

COM3005J: Agile Processes Artifacts

From User Stories to Burndown Charts

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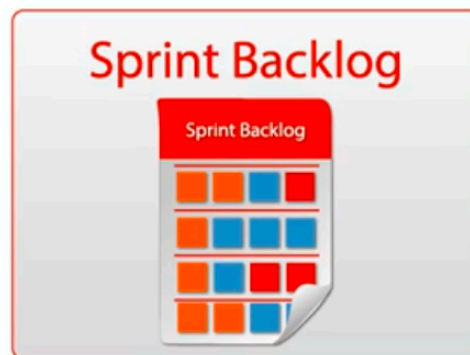
Information

- Great thanks for accommodating the interim arrangements, while I was away from Beijing!
- The remaining schedule for this course are as follows:
 - 11th November (Monday), 08:00am to 09:35am, Room 404, Teaching Building 4, Lecture on Agile Artifacts.
 - 14th November (Thursday), 3:25pm to 5:00pm, Room 414, Teaching Building 4, In-class assessment 1.
 - 18th November (Monday), 08:00am to 09:35am, Room 404, Teaching Building 4, In-class assessment 2.
 - 21st November (Thursday), 3:25pm to 5:00pm, Room 414, Teaching Building 4, In-class assessment 3.
 - 28th November (Thursday), 3:25pm to 5:00pm, Room 414, Teaching Building 4, Revision.

What is an Artifact?



Scrum Artifacts



Product Backlog

- The Product Backlog is an **ordered list of features** that are needed as part of the end product and it is the single source of requirements for any changes to be made to the product.
- The Product Backlog lists all features, functions, requirements, enhancements, and fixes that constitute the changes to be made to the product in future releases. Product Backlog items have the attributes of a description, order, estimate, and value. These items are normally termed as User Stories.
- A Product Backlog is an **evolving artifact**. The earliest version of it may contain only the initially known and best understood requirements. The Product Backlog gets developed as the product, and the environment in which it will be used, progress. The Product Backlog constantly changes to incorporate what is required to make it effective. As long as a product exists, its Product Backlog also exists.

Sprint Backlog

- The Sprint Backlog is the set of Product Backlog items **selected for the Sprint, plus a plan** for delivering the product Increment and realizing the Sprint Goal.
- The Sprint Backlog is a forecast by the Team about what functionality will be made available in the next Increment and the work needed to deliver that functionality as a working product Increment.
- The Sprint Backlog is a plan with enough detail that can be understood but the Team to track in the Daily Scrum. The Team modifies the Sprint Backlog throughout the Sprint, and the Sprint Backlog emerges during the Sprint. This emergence occurs as the Team works through the plan and learns more about the work needed to achieve the Sprint Goal.

Increment

- The Increment is the **sum of all the Product Backlog items completed during a Sprint** combined with the increments of all previous Sprints. At the end of a Sprint, the new Increment must be a working product, which means it must be in a useable condition. It must be in working condition regardless of whether the Product Owner decides to actually release it.
- The Scrum Team needs to have consensus on what is considered to be an Increment. This varies significantly per Scrum Team, but, team members must have a shared understanding of what it means for work to be complete. This is used to assess when work is complete on the product Increment.

User Story



Source: Cohn



Defines an atom of functionality

See lecture on practices -- we've seen this in some detail.

We've also seen the limits of using user stories as a tool to define requirements.

What is a user story?

The term "User story" was coined by Kent Beck in Extreme Programming in 1999. Simply put, a User Story is a short description (not more than one or two sentences), in everyday or business language, of a feature told from the perspective of the person who desires the new capability.

The typical format in which a user story is written may resemble something like this:

"As a , I want so that "

What is task?

A task can be seen as a subunit of user stories. They can be seen as **units of work that are contained within user stories**. For a user story to be counted as completed, all of its tasks must be in turn also completed.

How to write a user story?

A user story is an item of business value that a team can deliver in an iteration. A user story is defined in three stages:

- Description of requirement or need
- Conversations during backlog grooming and iteration planning added as details
- Tests that confirm the story's satisfactory completion

An example of a user story is:

As a credit card user I want to be warned if I spent more than a set amount.

