Designing Government

"The most dangerous phrase in the language is 'we've always done it this way.'"

-- Rear Adm Grace Hopper

Problems and Solutions

First, some problems:
  Multiple interventions (catfish)
  Redundant interventions (duplication)
  Uncoordinated interventions (HUD)
  Alternatives (fish market)
  The Budget inferno
  Gingrich
Solutions
  Google earth world
  Systems, transparency, design, patterns, new offices,   \
  Red Team U, USAF manual, Devil's Advocates
  Donella Meadows

Blue Catfish & Politics

https://www.washingtonpost.com/lifestyle/food/blue-catfish-are-destroying-the-chesapeake-bay-congress-isnt-helping/2017/06/12/17107802-4f8a-11e7-91eb-9611861a988f_story.html

Blue Catfish – the problem

Brought from the Mississippi, Missouri, & Ohio river basins

Introduced into the James, Rappahannock, and York river in the '70s & '80s for sport fishing – they can weigh in excess of 100 pounds!

Population now: 94m – 111m (between ½ & ¾ of the rivers' biomass)

They're eating EVERYTHING, including blue crabs!

Sell Blue Catfish – a good solution

Earlier this decade, some nonprofit groups, watermen, seafood processors and retailers started working together to catch, market, and serve blue catfish for dinner!

In a few years, the seafood processors have gone from handling zero blue catfish to millions of pounds of them each year.

The market continues to grow – as of now.

BUT…

Catfish farms in our Southern states generate hundreds of millions of dollars annually, but are being challenged by cheaper imports, largely from Viet Nam and China.

So, someone tucked a provision into the 2008 Farm Bill shifting authority for catfish inspections from the Food and Drug Administration (FDA) to the U.S. Department of Agriculture (USDA).

BTW, can you guess how many Federal agencies are involved in our food?

For Starters:

- FDA
  - Center for Food Safety and Applied Nutrition
  - Center for Veterinary Medicine

- Centers for Disease Control and Prevention
  - Food Safety Office
  - National Center for Infectious Diseases

- USDA
  - Food Safety and Inspection Service
  - Agricultural Marketing Service
  - Federal Grain Inspection Service
  - Animal and Plant Health Inspection Service (APHIS)
  - Foreign Agricultural Service
  - Agricultural Research Service
  - Food and Nutrition Service (school lunches and food stamps)

And Also:

Commerce
 National Marine Fisheries Service
 International Trade Administration
 Census Bureau
 National Technical Information Service

Environmental Protection Agency (pesticides)

Federal Trade Commission

Bureau of Alcohol, Tobacco, Firearms, and Explosives

Labor
 Occupational Safety and Health Administration
 Bureau of Labor Statistics

Since then, hundreds of members of both the House and Senate have been trying to kill the new program, which would impose tougher standards, but just for catfish processing.

And perhaps be outed as a "non-tariff trade barrier" by the WTO.

Although 170 members have signed a letter this year, no progress to date.

It's a cost issue:

USDA inspectors are onsite daily; FDA does periodic inspections. Older plants would have to spend hundreds of thousands to meet the USDA standards, which were designed for meat, poultry, & egg products.

And the new rules only apply to catfish, a small part of the work of many seafood processing plants. (FDA keeps tuna & oysters.)

So -- many processing plants may leave the blue catfish market.

As noted, oysters and tuna remain under FDA authority in the 2008 bill.

The Centers for Disease Control & Prevention: (from '98 – '15)
      56 reported cases of illness from catfish (2 hosp, 0 fatal)
      2,742 reported cases of illness from oysters (73 hosp, 2 fatal)
      3,083 reported cases of illness from tuna (126 hosp, 3 fatal)

The General Accountability Office has called on the Congress to repeal the USDA catfish inspection program.

The Trump Administration has written it out of their 2018 budget.

Might there be other ways to protect Southern catfish farming?

