

Agile Software Development for Developers

Session 3: Estimation (Part 1)

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Review

■ Session 1

- Paradigm and paradigm shift
- Agility: An elephant in the dark
- Agility: A definition
- Agile values, principles, and practices
- ▶ The Cynefin: clear, complicated, complex, chaotic, disorder

■ Session 2

- ▶ Product backlog items: feature (user story), defects, technical work, and knowledge acquisition (spike)
- ▶ User story: title, description, acceptance criteria
- ▶ Questions words: who, what, why
- ▶ User story is something like order

Estimation

What and When

What and When We Estimate

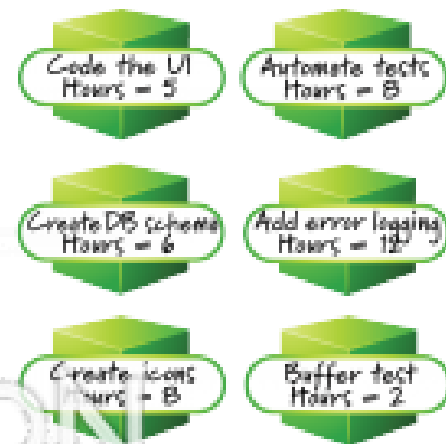
Portfolio backlog



Product backlog



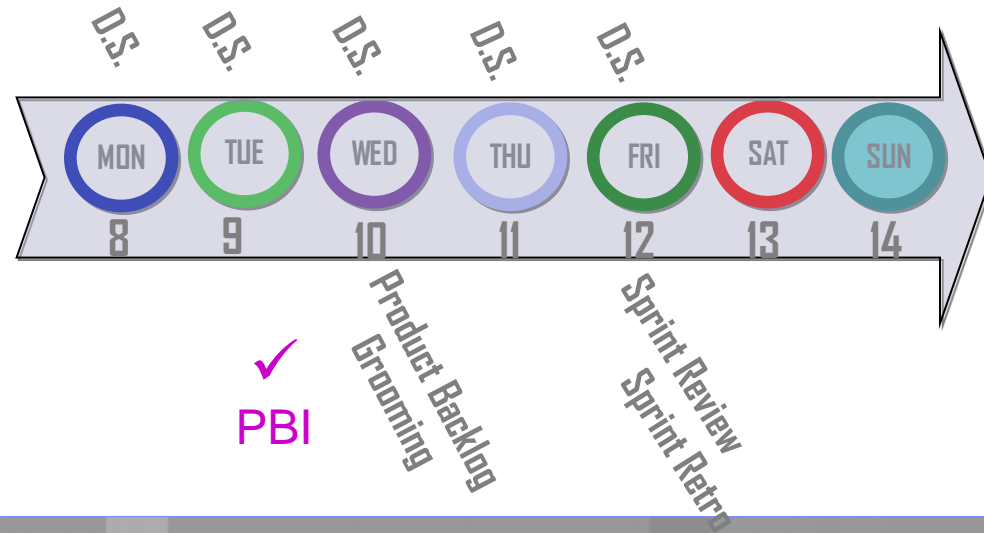
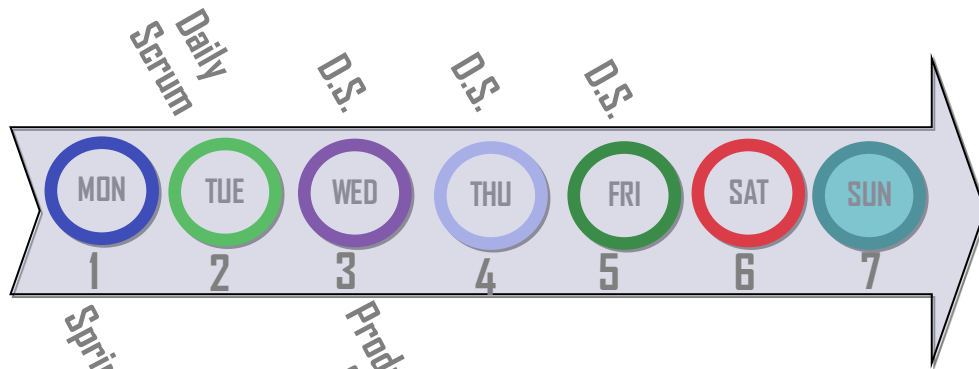
Sprint backlog tasks



Item	Portfolio backlog	Product backlog	Sprint backlog tasks
Unit	T-shirt sizes	Story points/ideal days	Ideal hours/effort-hours
When	Portfolio planning	Product backlog grooming	Sprint planning

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Sprint Timeline and Estimation (✓)



Estimation

Basic Concepts

EC: Words are important

Guesstimate, Estimate, Commit, Guarantee

"Words are free. It's how you use them that may cost you."

- Guesstimate: an estimate usually made **without** adequate information
- Estimate: to determine **roughly** the size, extent, or nature of
- Commit: to fully **dedicate** yourself to something.
- Guarantee: an **assurance** for the fulfillment of a condition

EC: Words are important cont.

