IBM Just Committed Cultural and Creative Suicide

For years, IBM has touted its "work from home" policy as a reason for its continued success. And rightly so. IBM's financial performance has shown steady improvement ever since the mid-'90s, when the internet made "work from home" practical, using tools that IBM pioneered, like email, groupware, and Web conferencing. IBM management has decided to kill the goose that's laid decades-worth of golden eggs by forcing its workers to report to regional facilities. Employees who don't comply will be fired.

Administrivia

- Assignments:
  - Project – Code and Video (6/2)
  - CS in Your Future (6/4)

- Final Exam – Thursday 6/8, 9am in SIG 134
  - Scheduled slot is 8:30-10:20, but exam will be 60 minutes
  - Similar to midterm – big ideas & programming sections
  - 10% of course grade
  - TWO sheets of notes (letter, double-sided, hand-written)

- Course Evaluation: [https://uw.iasystem.org/survey/178422](https://uw.iasystem.org/survey/178422)
Societal Impact of Computers

- Computers have completely resurfaced society as we know it
  - How does this affect the way we *think, act, and work*?

- Ellen introduces kids to the technology of yesterday
  - [https://www.youtube.com/watch?v=3CMS9xnBRkc](https://www.youtube.com/watch?v=3CMS9xnBRkc)
Internet Users

  - Accessed May 30, 2017

![Internet Users in the World](chart.png)

- 1993: 100,000,000
- 1995: 150,000,000
- 1997: 200,000,000
- 2001: 500,000,000
- 2005: 1,000,000,000
- 2009: 2,000,000,000
- 2011: 3,000,000,000
- 2013: 3,424,971,237
- 2015: 4,000,000,000

Year (as of July 1)

2016 Internet Users: 3,424,971,237
Internet Users

Graph of "Internet users per 100 inhabitants 1997 to 2014" based on data from “Individuals using the Internet 2005 to 2014” (XLS)
- [https://commons.wikimedia.org/wiki/File:Internet_users_per_100_inhabitants_ITU.svg](https://commons.wikimedia.org/wiki/File:Internet_users_per_100_inhabitants_ITU.svg)
Facebook Users

- Monthly active Facebook users worldwide (in millions)
  - Accessed May 30, 2017
Outline

❖ How We Think: Politics and Media
❖ How We Act: Social Movements
❖ How We Work: Job Implications
Audience News Consumption

- Where do you get your news (and opinions on the news) from?
  - Facebook
  - Twitter
  - The New York Times (online news sources)
  - Youtube
  - Print news sources (The Daily, NYT)
  - Reddit
  - The New Yorker
  - Late Night TV (Daily Show, Stephen Colbert)
  - Wikipedia
The Internet Forms Our Opinions

- Having an enormous amount of information available to us creates a *poverty of attention*
  - Compounded by the massive new problem of *fake news*

- How should we allocate our attention now that we have so many options to choose from?
  - Not only do we have the ability to choose what to read and pay attention to, but we also have the ability to choose *what we believe in*
Abundance of Info: Climate Change

Antarctic sea ice hit 35-year record high Saturday
Washington Post - 19 hours ago
Antarctic sea ice has grown to a record large extent for a second straight year, baffling scientists seeking to understand why this ice is ...
Polar Code: a new regulation for polar shipping
Explore in depth (2 more articles)

2015 is fourth lowest year on record for minimum Arctic sea ice levels

Tracy Sinclare, Weekend Meteorologist, tsinclare@ktuu.com
Filter Bubbles (Eli Pariser)

- Eli Pariser warns that technology tends towards exposure to information that confirms preexisting beliefs
  - https://www.ted.com/talks/eli_pariser_beware_online_filter_bubbles

- People (myself included) tend to look to people who they think have the right answers
  - Often people who act and look like me or share similar opinions
  - This is a bias (natural filter bubble)
Polarization and Technology

- Pablo Barberá argues that technology has the opposite effect
  - “How Social Media Reduces Mass Political Polarization. Evidence from Germany, Spain, and the U.S.”
  - [http://smapp.nyu.edu/papers/SocialMediaReduces.pdf](http://smapp.nyu.edu/papers/SocialMediaReduces.pdf)
  - “Citizens are now exposed not only to their close friends’ opinions, but also to political content shared by their co-workers, childhood friends, distant relatives, and other people with whom they form weak ties.”
  - “Weak social ties tend to be more ideologically heterogeneous than strong social ties.”
Polarization and Technology

