Project Crash Course

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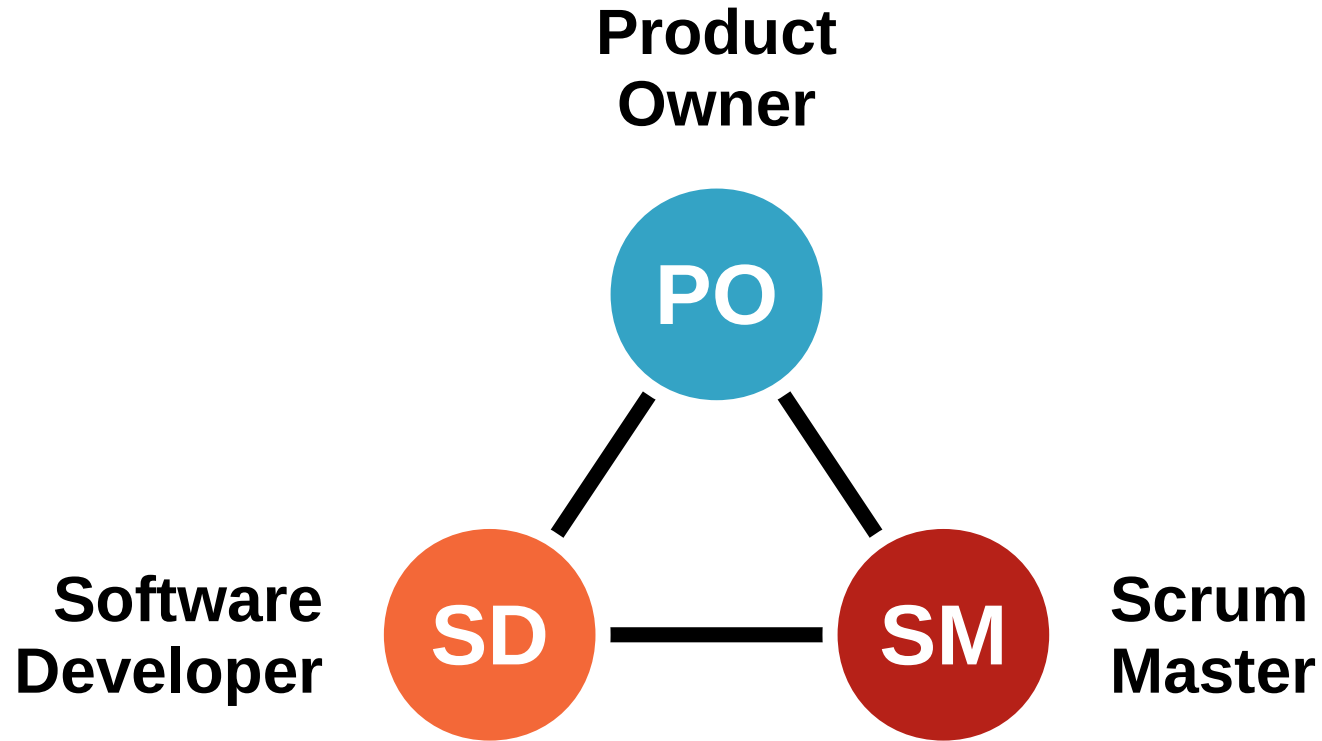
AMOS B01

To deliver useful software at the end of the project that can be developed further.

