Leftover bits (honoring Thanksgiving)

- Compliance with RIAA and p2p
  - Campus level issues

- Voting: electronic, internet, and other
  - Why is there less of this in the news?

- Court cases affect: life, liberty, technology
  - What are the key issues here?

Costs of dealing with campus p2p

- Campus Computing Project, Paul Green, 10/08
  - http://tinyurl.com/5mqxyd

- Private universities spend (average, ’07-’08)
  - $105K software, $158K hardware, $144K other direct costs (e.g., personnel)
  - Software for monitoring, shaping p2p
  - Hardware, e.g., Copysense appliance
  - Keeping up with RIAA: IT and student support
  - Stanford three-strikes policy?

Audible Magic: Copysense Appliance

- EFF ‘analysis’ of solutions
  - http://tinyurl.com/6l36p6

- What does this do? Database of copyrighted works with digital fingerprints
  - Compare packet data with database
  - If there’s a match do “something” to squelch use
  - $60-75K/year

Campus tussles in p2p monitoring

- How much of IT budget for p2p monitoring?
  - Vendor lock, support, open-source solutions?

- Academic freedom, student expectations of privacy
  - How is p2p traffic monitored? Wiretapping?

- Discourage infringement, respect laws and students
  - Laws require universities to do something
  - Student expectations and reality
Packet shaping
- From $1,500 to $58,000 (Packeteer, there are others)
  - Look at where packets go, specific port
    - http: 80, limewire: 6346, eDonkey: 4662, ...
  - Look at what type of information packet carries
    - Typically don't need to do “deep” inspection
- Throughput, latency, throttling
  - Change network behavior

Illustrated History of Voting
- Privacy, Reliability, Anonymity, ...
  - Who gets to vote, whose votes are counted?

History of Voting
- [http://americanhistory.si.edu/vote/votingmachine.html](http://americanhistory.si.edu/vote/votingmachine.html)

Voting, Technology, Internet
- “If elections are defective, the entire democratic system is at risk ... Americans are losing confidence in the fairness of elections, and while we do not face a crisis today, we need to address the problems of our electoral system.”
  - Commisson on Federal Election Reform
- From 1876 (Rutheford B. Hayes) to 2000 (George Bush), pushes for “voting machine reform”: HAVA 2002
How hard to attack voting machines?

- How hard to hack/attack paper ballot?
  - What about Internet voting? DRE machine?

- How hard is it to find the phone number of John Smith using a phone book?
  - What about whose number is 914.962.4204?

- How data is organized affects “difficulty”
  - Given a reverse-number phone book...
  - Given Google ...

Complexity and Computer Science

- Time doubles when items double in size
  - Linear or $O(n)$

- Time quadruples when items double
  - Quadratic or $O(n^2)$: 3 to 9, 5 to ?

- Time constant/unchanging when doubling
  - Constant time or $O(1)$

- Why does this matter?

Attacks (see Wallach paper)

- Absentee/vote-by-mail
  - To steal $N$ votes must do $O(N)$ work, bribe or coerce each voter. What about using postal workers? $O(N/P)$
  - Centralized DoS attack, potentially $O(1)$, throw out all envelopes, all from some zip-code, etc.

- DRE attack
  - Anonymity using $O(P)$ or $O(1)$ since order of votes is kept in machine (maybe)
  - Visits, poll-workers, ...

Legal v Technical: Courts of Law

- Perfect 10 v everyone
  - Mostly copyright: fair-use, infringement

- Blizzard v BNETD and MDY
  - Copyright, licensing, section 117

- Blumenthal v Drudge and AOL
  - Who is liable for libel online?
Perfect 10 v Google (and others)
- Thumbnails “transformative”
  - Anatomy of Google results
- History of Perfect 10
  - Who is sued and why?
- Who files Amicus Briefs?

Blizzard v BNETD and MDY
- Blizzard: $100 Million/month on WOW
  - MMO, how is it played? Licensed? Purchased
  - Network and updates (currently BitTorrent!)
- BNETD, open source, network alternative
- MDY, “Glider”, autoplayer
  - Warden as either spyware or protection
  - Tremendous implications if Blizzard wins

Blumenthal v Drudge and AOL
- Drudge alleges spousal abuse
  - Retracts “immediately”
- Blumenthal sues both
  - Why is AOL dismissed?
- What recourse here?
  - Good Samaritan clause
    - Section 230 of CDA