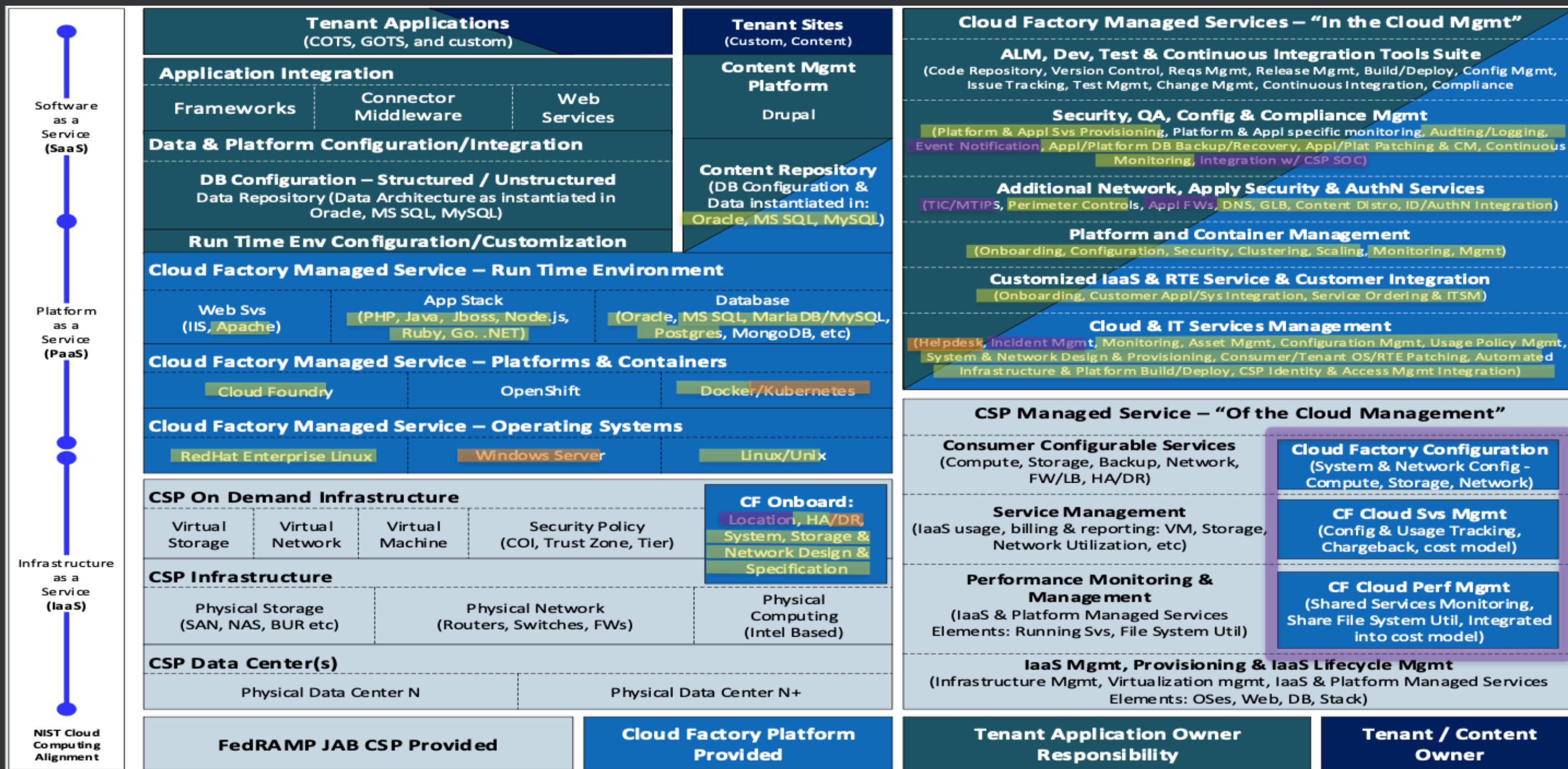


# Mnemonic Rules for Eponymous Laws

- SRECon EMEA 2024

# Brace yourself...



# What I said:

- How many customers do you have?
- Yada, yada, Agile Development, blah, blah, blah, Lean Enterprise, ...