1. **Scrum Process Practices**

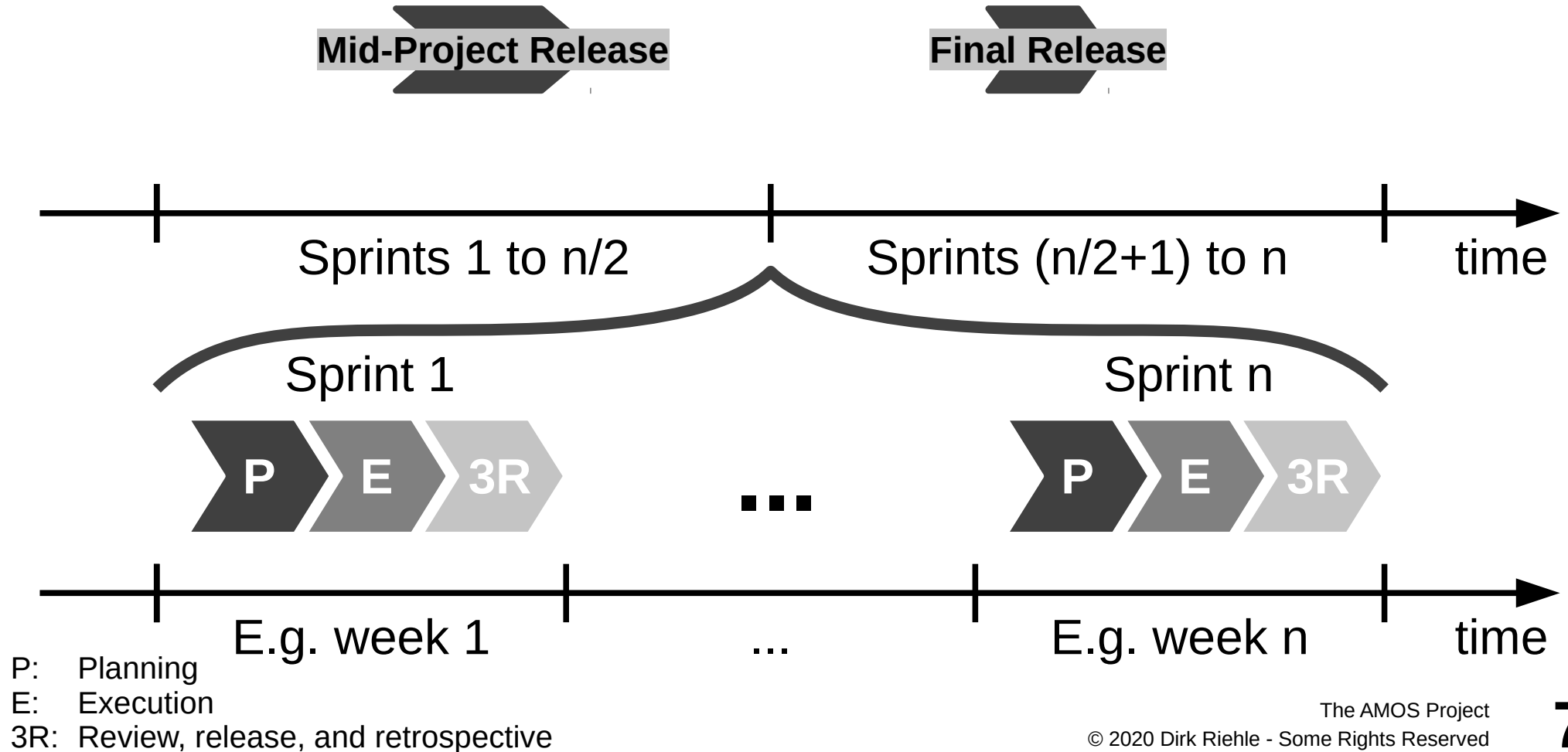2. **XP Technical Practices**

Core ("Committed") Role Responsibilities

- Definition of **product owner**
  - Holds overall responsibility for the product being developed
  - Provides product vision and product requirements
  - Plans and helps plan development and tracks progress

- Definition of **software developer**
  - Holds overall responsibility for design and implementation of product
  - Estimate complexity ("size") of product features to be implemented
  - Organizes and allocates design and implementation tasks

- Definition of **Scrum master**
  - Is responsible for tracking and resolving impediments

Industry Partner Responsibilities

- Definition of **industry partner**
    - Provides high-level requirements
    - Provides feedback in defined intervals
    - Cf. **Industry Guidance**, see http://bit.ly/2IhUFRn