2

User stories are best written in the following format:

As a , I want to so that

What is story point?

Story point is an arbitrary measure used by Scrum teams. This is used **to measure the effort required to implement a story**. Story points give accurate estimates, reduce planning time, accurately predict release dates, and help teams improve performance.

In most cases a story point range is 1, 2, 4, 8, 16 or X Small, Small, Medium, Large, Extra Large. Mostly commonly used series is the Fibonacci series.

Good qualities of a User Story

The Invest acronym was created by Bill Wake, and it serves as a reminder of the good qualities of a user story.

The **INVEST** acronym stands for:

I – Independent – Can the story stand-alone by itself?

N – Negotiable – Can this story be changed or removed without impact to everything else?

V – Valuable – Does this story have value to the end user?

E – Estimable – Can you estimate the size of the story?

S – Small – Is it small enough?

T – Testable – Can this story be tested and verified?

Story Card



Source: Jeffries

Customer Story and Task Card Blw Development / COLA

DATE: 3/19/98 TYPE OF ACTIVITY: NEW: ☒ FIX: ☐ ENHANCE: ☐ FUNC. TEST: ☐

STORY NUMBER: 1275 PRIORITY: USER: ☐ TECH: ☐

PRIOR REFERENCE: RISK: TECH ESTIMATE:

TASK DESCRIPTION:
 SPLIT COLA: When the COLA rate changes in the middle of the Blw Pay Period, we will want to pay the 1st week of the pay period at the OLD COLA rate and the 2nd week of the pay period at the NEW COLA rate. Should occur automatically based on system design.

NOTES:
 For the DT, we will write a program that will pay or calculate the COLA on the 2nd week of DT. The plant currently returns the hours data for the 2nd week exclusively so that we can calculate COLA. This will come into the Model as a "2nd" COLA.

TASK TRACKING: Gross Pay Adjustment. Create RM Boundary and Place in DE Ent Gross COLA

Date	Status	To Do	Comments

3

- It's a kind of historical example because it's an example that comes from the original extreme programming project, the Chrysler Comprehensive Compensation (C3) project, as it was called, which was a payroll project at Chrysler.
- It's a standard office card on which the various elements of a user story are codified.

Task Card



Source: Jeffries

From the original C3 project:

Engineering Task Card

DATE: 3/17/98 **BIW** *Smalltalk if Future*
Based on Conversation w/ REO:AMA **NEW**

STORY NUMBER: X923 SOFTWARE ENGINEER: _____ TASK ESTIMATE: _____

TASK DESCRIPTION:
Composite Bin - Regular Base Needs to Be Displayed on GUI. We have the hidden bin for Regular Base (last time) to display NO the autogen bin but the BIW that composites the Auto Bin the last time. There is a separate composite bin started that needs to be completed??

SOFTWARE ENGINEER'S NOTES:

TASK TRACKING:

Date	Done	To Do	Comments

Use Case



Describes how to achieve single business goal or task through the interactions between external actors and system

Use cases are actually used far beyond the agile methods.

They are one of the diagram types in the UML analysis and design notation, Unified Modeling Language.