Stay tuned…

For details on the various Federal agencies, see:
https://www.ndsu.edu/pubweb/~saxowsky/aglawtextbk/chapters/foodlaw/USagencies.html

Duplication in/among Federal agencies

GAO-11-714T: Opportunities to Reduce Potential Duplication in Government Programs, Save Tax Dollars, and Enhance Revenue

Appendix I: Duplication, Overlap, or Fragmentation Areas Identified

FOOD SAFETY: 15 agencies involved
WARFIGHTER URGENT NEEDS: 31 entities in DOD
ECONOMIC DEVELOPMENT: 80 programs
SURFACE TRANSPORTATION: over 100 programs in DOT
FEDERAL DATA CENTERS: 24 Federal agencies involved
PUBLIC HEALTH INFORMATION: "multiple agencies" in HHS
BIOLOGICAL THREATS: more than 24 presidential appointees involved

Continued…

FEMA'S GRANT OVERSIGHT: 17 programs involved

DOMESTIC FOOD ASSISTANCE: USDA, DHS, & HHS: 18 programs

HOMELESSNESS: Seven agencies, over 20 programs

TRANSPORTATION-DISADVANTAGED PERSONS: 80 programs

EMPLOYMENT & TRAINING: 44 programs

TEACHER QUALITY: Ten agencies, 82 programs

FINANCIAL LITERACY: 20+ agencies, about 56 programs

Appendix II: Federal Agencies and Programs Where Cost-Saving or Revenue-Enhancement Opportunities May Exist:

Agriculture: 1
Defense: 6
Economic Development: 3
Energy: 1
General government: 25
Health: 4
Homeland security/Law enforcement: 5
Income security: 1
International affairs: 1

-- that's 47 in total.

Since the initial report in 2011, GAO has issued annual Duplication and Cost Savings reports: the 2017 report includes 15 new areas of fragmentation, overlap, or duplication, and 14 new areas in which to avoid costs or increase revenues.

GAO's Action Tracker website, http://www.gao.gov/duplication/action_tracker/all_areas -- now covers 326 actions.

There are also podcasts, blogs, videos, etc., etc. Go to www.gao.gov and search for "duplication".

A quick review of the actions taken by the agencies reveals a lot of increasing "coordination" among the programs.

This, of course, does not necessarily save costs – it adds costs!

I haven't seen much in the way of programs being subsumed within other programs – but we could start a committee to look into this…

Lester Salamon talks about programs creating "guilds." This makes programs hard to kill.

Lack of Coordination – just within HUD!

"This flowchart documents the federally mandated process that housing authorities and tenants go through for *every* tenant, every year, just to calculate rent. A simpler system is long overdue."

-- <u>Navigating the Rent Labyrinth</u> – poster by PHADA, the Public Housing Authorities Directors Association

Alternative solutions -- Overfishing

"Tragedy of the Commons" as an idea dates to 1833.

Governments are still finding ways to control or alleviate it.

Here are four options in use today:
Government Regulation
Duck Stamps
Lobster Cooperatives
Catch Shares

Government Regulation

- In Oregon, albacore don't "belong" to anyone
- Fishermen and the industry pay fees to buy and sell it
- The program supported 351 small boats in 2015

Duck Stamps

1869: Congress protected fur seals in Alaska
Duck Stamps started in 1937: "Want to shoot ducks, gotta buy duck stamps!" Over 135m sold by 2005
98¢/$1 still goes to growing/preserving the National Wildlife Refuge System: 150m acres in the USA
Rachel Carson worked for 17 years at what's now Interior's National Fish and Wildlife Service.
1993: WV's Canaan Valley Wildlife Refuge becomes 500th refuge (now 562) (The refuges also protect an additional 900 species of wildlife.)

See also: https://www.fws.gov/refuges/

Maine's Lobster Fishery Cooperative

In 1872, Maine passed a law protecting egg-bearing females.

Today: The overall catch isn't limited, the season runs all year, and many rules keep the harvest sustainable. You have to have a license.

Maine exported $110million in live lobsters to China last year!

Some of the rules:

- Minimum and maximum size limits protect juveniles and healthy breeding stock.
- Females with visible eggs are notched, and protected forever.
- There's a statewide trap limit, and zones have trap limits too.
- New harvesters must apprentice, w/limited new licenses/year.
- Traps only – no diving, no dragging.
- Traps must have escape hatches for small lobsters.
- The Maine Lobster Seed Fund, supported by license fees, purchases and returns to the sea females that extrude eggs after capture.

