

Technology Policy During a Pandemic: Possibilities and Limits

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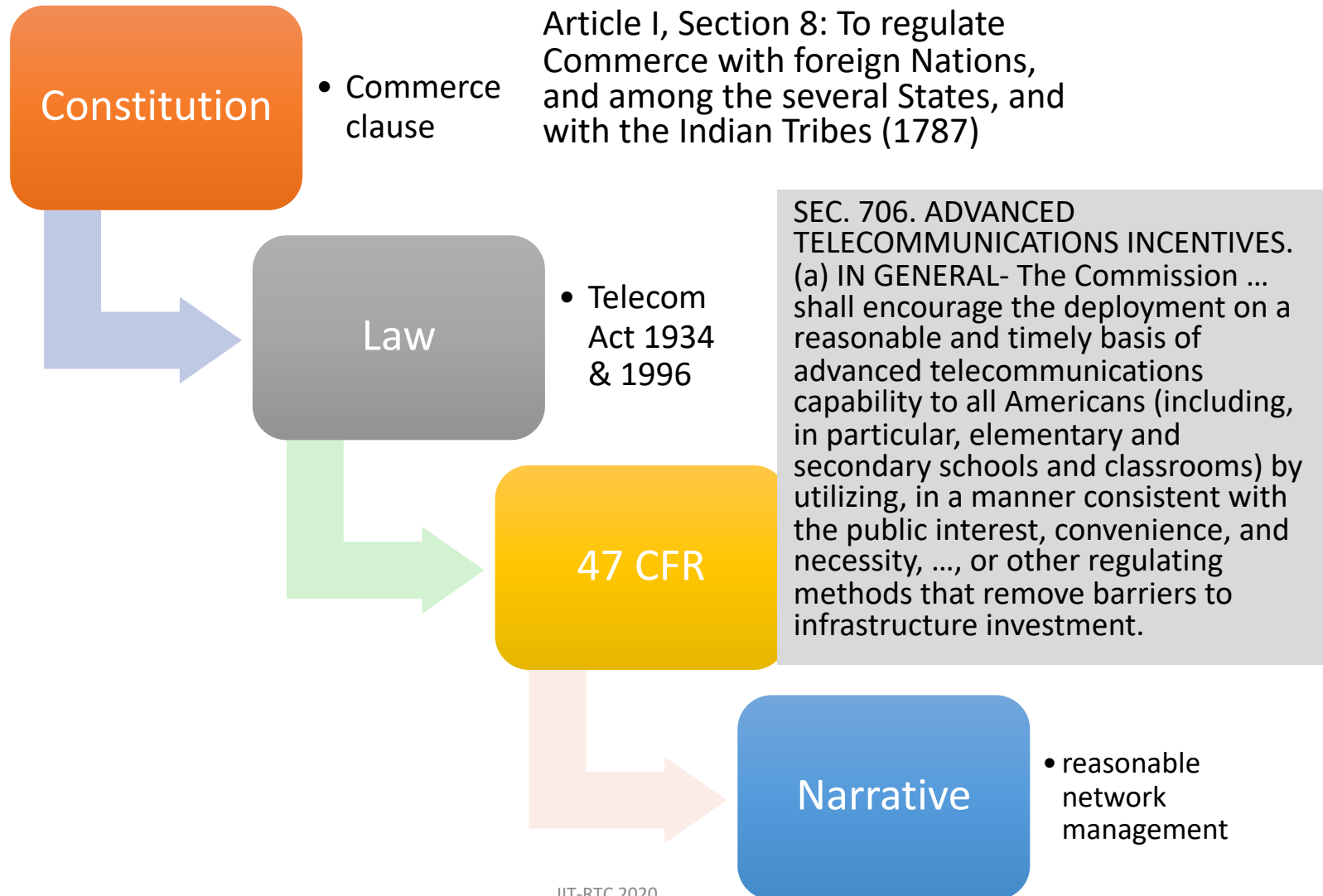
Itinerary

- Background: Making laws in practice
- Background: What do Congressional offices do all day?
- Veto points
- Case studies:
 - Broadband access
 - Privacy
 - Telehealth
- Future opportunities: e-government & digital identity
- How can I help shape laws?

