CS 428
Webster #2

Fall 2022

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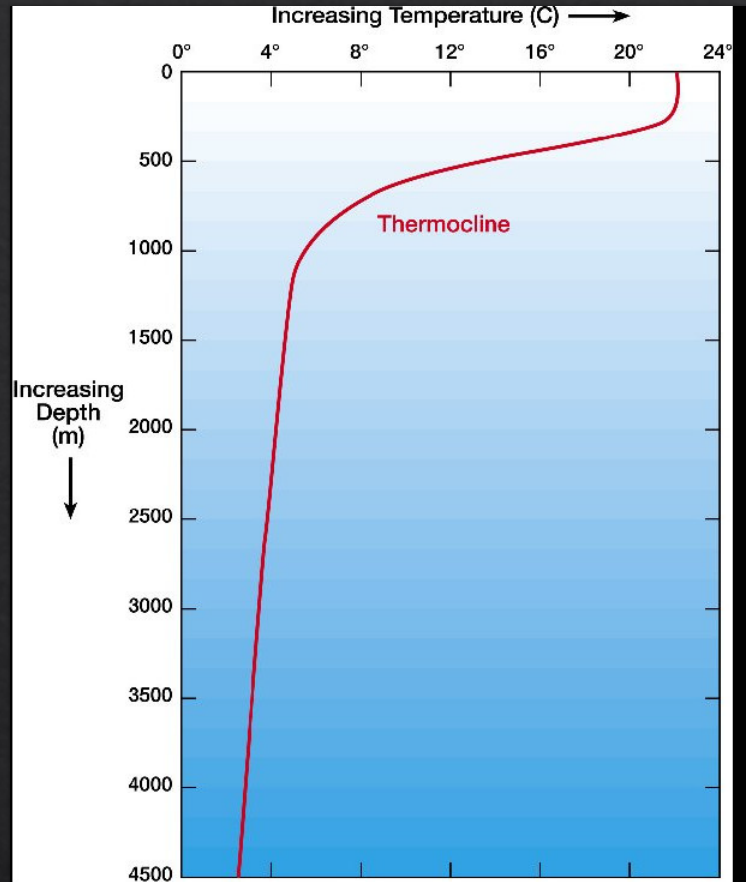
# WEB #6: The Thermocline of Truth (2008) [Link]

- ◈ A line drawn across the organizational chart that represents a barrier to accurate information regarding the project's progress

  - ◇ Those below this level tend to know how well the project is actually going

  - ◇ Those above it tend to have a more optimistic (if unrealistic) view

- ◈ Why does it form?

  - ◇ Lack of true metrics (objective, automated, predictive) on project status

  - ◇ Excessive optimism on part of engineers

  - ◇ Self-protection on the part of managers going up the chain

  - ◇ Top management tends to reward good news and punish bad news

The Thermocline of Truth (cont.)

- ◈ Consequence: as the deadline draws near, the actual project status tends to move upward in the management chain
  - ◇ Hence the classic "slip the project schedule three weeks before delivery" pattern
- ◈ How to avoid it
  - ◇ Honesty and outspokenness on the part of engineers and managers
  - ◇ Rewarding that honesty
  - ◇ Upper management actively seeking out from lower levels realistic feedback on project
  - ◇ Avoiding the temptation of the "quick fix to ship"

The Thermocline of Truth (cont.)

◇ Experience reviewing massive ($500M) failing IT project at Fortune 50 corporation
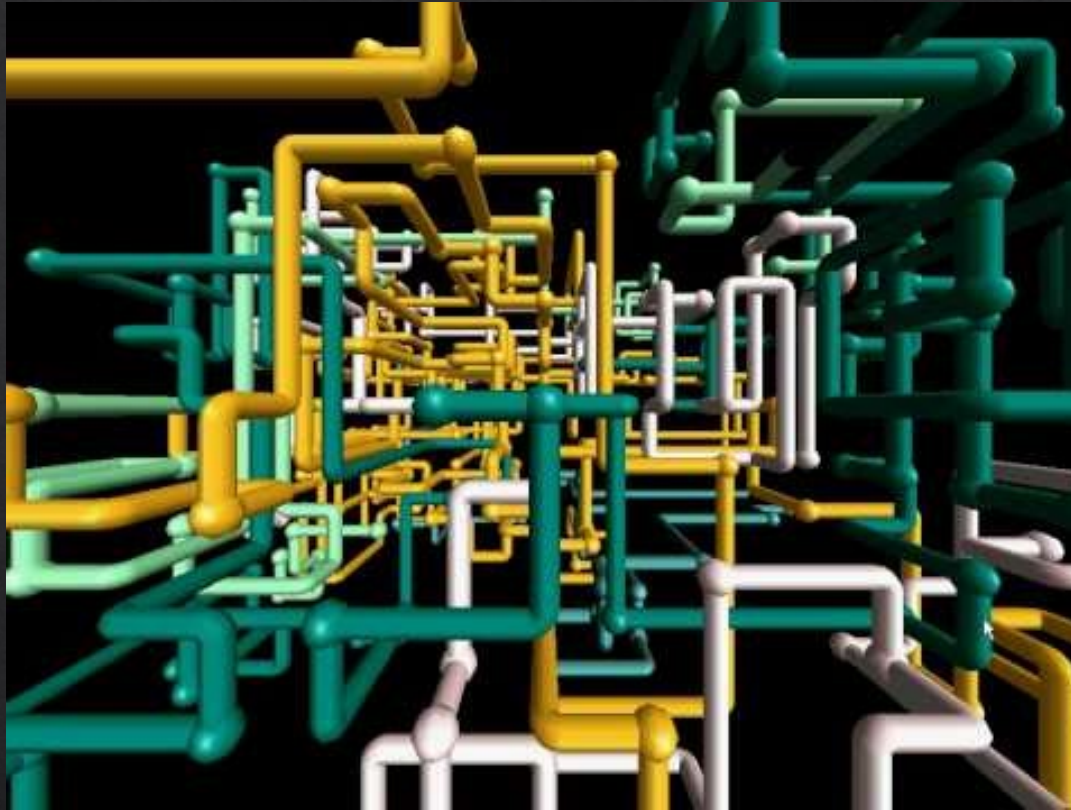
"Remember Conways Law" (2013) [Link]

- Coined by Fred Brooks in *The Mythical Man-Month*:

  - Any organization that designs a system (defined broadly) will produce a design whose structure is a copy of the organization's communication structure.

- Put simply, **architecture tends to follow organization**, not the other way around

- Thus, you need to **make sure your organization reflects your anticipated architecture** (hint: **you may end up revising your org charts**)

- Observations and experience?

"Remember Conway's Law" (cont.)

- Temptation: the appearance (illusion, really) of progress
  - Prototyping user interface
  - Use of third-party libraries, engines, utilities
  - Getting important modules to "80% completion" and then moving on
- Finishing that last 10-20% is where things drag on forever
  - All the hardest problems have been deferred to the end
  - Can find yourself in "solution deadlock" among remaining hard problems
- Solution: courage to actively identify and tackle hardest problems first
  - Initial progress will be slow, but you will be more likely to be able to predict completion

Do not Defer the Difficult in IT Projects (Baseline, 2008)
[Link]