Overall Project Time-Line

Mid-Project Release

Final Release

Sprints 1 to n/2   Sprints (n/2+1) to n   time

Sprint 1

Sprint n

P   E   3R   ...   P   E   3R

E.g. week 1   ...   E.g. week n   time

P: Planning
E: Execution
3R: Review, release, and retrospective

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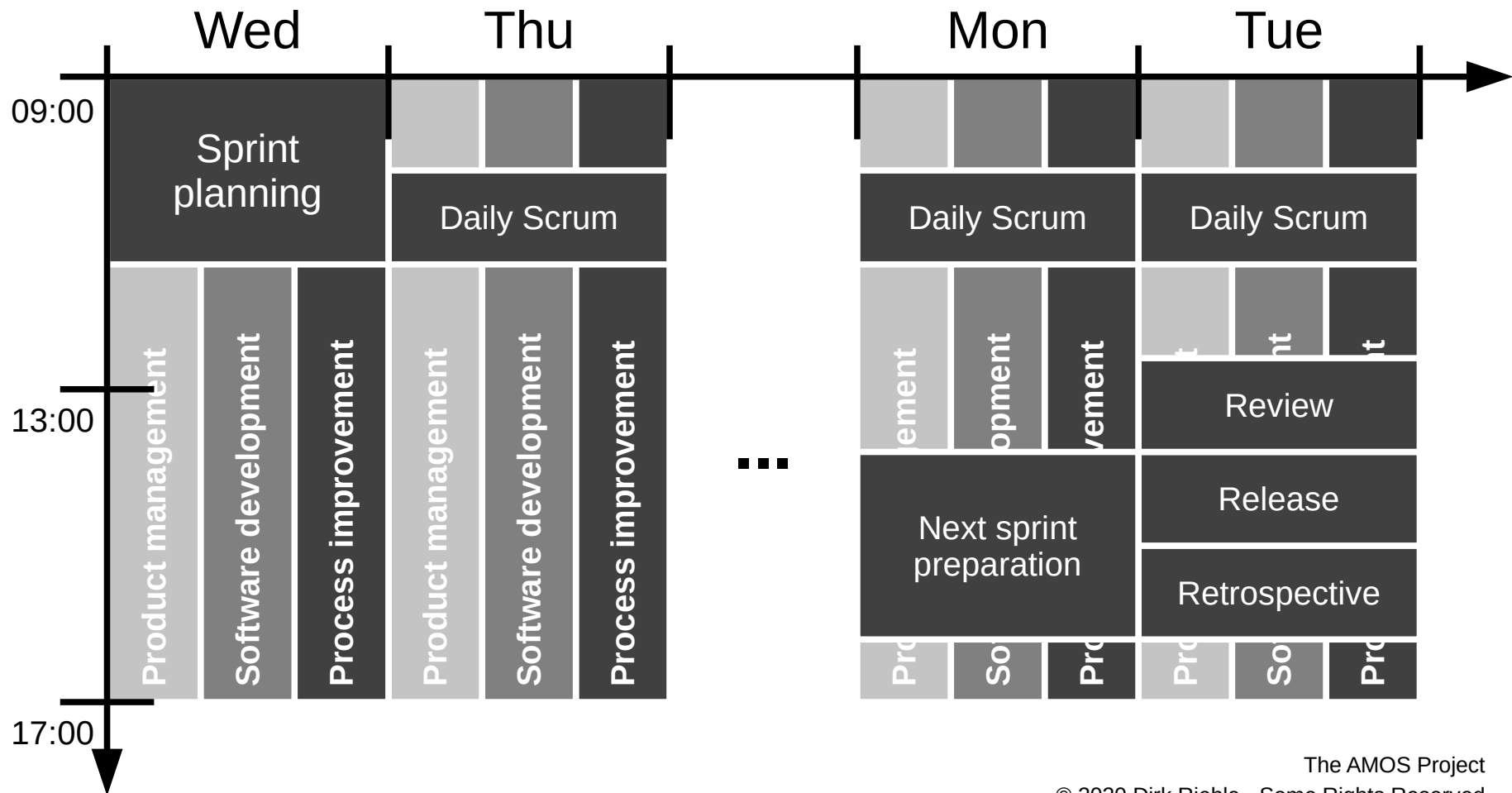
Time-boxed Sequence of Releases