The Fish Market – Lee Van Der Voo (2016)

- What does commercial fishing have in common with taxi medallions? Answer: catch shares.
- "Catch shares" can be bought and sold, and not just by fishermen
- It's "cap and trade" for fish!
- Landlords on the water, leading to sharecropper fishermen
- So we don't own the fish in our waters anymore
- One absentee American owns 60% of the Tasmanian abalone catch!
- (Not exactly news; America gave our railroads 9.3% of the continental US in exchange for transcontinental rail lines in the 19th century)

Catch shares vs Lease fees

- Lease fees:
  - Timber
  - Ranching
  - Mining
  - Wind
  - Solar
- Catch shares
  - In America, 117 species, 24 federal and state programs
  - Globally, 35 countries, 850 species, 275 private market programs

Why Catch Shares? See the history of grouper in the Gulf of Mexico

- Overfishing led to:
- Size limits on individual fish, and then
- A moratorium on new permits, and then
- A ban on fish traps, and then
- Marine reserves were established, and then
- Bycatch reporting, and finally
- An IFQ system: Individual Fishing Quotient
- (In Alaska, the first one week crabbing season brought in 14 million pounds of crab, and killed six crabbers – accidents, no sleep, no rest)

Catch Shares are:

- Good news for environmentalists, eg the Environmental Defense Fund (EDF)
- Good news for privatization advocates, like the Walton family
- Bad news for fishing communities (they're dying)
- Bad news for fishermen (they pay A LOT to "rent" them)

The Future of Catch Shares

- EDF has its eyes on 12 nations where 62 – 70% of the fish live.
- EDF hopes to have catch shares throughout, by 2020.
- The Walton Family Foundation is investing in catch shares in:
  - Indonesia
  - Peru
  - China
  - Mexico

The Budget Inferno

Steve Tidrick, The New Republic, May 29th, 1995

(cf www.tidrick.com/The-Budget-Inferno.pdf)

Nine Circles of Hell

As you descend through the progressively darker, murkier air of the nine circles of Dante's Inferno, the population of each group of sinners decreases, while the evil of their sins increases.

In Washington's Inferno….the deeper you descend into the pit, the smokier the air, the dimmer the light, the smaller the populations and the greater the stench of corruption.

At the entrance…

Welfare for the poor ($194B in 1994; 13% of total funding)

$89B to health care industry via Medicaid

$9B to landlords via HUD programs

$38B to agribusiness and food retailers via CHIP & Food Stamps

$58B to the poor (and liquor stores, convenience stores, etc.)

At Level One

Congressional Pork Barrel Spending (now *mostly* gone)
$10B in FY1995

At Level Two

Wasteful Defense Spending
    $200B/5 years – CBO identified 37 areas in FY1994
    $4B -- Air National Guard (mission??)
    …and mothballed factories (Industrial Preparedness)

At Level Three

Welfare for the well-off
> $1.7B in unemployment comp for people with $120K+ incomes
> $46B/5 years for Social Security & Medicare, to $120K+ incomes
> $700m for Coast Guard rescue services (yachts, anyone?)
>   National Endowment for the Arts grants (ballet, art galleries)
> $6.3B from DHHS supplementing education for doctors
> $100B in Treasury securities interest to the top 1%

At Level Four

Corporate Welfare

    $131B/5 years for 89 subsidies, per Progressive Policy Institute

    $87B/year for 129 subsidies, per Cato Institute

  Includes:

    $110m USDA spent advertising American food products abroad

    $140m FHWA spent on roads for logging in the national forests

    $100m for the Sematech program, subsidizing microchip firms

    $91m in price supports for peanuts

  The Progressive Policy Institute's $53B in industry subsidies equals:

    $11.8B net GAIN for the top 5% of Americans

    $6.6B net LOSS for the lowest four-fifths of the income distribution

At Level Five

"Slight of hand" authorizations

     All Interstates must be four lane (really? In Montana??)

     $369M for a Brooklyn Courthouse (in ISTEA'91)

     Keeping an OPM office in Denver open

     Preserving certain post offices

     …and others to tedious to find

At Level Six

Credit

    $155B direct loans to students, farmers, small businesses

    $699B guaranteed loans

  $1,502B Government-sponsored enterprise credit (Freddie Mac etc)

At Level Seven

Insurance (total: $5 trillion)

      Price-Anderson Act (covers nuclear plants: Chernobyl, anyone?

      Pension Benefit Guaranty Corporation ($71B in hock in 1993)

("Full faith and credit" lowers risk and changes investors' behavior.)