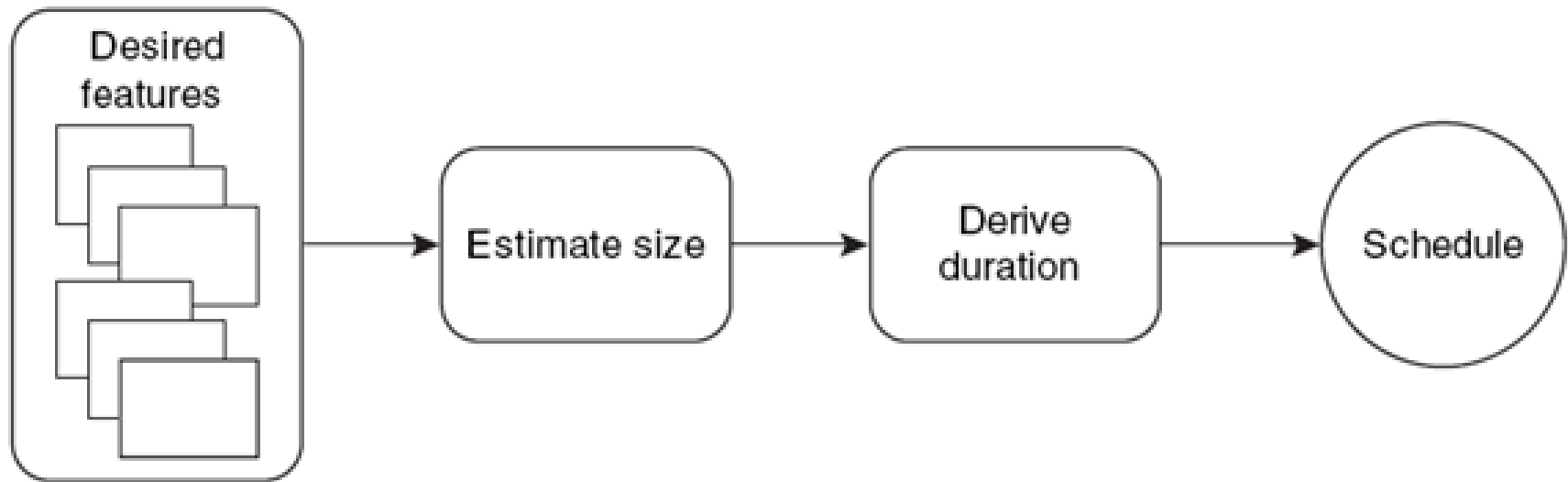
Estimates do not become commitments or guarantee

"Words are free. It's how you use them that may cost you."

- Embedded within every estimate is a **probability** that the work will be completed in the estimated time.
 - ▶ Suppose your team has been asked to develop a new word processor.
 - The probability of finishing this by the end of the week is 0%.
 - The probability of finishing it in ten years is 100%.
- An estimate is a probability, and a **commitment** cannot be made to a **probability**.
 - ▶ Ten unmyths of project estimation, Phillip Armour, 2002

EC: Size or Duration

What do we estimate? Size or Duration?



Estimating the duration of a project begins with estimating its size.

Estimate Size; Derive Duration

EC: Size or Duration

An Example: When will we be in Rasht?



Size

Calculation (Aux data)

Duration

Distance:
300 Km

Velocity:
100 Km/h

$300/100 =$
3 hours

Start:
2 PM

Finish:
2+3 = 5 PM

EC: Planning by Feature Rather Than Activity

- First

- ▶ Customers get no value from the completion of activities.
- ▶ Features are the unit of customer value.

- Second

- ▶ When we review a schedule showing activities, we do so looking for forgotten activities rather than for missing features.

EC: Estimation Gamification!

- 100 Pages
- Estimation:
 - ▶ Scenario I: Reward
 - ▶ Scenario II: Penalty
- What do we miss?



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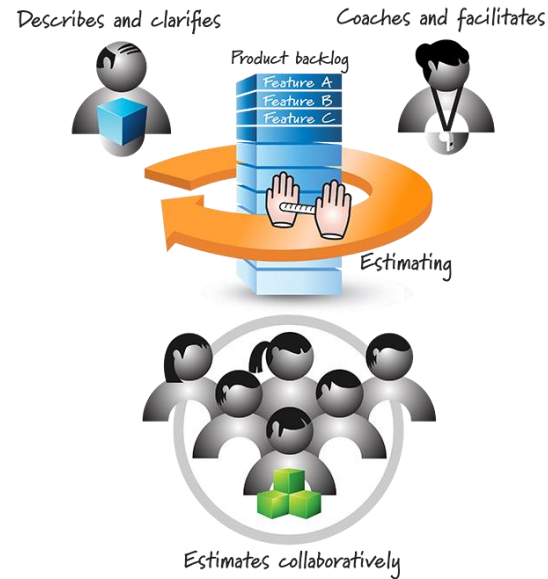


