

Skype

- Features:
 - Distributed indexing service to route your incoming calls to wherever you are logged in.
 - Conference calls
 - Skype Me
 - Connector services, e.g., jyve.com
- Challenges
 - Session Initiation: NATs and Firewalls (vs. SIP)
 - Quality and congestion and collapse
 - Security, spam
 - Regulatory (Pulver Order Feb04)
 - Business model

Skype P2P

- No central infrastructure, except for login and upgrade service.
 - And static bootstrap supernodes
- Directory services spread among supernodes
- Direct connections unless NAT/firewall prohibits
 - Use STUN to identify NAT type
- May route calls through well-connected supernodes
- How to do the routing?
 - Client pings tens of nodes on startup with UDP
- Search technology hard to reverse-engineer.
 - DHT-SIP?

Quality and Congestion

- TCP or UDP
- Codec (RFC 3951)
- Fair? Responsive?
 - "True end-to-end congestion control"
 - Does it matter? (mice vs. elephants)
- Adaptive?
- Bursts and silence suppression
 - None in Skype
- Emergency calls: need priority?
- Is overprovisioning sufficient?

Security?