

The incumbent and IXPs in Sweden

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Short Swedish IXP history

- First IXP in Sweden was "D-GIX", located at Royal Institute of Technology, founded in the early 1990s
- From day 1 all (three) IP networks in Sweden present
- D-GIX at one time was the largest IXP in Europe, and handled a lot of the European traffic
- D-GIX turned into Netnod in 1996



Why did we peer in Europe?

- 80% of traffic was destined for the US
- European operators wanted to avoid paying transit to US companies
- And not to send the traffic across the atlantic
- Also wanted to avoid paying expensive international half-circuits

Why did the incumbent peer?

- To not peer was never an option
 - Partly because you had to be part of the IX to be part of the Internet community
 - Was seen as an important sales point / business point
- Peering policy was in place from the beginning

Sweden's IXPs



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Peering policy

- You had to be of similar size
 - Traffic
 - Geographical coverage
- Hot potato routing
- You had to connect to all Netnod IXes

Reasoning

- From the beginning there wasn't that many pan-national operators
- If you had invested in a build-out you had roughly the same backbone cost as the incumbent
- With hot-potato routing you loaded the transport cost on the other network for their customers

Advantages

- Led to investments in national networks
- As “everyone” peered, service differentiation was focused on
 - Innovative services
 - Latency
- As interconnects was used as service differentiator, all networks had to make sure they had enough peering bandwidth

Why don't/didn't other incumbents peer?

- Perception that you are loosing customers / revenue
- But in the change to a deregulated market the previous monopoly can only loose market share
- Belief that not peering will be a service differentiator
- But in reality you are providing a second class service to your competitors

Modern times

- The incumbent split the network into different ASes
- TeliaSonera started TeliaSonera International carrier as a transit supplier
- But the national AS still peers at Netnod

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Questions?



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