CS 428
THE MYTHICAL MAN-MONTH
Chapters 4, 7, 11, 14

Fall 2018

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Ch 4: Aristocracy, democracy, and system design

◈ Brooks: conceptual integrity is *the* most important consideration in system design (I agree)

◈ Simplicity, straightforwardness, unity of design are necessary

◈ The design must proceed from one mind or a very small number of agreeing resonant minds

◈ The conceptual integrity of a system determines its ease of use

◈ A consistent architecture enhances the creative style of implementers

◈ A well-thought-out architecture increases the robustness and adaptability of the resulting software system

◈ Your observations/experience?

Ch 7: Why Did the Tower of Babel Fail?

- What they did have:
  - A clear mission
  - Manpower
  - Materials
  - Time
  - Technology
- What they lacked?
  - Communication
  - And, as a consequence, organization
- Your observations/experience?

Ch 7: continued

◈ Project workbook: replaced today by online organization (e.g., your project wiki/repo)

◈ Communication challenge: with n workers on a project, there are $(n^2-n)/2$ possible interfaces and 2^n possible sets of workers

◈ Solution: Division of labor / specialization of function

◈ Key: project manager and chief architect need to be different people

  ◇ Their priorities conflict

  ◇ Chief architect will tend to be overly optimistic

Ch 11: Plan to throw one away

◈ As with "second system effect", Brooks feels his comments here are superseded by use of iterative/incremental software development

◈ Still, far too often, "pilot" or "prototype" systems are forced to evolve into production systems

◈ Only after your first cut do you often see how you should have done it in the first place

◈ What has been your observation/experience?

Ch 11: Continued

- Plan the organization for change
  - Still a very real issue: lack of technical advancement track in most organizations
  - Instead, developers are pushed into management if they want to be promoted
- Two steps forward and one step back
  - Most 'maintenance' work involved adding new features
  - Introduces software entropy (or, if you prefer, software rot)
  - Production systems that are modified become less stable/reliable over time
  - "Less effort is spent on fixing original design flaws; more is spent on fixing flaws introduced by earlier fixes"
- Your observations/experience?

Chapter 14: Hatching a Catastrophe

- "How does a project get to be a year late? One day at a time."

- Milestones must be concrete, specific, measurable events

  - The myth of the "Oh, we're about XX% done" statement

  - 90/90 rule: 90% of the project takes the first 90% of the schedule; the remaining 10% of the project takes the other 90% of the schedule.

- The "three weeks before deadline" rule:

  - "*Underestimates* [of project schedule] do not change significantly during the activity until about three weeks before the scheduled completion."

- Need for a critical-path schedule (e.g., PERT) to show the critical path

- Observations?

CH 14: Continued

- Not being willing to pass bad news uphill
    - Webster: The Thermocline of Truth (2008)
- Not knowing the news is bad
    - Webster: Lies, Damned Lines, and Metrics (parts I through III) (2008)
    - Project progress metrics need to be objective, repeatable, and informative
    - Weinberg's Law of Metrics: That which gets measured gets fudged.
    - The Metric Law of Least Resistance: "The more human effort required to calculate a metric, the less often (and less accurately) it will be calculated, until it is abandoned or ignored altogether."
- Thoughts and observations?

Assignments for next class (10/1)

- By midnight on Saturday (9/29)
  - Watch one podcast w/associated reading (if any)
  - Create and post on team wiki org chart and roles/responsibilities
  - Submit first team status report, with billable hours
    - Email to me (bwebster@bfwa.com) and Tanner (tanneryorgason@gmail.com)
- By start of next class period (10/1):
  - Read *The Mythical Man-Month*, chapters 16-19
  - Webster #1 (if you haven't already) and Webster #2 (both online)