# CS 428
The Last Lecture

Winter 2021

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People matter most

- A small talented team is always better than a large less-talented team and is often better than a large talented team.

- Hire in haste, repent at leisure: it is better to be short-handed than to fill a slot with someone who will not add to the team or the project. Take your time in adding team members.

- Embrace mistakes, ignorance, shortcomings, of yourself and the other team members – grow together and help each other out.

- Take the time to understand each other's personal and professional goals, and then align the team goals to achieve those.

- Invest in team members: courses, seminars, conferences, books.

Process is not a panacea or a crutch or a silver bullet

- Methodologies only work as well as the people using them.

- Any methodology can be distorted to give the answer that upper management wants (instead of reality).

- When adopting a new methodology:

  - Do one or two pilot projects.

  - Do one non-critical real-world project.

  - Then, and only then, consider using it for a critical project.

- Understand the strengths and weaknesses of a given methodology before starting a project with it. Also, make sure a majority of team members have successfully completed a real-world project using that methodology.
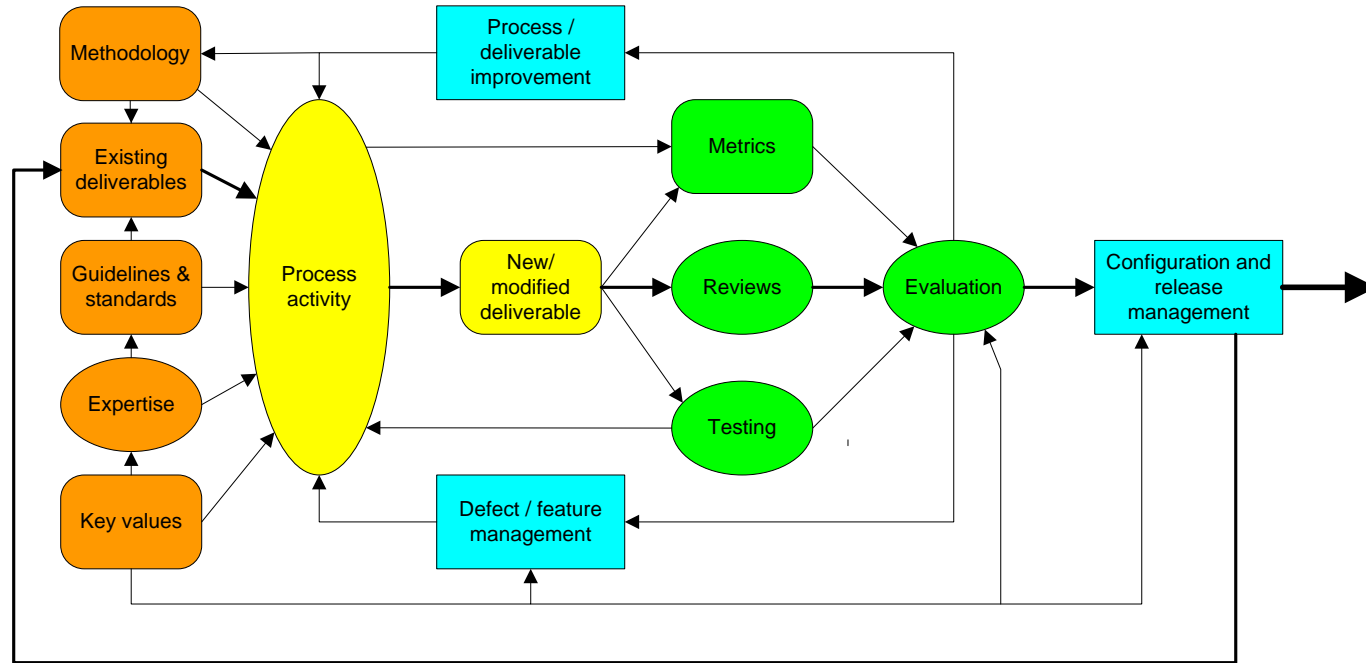
- A poor approach to SQA is a major factor in most failed projects.

- Weinberg: "Testing starts at project conception, or before."

Ignore or minimize software quality assurance at your peril

Be on the lookout for organizational dysfunctions

- The Thermocline of Truth: only good news moves up to the top.

- The Dead Sea Effect: great people will leave a frustrating environment.

- The Seven Deadly Sins

  - "Indeed, when asked why so many IT projects go wrong in spite of all we know, one could simply cite the seven deadly sins: avarice, sloth, envy, gluttony, wrath, lust, and pride. It is as good an answer as any and more accurate than most."
    -- me, testifying before Congress, 1998

- The Resistance to Change

  - And it ought to be remembered that there is nothing more difficult to take in hand, more perilous to conduct, or more uncertain in its success, than to take the lead in the introduction of a new order of things. Because the innovator has for enemies all those who have done well under the old conditions and lukewarm defenders in those who may do well under the new.
    -- Machiavelli, *The Prince*, Chapter VI

Reminder (from *Accelerate*)

Pathological (power-oriented)	Bureaucratic (rule-oriented)	Generative (performance)
Low cooperation	Modest cooperation	High cooperation
Messengers "shot"	Messengers neglected	Messengers trained
Responsibilities shirked	Narrow responsibilities	Risks are shared
Bridging discouraged	Bridging tolerated	Bridging encouraged
Failure leads to scapegoating	Failure leads to justice	Failure leads to inquiry
Novelty crushed	Novelty leads to problems	Novelty implemented

- "In architecting a new program all the important mistakes are made in the first day." – Spinrad (1998)

- "Start out stupid and work up from there." – Bruce Henderson (1990)

- "Whenever anyone tries to do something *for* you, they usually end up doing it *to* you." – Ashton's Law (Alan Ashton, 1974)

- "People hate change." – DeMarco & Lister (1998)

- "Take no small slips." – Brooks (1975)

- "How does a project get to be a year late? One day at a time." – Brooks (1975)

- "To effect change in an organization, you must go into work every day prepared to be fired." – Unknown, 1996 or so.

Maxims to remember

- Feedback on your experience on your team project & in CS 428
  - What went well
  - What didn't go well
  - What you would do differently if you were starting the semester over
  - What lessons you will take into your next software project
  - What feedback do you have for CS 428 (and me)
  - Answers don't need to be long
- Deliverable #10 (in LearningSuite) – set up as an exam (3% of grade)
- Due by midnight on Saturday (4/17)

Final Individual Assignment: Post-Mortem (Deliverable #10)

Final stuff

- It has been a joy and a pleasure to go through this class with you.

- Best of luck in whatever the future holds.

- You can all now call me "Bruce"

- You can always find me via Google (Bruce F. Webster), LinkedIn (ditto), or Steam (Fritzworth). Feel free to connect with me on the last two.