

THE GOOD & EVIL OF THE INTERNET AND WHY YOU SHOULD KNOW ABOUT THEM

OLLI WINTER 2020 COURSES
 • Mondays, January 27—March 2
 • 9:30—11:30 a.m.
 • @Cooperage
 • Dr. Farid Farahmand




A course focusing on understanding the Internet technologies & its contradictions:

Connecting us ↔ Isolating us
 Giving freedom ↔ Destroying privacy

What we cover in this course

- What is the Internet?
- What are internet algorithms?
- What is Internet surveillance?
- What is Cybercrime?
- Future of the Internet – where is it going?



First Lecture.....

- What is the Internet?
- What do we use it for?
- How does the Internet work?
- What runs the Internet?
- Who owns the Internet?
- Who controls the Internet?



Before we go on.....

- Course web page is available: <http://web.sonoma.edu/users/f/farahman/> (click on OLLI)
- First part (50 min) + 10 min break!
- In the second part we can watch a few movies / demos.
- All updates to the webpage will be available after class.
- **Please complete the short survey at the end of each class!**

Feel free to ask questions
at any time!



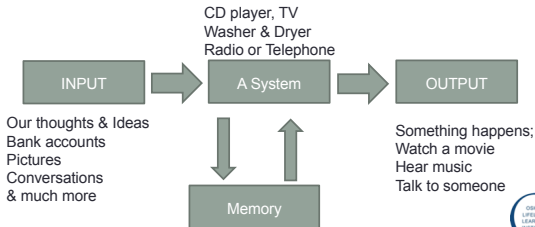
A Quick Survey.....

1. How many people carry a smart phone?
2. How many hours/day do you use the Internet?
3. Do you use the Internet mostly on the smart phone or on your computer?
4. What are the two most common things you use the Internet for?



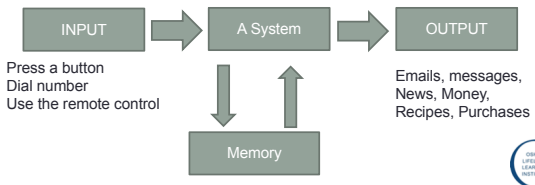
Why do we need to know about how the Internet work? ^{a little}

- What is the difference between your Internet and your car or dishwasher or TV?
- How much do you know about them?

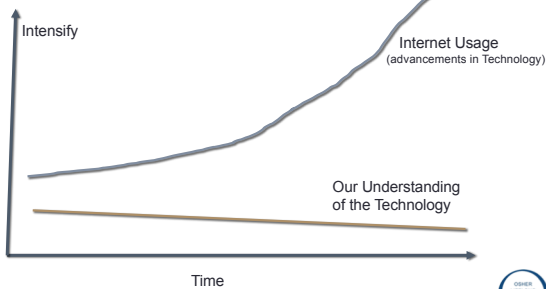


Why do we need to know about how the Internet work? ^{a little}

- What is the difference between your Internet and your car or dishwasher or TV?
- Internet is a digital **interactive media**

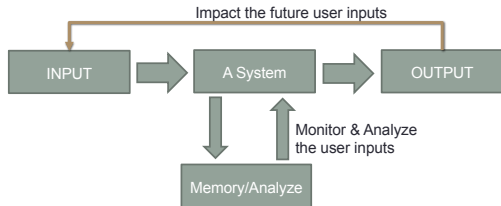


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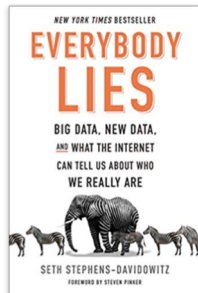
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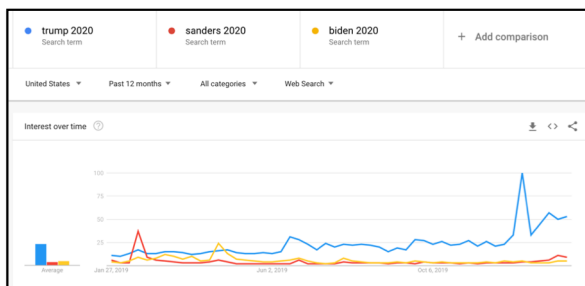