- Definition of **release**
  - A named, identifiable, consistent, and useful snapshot of the software and related relevant artifacts

- Definition of **sprint release**
  - A release used to gather feedback from industry partner to help steer the project (every week)

- Definition of **project release**
  - A release used to deploy for production (twice during the semester: mid-term and at end of semester)

The Scrum Sprint (Conceptualization)

Project Schedule

- See Course index → Course schedule
    - For date ↔ course week mapping

- See Course deliverables slide deck
    - For deliverables due for a course week

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Other Role Responsibilities

- Definition of **review and release manager**
    - Prepares the product for review session
    - Releases the product after agreement

Wahlzeit

About

This website is to show, discuss, and praise photos!

Photo Filter

Click to toggle filter!

Filter!

Community

It is Wahlzeit!

Who/what/where is that?
Click to show/hide description!

Praise it!

○ 10
○ 9
○ 8
○ 7
○ 6
○ 5
○ 4
○ 3
○ 2
○ 1

Or skip it.

Tell a friend about this photo: http://localhost:8585/x1ac6.html — Send Email to the owner of this photo!

Please help keep this community site clean! Flag photo as inappropriate if necessary.

This website is to show the best in photos!

[blog] — [about | contact / imprint | terms] — [language: en | de] — [photo size: XS | S | M | L | XL] — [debug: reset]

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Example Product Vision [1] and Project Mission

- **Wahlzeit / Flowers product vision**
  - The Flowers social network helps flower enthusiasts worldwide to connect with each other and enjoy following their favorite hobby online. Centered on showing and rating favorite flower photos, it inspires growing and presenting ever more beautiful flowers. With a highly engaged user community, Flowers is the best place for producers and sellers of gardening supply to reach out to customers and engage with them. Such engagement involves understanding flower enthusiasts' needs around gardening supplies and selling to them.

- **AMOS project mission**
  - The mission of the AMOS project is to enhance the Wahlzeit software with a mobile cross-plattform app, available both on Android and iPhone. To achieve this, the current domain model interface needs to be refactored into a REST-based API to be used by all user interfaces, whatever the modality.

[1] See http://goo.gl/pOazTZ

Feature and User Story

- Definition of **feature**
  - A distinguishing characteristic of a software item (for example, performance, portability, functionality) (IEEE 829)

- Definition of **user story**
  - A description mechanism for a software feature used to create a shared understanding of the feature; follows an established pattern
  - The description pattern is: As a **"user role"**, I need **"a function"**, so that **"I get business value"** where the parts in quotation marks are substituted

- Example user stories
  - Rate-a-photo: As a **visitor**, I can **rate a photo with a numerical value 1-10,** so that **I can share my opinion about the photo.**
  - Tell-a-friend: As a **user**, I need **a function to tell a friend about a flower photo,** so that **I can share my passion for flowers.**

Quality Criteria for Feature Descriptions

I	ndependent: Features should be independent of each other.
N	egotiable: A feature is man-made, not cast in stone.
V	aluable: Every feature should have business value.
E	stimatable: A feature should be precise so that size can be estimated.
S	mall: A feature should be small enough for one iteration.
T	estable: A feature should have testable success criteria.