# What I needed:

- Eponymous Principle
  - a law named for a person (from Greek eponymos "given as a name")
- Mnemonic Rule:
  - a trick for recall (from Greek mnēmē "memory")

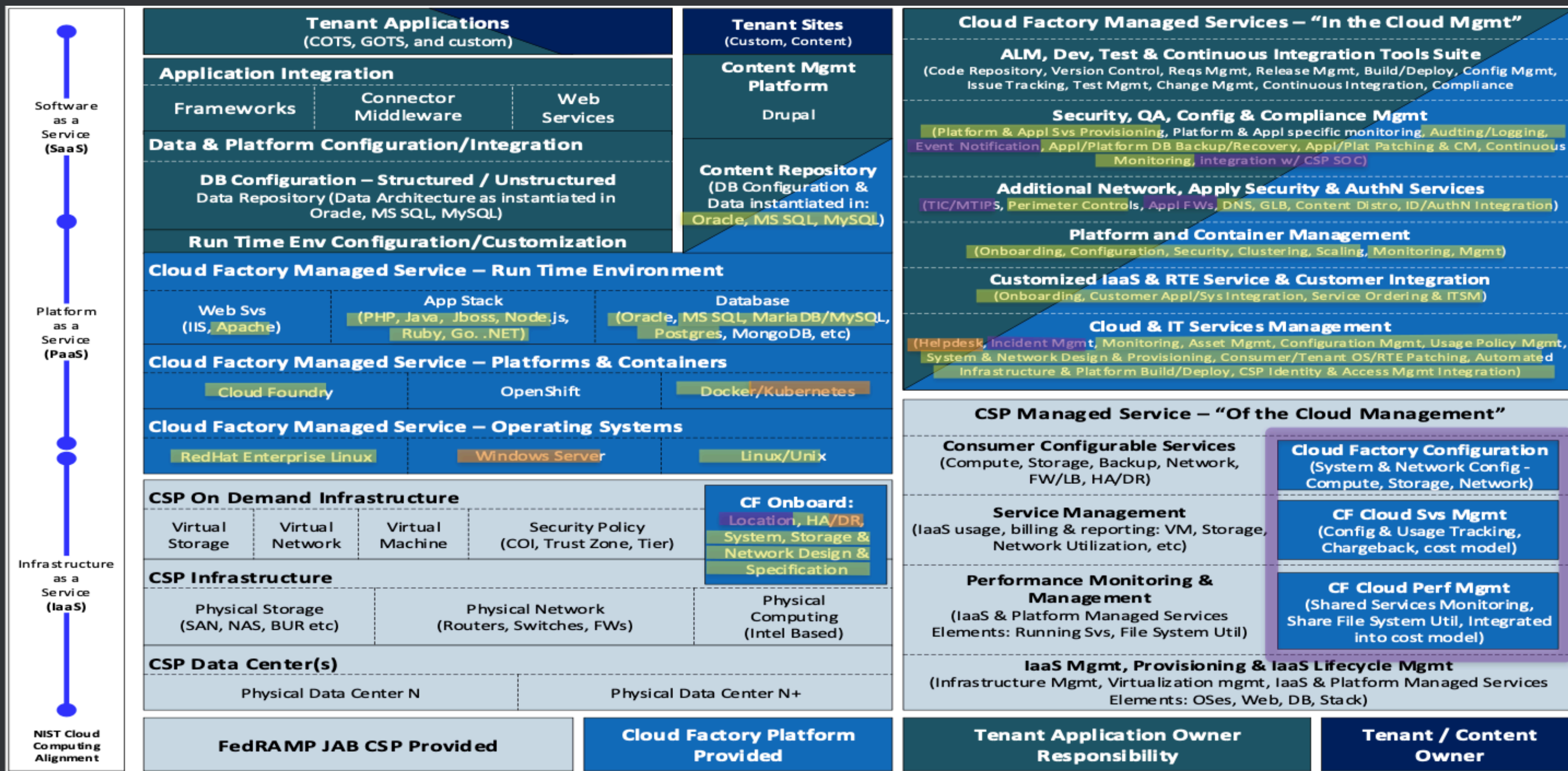
# Mnemonic Tricks

"To build a memory ... it has to be a little bit weird"