Why do we need to know about how the Internet work? a little

- What is the difference between your Internet and your car or dishwasher or TV?
- Internet is a digital **interactive media**
 - So powerful and reliable that can **analyze & even predict** our actions
 - It can even **influence** our thoughts and actions
- Example:
 - Book: Everybody Lies,



Google Trend

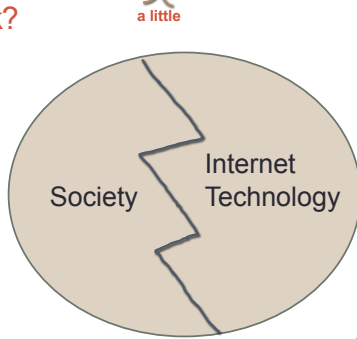


<https://trends.google.com/trends/explore?geo=US&q=trump%202020,sanders%202020,biden%202020>



Why do we need to know about how the Internet work?

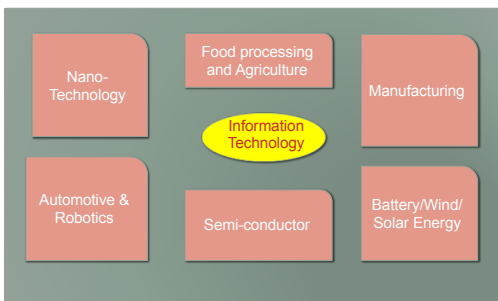
- Lack of transparency
- Lack of privacy
- Lack of oversight
-
- Exploiting & controlling the society



Let's talk about technology in general...

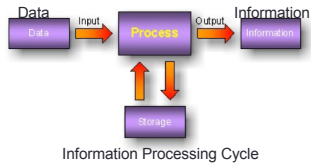


Different Technologies....



What is Information Technology?

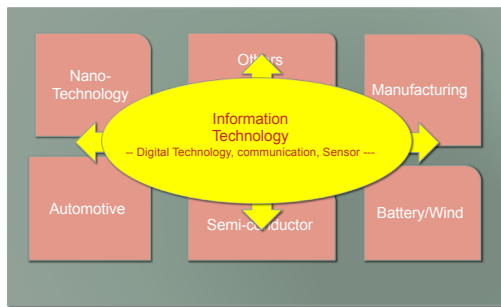
- IT is the **acquisition, management, processing, storage, and dissemination of information**
- The data/information can have many different forms (e.g., vocal, pictorial, textual and numerical)



http://www.usatoday.com/tech/news/2003-03-24-cell-phones_x.htm



IT Impacting All Other Technologies

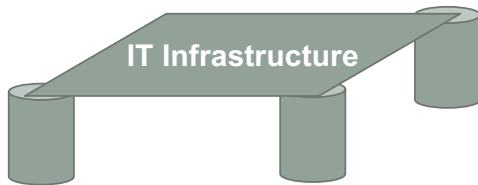


http://www.usatoday.com/tech/news/2003-03-24-cell-phones_x.htm



The Internet & Information Technology

- The **Internet** is the enabling technology to create an IT infrastructure

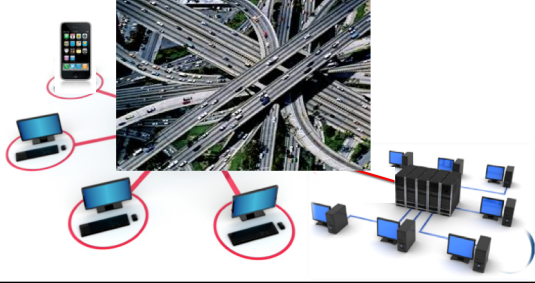


http://www.usatoday.com/tech/news/2003-03-24-cell-phones_x.htm



What is the Internet?

- The Internet is the **global system of interconnection** between devices – e.g., computers, cell phone, tablets
- The Network of Networks!
- Connecting everyone together – road system!