Flowers Planning Documents

- See http://goo.gl/FRfym

Product Backlog and Product Backlog Entry

- Definition of **product backlog**
  - An incomplete and evolving list of features prioritized by business value and used in product planning

- Definition of **product backlog entry**
  - A named, identifiable, and prioritized **feature** or **bug** that is part of a product backlog

Flowers Product Backlog

ID	Theme	Short Name	Item Description	Acceptance Criteria	Size
13	Photo Showing and Rating	Show Next Photo	As a visitor, I am presented with a random photo when I go to the website	Repeated visits to the site provide different photos	8
14	Photo Showing and Rating	Rate Photo and Proceed	As a visitor, I can rate a photo with a numerical value 1-10; after rating another photo is shown	The rating is stored and an average value is computed	8
15	Photo Showing and Rating	Show or Hide Photo Caption	As a visitor, I am presented with a photo caption, which I can expand to full photo data	A first click shows me the photo data, a second click hides it again; repeat	8
16	System Administration	Create Default Admin	As a sysadmin, I can create a default application administrator from the command line	After running the command, a default "admin" account with default password "dingdong" exists and can be used	5
17	System Administration	Startup and Shutdown Scripts	As a sysadmin, I can startup and shutdown the service from the command line	Three consecutive startup and shutdown command line invocations leave the system in a consistent state	3
18	System Administration	Reboot and Shutdown UI	As a administrator, I can reboot or shutdown the service using a graphical UI	The command is only available to the administrator role and shuts down the system to a clean	5

Development Speed   Product Backlog   Sprint Backlog   Feature Archive
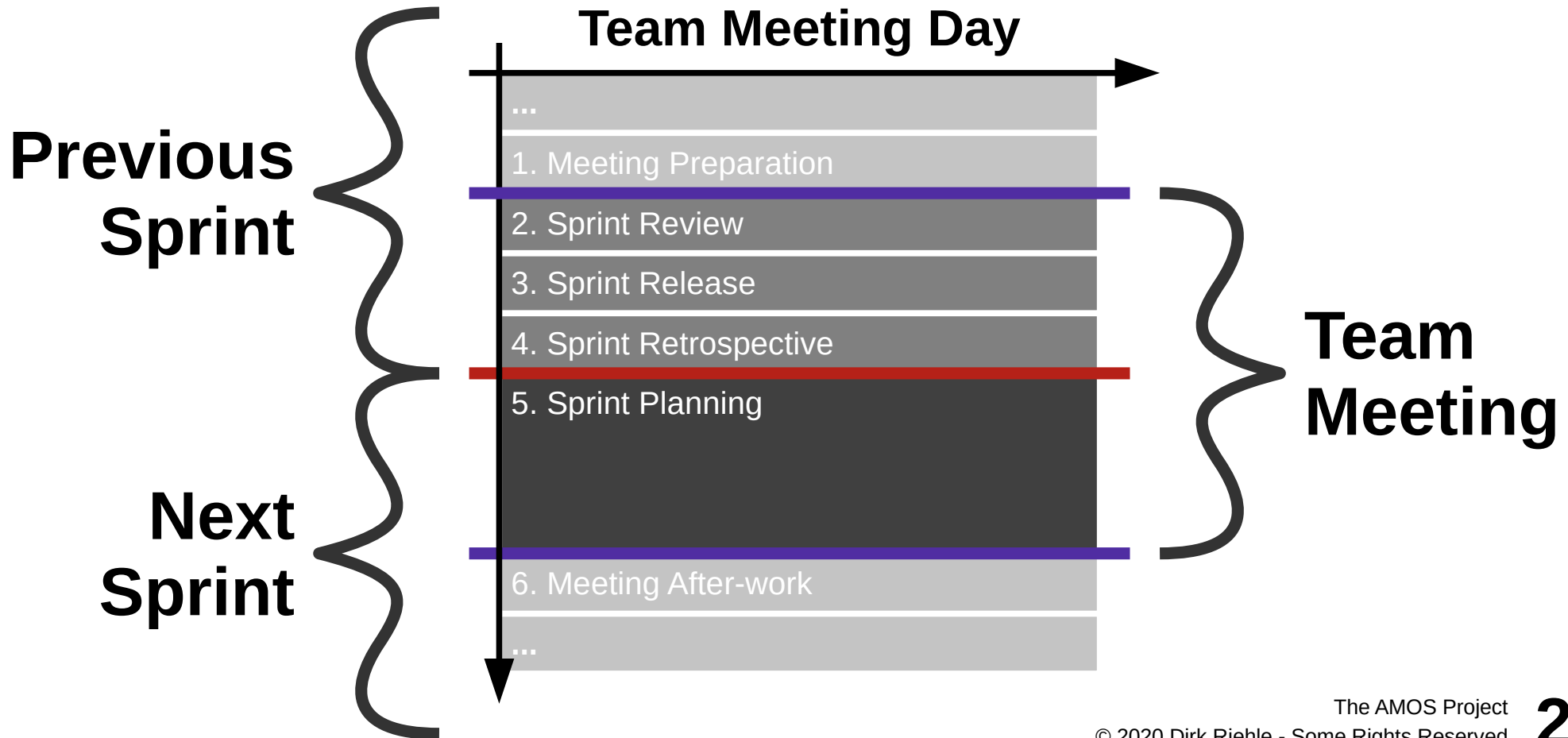
Sprint Backlog and Sprint Backlog Entry