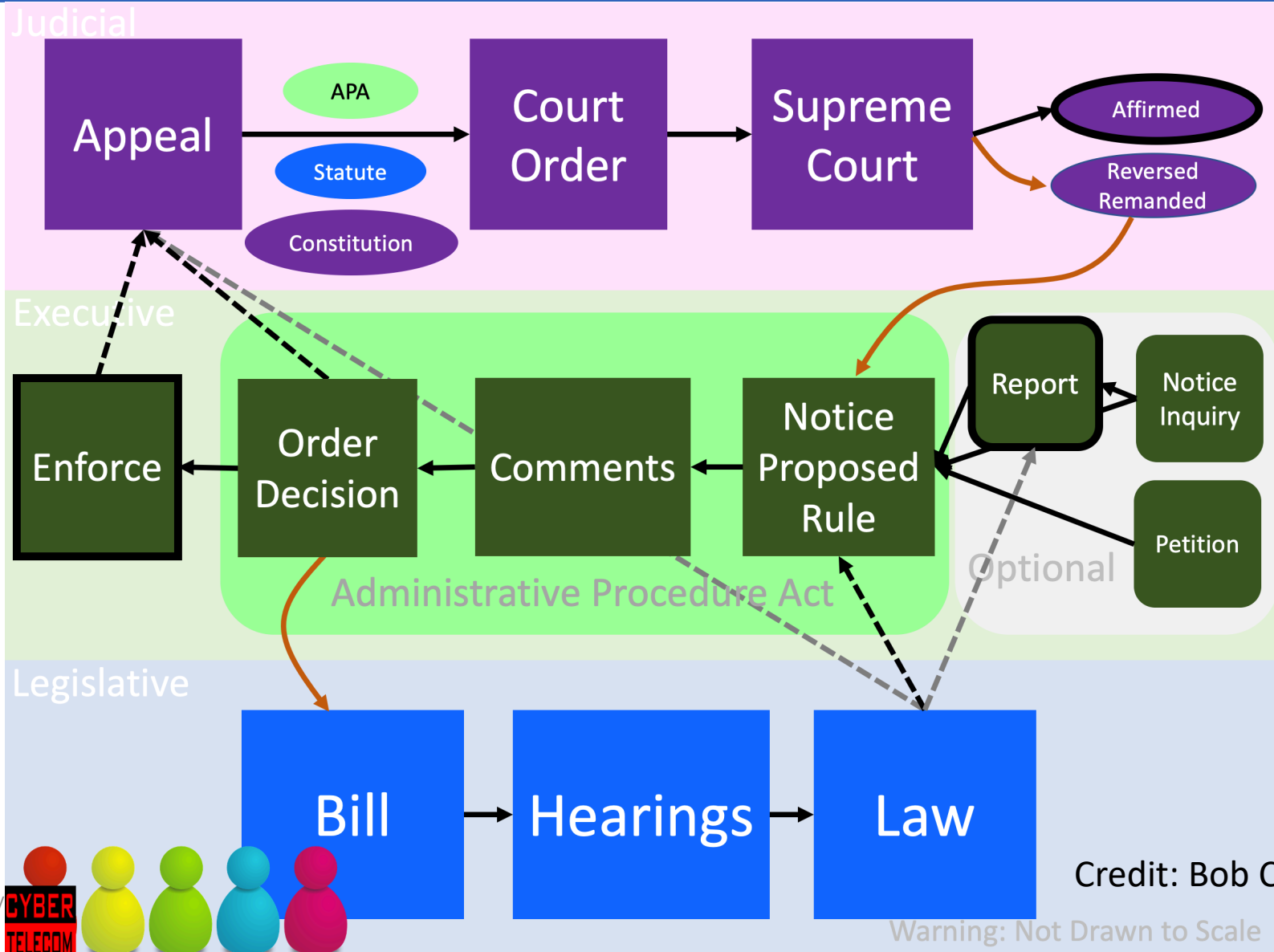
The kinds of law

- Constitutional law (1787)
 - relationship between
 - president and Congress
 - federal government and states
 - bill of rights (1791) + 17 amendments
 - short compared to other constitutions
- Criminal law
 - “Homicide means conduct which causes the death of a person or an unborn child with which a female has been pregnant for more than twenty-four weeks under circumstances constituting murder, manslaughter in the first degree, manslaughter in the second degree, criminally negligent homicide, abortion in the first degree or self-abortion in the first degree.” (NYS S125.00)
 - "Person," when referring to the victim of a homicide, means a human being who has been born and is alive.
- Civil law
 - contract, uniform commercial code, labor laws, ...
- Administrative law
 - e.g., how can regulations be made and enforced

The US hierarchy of laws



Three branches, intertwined



Credit: Bob Cannon

Warning: Not Drawn to Scale



Example: Law requiring 911

LII > U.S. Code > Title 47. TELECOMMUNICATIONS > Chapter 5. WIRE OR RADIO COMMUNICATION > Subchapter VI. MISCELLANEOUS PROVISIONS > **Section 615a-1. Duty to provide 9-1-1 and enhanced 9-1-1 service**

615a-1

U.S. Code Notes

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(a) DUTIES

It shall be the duty of each [IP-enabled voice service](#) provider to provide 9-1-1 service and [enhanced 9-1-1 service](#) to its subscribers in accordance with the requirements of the Federal Communications Commission, as in effect on the date of enactment of the [New and Emerging Technologies 911 Improvement Act of 2008](#) and as such requirements may be modified by the [Commission](#) from time to time.

