CS 428
Accelerate, Chs 7-11

Fall 2018

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Chapter 7: Management Practices for Software

◈ Focus on Lean Management practices

  ◇ Lean Management => Westrum Org / Delivery Performance / Less Burnout

◈ Combination of limiting Work in Progress (WIP) *and* Visual Management is critical

  ◇ Limit WIP: take small bites, not big ones

  ◇ Visual Management: physical and/or digital dashboards to show key metrics and work status

◈ Implement lightweight change management process

  ◇ Compared four approaches (all external, high-risk external, peer review, none)

  ◇ Highest delivery performance: peer review or none

  ◇ "Use a lightweight change approval process based on peer review, such as pair programming or intrateam code review, combined with a deployment pipeline to detect and reject bad changes"

    ◇ Me: that last item sounds like a bit of hand-waving – unclear how it works in two-party setting

Chapter 8: (Lean) Product Development

- ◈ Work in Small Batches (less than a week)
  - ◇ Allow experimentation, A/B testing, fast failure/discovery
- ◈ Make Flow of Work Visible
  - ◇ Path from development team to customer (in production)
  - ◇ Status of products and features
- ◈ Gather & Implement Customer Feedback
  - ◇ Actively seek, evaluate, incorporate customer feedback, including in early stages
- ◈ Team Experimentation
  - ◇ Allow teams to try new ideas, update specifications w/out outside approval
  - ◇ BUT: must be combined with above practices to avoid going off on their own

Chapter 9: Making Work Sustainable

◈ Where code deployments are most painful => poorest software delivery performance, organizational performance, culture

◈ Detecting deployment pain:

  ◇ Are deployments feared?

  ◇ Are deployments disruptive to work?

◈ To reduce deployment pain, build systems that:

  ◇ Are designed to be deployed easily into multiple environments

  ◇ Can detect and tolerate failures in their environments

  ◇ Can have various components of the systems updated independently (loose coupling)

  ◇ Also: ensure state of production systems can be reproduced automatically from version control

  ◇ And: build intelligence into the app & platform so that deployment is simple as possible

Chapter 9 (cont.)

- Burnout: "physical, mental, or emotional exhaustion caused by overwork or stress"
  - Work overload: job demands exceed human limits
  - Lack of control: inability to influence decisions that affect your job
  - Insufficient rewards: financial, institutional, social
  - Breakdown of community: unsupportive work environment
  - Absence of fairness in decision-making process
  - Value conflict between organization and individual

Chapter 9 (cont.)

- How to fight/reduce burnout
  - Improve organizational culture (generative rather than bureaucratic or pathological)
  - Reduce or eliminate deployment pain
  - Hire and empower effective leaders
  - Invest in best practices wisely (including training and pilot projects for developments)
  - Adopt changes to improve organizational performance
- Continuous Delivery + Lean Practices => Less Deployment Pain + Less Burnout

Chapter 10: Employee Satisfaction, etc.

◈ Employee loyalty: measured using variant of Net Promoter Score (NPS)

   ◈ Would you recommend your ORGANIZATION as a place to work to a friend or colleague?

   ◈ Would you recommend your TEAM as a place to work to a friend or colleague?

   ◈ Employee NPS correlates with:

      ◈ Collection and use customer feedback in design of products & features

      ◈ Ability of team to visual and understand flow of products & features from development to customers

      ◈ Alignment of individual goals and values with organizational goals and values

◈ Bottom line: loyalty is a two-way street.

Chapter 10: (cont)

◇ Changing organizational culture and identity

  ◇ "People are an organization's greatest asset – yet so often they're treated like expendable resources."

  ◇ "When leaders invest in their people and enable them to do their best work, employees identify more strongly with the organization and are willing to go the extra mile to help it be successful."

  ◇ Continuous Deliver + Lean Practices => Improved Identity, Job Satisfaction => Organizational Performance

◇ Diversity in Tech

  ◇ More reporting than actual research and root analysis

  ◇ BUT: "Women are leaving tech at a 45% higher rate than men, and the outlook for minorities is likely similar." (No cite or research for latter assertion)

  ◇ That said: there is no place for sexism, racism, or other forms of intolerance.

Chapter 11: Leaders and Managers

◇ Transformational Leadership: "inspiring and motivating followers to achieve higher performance by appealing to their values and sense of purpose, [thus] facilitating wide-scale organizational change."

  ◇ Vision

  ◇ Inspirational communication

  ◇ Intellectual stimulation

  ◇ Supportive leadership

  ◇ Personal recognition

◇ BUT: "leaders cannot achieve goals on their own. They need their teams executing their work on a suitable architecture, with good technical practices, use of Lean principles, and all the other factors we've studied over the years."

◇ A great leader cannot guarantee success, but a bad one can almost certainly guarantee failure.

Chapter 11 (cont.)

◈ The role of managers

   ◇ Ensure existing resources are made available/accessible to everyone

   ◇ Create space and opportunities for learning and improving

   ◇ Establish a dedicated training budget and let employees decide what to learn

   ◇ Encourage staff to attend tech conferences

   ◇ Set up internal hack days, allowing cross-functional teams to work on a project

   ◇ Encourage teams to organize internal 'yak' days to work on technical debt

   ◇ Hold regular internal DevOps mini-conferences

   ◇ Give staff dedicated time (+budget, infrastructure) to experiment with new tools, technologies

Chapter 11 (cont.)

- ◈ Enable cross-functional collaboration
  - ◇ Build trust with counterparts on other teams
  - ◇ Encourage practitioners to move between departments
  - ◇ Actively seek, encourage, and reward work that facilitates collaboration
- ◈ Create a climate of learning
  - ◇ Create a training budget and advocate for it internally
  - ◇ Ensure your team has resources to engage in informal learning and space to explore ideas
  - ◇ Make it safe to fail (and fail quickly)
  - ◇ Create opportunities and spaces to share information
  - ◇ Encourage sharing and innovation by having demo days and forums
- ◈ Make effective use of tools
  - ◇ Make sure your team can choose their tools
  - ◇ Make monitoring (infrastructure, app, environment) a priority

Midterm next week (11/19)

- By midnight on Saturday (11/17)
  - Submit your latest status report
  - Watch one podcast
- Midterm (11/19)
  - Will open at 12:05 am MST and close at 11:59 pm MST
  - 3-hours timed, so be sure you have that time cleared before you start
- Reminders
  - Nothing due over Thanksgiving weekend (no podcast, no status report, no readings, etc.)
  - See you on the 26th!