CMMI & Agile
Does it Work?

CMMI Quick Review 1/2

- CMMI collection of practices to improve performance

- Two main views (representations):

  - Staged - Shows all Process Areas (roadmap) allowing organizations to focus on basic improvements before advanced topics

  - Continuous - a la carte representation of processes

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CMMI Quick Review 2/2

- Level 2 - Change and project management

- Level 3 - Engineering skills, advanced project management, and organizational elaerning

- Levels 4/5 - Use of statistics to improve the organization's performance by statistically controlling selected processes and **reducing variation.**

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Agile & CMMI

- CMMI - Process improvement approach
- Guides process through entire org
  - Overly bureaucratic - Process over praxis?
  - Classical engineering approach - Problem?
  - Great for peer reviews / version control
- CMMI criticizes Agile for not enough control in undocumented changes…
- CMMI is all about objective evidence, often in the form of heavy documentation
  - Appraisals, qual/quant info, records, statements of

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Agile with CMMI?

- Agile + CMMI < 3 Maturity - Not enough stability in environment thus success is more on institutional knowledge, competence, and heroics of people

- Agile + CMMI > 3 Maturity - Standardized processes are in place already and often control routines.

  - SEI acknowledges Agile practices within CMMI Maturity Levels
  - Often it is less about process, and more about the rigidity of culture

SEI (Software Engineering Institute - http://www.sei.cmu.edu/cmmi/

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Agile in CMMI Levels

- Software Project Planning
  - Waves of functionality - Clear targets
- Software Project Tracking and Oversight
  - Information radiators
- Requirements Management
  - Traceability to requirements documentation from user stories - Linking dev to design, build, test efforts
- Quality Assurance
  - TDD and continuous integration - Use tools, automate,

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CMMI +/-

- CMMI great for engineering type projects
  - Building a satellite, or a missile, or a bridge.
  - Controlling massive amounts of sensitive data
- CMMI not-so-great at evolutionary system changes
  - Newer products/technology, modularization of systems
  - Evolutionary development and emergent design

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Really?

- Agile + CMMI < L3 - Yes. - Lightweight enough
- Agile + CMMI > L3 - Yes… but very hard…
  - Intrusion of documentation into development process over-formalizes Agile disciplines
  - Risk management? - Agile doesn't address this.
  - CMMI assumes requirements can be known a priori… Agile assumes they cannot.
  - Reduction of statistical variation is hard - lots of define control

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