- Diana Mutz: “Cross-cutting Social Networks: Testing Democratic Theory in Practice”
  - [http://repository.upenn.edu/cgi/viewcontent.cgi?article=1124&context=asc_papers](http://repository.upenn.edu/cgi/viewcontent.cgi?article=1124&context=asc_papers)

  - “Exposure to conflicting political viewpoints is widely assumed to benefit the citizens of a democratic polity.”
  - “The benefits of exposure to heterogeneous political viewpoints have yet to be demonstrated empirically.”
  - “…Utilizing a laboratory experiment manipulating exposure to dissonant and consonant political views, I further substantiate the causal role of cross-cutting exposure in fostering political tolerance.”
The Politics of Facebook Friends

- There’s an interesting fad of unfriending people on social media sites like Facebook

- This past election, in particular, has made many people post their personal political beliefs on Facebook
  - Friendships have been ruined as a result!
    - This results in a *tighter filter bubble*
The Politics of Facebook Friends

- Entire academic studies have been made on this topic

- Andrea Peterson explains:
  - "... our online interactions about politics don't necessarily represent an entirely new pattern of interactions – but rather an extension of existing dynamics into the digital realm."
Peer Instruction Question

- Do you find that social media relationships have made you more politically aware and/or changed your own beliefs?

A. Yes, social media has opened my mind to a variety of different opinions
B. No, I ignore or don’t see dissenting opinions on social media
C. No, I tend to dismiss dissenting opinions on social media as bogus
D. I don’t use social media enough for it to affect my opinions
Outline

- How We Think: Politics and Media
- **How We Act: Social Movements**
- How We Work: Job Implications
Individual Empowerment

- Individuals are empowered by their ability to access information and communicate
  - The Internet provides unprecedented access to both data and opinions
  - In China, Virtual Private Networks (VPNs) are a popular way for citizens to access news that is otherwise censored

- Governments often try to control information to help control public opinion
Group Empowerment

- **Groups** are empowered by the ability to coordinate and attract assistance
  - Can attempt to bring people to a cause *(e.g. create a Facebook protest event)*
  - Information transmission creates collective identity *(i.e. it’s not just me that’s mad; my friends are mad, too)*
Small Change (Malcolm Gladwell)

  - “The world, we are told, is in the midst of a revolution. The new tools of social media have reinvented social activism.”
  - “Activism that challenges the status quo, that attacks deeply rooted problems” is physically dangerous
  - Research from the 60’s suggests that people who engage in such activism usually have very strong social ties with the movement
Small Change (Malcolm Gladwell)

  - “The platforms of social media are built around weak ties. Twitter is a way of following (or being followed by) people you may never have met. Facebook is a tool for efficiently managing your acquaintances, for keeping up with the people you would not otherwise be able to stay in touch with.”
  - “Social networks are effective at increasing participation — by lessening the level of motivation that participation requires.”
Example: Alexander Coward Protest

- In Fall 2015, UC Berkeley Mathematics Lecturer Alexander Coward publicly announced his contract was not being renewed after the 2015-2016 academic year
  - Announcement came with harsh critique of math dept.
  - Feverish discussion of story on Facebook, Reddit, school newspaper, etc.
  - A protest event was created on Facebook, timed to coincide with an administrative review of Coward’s case
Example: Alexander Coward Protest

IMPORTANT UPDATE!

The time and place of the protest has changed! We're going to be gathering at 2:30 PM (when Dr. Coward's meeting starts) on the grassy area across the street from University Hall.

If you're interested in speaking at the protest or making signs, please message me or
Example: Alexander Coward Protest

Photo from Reddit: “What 3.9K facebook attendees looks like”

- **Slacktivism**: Actions performed via the Internet in support of a political or social cause but regarded as requiring little time or involvement
  - *e.g.* signing an online petition, joining a campaign group on a social media website
Facebook “Support” Photos

- Facebook has had a variety of “support” photos in recent years
  - Lots of controversy about why certain events receive more attention than others
    - e.g. Paris bombings (Nov. 13, 2015) vs. Lebanese bombing day earlier

- “Our research shows that if people are able to declare support for a charity publicly in social media, it can actually make them less likely to donate to the cause later on.”
Hillary Clinton Presidential Campaign

- Could create “Personal Hillary Logo” for profile
  - https://twibbon.com/support/h-92
    Support this campaign by adding to your profile picture

- Does this mean you are more likely to go out and vote?