- Definition of **sprint backlog**
    - A list of sprint backlog entries that the software developers have committed to implementing in the current sprint

- Definition of **sprint backlog entry**
    - A high-quality product backlog entry that has been estimated for size and committed-to to being implemented by the software developers

Flowers Sprint Backlog

	ID	Theme	Short Name	Item Description	Acceptance Criteria	Size
2	9	Photo Management	Browse Photo Portfolio	As a user, I can browse my collection of uploaded photos, i.e. my photo portfolio, complemented by basic information	I am provided with a browseable list of all my photos to select one from	8
3	10	Photo Management	Select Photo	As a user, I can select any one of my photos and have it shown to me, including any added information	After selecting one of my photos I'm presented with a screen that shows the photo and its information	5
4	11	Photo Management	Change Photo Data	As a user, I can select any of my photos and change the information available for it	After changing the photo's information, the change becomes effective immediately	3
5	12	Photo Management	Delete Photo	As a user, I can select any photo from my portfolio and have it deleted	After deleting the photo, it will not be shown any longer to any user	5

Development Speed Product Backlog Sprint Backlog Feature Archive

The AMOS Team Meeting

Previous Sprint

Next Sprint

Team Meeting Day

...

1. Meeting Preparation

2. Sprint Review

3. Sprint Release

4. Sprint Retrospective

5. Sprint Planning

6. Meeting After-work

...

Team Meeting

1. Meeting Preparation

- This sprint's **review and release manager**
  1. Ensure that a working demo system will be available
  2. Tag release candidate with **sprint-xx-release-candidate**
     - where xx is your sprint number (see project schedule)

- Next sprint's **product owner**
  - Ensure that product backlog is ready for sprint planning
    - Include new user stories
    - May transcribe bugs from issues
    - May include refactorings

2a. Sprint Review

- This sprint's **review and release manager**
    1. Check-out fresh code base using release candidate tag
    2. Compile, build, and run tests for release candidate
    3. Deploy release candidate to test environment

2b. Sprint Review

- This sprint's **product owner**
  - Walk through sprint backlog feature by feature
    1. Ask developer to demo current feature
    2. Check fulfillment of acceptance criteria
    3. Check other criteria incl. logging output for problems
    4. If successfully implemented, move feature to feature archive
    5. If not successfully implemented, move feature back to product backlog

- **Software developer**
  1. Demo feature as requested by product manager
  2. Answer questions about feature design and implementation

