

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?

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17.1

Costs of dealing with campus p2p

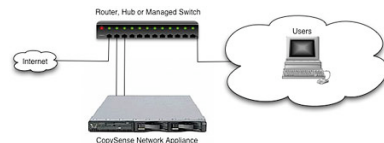
- **Campus Computing Project, Paul Green, 10/08**
 - <http://tinyurl.com/5mqxyd>
- **Private universities spend (average, '07-'08)**
 - \$105K software, \$158K hardware, \$144K other direct costs (e.g., personnel)
 - Software for monitoring, shaping p2p
 - Hardware, e.g., Copysense appliance
 - Keeping up with RIAA: IT and student support
 - Stanford three-strikes policy?

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17.2

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



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17.3

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

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17.4

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

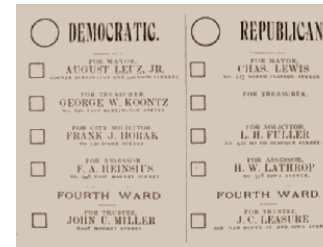


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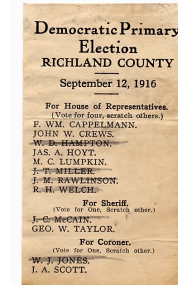
17.5

Illustrated History of Voting

- <http://www.cs.uiowa.edu/~jones/voting/pictures/>
- Privacy, Reliability, Anonymity, ...
 - Who gets to vote, whose votes are counted?



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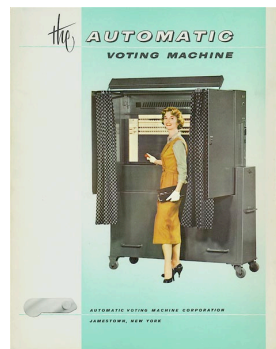
17.6

History of Voting

- <http://americanhistory.si.edu/vote/votingmachine.html>



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17.7

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."

Commission on Federal Election Reform

- From 1876 (Rutherford B. Hayes) to 2000 (George Bush), pushes for "voting machine reform": HAVA 2002

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17.8

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?

PERFECT 10™

- **Who files Amicus Briefs?**



Google™

CBILL.com

amazon.com™



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17.13

Blizzard v BNETD and MDY

- **Blizzard: \$100Million/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



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17.14

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



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17.15