

Technology And Society

No readings

Out With The Old, In With The New

- New ways of delivering information changes the way a society operates.
 - Not necessarily good, not necessarily bad—just different.
 - Need to rethink the old way of doing business.
 - Example: spelling and the ubiquity of text messaging
- Outside factors, like laws and pricing structures, can influence how quickly a society adopts a new technology and how the technology is used.
 - In many countries, talking on a cell phone costs so much more than sending a text message.






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Reasons For Electronic Voting

- Instantaneous results
- No risk of running out of ballots (or wasting ballots)
- Can also offer ballot in any language without second-guessing how many ballots to print
- Can be made accessible to persons with disabilities
 - Can use with headphones, larger fonts, foot pedals, etc...

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Reasons Against Electronic Voting

	LAS VEGAS SLOTS	ELECTRONIC VOTING MACHINES
 Software	State of Nevada has access to all software. Illegal to use software that is not on file.	Software is a trade secret.
 Spot-Checking	State gaming inspectors show up unannounced at casinos to compare computer chips with those on file. If there is a discrepancy, the machine is shut down and investigated.	No checks are required. Election officials have no chip to compare with the one found in the machine.
 Background Scrutiny	Manufacturers subjected to background checks. Employees are investigated for criminal records.	Citizens have no way of knowing, for example, whether programmers have been convicted of fraud.
 Equipment Certification	By a public agency at arm's length from manufacturers. Public questions invited.	By for-profit companies chosen and paid by the manufacturers. No public information on how the testing is done.
 Handling Disputes	Casino must contact the Gaming Control Board, which has investigators on call round the clock. They can open up machines to inspect internal mechanisms and records of recent gambling outcomes.	In most cases, a voter's only recourse is to call a number at the board of elections that may or may not work to lodge a complaint that may or may not be investigated.

Source: <http://www.washingtonpost.com/wp-dyn/content/graphic/2006/03/16/GR2006031600213.html>

The Need For Transparency

- Australia publishes voting machine software:
 - <http://www.elections.act.gov.au/elections/electronicvoting.html>
- How do we ensure that every vote is counted?

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Downfall Of Newspapers

- Seattle Post-Intelligencer is expected to print its last issue next week.
- Why pay for classifieds in newspapers?
 - Newspapers: not searchable, not free
 - Craigslist: searchable, free
- "For Papers, a Downsizing Trickle Becomes a Flood", March 11, 2009
 - <http://www.nytimes.com/2009/03/12/business/media/12papers.html>

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What Is The Future Of News?

- Smaller, more specialized operations?
- Citizen reporters?
 - <http://english.ohmynews.com/>
- Googlezon?
 - <http://www.youtube.com/watch?v=OQDBhg60UNl>
- What will happen to the quality of the news?

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What Is The Future Of The Internet?

- Net neutrality
 - Should ISPs be able to control which packets get priority?
 - Would that stifle free communication?
 - What about stopping unwanted web traffic that is clogging the Internet like spam?
 - Government passed legislation in favor in 1860 for the telegraph.
- Create a new Internet?
 - Remove some anonymity?
 - System to charge for unwanted e-mails?

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From Start To Finish

It All Started With Moore's Law...

- Technology is changing at an extremely rapid pace.
- No course can teach you "everything" you need to know.
- There are certain ideas that everyone who uses technology should know.

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Some Of The Big Ideas

- People are not born with technological abilities.
- Software designers try to design products to match what we may already know.

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How The Internet Works On One Slide

- Most interactions over the Internet use a client-server architecture.
- Computers have numerical addresses (IP address).
- The Domain Name System (DNS) converts human-readable named addresses to IP addresses.
- Data sent over the Internet is broken up into small packets, routed through various channels on the Internet and reassembled at the destination.

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Hierarchies

- The server's name of a URL follows a hierarchical structure (e.g., www.cs.washington.edu)
- Files are also stored in a hierarchical structure.
 - Make sure you understand how the hierarchy works and how to write a pathname (both relative and absolute).

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HTML / CSS

- HTML describes the content of information of a web page.
- CSS describes how the information is to be displayed.
- Separating content and appearance makes it easy to export the content into different contexts.

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Digital Representation

- Data on a computer is just a series of 1's and 0's.
- Bits have no inherent meaning.
 - Standards ascribe meaning to the bits so that we can share information.

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Computing

- An algorithm is a step-by-step procedure for solving a problem.
- A program is an algorithm expressed as in a programming language.
- Programming is a fairly detail-oriented task.

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Spreadsheets / Databases

- Spreadsheets store information in a grid of cells.
- Databases store information in tables that are related to each other.

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Security

- Computer security can usually be achieved by small preventative measures that are exercised regularly (like brushing your teeth).
- People are sometimes the weakest link.
- Don't be gullible, but at the same time, don't be paranoid.

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Privacy

- Technology raises questions about privacy that might not have been an issue before the technology existed.
 - Example: RFIDs, thermal imaging cameras
- Most e-mails are sent in the clear. If you send sensitive information, use PGP.
 - Unfortunately, there's no mechanism yet for e-mails to self-destruct.

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Final Exam Information

The Final

- When: Thursday, March 19, 8:30 – 10:20
- Where: Here (unless a new location posted and e-mailed to class list)
- You only need a writing implement.
- Will give you handout with HTML tags, JavaScript syntax, SQL query syntax, anything else?
 - Will post it by Saturday night and will continually update from comments I receive
- Questions?

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Assignments Of Interest

- Lab 3
- Lab 5
- Lab 7/8
- Project 1 (HTML and file structure)
- Project 2 (JavaScript)
- Project 3 (queries)

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Last Word

- Don't forget to sell your textbook to the bookstore or to a friend taking this course later.

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