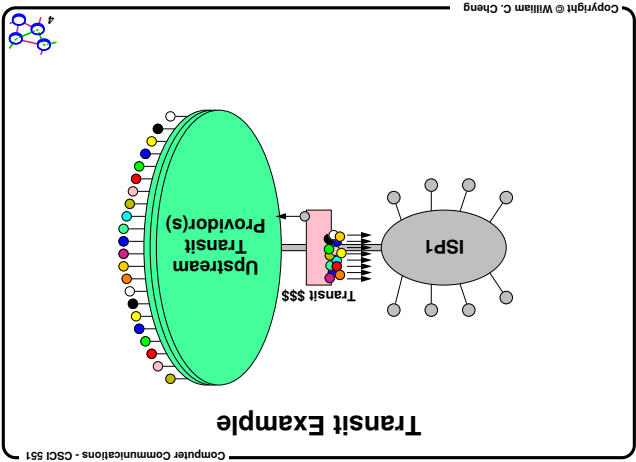


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Definitions

- Peering:
 - = provide connectivity to each others' customers
 - = non-transitive relationship
- Transit:
 - = one ISP sells transit to another ISP
- Tier-1 ISP:
 - = has access to global routing table
 - = does not purchase transit from anyone

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Why Not Peer?

- Traffic asymmetry (and investment asymmetry)
- Potential transit sale
- Peering consumes resources
- = staff, router cards, etc.
- Peering makes a peer ISP appear stronger
- = makes a peer into competition
- Peering relations have less contractual teeth
- = no incentive to repair problems

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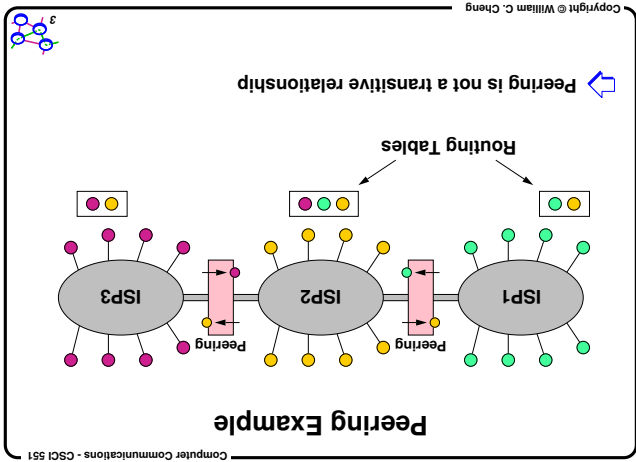
CS551

ISP Peering [Norton01]

Bill Cheng

<http://merlot.usc.edu/cs551-f12>

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Why Peer?

- Reduced cost
 - = buying transit is expensive
- Reduced latency
 - = reduced number of hops

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Phase 1: Identify Peer

- ↳ Traffic engineering, data collection and analysis
- ↳ Technical, business and legal issues
- ↳ Intuition
- ↳ Broader business arrangements (CEO's play golf together)
- ↳ Peering policies (open, exclusive)
 - = open peering policy: we will peer with anyone
 - = policies are often exposed only under NDA

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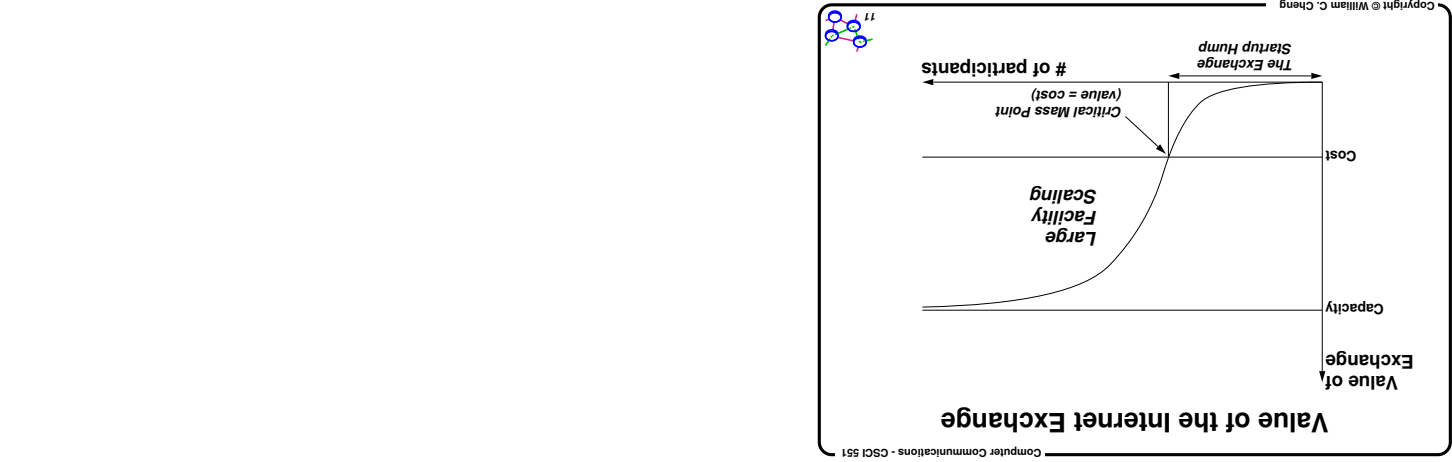
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Phase 3: Peering Methodology

- ↳ Direct-circuit v.s. exchange-based interconnection (or a combination)
 - = depends on number of peers participating in the region
 - bandwidth required for the regional interconnections
- ↳ Cost sharing
 - = split equally
 - = I will peer with you if you pay all the cost

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Decision Phases

- ↳ Phase 1: Identify peer
- ↳ Phase 2: Contact potential peer
- ↳ Phase 3: Agree on peering methodology

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Phase 2: Contact Peer

- ↳ Find the right person!
- ↳ Sign NDA (optional)
- ↳ Share traffic statistics

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