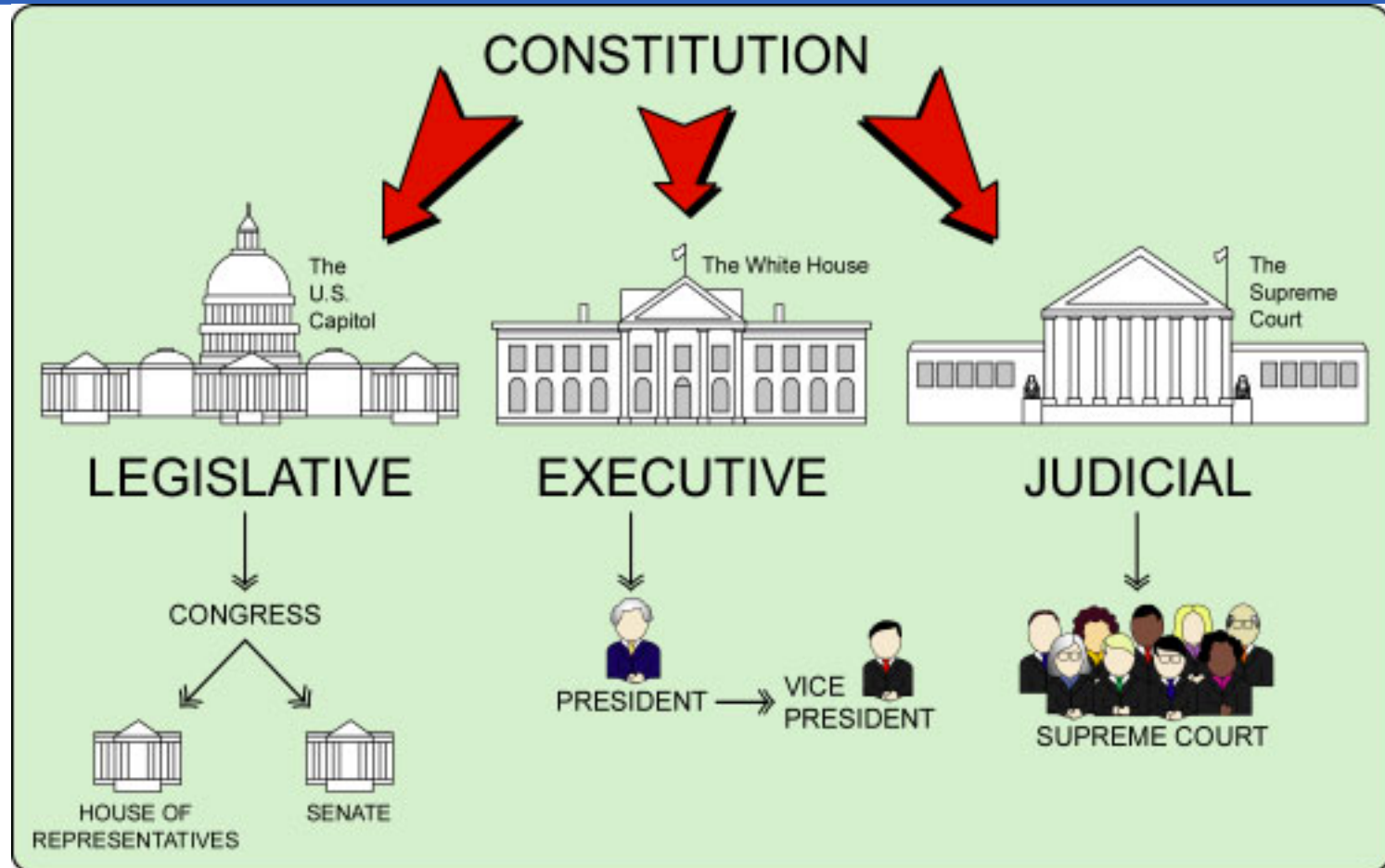
(b) PARITY FOR IP-ENABLED VOICE SERVICE PROVIDERS

An [IP-enabled voice service](#) provider that seeks capabilities to provide 9-1-1 and [enhanced 9-1-1 service](#) from an entity with ownership or control over such capabilities, to comply with its obligations under subsection (a), shall, for the exclusive purpose of complying with such obligations, have a right of access to such capabilities, including interconnection, to provide 9-1-1 and [enhanced 9-1-1 service](#) on the same rates, terms, and conditions that are provided to a provider of commercial [mobile service](#) (as such term is defined in section 332(d) of the [Communications Act of 1934 \(47 U.S.C. 332\(d\)\)](#)), subject to such regulations as the [Commission](#) prescribes under subsection (c).

Example of rule – 47 CFR 20.18

- **§ 20.18 911 Service.**
- (a) Scope of section. The following requirements are only applicable to CMRS providers, excluding mobile satellite service (MSS) operators, to the extent that they:
 - (1) Offer real-time, two way switched voice service that is interconnected with the public switched network; and
 - (2) Utilize an in-network switching facility that enables the provider to reuse frequencies and accomplish seamless hand-offs of subscriber calls. These requirements are applicable to entities that offer voice service to consumers by purchasing airtime or capacity at wholesale rates from CMRS licensees.
- (b) Basic 911 Service. CMRS providers subject to this section must transmit all wireless 911 calls without respect to their call validation process to a Public Safety Answering Point, or, where no Public Safety Answering Point has been designated, to a designated statewide default answering point or appropriate local emergency authority pursuant to § 64.3001 of this chapter, provided that “all wireless 911 calls” is defined as “any call initiated by a wireless user dialing 911 on a phone using a compliant radio frequency protocol of the serving carrier.”