Use Case Example

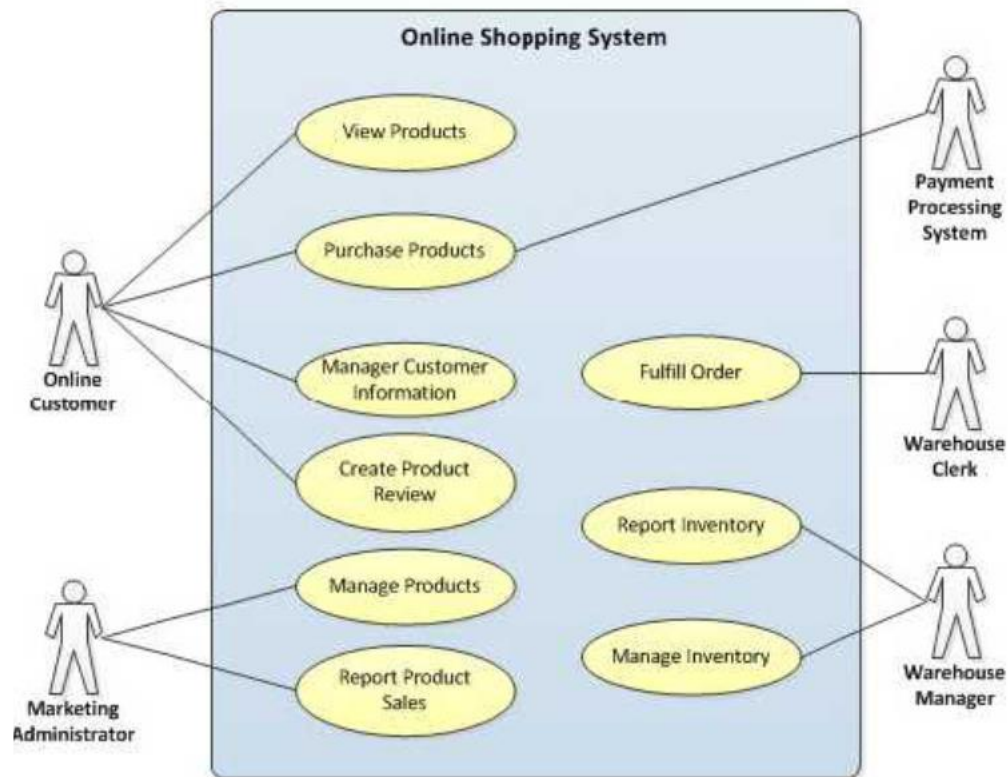


Diagram source: T. Lockman
(Wikimedia Commons)

Use Cases vs User Stories

After Cockburn



User story:

- Very simple
- Written by customer
- Incomplete, possibly inaccurate
- Does not handle exceptional cases
- Starting point for additional discussions with customer

“Think of a user story as a use case at 2 bits of precision”

Use case:

- More complex
- Written by developer in cooperation with customer
- Attempts to be complete, accurate
- Should handle all possible cases
- Intended to answer any developer questions about customer requirements without further interaction with customer

Product Backlog



- Maintained throughout project
- Property of product owner
- Open and editable by anyone
- Contains backlog items: broad descriptions of all potential features, prioritized by business value
- Includes estimates of business value
- Includes estimates of development effort, set by team

Visualized in “task board” (see next)

Task Board, Story Board

Scrum

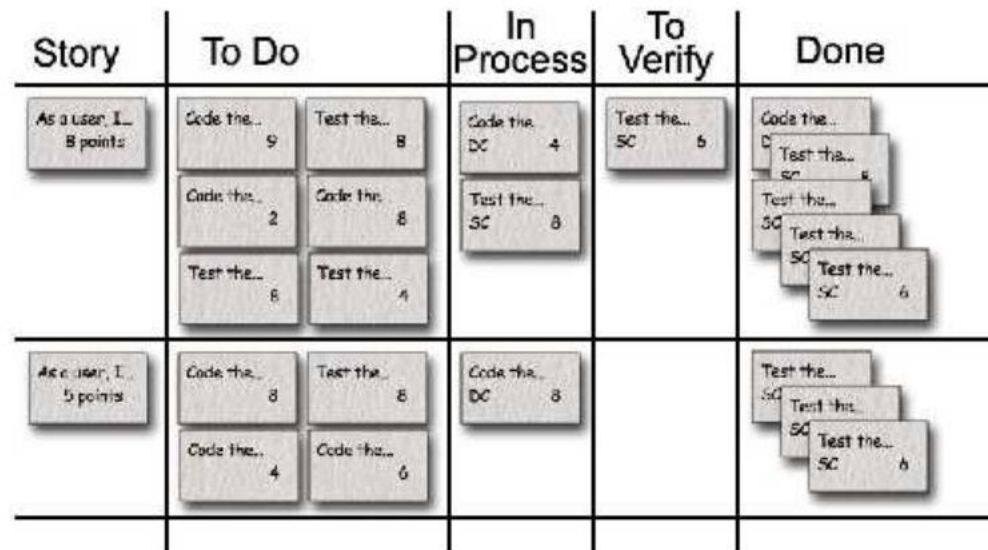
Source: Cohn, Anand



Used to see and change the state of the tasks of the current sprint: “to do”, “in progress”, “done”.