At Level Eight

Tax Exemptions and Deductions
    $400B per General Accountability Office
    $416B per Citizens for Tax Justice for "corporate loopholes"
  including
      $6B in fossil energy subsidies (thus discouraging solar, etc.)
    $20.6B/5 years for mortgage interest deductions ($300K+)

and lots of "little ones"
    $3.6B/5 years for ethanol production (60% Archer Daniels Mid)
    $6.57B for just 8 subsidies, per the Center for Responsive Politics

At Level Nine

Trade protections and regulations
    $9B - $19B for trade protections ($54M/year more for peanuts)
    $400B - $667B for social & economic regulation
        -- some for cleaner air and water, safer cars, etc.
    (but see high sulfur vs strip-mined coal, or ETOH in gasoline)
    Very little "sunshine" about the politics behind regulations
Appropriation of public goods
    Land grants
    Radio spectrum allocations
    Landing slots at airports
    Antitrust exemptions for public utilities – and baseball

Our NPR List of Subsidies

Treading lightly on levels five, six, seven, & nine, we still reached $700B/5 years.

It went nowhere in the Oval Office.

Since the 1995 rules changes:

Office of Technology Assessment -- gone ("Thanks!")
Shared expert committee staff – not so much
Larger committee staffs (now borrowed from executive agencies)
Joint committee hearings -- seldom
Joint House & Senate hearings -- seldom
Library of Congress, CRS, GAO staff – large cuts
Focus shifted from authorization (policy) to appropriations ($$)

Congress: Increasingly partisan because:

Far fewer joint activities among the parties
Legislators don't eat together across party lines
Far more time spent in the home districts
Disconnects between home, DC office staffs

See: https://www.newamerica.org/oti/policy-papers/congress-wicked-problem/ for an excellent, thoughtful article (December 2012)

Solutions?

"People are speaking to their government with 21st century technology, we are listening with 20th century technology and responding with 19th century policy."

--Madeleine Albright

Solutions? Both Structure and Process

Structure:

    Congress: see "Congress' Wicked Problem" article

    Executive Branch:

        Devil's Advocate for the White House

        Red Team University for the agencies

        USAF Management Engineering Team

        Offices of Innovation

        Recast the duplicative programs

Devil's Advocate -- Pope Sixtus V in 1587

A "devil's advocate" is someone <u>within</u> an organization who is charged with advocating against the position(s) taken by more senior members.

A Devil's Advocate can "pierce the bubble" around leadership.

Imagine if Barack Obama had had someone charged with looking deep into the implementation of the Affordable Care Act & reporting directly to him!

See Wikipedia: Devil's advocate

The US Army's Red Team University

A "Red Team" See Wikipedia) serves the same functions as a Devil's Advocate: testing the "received wisdom" of an organization.

The US Army has established its University of Foreign Military and Cultural Studies at Fort Leavenworth, Kansas. UFMCS is also known as "Red Team University." (See Wikipedia)

There are many ways for an organization to seek out contrary counsel, IF the leadership is willing. For example, Crowdsourcing.

The USAF Management Engineering Team

How does any organization know how many people it takes to do any given task over time?

The USAF began working on this problem decades ago. See http://www.au.af.mil/au/afri/aspj/airchronicles/aureview/1966/jan-feb/hoke.html

Staffing and job requirements must match up, or the results will be either inefficient or ineffective. Neither is good…

Innovation and Duplication

"Innovation" is showing up all over the Federal government. Within General Services Administration, GSA's Technology Transformation Service includes three offices:

Office of Products and Programs

Office of 18F

Office of Presidential Innovation Fellows*

(See www.gsa.gov/portal/category/25729)

DUPLICATION? We've discussed that. Congress needs to solve it.

*Disclaimer: I've addressed this group.

