Lect. #8: Agile Project Management

dilbert.com/strip/2017-02-10

Agenda for Today

1. Agile Project Management

2. Agile Frameworks: Scrum and Kanban

3. A Brief Tour of Asana

Announcements

- Teams (w/ PM/Team Leads) due by 11:59 pm tonight
- PM2 due by 11:59 pm tomorrow night
- TWO ethics assignments due next week *before class* (by 1:00 pm day of lecture)
- PM3 due Thursday, 9.29.22
- PSD starts Friday, 9.30.22; ends Monday, 10.10.22
- Please check the schedule on Canvas so you know what's coming up (a lot)
- Questions?

Poll

Have you used the Scrum framework in a CptS or EE course?

A. Yes

B. No

C. Other

Agile PM: Attributes

Agile PM has five attributes [1]:

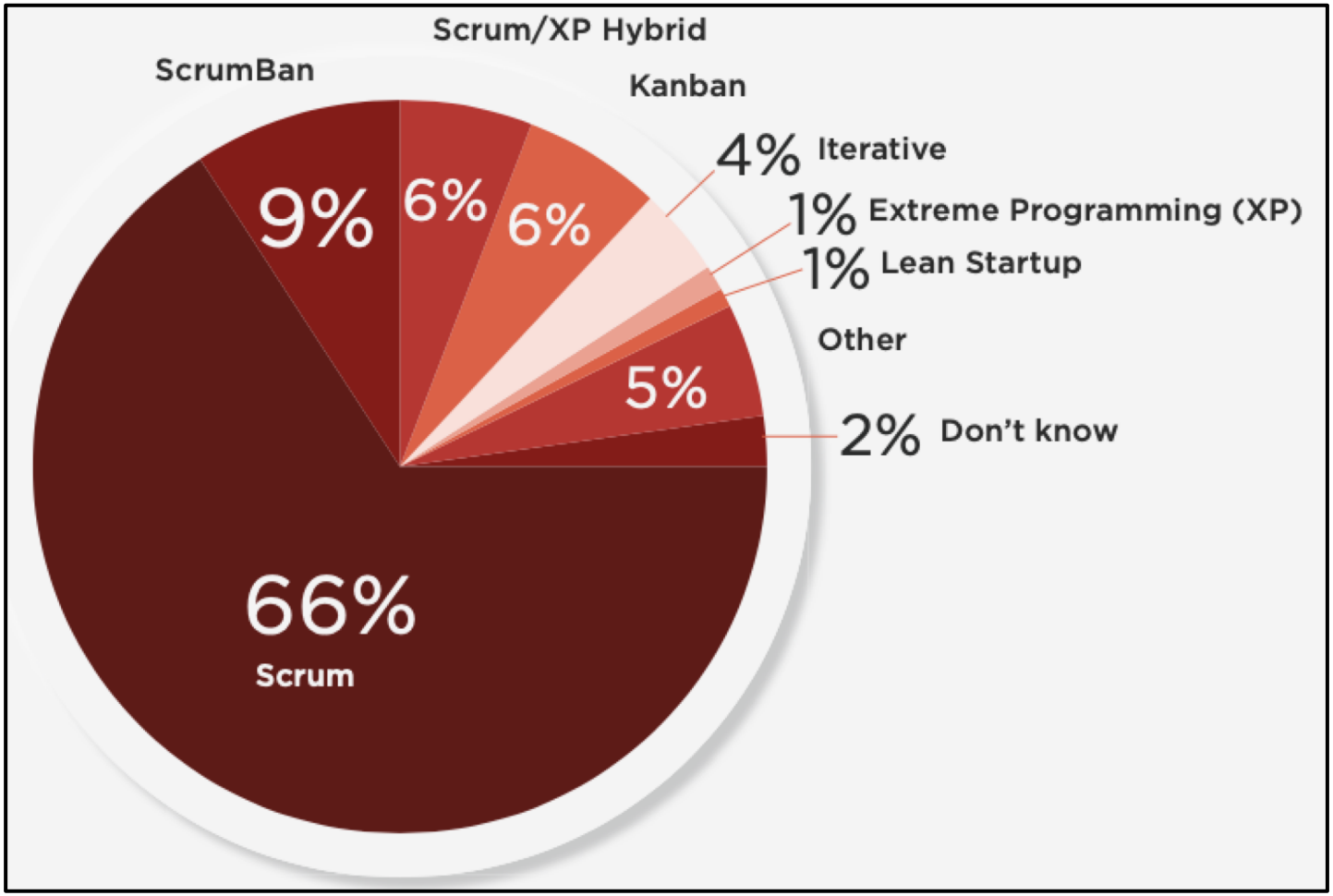
1. Transparency: Progress of work for each team member is visible
2. Customer focus: Constant feedback from customer
3. Adaptability: Iterative approach in which teams break down project and deliver small chunks; stay flexible for rest of project
4. Shared ownership: No single project manager who allocates tasks to team members
5. Continuous improvement: Frequent reviews so learn while project is active