Benefits:

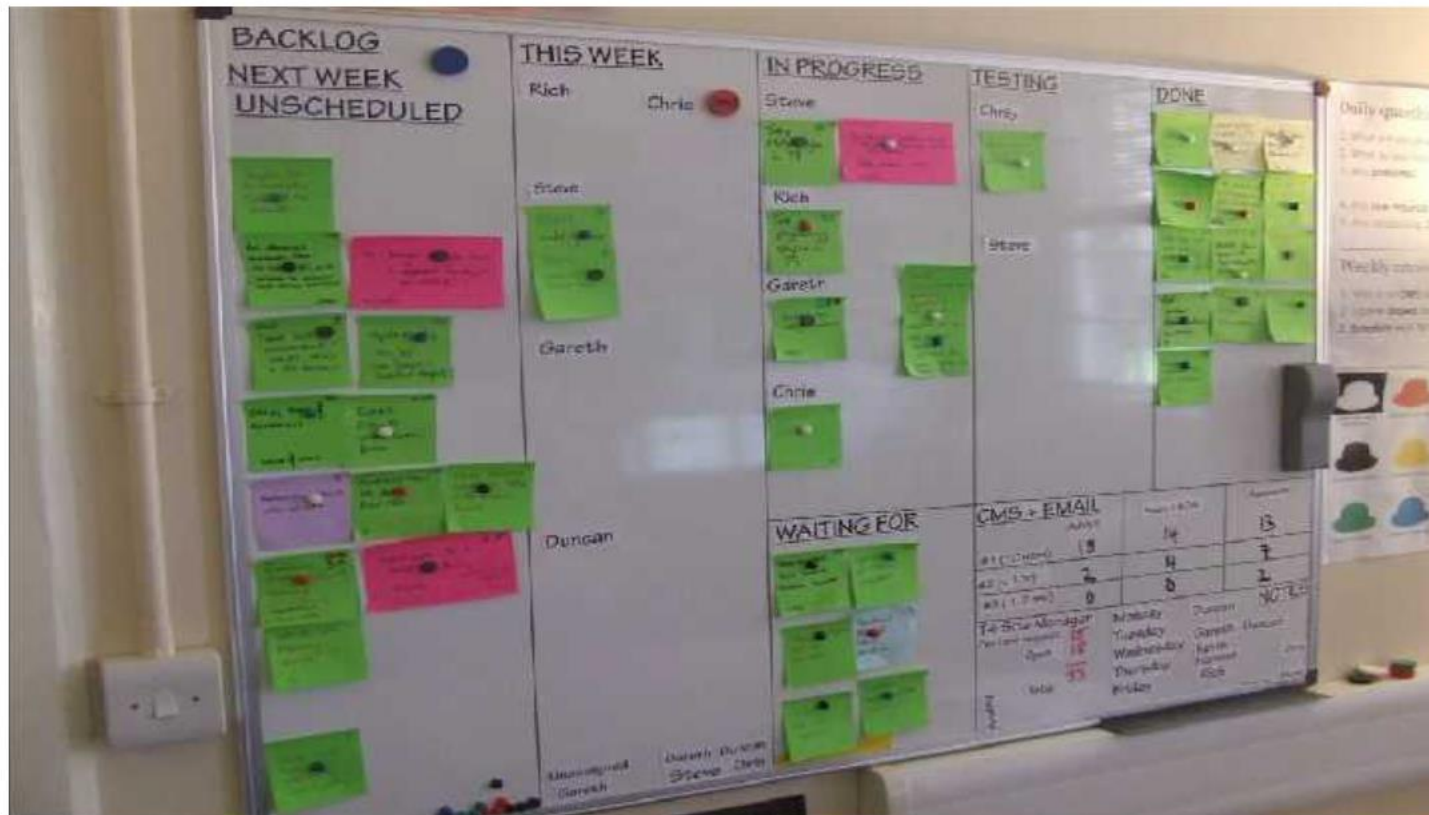
- Transparency
- Collaboration
- Prioritization
- Focus
- Self-organization
- Empiricism
- “Humility”
- Morale