Process Solutions

- Systems Thinking and Modeling √
- Design Thinking and Crowdsourcing √
- Dana Meadows
- Ashby's Law
- New Tools
- Patterns
  - Jane Jacobs
  - Christopher Alexander and software patterns
  - Patterns in legislation and regulation

"Complex systems are shaped by all the people who use them, and in this new era of collaborative innovation, designers are having to evolve from being the individual authors of objects, or buildings, to being the facilitators of change among large groups of people." p. 7

John Thakara, <u>In the Bubble</u>, 2006

"We must insist on solving more than one problem at a time and on tackling multiple interrelated challenges at the same time. **We need the resolve to address systems rather than symptoms.** A solution will not be effective or enduring if it creates new problems. And so, we need new business models, new technologies, new policy frameworks, and most importantly, new ways of engaging with each other."
— Quoted on Facebook by the Donella Meadows Institute (emphasis added)

Places to Intervene in a System
— Donella Meadows (Whole Earth, 1997)

9. Numbers (subsidies, taxes, standards)
8. Material stocks and flows
7. Regulating negative feedback loops
6. Driving positive feedback loops
5. Information flows
4. The rules of the system (incentives, punishment, constraints)
3. The power of self-organization
2. The goals of the system
1. The mindset or paradigm out of which the goals, rules, feedback structure arise

In *An Introduction to Cybernetics*, Ross Ashby (1903 - 1972) formulated his Law of Requisite [Variety](#)[9] stating that "variety absorbs variety, [and] defines the minimum number of states necessary for a controller to control a system of a given number of states." (Wikipedia)

"Phase Four Souvlaki"

President Nixon's wage & price controls (1971 - 1973) were unenforceable:

The price of the souvlaki at a greek restaurant on Capitol Hill was held constant, but my friends and I found that the portions steadily diminished in size. There was NO WAY that the Federal government could keep track of portion sizes across America.

Governments should not pass unenforceable laws. See "Prohibition."

Partnering with the Internet

An office with ten attorneys at Social Security has prosecuted cases of mail fraud since 1988. In 2011, when Internet fraud began swamping them, they initiated partnerships with firms such as Google, Microsoft, Apple, Facebook, Visa, Mastercard, and Paypal to block both ads and payments — thus preventing victimization before it occurs. Their partners have shut down websites, mobile apps, social media accounts, and advertisements — both within America and in foreign countries.

Although Ashby's Law cannot be violated, the attorneys successfully changed their *modus operandi* by enlisting a substantial number of additional controllers of the system.

They redesigned their program.

Gavin Newsom, California's Lieutenant Governor, has laid out five themes for connecting people and government in his new book, <u>Citizenville</u>.

They're in the Introduction. And they are all tied to the information explosion.

"First, government has to be absolutely transparent — every agency, across the board, with exceptions only to protect public safety or personal privacy.

"Second, we must encourage people to use that data to create useful apps, devices, tools — anything they want.

"Third, we must learn to engage people on their own terms.

"Fourth, we need to allow people to bypass government.

"Fifth, we must inject a more innovative, entrepreneurial mind-set into government."

— Gavin Newsom, <u>Citizenville</u> (2013)

Jane Jacobs

In The Death and Life of Great American Cities, Jane Jacobs began identifying the patterns of great cities:

    Eyes on the street
    Mixed primary uses
    Social Capital

The New Urbanist now has twelve patterns:

- The neighborhood has a discernible center. This is often a square or a green and sometimes a busy or memorable street corner. A transit stop would be located at this center.

- Most of the dwellings are within a five-minute walk of the center, an average of roughly 0.25 miles (0.40 km).

- There are a variety of dwelling types — usually houses, rowhouses, and apartments — so that younger and older people, singles and families, the poor and the wealthy may find places to live.

- At the edge of the neighborhood, there are shops and offices of sufficiently varied types to supply the weekly needs of a household.

- A small ancillary building or [garage apartment](#) is permitted within the backyard of each house. It may be used as a rental unit or place to work (for example, an office or craft workshop).

- An elementary school is close enough so that most children can walk from their home.

- There are small playgrounds accessible to every dwelling — not more than a tenth of a mile away.

- Streets within the neighborhood form a connected network, which disperses traffic by providing a variety of pedestrian and vehicular routes to any destination.

- The streets are relatively narrow and shaded by rows of trees. This slows traffic, creating an environment suitable for pedestrians and bicycles.

- Buildings in the neighborhood center are placed close to the street, creating a well-defined outdoor room.

- Parking lots and garage doors rarely front the street. Parking is relegated to the rear of buildings, usually accessed by alleys.

- Certain prominent sites at the termination of street vistas or in the neighborhood center are reserved for civic buildings. These provide sites for community meetings, education, and religious or cultural activities.

So -- see why we all love Chautauqua??

…back to patterns.