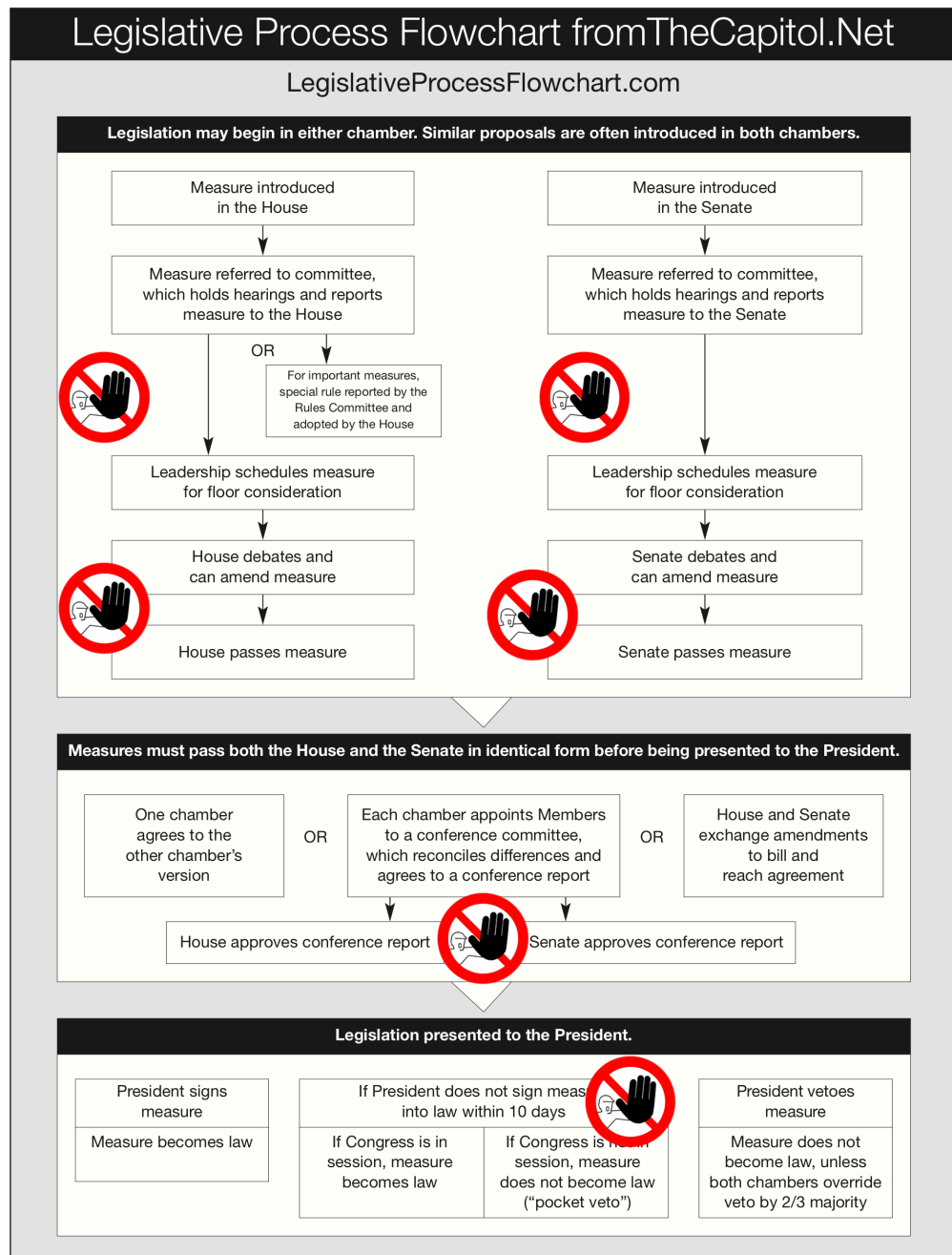
Civics was a bit too simple...



<https://www.youtube.com/watch?v=FFroMQIkiag>

Veto points

And if it fails within the Nth Congress, start again in N+1.



But that's not the end of it if money is involved...

- **Authorization:** “enactment of an authorization measure that may create or continue an agency, program, or activity as well as authorize the subsequent enactment of appropriations”
- **Appropriation:** “enactment of appropriations to provide funds for the authorized agency, program, or activity.”
- **Example: S.1822 (Broadband DATA Act) – became law 03/23/2020**

16 **SEC. 6. AUTHORIZATION OF APPROPRIATIONS.**

17 There is authorized to be appropriated to the Com-
18 mission to carry out this Act the following amounts:

19 (1)(A) For fiscal year 2020, \$55,000,000, not
20 less than \$34,500,000 of which shall be made avail-
21 able to carry out section 4.

22 (B) The amounts made available under
23 paragraph (A) shall remain available

But law ≠ money:

“At this point, it is vital for Congress to provide the FCC as soon as possible with the appropriations necessary to implement the Act. Right now, the FCC does not have the funding to carry out the Act, as we have warned for some time. And given the Act’s prohibition on the Universal Service Administrative Company performing this mapping work, if Congress does not act soon, this well-intentioned legislation will have the unfortunate effect of delaying rather than expediting the development of better broadband maps. I look forward to working with Congress in the weeks ahead to secure this funding, so that we can ensure that we have the best tools available for bridging the digital divide for the American people.”

Try, try and try again

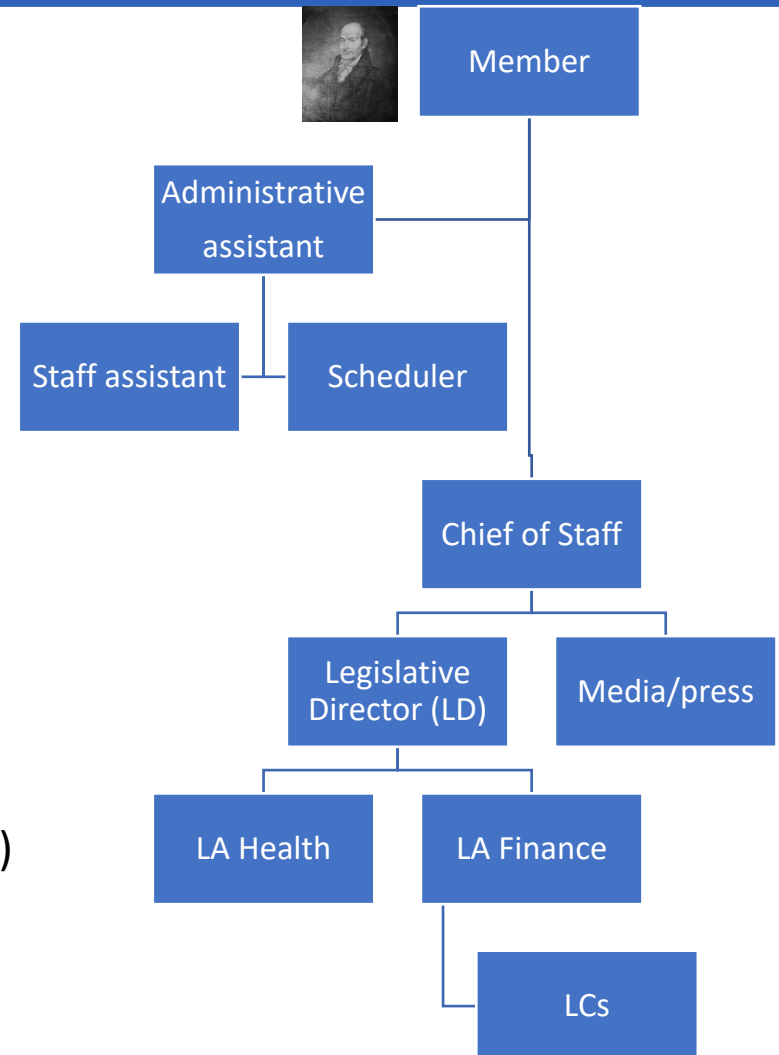
- Bills are often re-introduced Congress after Congress
- They may also get folded into larger legislation or must-pass bills
 - examples: NDAA, CARES Act, HEROES Act
- Or bits and pieces get combined into one
 - example: TRACED Act
- Sometimes, attempt to pass by unanimous consent at end of session
 - particularly, small and not-too-controversial bills

