4/16

Agile is a cultural change for company who ready to empower their team to make decision faster

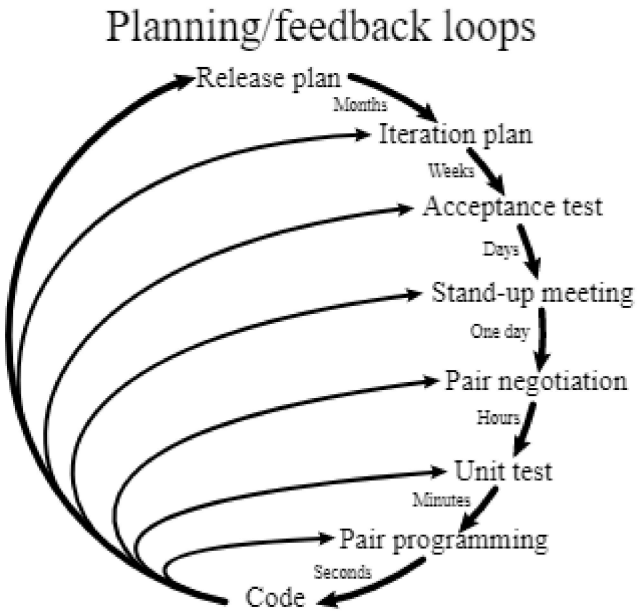
Learning apply agile into your company's business plan

What is Agile? Agile is an interactive approach to project management that helps team be responsive and deliver value to their customer faster

Agile defining characteristics are adaptive planning, evolutionary development, early delivery, continual improvement, responsiveness to change. Use small, co-located, cross-functional,self-organizing teams to build what is needed. Not what was planned.

Traditional waterfall development : document all the customer requirements, then design, then code, then integration then test then deploy

Extreme Programming (xp) Kent Beck introduced



Simplicity
Communication
Feedback
Respect
Courage

Core principles of **Kanban**

- Visualized the workflow
- Limit work in progress
- Manage and enhance the flow
- Make process policies
- Continuously improve

Working agile

- Working in **small batches**
- Minimum Viable Product (**MVP**)
- Behavior Driven Development (**BDD**)
- Test Driven Development (**TDD**)
- **Pair programming**

MVP is the cheapest/easiest thing you can build to start testing your value hypothesis and learning, **it is about learning** by each mvp and decide whether we want to continue or pivot

BDD describes the behavior of the system from the outside in, used for integration testing.

TDD tests the function of the system from the inside out. Test cases drive the design.
Red Grean Refactor

Pair programming

Summary

- Agile is an iterative approach to software development that emphasizes flexibility, interactivity, and transparency using small, cross-functional teams
- The Agile Manifesto describes the core values of Agile:

  - Individuals and interactions over processes and tools

  - Working software over comprehensive documentation

  - Customer collaboration over contract negotiation

  - Responding to change over following a plan
- The waterfall approach is a structured, step-by-step process that can lead to problems not surfaced until later in development
- Extreme Programming (XP) advocated an iterative approach that valued simplicity, communication, feedback, respect, and courage
- A Kanban system is characterized by visualizing workflow, limiting work in progress, managing and enhancing flow, making process policies explicit, and continuously improving a process
- Working in small batches means delivering something useful quickly
- An MVP is the cheapest/easiest thing you can do to test a hypothesis and learn
- Behavior Driven Development makes sure you are building the right thing
- Test Driven Development makes sure you are building the thing right
- Pair programming enables you to discover defects earlier and increase your code quality
- The Gherkin syntax, which comes from a company called Cucumber, is a single syntax that developers and stakeholders can understand: given some set of preconditions, when an event occurs, then some outcome is observed.

Scrum Overview

Agile is a philosophy and **scrum is methodology**
Scrum is

- a **management framework** for incremental product development
- prescribes a **small**, cross-functional, self-organized team**.**
- Provides a **structure of** roles meetings, rules and artifacts
- Uses fixed-length iterations called **sprints**
- Has a goal to build a potentially **shippable product**

Sprint

Cycle through design code test deploy,
every sprint should have a goal
and usually 2 weeks in duration

Scrum roles

Product owner (can be project manager or not) make decision, represent the stakeholder's interests

Scrum master facilitates the scrum process, coach the team and create environment to allow the team to be self organized

Scrum team, delivering product

Scrum artifacts

Product backlog
Sprint backlog
Done increment

Scrum events

Sprint planning meeting
Daily scrum meeting
Sprint
Sprint review
Sprint retrospective

Scrum VS Kanban
Fixed length sprint / continuous flow
End of each sprint / continuous delivery
Velocity / Cycle time
Team should strive to not make changes to the sprint / Change happens anytime

Summary

- Scrum is a methodology that follows the Agile philosophy
- The Scrum management framework:

  - Provides structure through defined roles, meetings, rules, and artifacts

  - Prescribes small, cross-functional, self-organizing teams

  - Uses fixed-length iterations called sprints

  - Produces a potentially shippable product increment with every iteration

    - The product owner represents stakeholders, articulates the product vision, and decides priorities, requirements, and readiness to ship