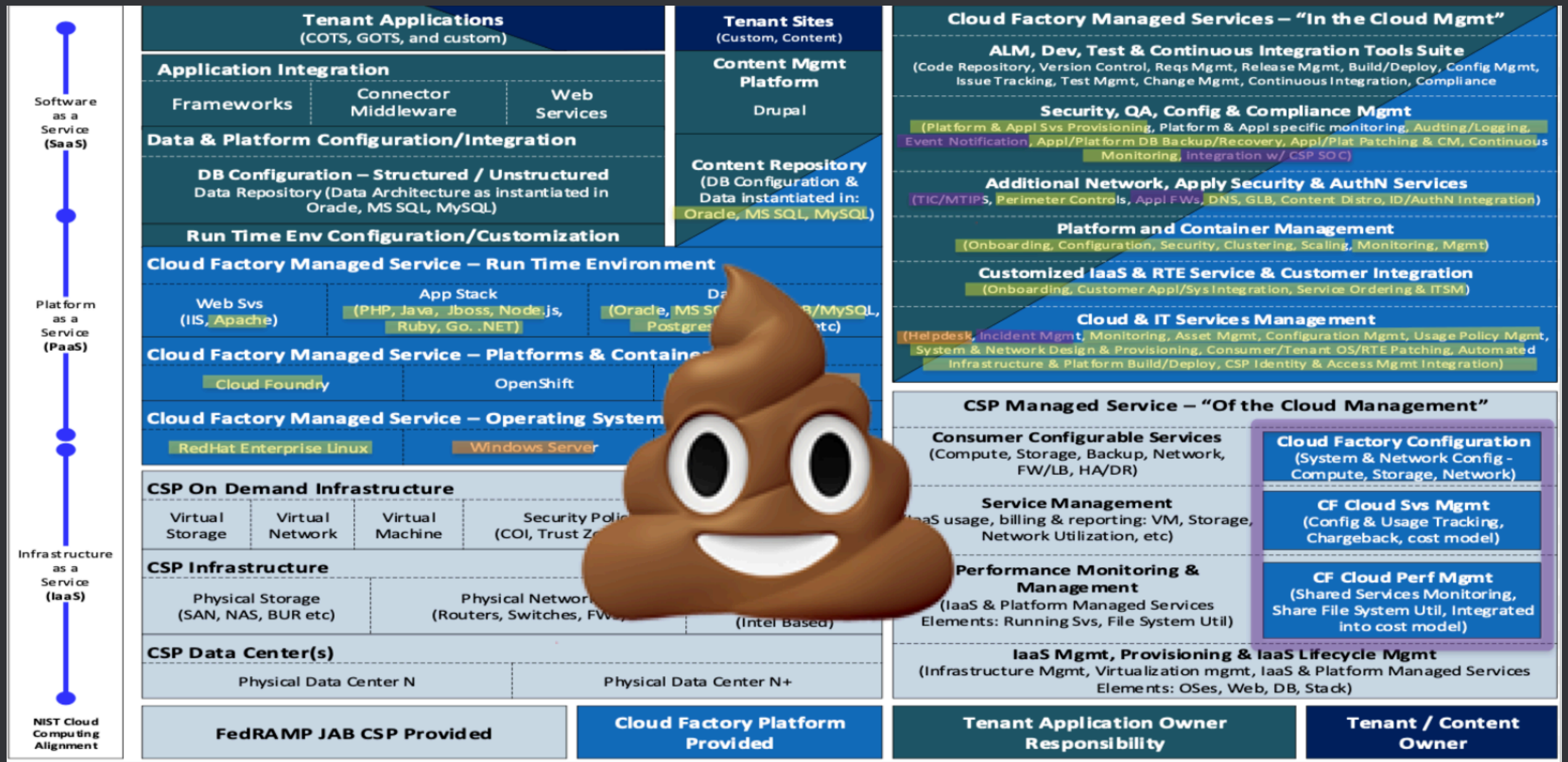
– Per Sederberg (Ohio State University)

