordinator to Use Contexts- Packet Loss

Comparable routes loss rates from router interface v. active probes