    - The scrum master coaches the team, promotes a cooperative environment, shields the team from interference, and unblocks impediments

    - The scrum team is small, dedicated, co-located, cross-functional, and self-managing

    - The scrum team negotiates commitments with the product owner — one sprint at a time

    - The scrum team has autonomy regarding how to reach commitments

    - Scrum produces a product backlog, a sprint backlog, and a completed — or done — increment

    - The Scrum events are sprint planning, daily Scrum meetings, sprints, sprint reviews, and sprint retrospectives

- If done well, Scrum can:

    - Increase employee productivity and happiness

    - Improve product quality

    - Reduce time to market

- Enhance stakeholder satisfaction

Plan Agile

Don't decide everything at the point when you know the least, plan for what you know, later adjust

Planning tool

Agile Tool will not make you agile, agile is a mindset ex **ZenHub**

New issue>Icebox>product backlog>sprint backlog>in progress> review/QA>done

Kanban board. Bunch of stick note (to do, doing, done)

Create good user story
Effectively using story points

Summary

- A user story documents a person requesting a function to achieve a goal.
- Using a template helps ensure that stories are complete.
- Defining "done" helps minimize misunderstandings.
- Use the INVEST acronym to remember the qualities of a good user story: independent, negotiable, valuable, estimable, small, and testable.
- Epics can be used to capture big ideas.
- Story points are a metric used to estimate the difficulty of implementing a given user story.
- Story points are relative, like T-Shirt sizes.
- You must agree on what "average" means.
- You should never equate story points with wall-clock time.
- A product backlog is a ranked list of all unimplemented stories.
- Stories high in the ranking should have more detail than those that are lower.
- Create stories using the "As a", "I need", "So that" template to ensure everyone understands who it benefits and the business value it provides.

The planning process

Backlog Refinement

Meet and what is the goal of it? Groom the backlog by ranking the stories in order of importance
Make sure the story contains enough information for a developer to start working on it

New issue>Icebox>product backlog>sprint backlog>in progress> review/QA>done

Workflow for daily Plan execution

Take the next highest priority item from the sprint backlog
Assign to yourself to yourself
Move it to process

Daily Stand up

Scrum master
Developement team
(optional) product owner

Answer 1. What did I accomplish the previous day?
2. What will I work on today?
3. What blockers or impediments are in my way?

Burndown Charts

Burndown charts can be used to measure your progress against a milestone

A measurement of story points completed vs. story points remaining for a sprint

Sprint review Meeting

Live demonstration of implemented stories
Feedback from stakeholder is critical for shaping the product

Sprint Retrospective Meeting

1.reflect on the sprint
2. Measure the health of sprint
3. Dev team should speak freely
4. Scrum master and dev team should attend

Q1 What went well?
Q2 What did not go well?
Q3 What do we want to change for the next sprint?

Measurements and Metrics

You can't improve what you can't measure

Vanity metric like 10000 hit is not a good indication
Actionable metrics use A/B split **-** test to deploy new feature to 50% of user

Top 4 ..Mean Lead Time - how long does it take from idea to production?
..Release Frequency - how often can you deliver changes?
..Change failure rate - how often do changes fail?
..Mean time to recovery (MTTR) - how quickly can you recover from failure?

For the next sprint

Do not move unfinished stories into the next sprint!
Give the developer credit for the work they did
This will keep your velocity more accurate
Write a new story for the remaining work
All stories assigned to the current sprint are closed
All unfinished stories are reassigned

Agile anti pattern

No real product owner
Teams are too large
Teams are not dedicated
Team are not self -managed

Summary

- High performing teams use metrics to continually improve
- It is important to be sure that the metrics you use are actionable
- You should take a baseline before trying to measure change.
- It is important to give developers credit for unfinished stories
- Unfinished stories should be split into new stories to complete the work in the next sprint
- Each sprint milestone should be closed when completed to reflect the velocity of the sprint
- You should create a new milestone for the next sprint
- The top 4 actionable metrics can be used to improve your team's overall performance

  - Mean Lead Time (How long does it take from idea to production?)

  - Release Frequency (How often can you deliver changes?)

  - Change Failure Rate (How often do changes fail?)

  - Mean Time to Recovery (MTTR) (How quickly can you recover from failure?)
- Anti-patterns to avoid when practicing Scrum include:

  - No real product owner

  -Teams are too large

  -Teams are not dedicated

  -Teams are too geographically distributed

  -Teams are siloed

  -Teams are not self-managing
- The Scrum health check provides guidelines for measuring a healthy scrum team

Question 6

Why is the daily Scrum meeting called a “stand-up”?

The meeting is conducted with people standing.

Question 11

As a customer, I need some functionality, so that we will gain some business benefit is a description of _____.

A user story

Question 20

Select the statement that describes an end of sprint activity.

Stories are moved from the done column to the closed column.