What does a Congressional office do?

- Legislation
 - research, draft, submit, manage
 - mostly done by LAs, LD
- Oversight
 - letters, hearings
- Constituent correspondence
 - semi-automated via LCs
- Constituent service
 - case workers
- Media

House member: 15 staff (incl. field)
Senator: 41 staff (incl. field)

+ staff for committees (majority & minority)



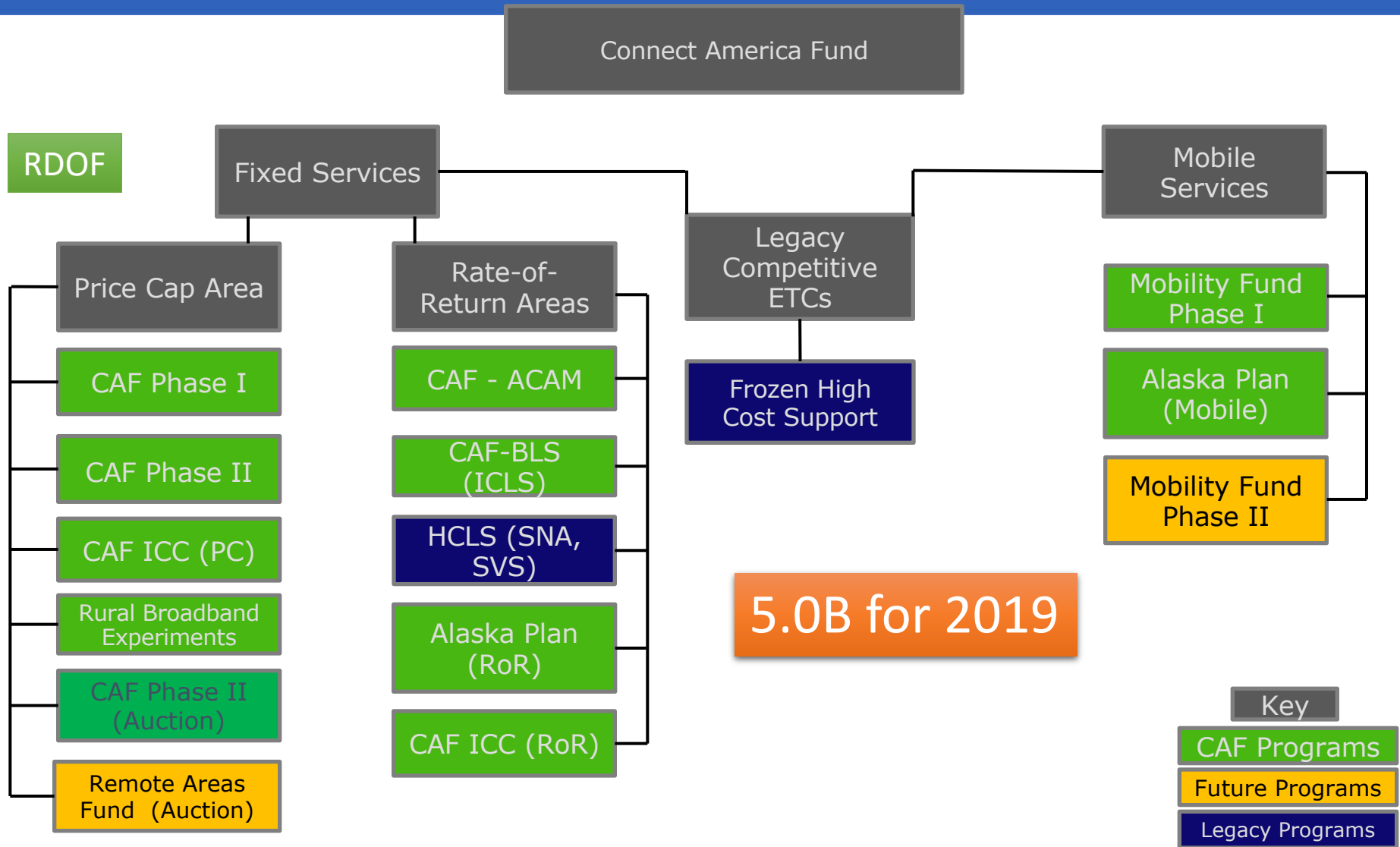
Congress during a pandemic

- March 12: Wyden office switches to home mode
- March 12: Capitol closed to visitors
- But each office makes own decision
 - the political becomes personal
- Senate still votes in person; House has proxy voting
- Minimal personal staff remain on-site
- Staff geographically distributed
- Congress designed for in-person hearings, votes, negotiation, visits, ...
 - normally, anybody can walk into a Member front office
- Spring dominated completely by CV-19 packages and home state support



