

# **AGILE SOFTWARE DEVELOPMENT & SCRUM**

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# AGILE DEVELOPMENT

## **The New New Product Development Game**

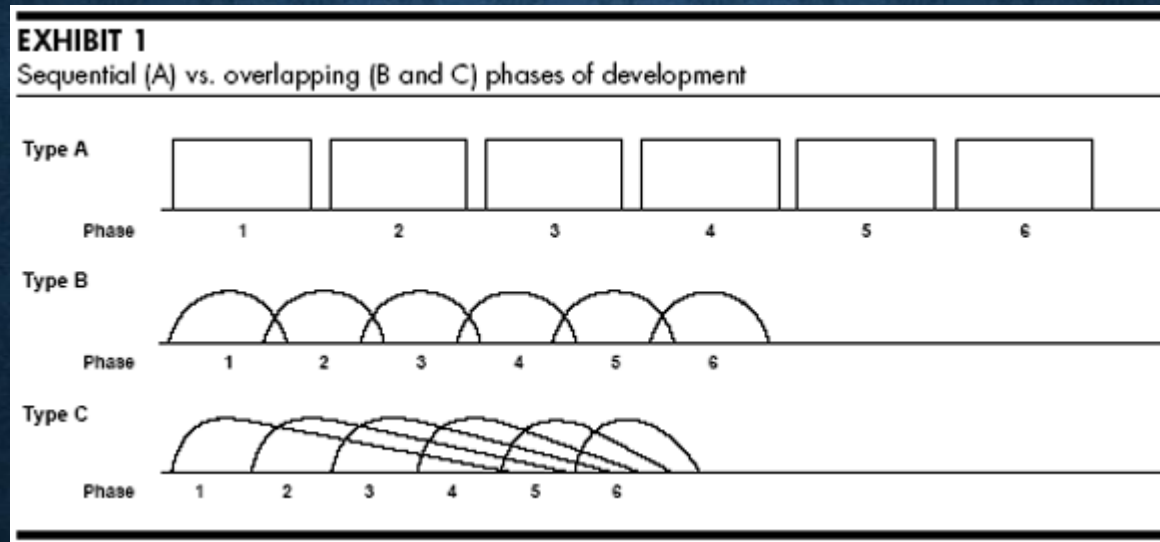
by Hirotaka Takeuchi and Ikujiro Nonaka

*Harvard Business Review* 64, no. 1 (January–February 1986).

<https://hbr.org/1986/01/the-new-new-product-development-game>



# AGILE DEVELOPMENT



<https://hbr.org/1986/01/the-new-new-product-development-game>

# AGILE DEVELOPMENT

- 1. Built-in instability
- 2. Self-organizing project teams
- 3. Overlapping development phases
- 4. “Multilearning”
- 5. Subtle control
- 6. Organizational transfer of learning



# AGILE SOFTWARE DEVELOPMENT

## The Manifesto for Agile Software Developments

February 2001

- ***Individuals and Interactions** over processes and tools*
- ***Working Software** over comprehensive documentation*
- ***Customer Collaboration** over contract negotiation*
- ***Responding to Change** over following a plan*

[https://en.wikipedia.org/wiki/Agile\\_software\\_development](https://en.wikipedia.org/wiki/Agile_software_development)

# SCRUM

- Ken Schwaber

[https://en.wikipedia.org/wiki/Ken\\_Schwaber](https://en.wikipedia.org/wiki/Ken_Schwaber)

<https://www.scrum.org/resources/scrum-guide>

- Scrum Alliance

<https://www.scrumalliance.org>

- Certified Scrum Master program

- Kane Mar

<https://scrumology.com/>



# SCRUM ROLES

- Product Owner
  - Stakeholder representation
  - Adds and prioritises items in Product Backlog
- Development Team
  - Delivering product increment, self-organised
  - Cross-functional with all skills required
- Scrum Master
  - Facilitate
  - Remove impediments
  - Coaching and educating

# SCRUM EVENTS

- The Sprint
  - Time-box 1-4 weeks
  - Results in Potentially shippable increment (PSI) of product
- Sprint Planning
  - 4 hours for 2 weeks sprint
  - What and how can it be delivered
  - Product Backlog to Sprint Backlog



# SCRUM EVENTS

- Daily Scrum
  - 10-15 min
  - What did I do yesterday?
  - What will I do today?
  - Impediments?
- Sprint Review
  - 2 hours for 2 weeks sprint
  - PO accepts the outcome of all finished items
- Sprint Retrospective
  - 2 hours for 2 weeks sprint
  - What did we do well?
  - What should we do better?
  - Actions

# ARTIFACTS

- Product Backlog
  - All items needed for the planned product or phase
  - Ordered by priority
  - 10 – 20 – 70 Refinement Status
- Sprint Backlog
  - All items accepted into the current sprint
  - Tickets get estimated
    - Story Points (usually adapted Fibonacci scale 1 2 3 5 8 13 20 40 60 100)
    - Custom Scales
      - XS S M L XL XXL...
      - Shot Pot Pint Jug Barrel Brewery
  - Velocity
- Product Increment



# BACKLOG TICKETS

- Short description
- User Story
  - As a user admin
  - I need to be able to edit user profile details
  - So that I can keep user details up to date
- Ticket Status: To Do, Under Development, Testing, Done
- Business Value / Technical Value
  - BV – 0 not relevant – 5 extremely important
  - TV – 0 very hard – 5 very easy
- Acceptance Criteria
- Behaviour Driven Development
- Epic – User Story – Sub-Task