Internet & WWW

- The **World Wide Web** is a technology that exploits the Internet to enhance delivering **many services**

Examples of Such Services

- Finding Directions
- Shopping
- Chatting
- Music
- News
- File Sharing



Web Browsers

- The **software** allowing us to use available services
- Different in terms of
 - Speed,
 - Resource utilization,
 - Portability,
 - Etc.



Common Browsers:

Web Browsers

- The **software** allowing us to use available services
- Different in terms of

Access to the Internet Services

- Today about **half** of Internet users in the U.S. use their smartphones to get online!

Body-integrated electronic devices (Electronic Tattoo & Embeddable Implant Elec.)

Watch-size Computers (wearables)

Smart Phones: Anytime, anywhere! (smaller & more powerful)

Laptops: Offering mobility (smaller & more powerful)

PCs: Promising Individual Freedom

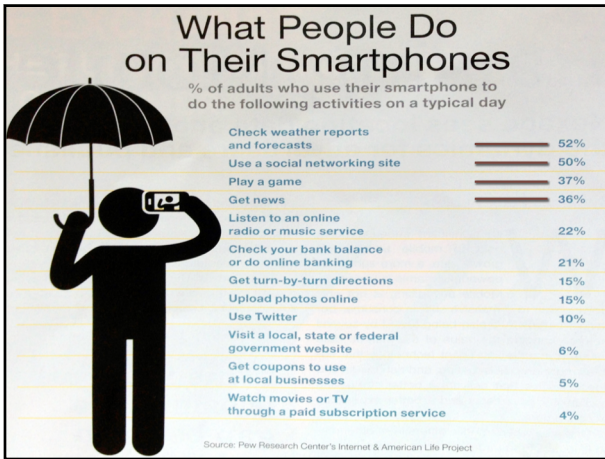
ENIAC (Electronic Numerical Integrator And Computer) was one of the earliest GP computers It weighed about 30 tons & consumed 150 k

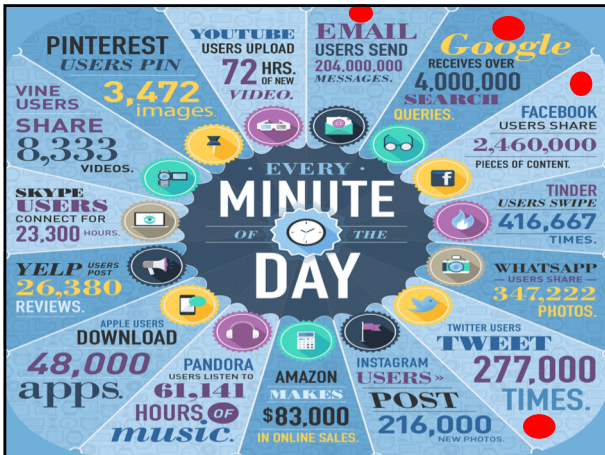
Mainframes: Large machines, Limited access

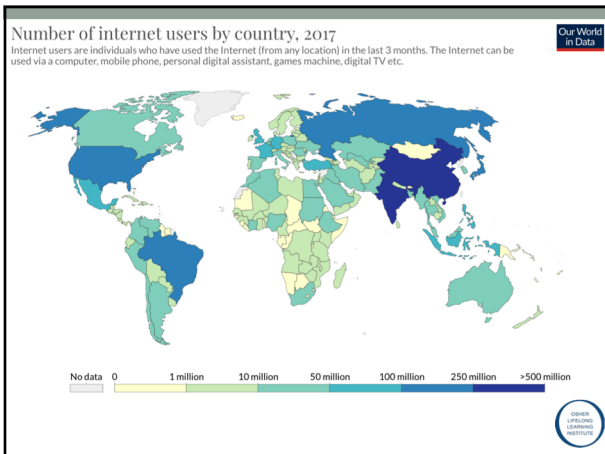
Devices ...