- Good mnemonics are weird, perhaps a little gross, or embarrassing.
- Make them work for you









# Evolution of Digestion and

- Worm Digestion:
  - A simple system that works
  - Eat continually, liver produces bile continuously
- Human digestion:
  - A complex systems that works
  - We eat big meals, liver stores bile in the **GALL** bladder
- **Gall**: Mnemonic for ...



# Gall's Law

- "A complex system designed from scratch never works, and cannot be patched ... to make it work. You have to start ... with a working simple system."
  - *John Gall, M.D. 1975, General Systemantics*
- Every complex system that works has evolved from a simple system that works.
- Mnemonic: Graphic imagery, digestive system, and **GALL** bladders

# Mnemonic Tricks for Eponymous Principles

- Peter Burkholder *(he/him)*
- US Gov (Cloud.gov), Chef Software, ..., Research Labs
- Geophysicist

# The power of Eponymous Principles

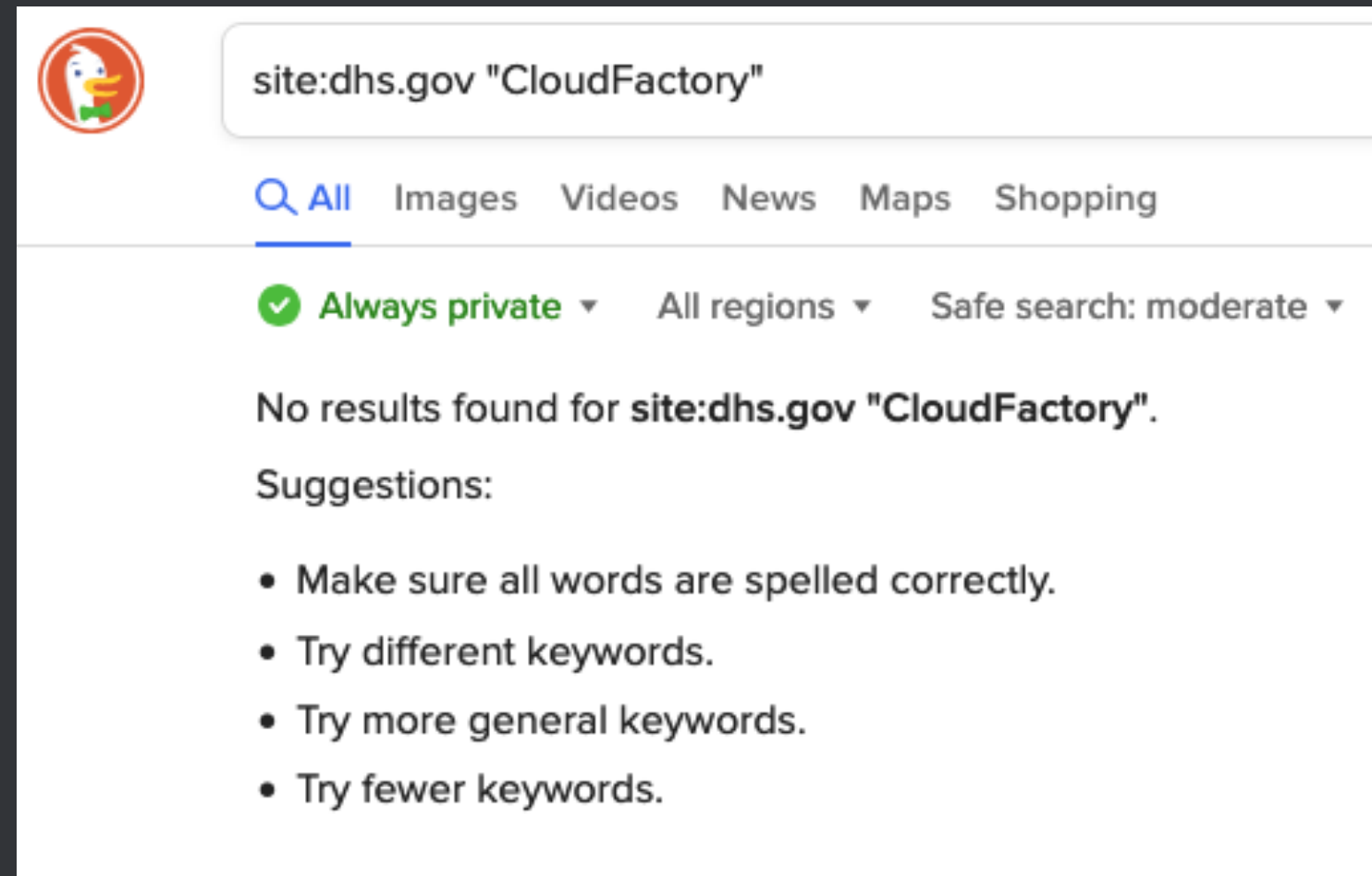
- Newton's Laws
  - Law of inertia, etc.
- Murphy's Law
  - Everything that can go wrong will
- Moore's Law
  - Compute power doubles every two years