# SCRUM BOARD



[https://en.wikipedia.org/wiki/Scrum\\_\(software\\_development\)#/media/File:Scrum\\_task\\_board.jpg](https://en.wikipedia.org/wiki/Scrum_(software_development)#/media/File:Scrum_task_board.jpg)



# KANBAN/SCRUM BOARD

- To Do
- Under Development
- Ready for Testing
- Testing
- Ready for QA
- Under QA
- Ready to merge
- Done
- [https://en.wikipedia.org/wiki/Kanban\\_\(development\)](https://en.wikipedia.org/wiki/Kanban_(development))

# BDD

**Given** I am a user admin

**When** I am on a user view page

**Then** I should see an “Edit” link

**When** I click in the link

**Then** I should see a user edit form

And I should see a “Save” button

And I should see a “Delete” button

And I should see a “Back to User View” button



# BEHAT

Given I am a user with role “User Admin”

When I am on “/user/5” # behat test user

Then I should see “Edit”

When I follow “Edit”

Then I should see “.user-edit-form”

And I should see a “Save”

And I should see a “Delete”

And I should see a “Back to User View”

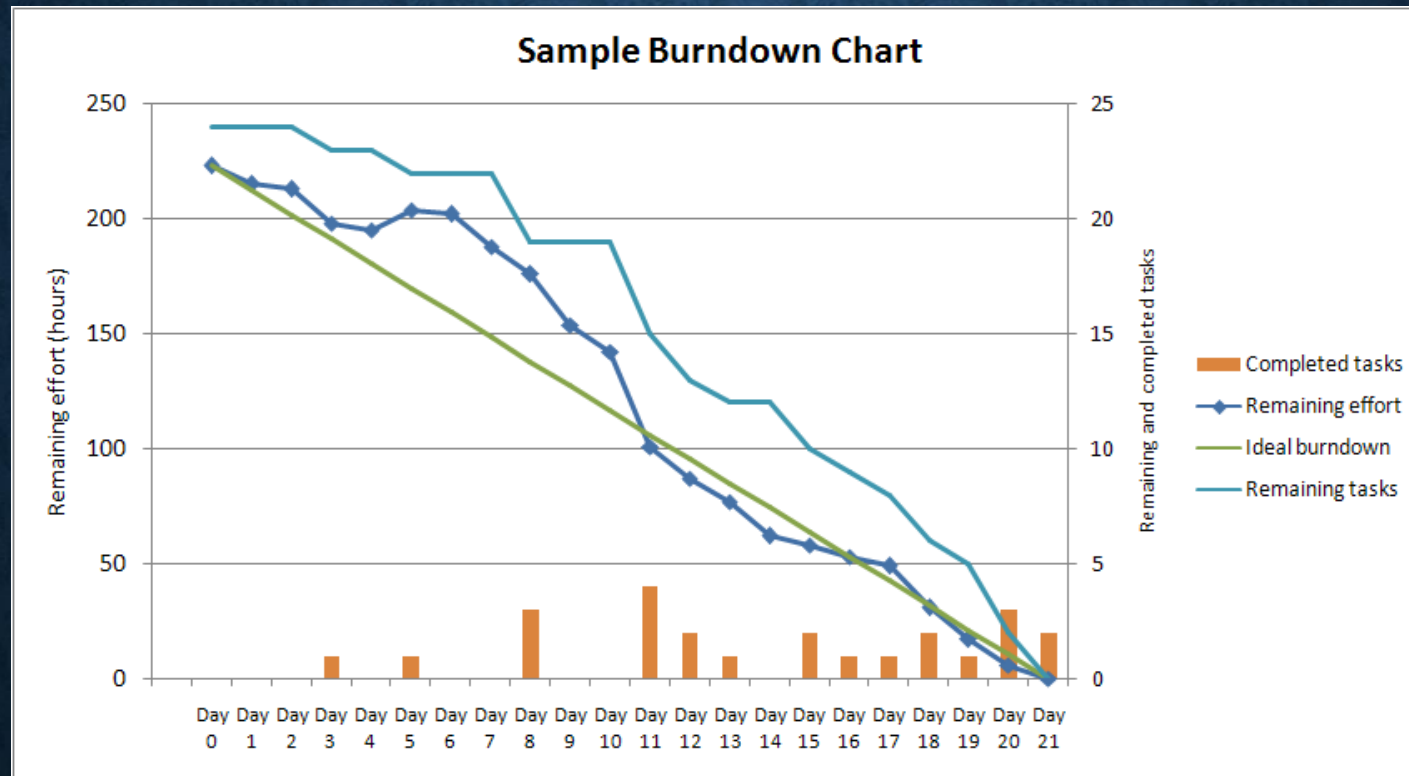
<http://behat.org>

# MISCELLANEOUS

- Definition of Done
- Refinement 10%
- Spike
- Task
- Sprint of Sprints
- Atlassian JIRA <https://www.atlassian.com/software/jira>
- Sprint Burndown Chart



# SPRINT BURNDOWN CHART



[https://en.wikipedia.org/wiki/Scrum\\_\(software\\_development\)#/media/File:SampleBurndownChart.png](https://en.wikipedia.org/wiki/Scrum_(software_development)#/media/File:SampleBurndownChart.png)

# **LIMITATIONS**

- De-centralised teams
- Specialised skill sets
- External dependencies
- P1/2 Defects
- Projects across several teams