P2P and ISPs - The users’ take

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The ISP/P2P dance/chase

- ISPs shape traffic directed to standard ports
  - P2Ps move to dynamic, non-standard ports
- ISPs turn to deep-packet inspection to identify & shape P2P flows
  - P2Ps encrypt their connections
- ISPs place caches and/or spoof TCP RST msgs
  - Lawsuits + bad publicity

- A clear lesson
  - An effective solution needs user
An alternative & practical approach

• Reuse CDNs’ net views for peer selection
  ▫ CDNs have an up-to-date view of the network
    • To redirect web-clients to web content replicas
• How? Simply comparing DNS redirections
  ▫ No additional infrastructure
  ▫ No topological information
  ▫ No trust relationship
  ▫ Reduces cross-ISP traffic ...
  ▫ while improving users’ downloads
• Ono - extension to Azureus/Vuze BT client
  ▫ Out since April 2007, now > 272,000 users
Coverage
Let’s work together

- Number of AS hops to reach (Ono-recommended) peers

> 30% of paths to Ono-recommended peers do not leave the AS of origin

883% median improvement

... and with the right BW allocation policy
... and help each other

- NEWS - the new thing
  - *Network Early Warning System (NEWS)*
  - Reuse P2P aggregated views & natural traffic
    - Detect network anomalies locally
    - Use corroboration to confirm them globally

*Join the >9,000 users who have already done so!*

http://aqualab.cs.northwestern.edu/projects/NEWS.html