Example source: Mountain Goat Software

Story Board

Source: Saunders



Velocity



Measure of progress in a project:

Number of items delivered

- Measured in tasks, user stories, backlog items...

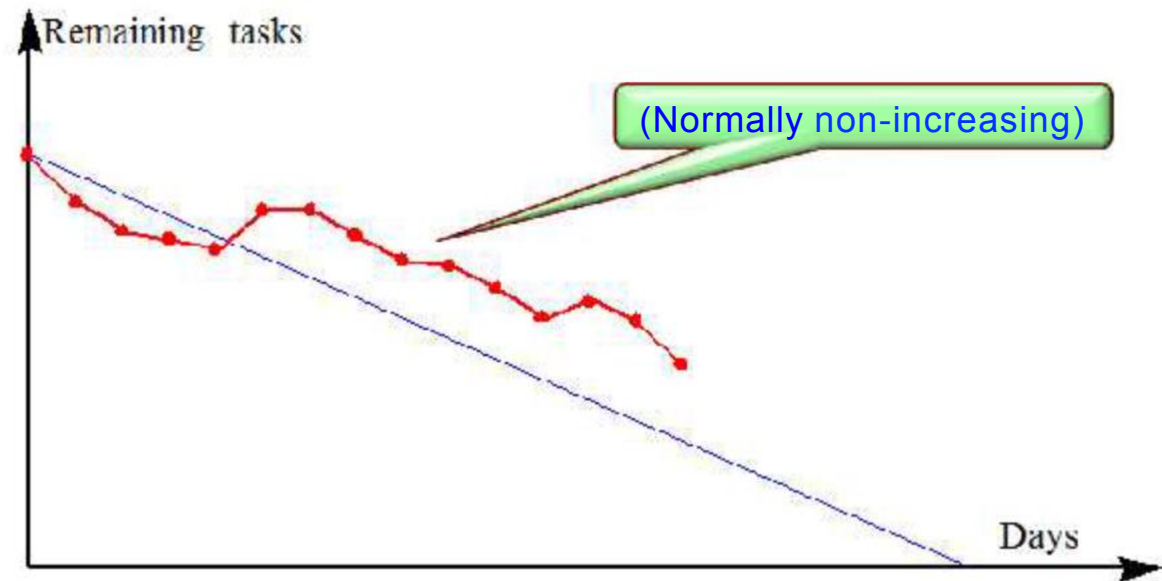
Burndown Chart

Scrum

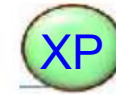


Publicly displayed chart, updated every day, showing, for the sprint backlog:

- Remaining work
- Progress



Bullpen



Single, open room
(See “ Informative workspace” principle)

So what we've seen in this discussion of artifacts is a whole set of virtual and material tools often paired with each other, a **material tool** directly supporting a virtual tool.

And they directly support agile concepts -- in particular, agile principles, agile practices, and agile rules.

Artifacts

Part E: Artifacts

What we have seen:

Virtual and material tools
that directly support agile concepts

In-class assessment discussions

- Please bring your laptops to the class during the in-class assessments.
- This will be an open-book assessment, and you will be allowed to consult your notes during the assessment.
- The assessment questions will be available in the CS moodle page (will be visible *just* before the class starts).
- Please compose your answers in any software (.docx, .tex, .md etc.). However, you need to save them as **.PDF** file.
 - The .PDF file should be uploaded in the CS moodle during the class hours before the set deadline.
- Good luck!



Thank you



For general enquiries, contact:

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