Agile PM: Frameworks (Methods)

- There are many different frameworks for applying Agile PM (many more than shown in the figure)
- Frameworks can be combined as well, e.g., Scrumban
- We'll focus on Scrum and Kanban

www.vinsys.com

Agile PM: Frameworks (cont.)



digital.ai/resource-center/analyst-reports/state-of-agile-report/

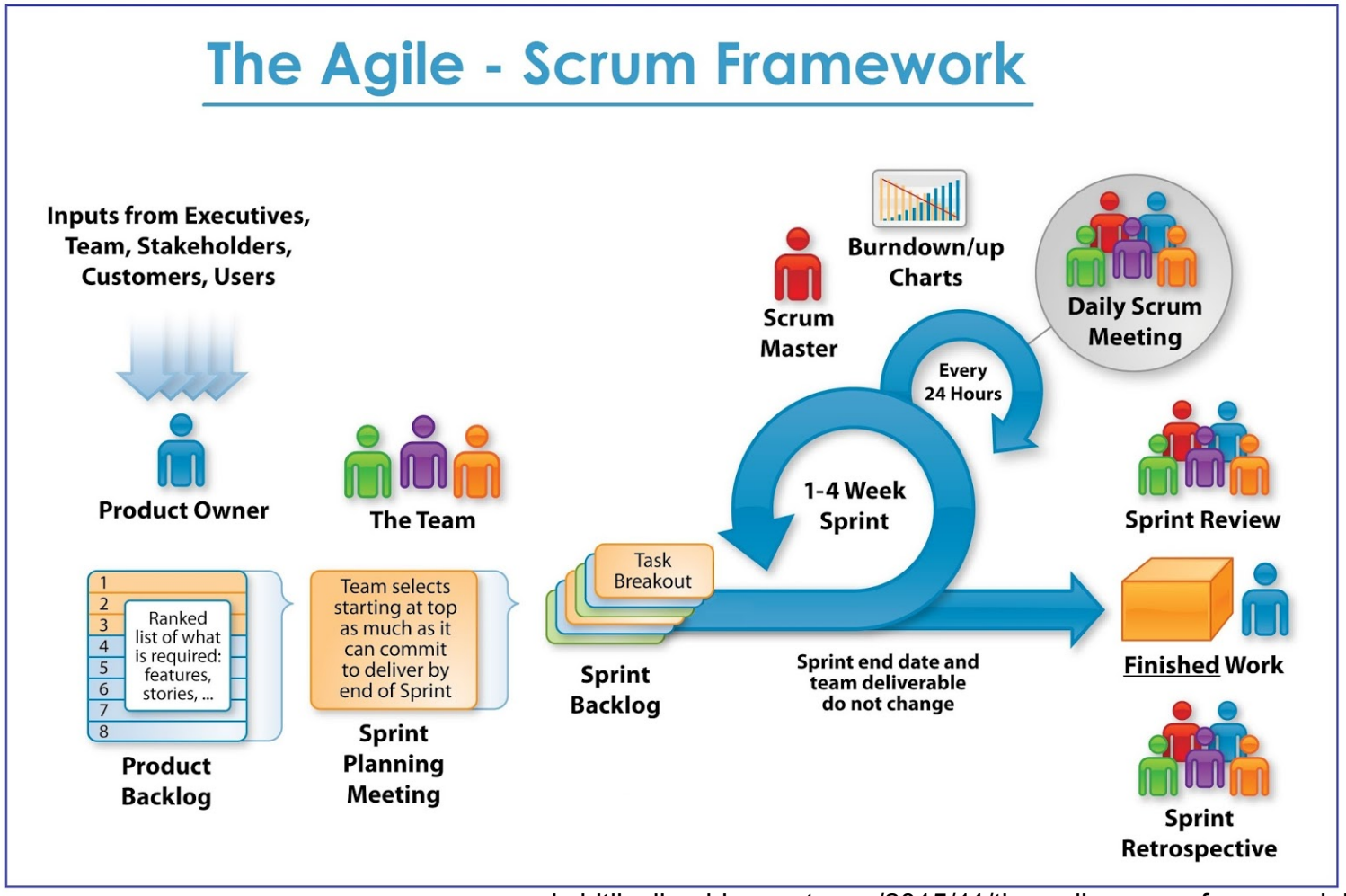
Agile PM: Scrum Framework

- Project split into fixed periods of time called sprints
- Three roles:
  - Product owner: Loosely akin to a project manager; represents customer and other stakeholders; manages product backlog
    - product backlog = prioritized list of tasks for all work items needed for the product
  - Team: Small group of self-managed workers
  - Scrum master: Facilitator for the product whose job is to remove or reduce any obstacles, barriers, or constraints that impede progress

Agile PM: Scrum Framework (cont.)

- There are four major Scrum events:
  - **Sprint planning:** Product owner and team choose number of tasks from the product backlog that they think they can finish during the sprint; these become the sprint backlog
    - burn down chart = effort and work-to-date and remaining effort needed
  - **Daily Scrum (AKA Daily Stand-up):** Short meeting (~15 min) each day in which each team member reports on what they did the previous day, what they plan to do that day, and any obstacles impeding their progress; provide accountability and motivation for team members
  - **Sprint review:** Team review of which tasks were completed, which weren't, and demo of work to product owner, customer, and other stakeholders
  - **Sprint retrospective:** Review of sprint—what went well and what didn't