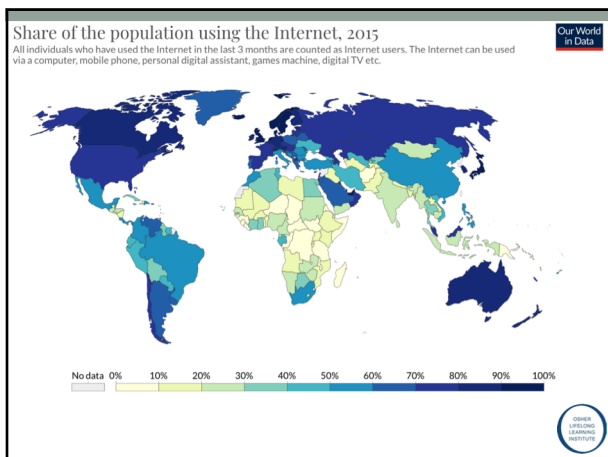
- As the devices become smaller and more powerful
 - Easier to use!
 - We use them for everything....
 - **Integrated part of our lives!**

1.75 Billion Cellphones in 2014
 748 million Androids in 2013
 125 million iPhones in 2012
 53 million iPads in 2012









Smartphones: Use Them Anywhere, Anytime!

63% keep their phone with them for ALL but an hour of a working day!

3.37 Billion worldwide email accounts

15% of Americans answer phone calls During Sex Hello? Hello?

Teens send an average of **60** texts a day,

40 percent of people with iPhones said they'd rather give up brushing their teeth for a week than go without their phone! (Chicago Tribune, 2011)

Percent who said they could only go a few hours without their mobile phone: 34%

6.1 BILLION tick tick tick! Americans use approximately **Minutes Per Day** (That's about 21 minutes per person)

80% TEENS own a wireless device Have access to cell phones

50% TEENS can text blindfolded! Text Blindfolded!

Cell phones around the WORLD

Highest average number of cell phones per person

1. United Arab Emirates 1.85	6. Lithuania 1.41
2. Estonia 1.94	7. Portugal 1.39
3. Hong Kong 1.81	8. Singapore 1.36
4. Italy 1.52	9. Czech Republic 1.34
5. Bulgaria 1.47	10. Russia 1.33

What do We Use the Internet for?

- Global Communications
- Healthcare
- Gambling
- Education
- Distance Learning
- E-commerce
- Criminology
- Radio
- Finding Directions
- Dating
- Shopping
- Chatting
- Music
- News
- Monitoring
- Forms and Applications

25% of "hook ups" are now starting on Facebook!

Gross revenues of online games (gambling) estimated to grow to USD 5.5 billion by 2015

Babies & the Internet



So, What Do ALL These Tell Us about Us?

The WiFi is not Working!



Our Dependency on IT

- Physical & Social dependency
- The Internet is becoming the default forum for many commercial and personal relationships
 - Self-expression
 - Communicate with others
 - Storage and exchange of information
- For many of us "the virtual world is becoming as real as the physical"

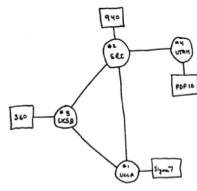


Early Expectations of the Internet!



The Internet Project

- The Internet project started in 1967 (ARPANET)
 - A group of scientist began planning a Data Communication Network to exchange messages
 - The computer network funded by the DoD
- Two main trusts of the Internet
 - A network to share resources
 - New protocols allowing exchange of information



1. UCLA
2. The Stanford Research Institute's Augmentation Research Center
3. UC Santa Barbara
4. The University of Utah



Early Expectations – Early 70's

- Internet became the technology of liberation
 - Techno-utopian dreamers were promising a cybernetic meadow
 - Fred Turner coined the term Virtual Reality
 - Believed linked computers will link people creating a technological paradise - unconstrained by existing physical, social & political boundaries
- The WWW brought the notion of Heavenly City - emerging from computer network
 - Promising liberation from rules and routines