A Pattern Language

Alexander, Christopher et al, Oxford University Press, 1977

A **pattern language** is a method of describing good design practices within a field of expertise. The term was coined by architect Christopher Alexander and popularized by his book *A Pattern Language.* (…) Some advocates of this design approach claim that ordinary people can use it to successfully solve very large, complex design problems. (Pattern Language, Wikipedia)

Alexander's <u>A Pattern Language</u> (1189 pages) discusses and lists patterns for towns, buildings, and construction. In all, there are over 250 patterns, ranging from:

#1: Metropolitan regions will not come into balance until each one is small and autonomous enough to be an independent sphere of culture.[See Jacobs, Jane]

#252: Pools of Light. Uniform illumination – the sweetheart of the lighting engineers – serves no useful purpose whatsoever. In fact, it destroys the social nature of space, and makes people feel disoriented and unbound.

- All the patterns are INDUCTIVE – drawn from experience, not developed from theory.
- They are "What works" – not "What should work."
- This rule applies to any pattern language – the software patterns, for example.
- Patterns are common pieces to solving complex problems. The designer doesn't have to climb each mountain alone – the solutions are found along well trodden pathways.

- The elements of this language are entities called **patterns**. Each pattern describes a problem that occurs over and over again in our environment, and then describes the core of the solution to that problem, in such a way that you can use this solution a million times over, without ever doing it the same way twice.

  - — Christopher Alexander

  - (Design Pattern, Wikipedia)

Design paradigms can be used either to describe a design solution, or as an approach to design problem solving. Problem solving occurs through a process of abstraction and characterization of design solutions, with subsequent categorization into problem solving types. The approach is akin to the use of metaphor in language; metaphors are used to help explain concepts that are new or unfamiliar, and to bridge between a problem we understand and a problem we don't. (Design Paradigm, Wikipedia)

-- A pattern language is a method of describing good design practices or patterns of useful organization within a field of expertise.

-- Design patterns must be related to each other in position and utility order to form a pattern language.

-- A designer had a problem, selects a solution, then discovers new, smaller problems resulting from the larger solution.

-- Eventually all of the remaining design problems are small enough or routine enough to be solved by improvisation by the builders.

PLoP – Pattern Languages of Programs

- Pattern Languages of Programs is the name of a group of annual conferences sponsored by The Hillside Group. The purpose of these conferences is to develop and refine the art of software design patterns.

- A software design pattern is a general reusable solution to a commonly occurring problem within a given context in software design. It is not a finished design; it is a description or template for how to solve a problem that can be used in many situations.

- Design patterns are formalized best practices that can be used to solve common problems.

Two Patterns for Architecture

- **159: Light on two sides of every room**
  - When they have a choice, people will always gravitate to those rooms which have light on two sides, and leave the rooms which are lit only from one side unused and empty.
- **167: Six-foot balcony**
  - Balconies and porches which are less than six feet deep are hardly ever used.

•We do not have a "pattern language" for creating legislation or regulations, but we need one, and creating one is within reach.

•A lawyer at Housing and Urban Development, fresh from the Civil Aeronautics Board, used Federal Aviation Administration safety authority as a template for HUD's new rules for mobile home safety, many decades ago. See: http://government-reform.info/?p=129

• Our problem is that "designing government" isn't a lost art – it's an undiscovered science! (repeating myself)

The following classes at Harvard's Kennedy School five years ago made no mention of systems or design thinking, or of any routinization of the development of legislation or regulation:

Political Institutions and Public Policy
The U.S. Congress and Law Making
Politics and American Public Policy
Policy Analysis Exercise Seminar

Neither did the Hopkins MPP course, The Policy Process.

To repeat Monday's first slide:

- As our civilization has become more complex, so have its problems.
- In order to respond to these problems, we need:
  - in depth understanding of the problems, and
  - the most thoughtful, creative solutions possible.
- We also need a process that enables our political and administrative systems to craft solutions more easily and more transparently.

We'd better get started!

"It is not the strongest or the most intelligent who will survive but those who can best manage change."
— Charles Darwin

See www.government-reform.info & http://www.albany.edu/~gpr/ for more!

I'm at bobknisely@gmail.com   George is at gpr@albany.edu

And, as Elvis said, "Thank yuh, thank yuh, thank yuh vurry muuch!"