# What makes for a good eponymous principle?

- True - with empirical evidence
- True - with weight of lived experience
- Predictive or explanatory value



# Speaking of predictive value...



# Conway's Law

"Organizations which design systems...are constrained to produce designs which are copies of the communication structures of these organizations"

- *Melvin Conway, 1968*
- Or: Your architecture will mirror your org chart
- *Mnemonic: We **CON**struct systems mirroring the **WAY** we communicate*
- Application: ... next slide ...

# The Inverse Conway Maneuver

- Build teams to achieve the desired architecture
- Tech: Used bounded contexts and APIs along team bounds
- Orgs: Consider *Team Topologies* (Skelton & Pais, 2019)

(image: Team Topology cover)

# Brooks Law

"Adding [engineers] to a late software project makes it later"

- *Fred Brooks, 1975, The Mythical Man Month*
- Mnemonic: The **BROOK** went over the waterfall
- Why: onboarding time + geometrical growth in communication lines



# Javelins Paradox

As the throwing rate of javelineers in ancient Roman armies doubled they went from  $\frac{1}{5}$  of a brigade to  $\frac{1}{3}$ .

One would expect the number to *decrease* because the same number would already throw TWICE as many.

# Jevons' Paradox

As the cost of economically useful commodity decreases, total expenditure on the commodity grows

- *William Stanley Jevons, 1865*
- Mnemonic: Something to do with ancient javelineers
- Examples:
  - 1860s: Coal
  - 1970s: Automobile fuel efficiency
  - 2010s: Cloud spend
- See also: Moore's Law

# Pareto Principle

"the vital few and the useful many" (or the 80/20) rule

- *Joseph Juran, inspired by Vilifredo Pareto, 1941*
- Mnemonic: *(under construction)*
- 80% of a project is complete in 20% of the time
- Validity: Power-law distribution in process variation
  - *or a Pareto Distribution*

# Pareto Principle (2)

"In the last six months, we've been able to meet the needs of one-half of our users. We can meet the needs of the other half in another six months"

- Can you spot the problem here?