The Reality of the Internet –

Fast forward 40 years

- The Internet turned out to be a powerful and a mysterious new technology
- It empowered us in many ways (revolutionized our lives)!
 - Education, Commerce, Healthcare, etc.
- It has also become an instrument of bureaucratic control
 - Creating a conduit of corporate profits
 - Replacing human work by smart technology
 - Polarizing communities
 - Becoming a "Home of Business" rather than Mind



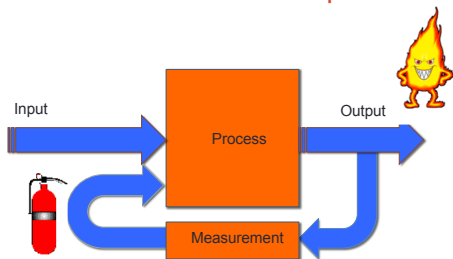
The Reality of the Internet

Fast forward 40 years

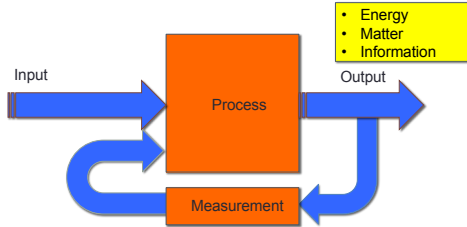
We focus on
"CONTROLLING"
power of the Internet
technology



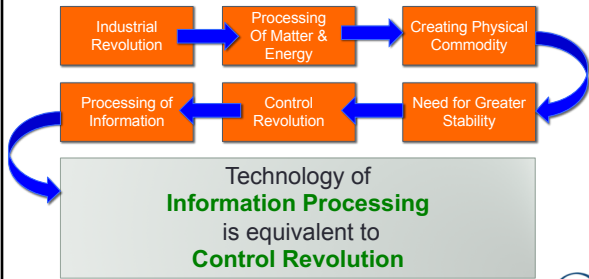
Technology Is All About Processing & Measurement to Control the Output



Technology Is All About Processing & Measurement to Control the Output



Control Revolution & Information Technology



Information is Commodity!

- Our economic system is based on Market-Economy
 - The means of production are privately owned and operated for profit
 - The market rules
- Information technology (e.g., Internet) is yet another way to control the market for more profit!

the people and labor




Corporation




How THE INTERNET Works *In Five Minutes*

15



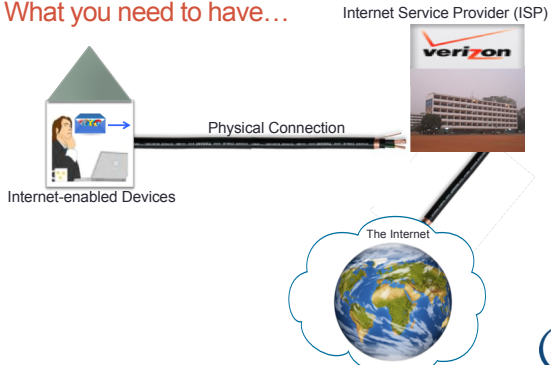
Getting Connected....

- Internet Device (e.g., computer or cell phone)
 - Each device has a unique hardware address (called MAC address)
 - My phone Wi-Fi MAC: **18:87:00:bf:99:0f**
 - My MacBook: **f0:f4:79:50:df:b6**
- Internet Service Provider (ISP)
 - Examples: AT&T, Verizon, Netzero, etc.
 - They provide IP (Internet Protocol) address (e.g., **168.34.23.101**)
 - Also offer services such as email, web page, etc.
- Physical Connection (e.g., cable or phone)
 - Provided by the phone company or the ISP



The Internet In Action

What you need to have...