Broadband is now a necessity

We've tried this for a while: Connect America Fund (CAF) and off-spring



Long-running arguments

- Who should fund universal service?
 - Old model: interstate communication – now, 27%
 - New model (Congressional bills): general revenue
 - Other models: connection-based, number-based, include BIAS revenue, ...
- Balance between rural (build-out, provider subsidy) and urban (consumer subsidy)?
 - cf. farm bills -- agricultural subsidies vs. SNAP
- Build for today's perceived minimum need or tomorrow?
 - subsidies paid over seven to ten years
 - AT&T 2014: 4 Mbps “Given the pace at which the industry is investing in advanced capabilities, there is no present need to redefine “advanced” capabilities”
- Minimum usable speed or closer to “urban” (cable) speeds?

Lifeline

- Established in 1985 by the FCC and mandated by Congress in the Telecommunications Act of 1996
 - used to be mostly local phone, now mostly mobile
- Federal program that lowers the monthly cost of phone and internet for qualified low income consumers
 - Program qualification based on income or participation in a qualifying assistance program (e.g., SNAP, Medicaid, SSI, Public Housing Assistance)
 - Basic support amount is \$9.25 per month and up to \$34.25 for consumers living on Tribal lands
 - e.g., 1,000 minutes of voice, 3 GB of data
- Concerns about fraud
 - unused phones
 - multiple phones in one household
 - phones to ineligible consumers

FREE TALK, TEXT AND DATA PLAN



FREE Android™ Smartphone
350 FREE Voice Minutes Each Month
UNLIMITED FREE Texts Each Month
500 MB FREE Data Each Month



Provider-based: Comcast Internet Essentials

The screenshot shows the Comcast Internet Essentials website. At the top left is the logo "internet essentials FROM COMCAST". To its right is the text "Affordable Internet at Home for Eligible Households". A "Get Help" link is visible in the top right. Below the header are two navigation tabs: "How to Apply" and "Low-Cost Computer". A blue banner below the tabs contains the text "Click here to read about how we are responding to the COVID-19 crisis". The main content area features a large image of a person's hands holding a laptop. Overlaid on this image is a white box with a blue header that says "Bring home affordable high-speed Internet." Below this, the price "\$9.95" is displayed in large blue font, followed by "Per Month + Tax" in smaller blue font. To the right of the price, a list of benefits is shown: "25 Mbps", "No Term Contract", "No Credit Check", and "In-Home WiFi". At the bottom of the white box is a button that says "Apply Now" with a right-pointing arrow.

Some school districts give out bulk vouchers

- Fear of bills
- *It's free – must be a scam*
- Not available in 58% of households
- "have not subscribed within 90 days"
- "no overdue bill within 12 months"

see also



COVID-19 changed thinking

Pre-COVID-19

- Biggest problem: no broadband in small parts of rural America
- Low income households have Lifeline for basic connectivity
- Need to solve mapping problem first to understand scope of unavailability
- 10-year programs (USF CAF II, RDOF)
- Can always go to the local library or school
- 25/3 is plenty fast

With COVID-19

- Biggest problem: lots of people can't afford broadband
 - and quality of supposedly-covered areas is low
 - no 25/3 broadband in urban areas
 - only 1.5%, but that's 3.9 M people
 - vs. 11.1 M rural
 - "digital redlining"
 - or cannot afford devices
- Students cannot wait 10 years
- Local library (and school) is closed
- Multiple video conferences bust 3 Mb/s upstream

But Lifeline has reached (mostly) the end of its line

State	July 2020 Subscriber Count	2018 Lifeline Eligible Households Based on ACS Data	Estimated 2020 Lifeline Participation Rate
Alabama	84,707	586,269	14%
Alaska	21,218	63,554	33%
Arizona	171,625	724,439	24%
Arkansas	79,667	390,538	20%
California	1,612,738	3,772,226	43%
Colorado	62,177	490,133	13%
Connecticut	73,640	357,860	21%
Delaware	14,001	99,002	14%
District of Columbia	18,876	87,184	22%
Florida	396,392	2,294,462	17%
Georgia	272,302	1,056,298	26%
Hawaii	7,579	104,985	7%

- one per household – who gets the phone?
- too little data even if tethering enabled
 - 3 hours of Zoom per month
- not all children can get access