Flowers Feature Archive

	A	B	C	D	E	F	G	H
1	**ID**	**Sprint**	**Category**	**Short Name**	**Item Description**	**Acceptance Criteria**	**Est. Size**	**Real Size**
2	1	1	Visitor Self-Admin	Register	As a guest, I can register on Flowers for free, to become a user and get access to user functionality	After registration, my newly created account is available right away and I can login	8	8
3	2	1	Visitor Self-Admin	Login	As a guest, I can login using my previously created user account data to get access to user functionality	After logging in, I have access to user functionality	5	5
4	3	1	Visitor Self-Admin	Logout	As a logged-in user, I can logout from Flowers to free up the computer for some other person	After logging out, I have lost access to user functionality and can only regain it by logging in again	3	3
5	4	1	Visitor Self-Admin	Reset Password	As a visitor, I can request to be sent an email with a link to a page that lets me create a new password	Upon having received the email, I can use the linked-to page to create a new password	5	5
6	5	2	User Self-Admin	Prompt Basic Profile	As a user, I am asked to enter basic profile data upon every login, if it doesn't yet	I am asked for basic data upon every login; after providing it once, I never get	5	5

Development Speed   Product Backlog   Sprint Backlog   Feature Archive

3. Sprint Release

- This sprint's **product owner**
  - Decide whether release candidate should be released
    - Only in case of significant regression should you not release

  - Consult with software developers if necessary

- This sprint's **review and release manager**
  - If the release candidate is to be released
    1. Deploy sprint release to operations environment
    2. Tag release with **sprint-xx-release**
       - where xx is your sprint number

  - If you maintain a change log (optional)
    - Update change log with release information

4. Sprint Retrospective

1. This sprint's **Scrum master**
   - Review this sprint's impediments
     - Report on progress
     - Review remaining problems

2. Next sprint's **Scrum master**
   - Make roll call as to new impediments
     - Take note of people's impediments
     - Allow everyone to make a suggestion