Agile PM: Scrum Framework (cont.)



kshitijyelkar.blogspot.com/2015/11/the-agile-scrum-framework.html

Breakout Discussion (4 min)

Agile PM was originally meant for software development projects. However, many other types of projects now use Agile PM. What kind of projects might these be?

Discuss at least 3 types of projects suitable for Agile PM. Alternatively, come up with ideas of projects that aren't suited for Agile PM.

Choose someone to present the projects and to explain why they're suitable, or not, for Agile PM

Agile PM: Kanban Framework

- Developed by Taiichi Ohno at Toyota in 1940's for on-demand manufacturing, i.e., rather than predicting demand, Ohno tracked demand and produced products as needed; this lowered inventory costs
- Ohno used paper cards on a board; in Japanse, kan = sign and ban = board, so this framework came to be known as Kanban
- Rather than pushing products into the market, Kanban pulls products, i.e., manufactures them on demand
- Today, Kanban boards are virtual, and each card represents a task; each task card moves across the board as different stages are completed
- Typically, one team uses a single Kanban board and members pull tasks

Agile PM: Kanban Framework (cont.)

The six rules of Kanban [4]:

- Visualize work: Card starts on left and moves toward right
- Limit work in progress: Pull one task at a time; don't have too many cards on the board
- Manage flow: Optimize flow of tasks
- Make process policies explicit: All team members need to understand conventions and methodologies
- Implement feedback loops: Feedback from both team and customer needed
- Improve collaboratively: Continuously experiment, evolve, and improve