Example: Emergency broadband benefit

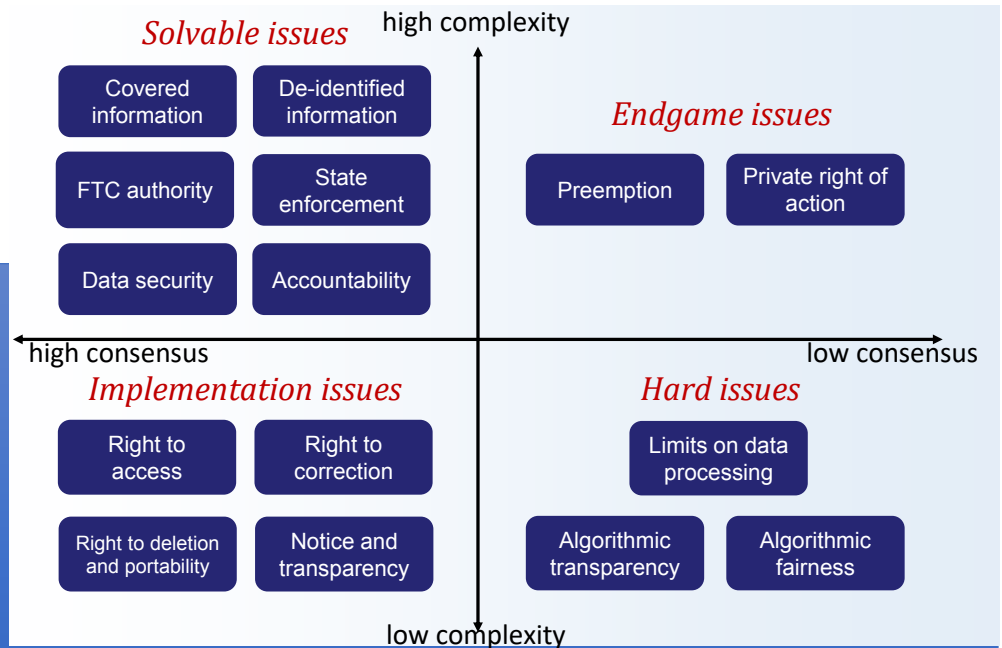
- S. 4095 (Wyden) & H.R. 6881 (Butterfield)
- Provides an emergency broadband benefit of up to \$50 a month (\$75 for those on tribal lands) for broadband for low-income individuals and those financially impacted by COVID-19
- The Senate version allows postsecondary Pell grant recipients to be eligible for the emergency broadband benefit
- Requires the provision of unlimited voice and data for Lifeline subscribers
- H.R. 6881 is also included within the HEROES Act (H.R. 6800, 8406)

Other broadband bills - examples

- Roughly 35 broadband-related bills so far this year – none passed
- HEROES Act:
 - Includes \$1.5 billion in emergency support for E-Rate to provide Wi-Fi hotspots, modems, routers, and connected devices to K-12 students and library patrons
 - Includes \$4 billion for an emergency broadband benefit that would provide up to \$50 a month for broadband for low-income individuals and those financially impacted by COVID-19
 - Requires the provision of unlimited voice and data for Lifeline subscribers
 - Prohibits internet service providers from charging late fees, shutting off service, or imposing data caps
 - Fast-tracks the FCC's Rural Digital Opportunity Fund for high speed projects
- USDA funds for Indian Country broadband
- Provides \$2 billion to reimburse small business broadband providers for costs incurred during the COVID-19 emergency period to provide free or discounted service

Comprehensive broadband bill (H.R. 7302)

- Provides \$80 billion to deploy high-speed broadband
- Provides a \$50 monthly discount on broadband for low-income consumers
- Requires the FCC to collect data on the prices of broadband and the resiliency of networks
- Provides \$1 billion to establish grant programs for states for broadband adoption and digital inclusion projects
- Provides funding to deploy Wi-Fi on school buses
- Study the affordability of broadband and how competition impacts affordability



Everybody wants some privacy

The basic outlines

Table I. Selected Protections in Pending Privacy Legislation

	H.R. 4978	USCDPA Draft	S. 2968	E&C Draft	S. 3456
Right of Access	§ 101	§ 103(a)(1)(A)	§ 102(a)	§ 5(a)(2)	§ 5(b)
Right of Correction	§ 102	§ 103(a)(1)(B)	§ 104	§ 5(a)(3)	§ 5(c)
Right of Deletion	§ 103	§ 103(a)(1)(C)	§ 103	§ 5(a)(5)	§ 5(d)
Right of Portability	§ 104	§ 103(a)(1)(D)	§ 105(a)	—	§ 5(b)(2)(B)
Right of Information	§ 107	§ 102	§ 102(b)	§ 3(a)(1)	§ 4
Notice Requirements	§§ 212(a), 213	§ 102	§ 102(b)	§ 3(a)(1)	§ 3(b)(2)
Opt-Out Consent	§ 212(b)(2)	§ 104(d)	§ 105(b)	§ 6(c)	§ 3(b)(1)(A)
Opt-In Consent	§ 212(b)(1)	§ 104(a)	§ 105(c)	§ 6(d)	§ 3(b)(1)(B)
Minimization	§ 201	§ 105	§ 106	§ 7(a)(1)	§ 3(d)
Data Security	§ 214	§ 204	§ 107	§ 9	§ 6

Wyden “Mind your own business”: Do-not-track web site; privacy certification

The controversial issues

- Should the FTC manage this or a new data protection agency?
- Should consumers be able to sue companies (“private right of action”), state AGs or just the FTC?
- Should federal law preempt state privacy laws?
- What about algorithmic fairness?
- Pay for privacy?