   - Note impediments in impediments backlog

3. Everyone
   - Answer to happiness index
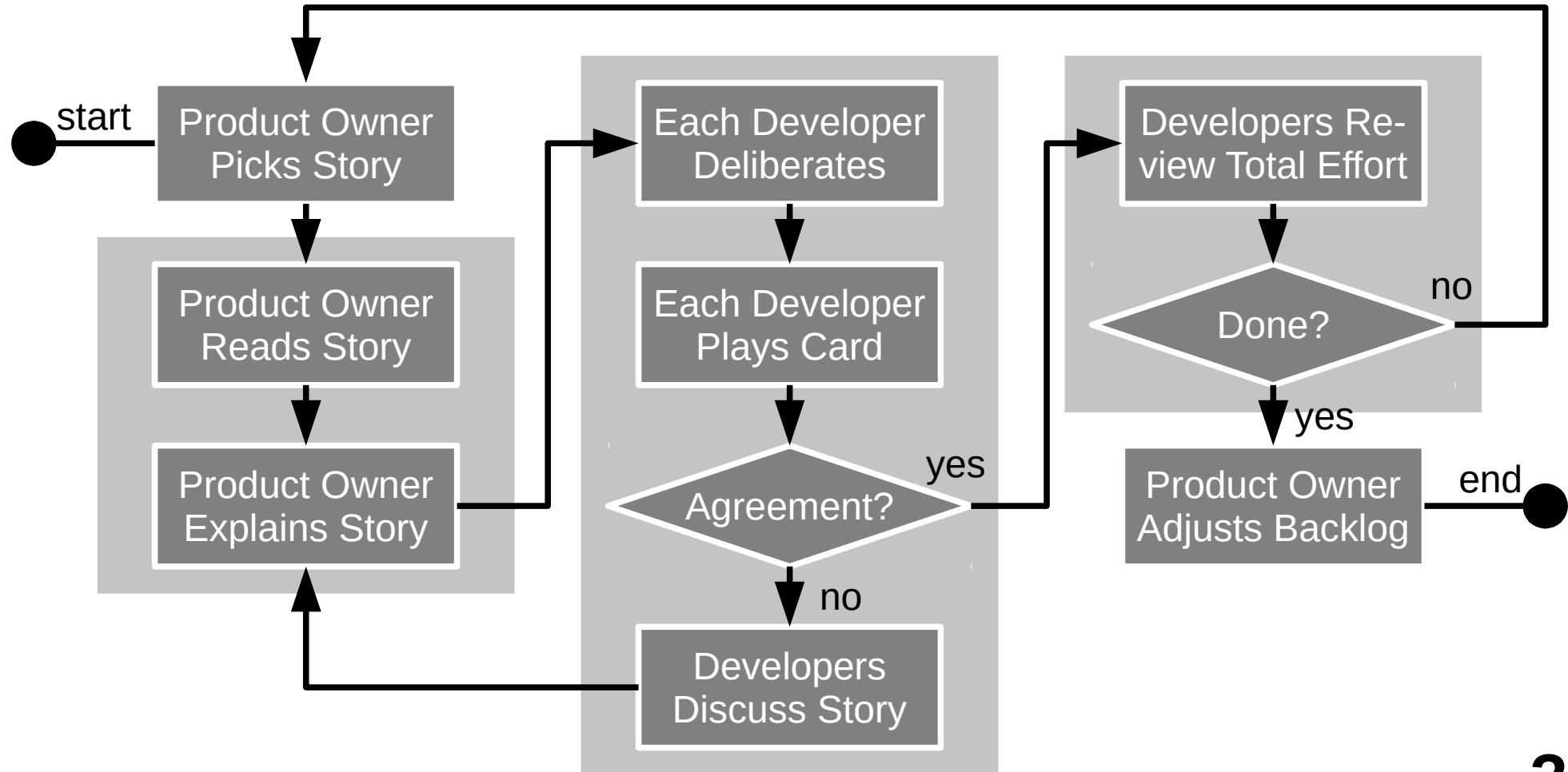
5. Sprint Planning

- This (now new) sprint's **product owner**
  1. Reprioritize backlog items, if necessary, on-the-fly
  2. Work through top-prioritized backlog items one-by-one until finished
     - For each product backlog item, explain it, ask developers to estimate and commit
     - You are finished, if the team does not want to take on more backlog items

- Software developer
  - Estimate size of each backlog item using planning poker
  - After planning, commit to backlog items put into sprint backlog

- Everyone
  - Make sure roles for sprint are clear to everyone

Story Points

- Story point
  - An arbitrary numeric measure of size of a given feature

- Properties
  - Is a measure of size, not of effort or duration
  - Measured in non-linear increments, forcing choice
  - Is socially agreed upon, depends on team estimation history
  - Is independent of a particular person (and their skills)
  - Is mapped to time using the team's velocity (dev. speed)

Points	Meaning
0	No effort
1	Minimal effort
2	Small effort
3	Medium effort
5	Large effort
8	Very large effort
13	Too large effort

Flow Diagram for Sprint Planning [1]

start

Product Owner Picks Story

Product Owner Reads Story

Product Owner Explains Story

Each Developer Deliberates

Each Developer Plays Card

Agreement?

yes

no

Developers Discuss Story

Developers Review Total Effort

Done?

no

yes

Product Owner Adjusts Backlog

end

[1]   A simple planning poker cards replacement can be found in the planning documents

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6. Meeting After-work

- This sprint's **product owner**
  - Update planning documents to consistent state
    - Clean up product and sprint backlog
    - Ensure feature archive is current
    - Update release plan with actual effort for sprint

- This sprint's **Scrum master**
  - Work on resolving impediments during sprint
  - Document resolutions in impediments backlog

Weekly Checklist for Artifacts

- Planning documents
  - Clean release plan, product backlog, sprint backlog, and feature archive

- Software product
  - Tagged, testable, deployable software code base and product

- Process improvement
  - Impediments documented, discussed; happiness index survey taken

Next Steps

- See Course schedule

Thank you! Questions?

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- Contributions
    - None yet