Opt-in WG

Henning Schulzrinne
Columbia University

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Agenda

• 5’ Agenda bashing, scribe
• 15’ Introductory remarks
• 30’ Jay Lepreau
• 100’ Discussion:
  – scoping
  – motivation
  – technical components
  – legal & “IRB” issues
  – risk reduction activities
Tentative charter

• Wiki: http://wiki.cs.columbia.edu
Who are the users?

• ~ Internet 2
  – students at major research universities
  – researchers

• Early adopters
  – e.g., open wireless

• Your mother
  – why? how?

• Bad guys
  – we’ll need more of them!
Scoping

• GENI infrastructure OAM
• Services for experimenters
• Services for users
A modest proposal

• GENI needs users, with motivation

• New applications:
  – health advice
  – international cooperation opportunities
  – investment banking

• Even willing to pay for services!
Opt-in views

• GENI as ISP
  – alternative network interface
  – “Internet 3”

• Generalized end-user services
  – services running on user devices
  – “SETI@HOME 2.0”

• In-network services
  – services provided by GENI infrastructure
  – “PlanetLab 2.0”
Opt-in retail & wholesale

• Retail
  – each user decides
    • per service
    • per destination

• Wholesale
  – by origin: campus dorm, open access wireless network
  – by destination: reach group of services
User motivation

• *bribe’em, woo’em, force’em*
• Cheaper
  – subsidy, not inherently - “bribery”
• Faster
  – Not likely for I2 users
• More reliable
  – unlikely for experimental system
• Less restricted
  – also not likely for I2 users
Technology pieces

• Virtual ISP
  – easy for WLAN-style access or VLANs
  – not hard if users can configure DHCP server

• Non-IPv4/6 services
  – just another network interface - leverage IPv6 experience

• L7 services
  – addressed as usual

• Experiment description and user opt-in
  – formalized description mechanism instead of one-off IRB process?
Incentives

• Can users be provided with trade-able incentives?
  – provide CPU cycles, storage, wireless access, human cycles, ...
  – money = medium of exchange (vs. barter)

• Virtual currency?
  – cf. Linden Dollars (SecondLife)
Legal & IRB issues

• Informed consent?
• Just privacy statements?
  – P3P?
• Who is responsible if bad guys get SSNs and credit card numbers from user machines running GENI services?
• CALEA?
Risk reduction activities

• What technologies are needed?
• End system VM?
• User service selection?
• Experiment description?