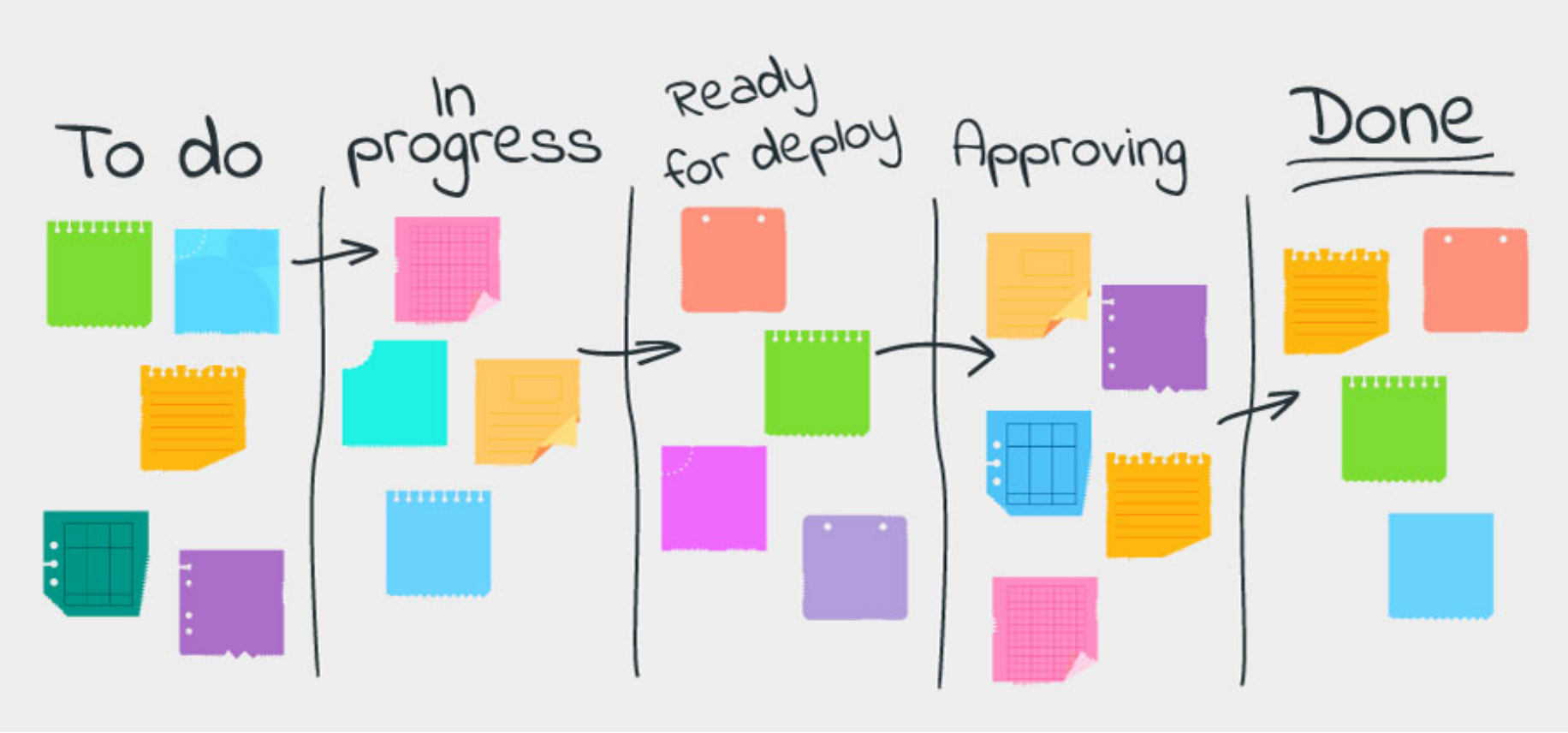
Agile PM: Kanban Framework (cont.)

How to apply Kanban:

1. Start with a blank Kanban board
2. Create columns to represent workflow, e.g.,
   - Backlog, Inbox, New
   - Ready or Prioritized
   - In Progress
   - Completed or Done
   - On Hold
3. Add tasks
4. Move tasks across columns as they progress

Agile PM: Kanban Framework (cont.)

Each task is a card that moves across the Kanban board as the task reaches different stages



santanderglobaltech.com/en/kanban-vs-scrum-how-to-choose-the-best-framework-guide/

Breakout Discussion (4 min)

In board mode, Asana organizes tasks into columns. Assume your team is organizing a hardware-software hackathon.

- Determine the columns you would use for your project from start to finish (venue is spotless, and thank you notes have been written)
- What are some of the tasks needed?
- Choose someone to present your ideas to the class

Poll

Have you used a Kanban board before?

A. Yes

B. No

C. Other

References

[1] kanbanize.com

[2] Wikipedia

[3] *Successful Project Management*, seventh edition, J.Gido, J. Clements, and R. Baker, Cengage

[4] https://asana.com/resources/what-is-kanban