Table 2. Major Differences in Pending Privacy Legislation

	H.R. 4978	USCDPA Draft	S. 2968	E&C Draft	S. 3300	S. 3456
Private Right of Action	Yes (§ 407)	No	Yes (§ 301(c))	Not specified	No	No
State Law Preemption	Not specified	Yes (§ 404)	Only direct conflicts (§ 302(c))	Not specified	Only direct conflicts (§ 10(a))	Yes, with exceptions (§ 10(a))

COVID-19 privacy issues

- Contact tracing, both digital and human
 - pure technical privacy may not help public health authorities
 - but fear of commercial or law enforcement (or immigration) use
- Doesn't quite fit HIPAA
- New America/OTI: Non-Discriminatory; used exclusively for public health purposes; effective; voluntary; secure; accountable
- Public Health Emergency Privacy Act (PHEPA):
 - “necessary, proportionate, and limited for a good faith public health purpose”
 - “adopt reasonable safeguards to prevent unlawful discrimination” (voting)
 - private right of action
- Exposure Notification Privacy Act (ENPA):
 - only for exposure notification systems
 - voluntary participation the basis for any digital contact tracing system
 - necessary to implement an exposure notification service for public health purposes (no LE)

How to win friends and influence people (in Congress)

How to influence Congress

- "Write a letter to your representative" – maybe
 - at least be nice – otherwise, you're just making the life of a 25-year old LC or intern miserable
- Organize – definitely
- You likely won't get to talk to the member of Congress
 - at least not for more than 5 minutes
 - unless you're a home-state CEO or university president or ...
- It's a lot easier to convince friends
 - can you modify an existing bill?
- Be organized & be prepared
 - the staff member may not be an expert, but they are not dumb
 - some staff members *are* experts – pivot if necessary
 - know what the member has done in your area of interest
 - they don't want to know whether your organization contributed to the campaign
 - that just makes the staff feel like they are for sale
 - the staff may need evidence and data – make yourself useful
- If lucky, your organization will be asked for feedback on draft bills
 - provide it – promptly and recognize that you won't get 100%

What can computer science
contribute to make government
work better?

Example: Unemployment insurance

Unemployment Websites Are Crashing Across The Country

March 18, 2020 · 5:47 PM ET

'COBOL Cowboys' Aim To Rescue Sluggish State Unemployment Systems

April 22, 2020 · 6:17 PM ET

Heard on [All Things Considered](#)

- Complex, multi-generational systems --- from COBOL to JavaScript
- Some parts scale, others do not
- Not well integrated with other systems
 - e.g., to compute earnings based on tax records
 - no standard APIs
- Each state does its own thing (and pays consultants)

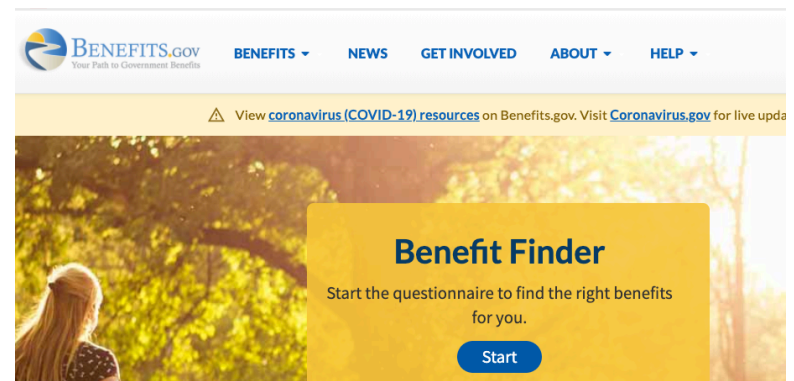
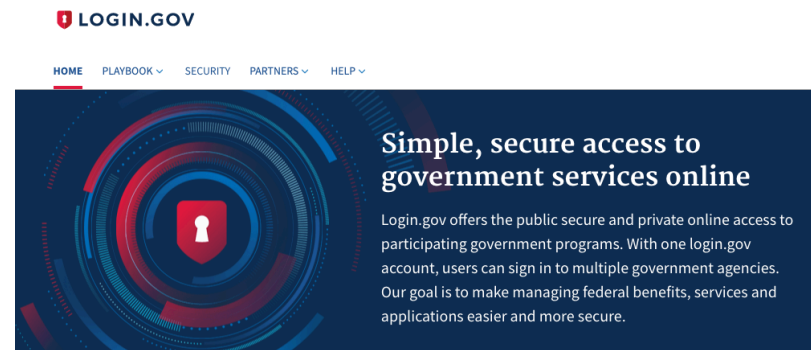
Widespread Unemployment Fraud Is Overwhelming State Systems

State government unemployment systems are under attack from fraudulent applications, as Pandemic Unemployment Assistance programs nationwide are being targeted by cybercriminals. And the situation is only getting worse.

BY DAN LOHRMANN / OCTOBER 11, 2020

What can CS contribute?

- Not necessarily ML, NLP, AI, blockchains or 5G...
- Notion of interoperability and standards – lessons from EHRs (HL7, ...)
- Systems thinking – none of the modern administrative systems are islands
 - but they are developed as islands
 - identity, address, employment, ...
 - money flows
- Re-use of services
 - login.gov as an example
 - identity verification as a service (e.g., DMV)
- Example: \$9.25/month Lifeline benefits based on
 - 135% of federal poverty guideline income → time period? dependents?
 - Supplemental Nutrition Assistance Program (SNAP), formerly known as Food Stamps
 - Medicaid
 - Supplemental Security Income (SSI)
 - Federal Public Housing Assistance (FPHA)
 - Veterans Pension and Survivors Benefit



And in closing

- Technology now plays a central role in key policy debates
- Hot topics: privacy, algorithmic fairness, broadband access, IT modernization, autonomous/electric vehicles
- Congress is not well engineered to get things done in a time of polarization and divided government
 - US has an unusually high number of veto points
- But computer science has significant roles to play:
 - build, design and advise on better IT infrastructure
 - advise decision makers – both in Congress and in federal agencies
 - consider internships for students
- More likely as part of an organization than as an individual