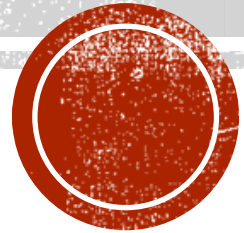
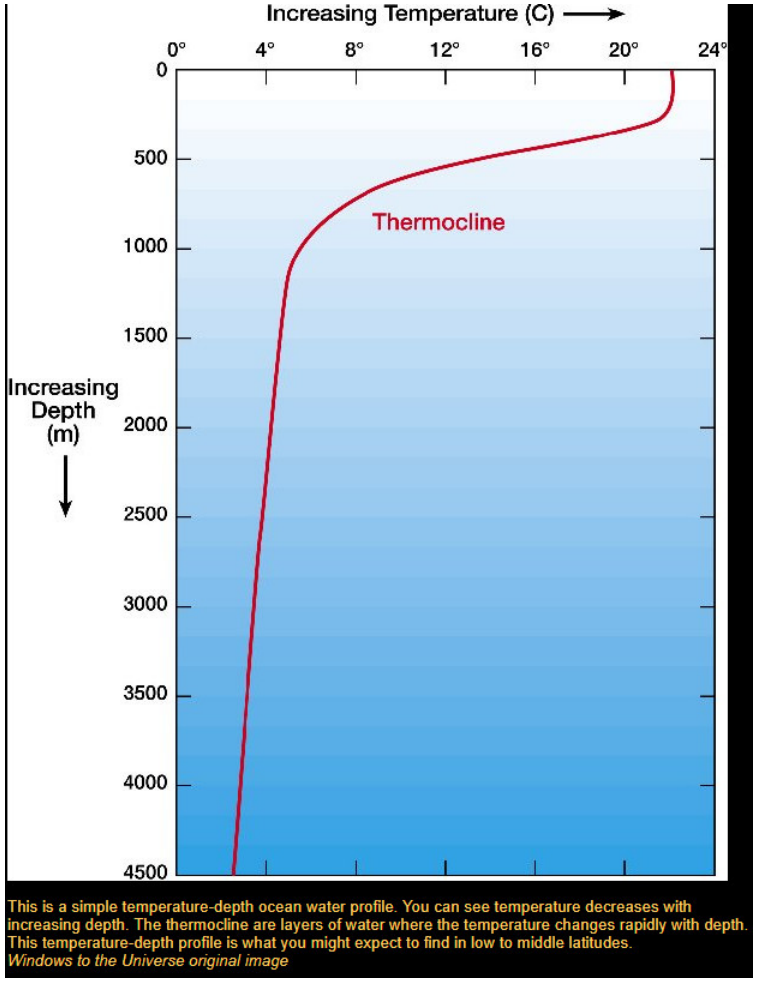
CS 428 WEBSTER #2



Fall 2021

Bruce F. Webster



WEB #6: THE THERMOCLINE OF TRUTH (2008) [LINK]

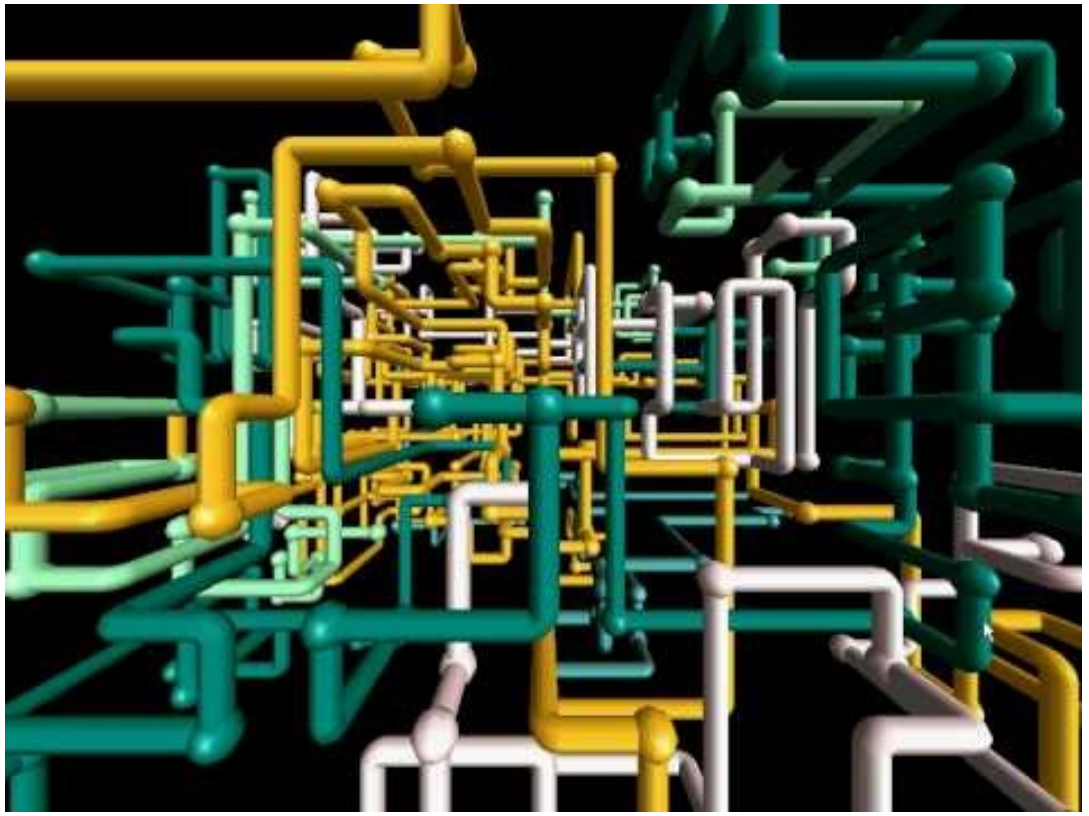
- A line drawn across the organizational chart that represents a barrier to accurate information regarding the project's progress
  - Those below this level tend to know how well the project is actually going
  - Those above it tend to have a more optimistic (if unrealistic) view
- Why does it form?
  - 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]

"REMEMBER CONWAY'S LAW" (CONT.)

- 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?

- 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]