

Applying Lean Thinking and Kanban to Software Development and Support

A two-day training course

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Version 2

Day 1 Morning: Introduction to Lean Thinking

Class Logistics

- Session timings and breaks
- Location of facilities
- No PDAs, cell phones, etc.

Who are you?

- Determine roles, interests, and existing level of knowledge of the group
- Develop list of key goals participants have for the class

Lean Principles

- Define value
- Map the value stream
- Create flow
- Establish pull
- Aim for perfection

What is value?

- Different stakeholders
- Different forms of value

What is flow?

- Theory of Constraints
- Every process has a constraint
- Using WIP limits to promote flow
- Drum-Buffer-Rope
- Lean process improvement: The Five Focusing Steps

What is waste?

- The seven deadly wastes and how they relate to software development

Applying Lean Thinking and Kanban to Software Development and Support (2-day course)

- Waiting
- Inventory
- Overprocessing
- Transport
- Motion
- Defects
- The eighth waste: Lost human potential

Priorities

- Focus on value creation
- Maintain flow
- Eliminate waste

Day 1 Afternoon: Mapping Your Value Stream

- Introduction: Example
- Participants map their own value stream(s)
- Debrief
- Refining the value stream maps

Day 2 Morning: Kanban Board Layout and Mechanics

Pull Systems

- Visual management and signaling
- Kanban as a signaling system in a manufacturing environment
- Pull in the context of software development and support
- Hybrid push-pull systems
- Software development is a portion of a larger value stream

Kanban Boards

- From value stream map to kanban board
- Basic layout: Tracking progress
- What's the signal that drives pull?

A Little More Lean Thinking

- Batch sizes
- Too much WIP
- Effect of context switching
- Utilization thinking vs. throughput thinking
- Local optimization vs. global optimization

Getting Real with Kanban

- Classes of service
- Handling urgent work items
- Handling multiple work streams
- Depicting back-flows
- Depicting dependencies

Day 2 Afternoon: Completing the Big Picture

Metrics

- Basic Lean Metrics: Lead Time, Cycle Time, Queue Depth
- Cumulative Flow Diagram
- Detecting the seven deadly wastes
- Understanding process effectiveness
- Applying the Five Focusing Steps

Kanban in Context

- Kanban at the team level – project work (e.g., application development)
- Kanban at the team level – continuous work (e.g., production support)
- Kanban combined with traditional SDLC processes
- Kanban combined with iterative agile processes
- A Lean-style daily stand-up: It's not about the “three questions”

Kanban at Scale

- Strategic planning, portfolio management, and multi-level kanban
- Metrics roll-up and dashboards

Wrap-up

- Did we achieve the goals we listed at the start of the class?
- What are next steps for participants to take the new information forward?
- Suggestions to improve the course