- Filter bubble: bias in media and social media realms led many to predict/assume a victory for Hillary
The Good and the Bad of Social Media

- Despite usefulness as an organizing tool, social media might not necessarily lead to successful high-risk political actions
  - Gladwell: “Weak ties seldom lead to high-risk activism.”
  - Tufekci: “Digital tools make it much easier to build up movements quickly... before the Internet, the tedious work of organizing that was required to circumvent censorship or to organize a protest also helped build infrastructure for decision making and strategies for sustaining momentum.”

  - [https://www.nytimes.com/2014/03/20/opinion/after-the-protests.html](https://www.nytimes.com/2014/03/20/opinion/after-the-protests.html)
The Good and the Bad of Social Media

- However, social media can change society more subtly through establishing new social norms
  - Tufekci: “Those ‘likes’ on Facebook, derided as slacktivism or clicktivism, can have long-term consequences by defining which sentiments are ‘normal’ or ‘obvious’ — perhaps among the most important levers of change.”
  - https://www.nytimes.com/2014/03/20/opinion/after-the-protests.html
Outline

- How We Think: Politics and Media
- How We Act: Social Movements
- How We Work: Job Implications
Peer Instruction Question

What was your primary motivation to take CSE120?
- Vote at http://PollEv.com/justinh

A. People told me it was cool
B. I thought it seemed interesting
C. Potentially interested in a CS career
D. Potentially interested in a career for which programming might be useful, but not necessarily CS
E. Other
Rapid CS Job Growth

Source: http://cs.stanford.edu/people/eroberts/CSCapacity/CSCapacity-HistoryToday.html
Rapid CS Student Population Growth

- CSE142 (here at UW) has seen a 2-fold enrollment increase since 2008
  - This is actually significantly slower than most other major American universities (\(\text{closer to } \sim 4x\))
How is the Labor Pool Changing?

- Composition of U.S. Job Market over the Last 150+ Years
How is the Labor Pool Changing?

How is the Labor Pool Changing?

Estimated 3.5 million truck drivers in the US today

http://www.npr.org/sections/money/2015/02/05/382664837/map-the-most-common-job-in-every-state
Visualizing the Jobs Lost to Automation

Humans Need Not Apply

- More thoughts on your reading this week?
  - https://www.youtube.com/watch?v=7Pq-S557XQU
Labor and Output

- Each worker generates ~4 times as much output as they did in 1947

- Productivity and total employment historically tracked each other in the US
  - Number of total jobs has stagnated since 2000 (140-150 million)
Education and Wages

“Why Workers Are Losing the War Against Machines”

What is the Future of Labor?

- Some opinions of experts:
  - http://www.pewinternet.org/2014/08/06/future-of-jobs/
  - No need to panic; new jobs will arise
  - We’ll move to more artisanal, small-scale modes of productions
  - We’ll need to reconfigure society to provide a decent standard of living for the less educated (e.g. guaranteed basic income)
The Paradox of Leisure

- What does it mean when you have a world when you don’t have to work?
Peer Instruction Question

- Compared to our ancient small-group hunter-gatherer ancestors, are people’s lives better with all of today’s social and technological innovations?

A. Much better
B. Somewhat better
C. About the same (neutral)
D. Somewhat worse
E. Much worse
Summary

- Computing affects the way we form opinions
  - How we decide to use the Internet shapes our opinions
  - Pariser: People will use the Internet to reinforce their preexisting beliefs (filter bubble)
  - Tufeck: Social networks help establish what’s “normal”

- Computing affects social movements
  - Useful as a tool for coordinating actions and attracting support
  - Gladwell: Does not lead to direct action that challenges the status quo
  - Gladwell/Tufeck: Can prevent movements from properly organizing

- Computing affects jobs
  - Millions of jobs (domestic and abroad) may be automated away soon