# Meme Laws

- ~~True – with empirical evidence~~
- ~~True – with weight of lived experience~~
- Feel true
- ~~Predictive or explanatory value~~
- Build Community

# Godwin's Law

- As an online discussion grows longer, the probability it will involve Nazis approaches 1  
  . \* *Mike Godwin, 1980*
- In online discussions, **Go(o)d** never **Wins**



**Mike Godwin** ✓

@sfmnemonic

Replying to [@DownTwist](#) [@Jamie\\_Foxworthy](#) and 5 others

If you think comparing me to Hitler works, you must be new to the internet.

9:31 AM · Aug 12, 2019 · [TweetDeck](#)

# Meme Laws

- Cunningham's Law
  - "The best way to get the right answer on the internet is not to ask a question; it's to post the wrong answer."
  - *Ward Cunningham*
  - Mnemonic: Knowledge is COMING HOME when you post the wrong answer
- Hofstadter's Law
  - "It always takes longer than you expect, even when you take into account Hofstadter's Law."
  - *Douglas Hofstadter, 1979* (image: GEB cover)
  - Mnemonic: **Ha! Later...**



# Whong's Law

"Every government agency, everywhere is working on a "new system"; It will solve all of their data problems and will be ready to use in 18-24 months."

- *Chris Whong, 2018*
- Mnemonic: Data throng done long? Wrong, says Whong.
- See also: Gall's Law, Pareto Principle

# Quiz Time

# What law explains this?

To meet the specified contract deadlines,  
we've added a DevOps team. But now we're further behind schedule!

Answer:

- Brooks's Law
- Whong's Law
- Conway's Law
-

# What law explains this?

To meet the specified contract deadlines,  
we've added a DevOps team. But now we're further behind schedule.

Answer:

- **Brooks's Law**
- ~~Whong's Law~~
- ~~Conway's Law~~
- Mnemonic: The **BROOK** goes over the waterfall

# Fill in the blank

We have five teams assigned to a system that only has three major components. Time to apply an Inverse \_\_\_\_\_ Maneuver so we don't end up with five subsystems.



# Answer: CONWAY

We have five teams assigned to a system that only has three major components. Time to apply an Inverse **Conway** Maneuver so we don't end up with five subsystems.

- We CONstruct systems the same WAY we're organized

# Fill in the blank

This proposed architecture is too complex. We'll have to start with a simpler initial *working* solution, otherwise we're doomed by \_\_\_\_\_ Law.

# Answer: Gall's Law

This proposed architecture is too complex. We'll have to start with a simpler initial *working* solution, otherwise we're doomed by **Gall's Law**.

- 🍌 architecture -> digestion -> evolution -> Gall bladder


# Fill in the blank

We've met the needs of 80% of our users in two sprints, so by the \_\_\_\_\_ we'll need another \_\_\_\_\_ sprints for the other 20%.

# Answer

We've met the needs of 80% of our users in two sprints, so by **Pareto Principle** we'll need another **eight** sprints for the other 20%.



**Heather Battaglia (18F) (DEN)**  Nov

27th at 6:26 PM

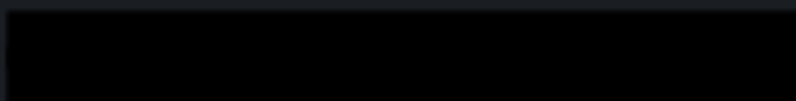
why is it that no matter how realistic I  
try to be with my time estimates,  
everything is always at least double  
the time I think it is

3 replies




**James Tranovich (18F - SF - he/him)**

13 days ago





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why is it that no matter how realistic I try to be with my time estimates, everything is always at least double the time I think it is

3 replies



**James Tranovich (18F - SF - he/him)**

13 days ago

Hofstadter's law!





# Thank you

And laws to look forward to in a future version

- G.I. Joe Fallacy
- Dunning-Kruger Effect
- Goodhart's Law
- Hanlon's Razor
- Overton Window
- Metcalf's Law

# Resources

- This talk: <https://github.com/pburkholder/eponymous-principles>
- Laws of Software: <https://laws-of-software.com>