

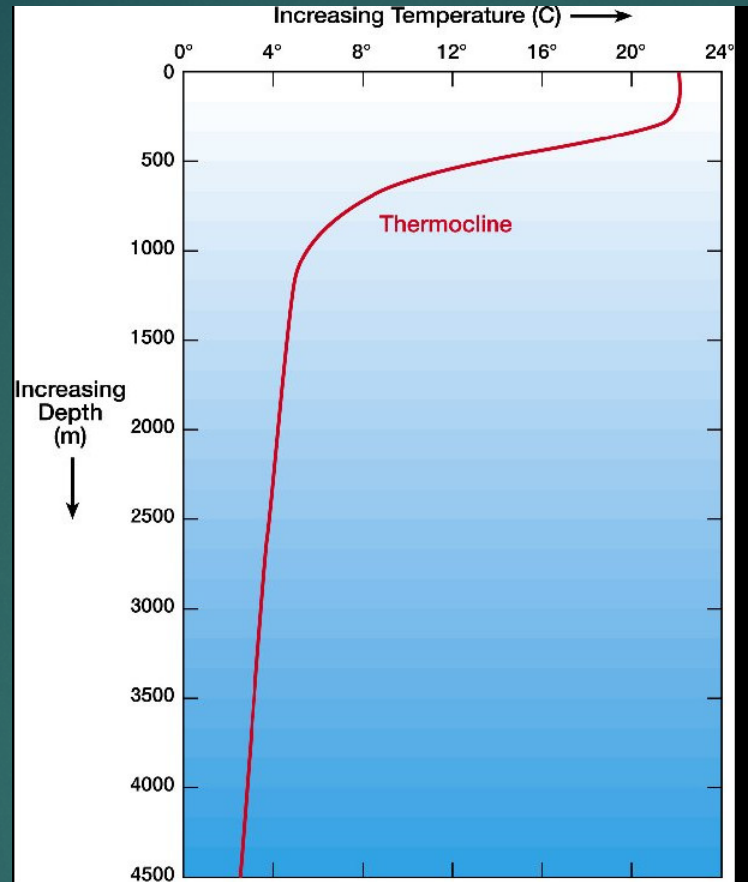


CS 428

Webster #2

WINTER 2023

BRUCE F. WEBSTER



This is a simple temperature-depth ocean water profile. You can see temperature decreases with increasing depth. The thermocline are layers of water where the temperature changes rapidly with depth. This temperature-depth profile is what you might expect to find in low to middle latitudes.
Windows to the Universe original image

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

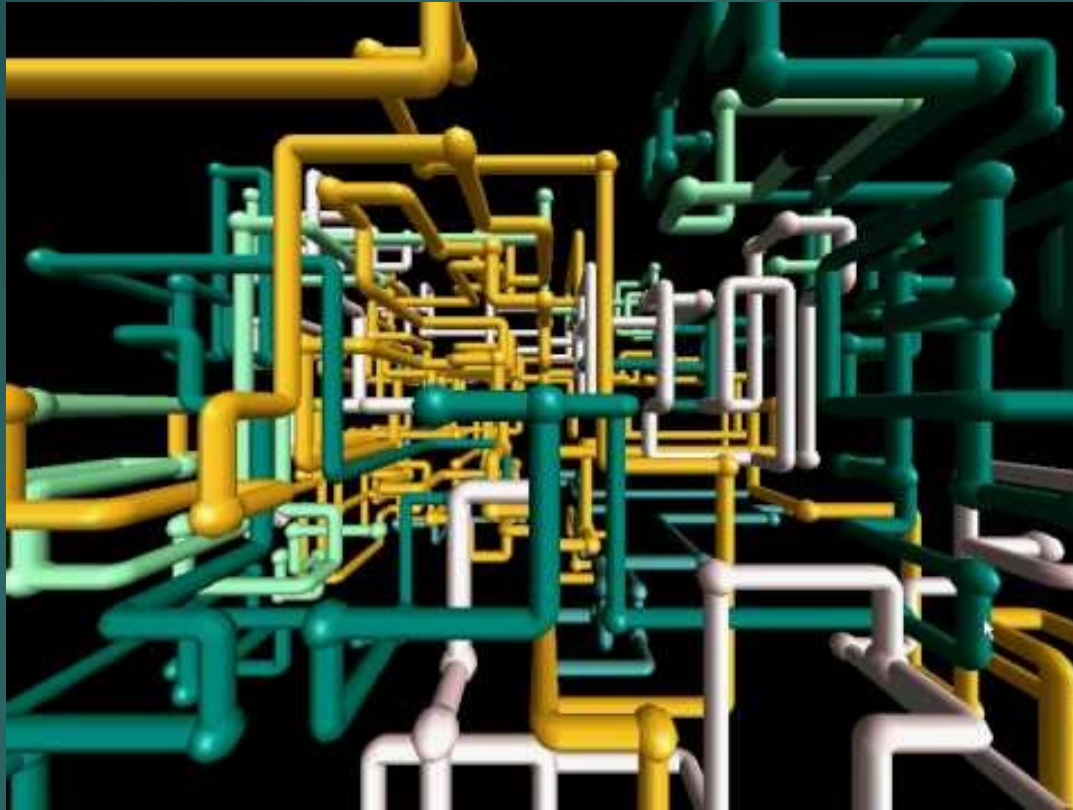
- ▶ A line drawn across the organizational chart that represents a barrier to accurate information regarding the project's progress
 - ▶ Those below this level tend to know how well the project is actually going
 - ▶ Those above it tend to have a more optimistic (if unrealistic) view
- ▶ Why does it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