Internet-enabled Devices

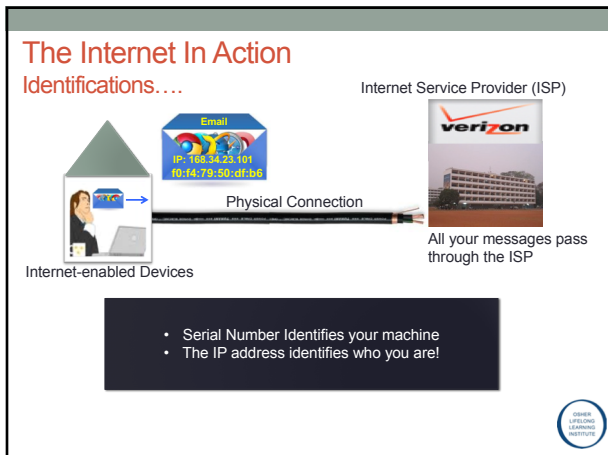
Physical Connection

Internet Service Provider (ISP)

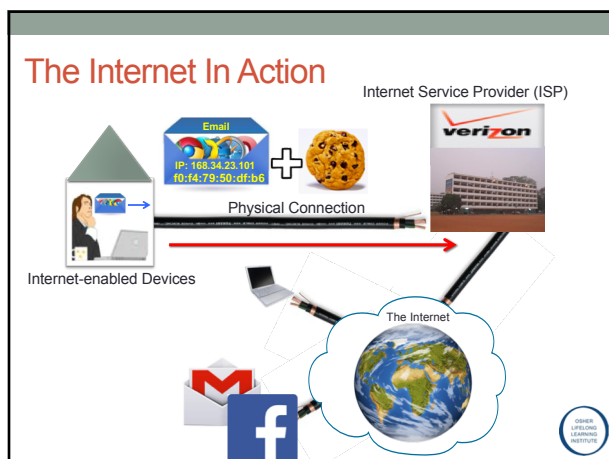
The Internet

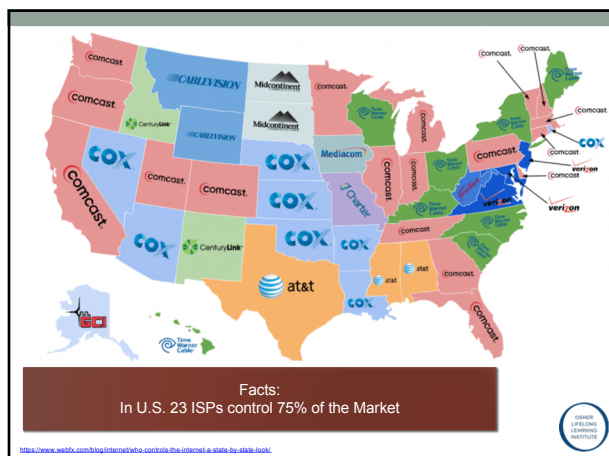













Tracing A Simple Email From YAHOO!

Where am I sending this to you from?

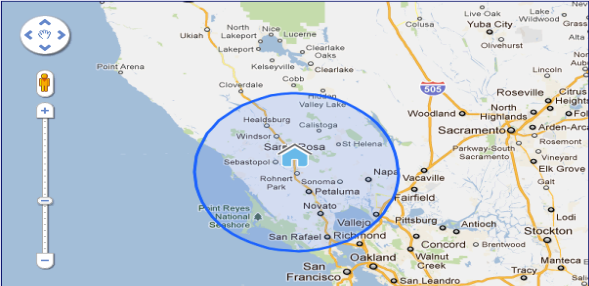
HEADER-----
IP: 168.34.23.101
MAC: f0-14-79-50-df-b6
ISP & Location

© 2008 LIFEPOINT LEARNING INSTITUTE

Email Header Analysis

IP Address: 130.157.158.211
Hostname: village-158-211.sonoma.edu
IP Address Country: United States 
IP Continent: North America
IP Address City Location: Rohnert Park
IP Address Region: California
IP Address Latitude: 38.3433
IP Address Longitude: -122.7041
Organization: Sonoma State University
ISP: Sonoma State University

Email Lookup Map (show/hide)



The map shows the state of California with major cities and highways labeled. A blue circle is drawn around the area of Sonoma State University, specifically highlighting Rohnert Park and the surrounding region. The map includes a compass rose and a zoom control on the left side.