Original size estimate



**Revised estimate
based on commitment**

EC: Estimate as a Team



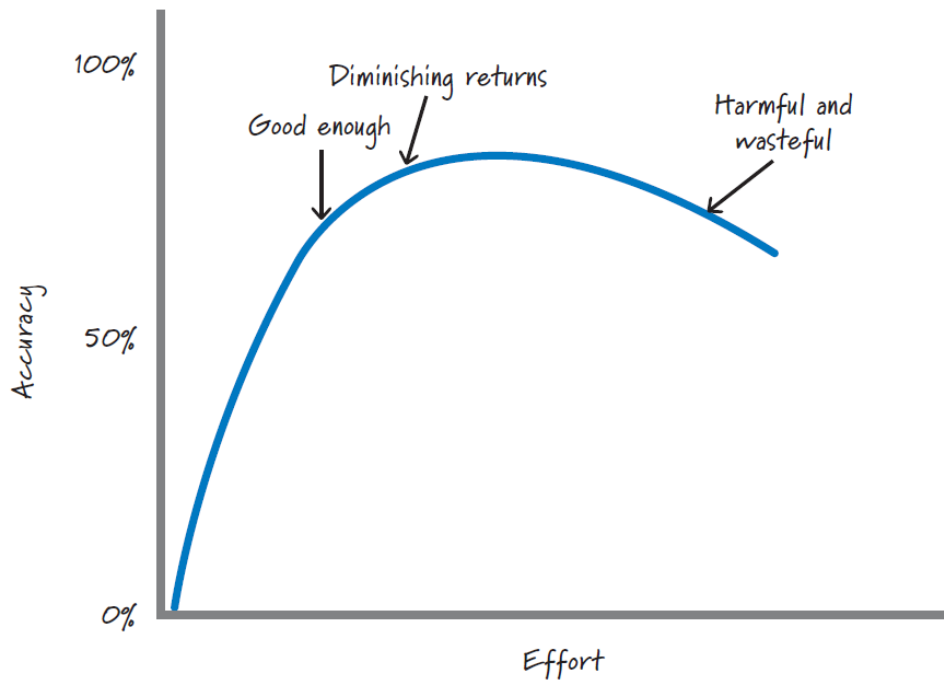
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- "The whole is greater than the sum of the parts." Aristotle
- When everyone participates, it increases buy-in and engagement.
- Everyone contributes, even if she doesn't estimate

BC: Accuracy versus Precision

■ Numbers:

- ▶ 2, 2.1, 2.12, 2.124, 2.1242
- ▶ Better precision needs better tools, requires more investment



Credit: Essential Scrum

- Estimates should be accurate without being overly precise.
- The more precise we try to make our estimates, the less accurate they'll actually be.
- Trying to be too precise only creates waste.

BC: Accuracy versus Precision (cont.)



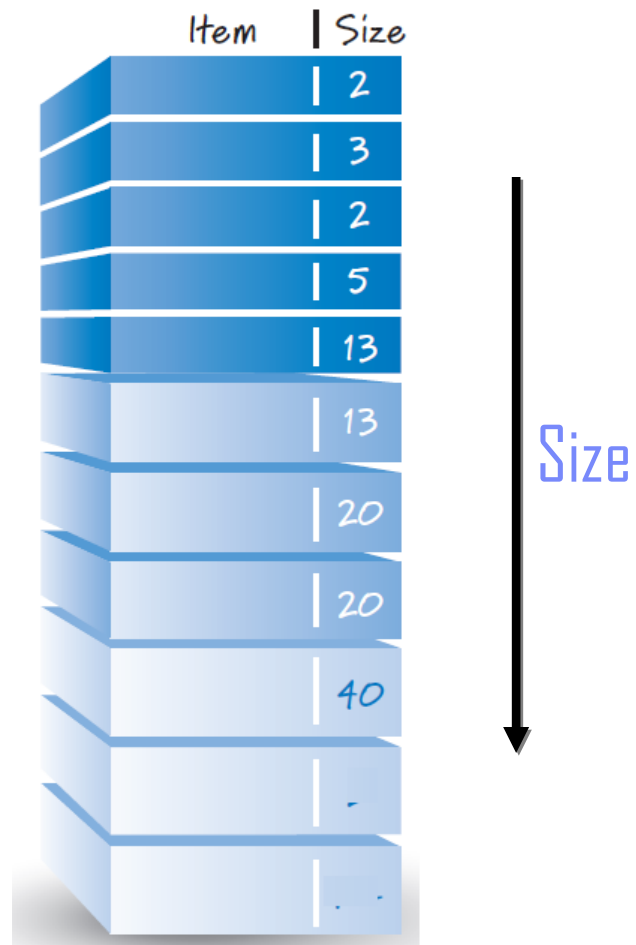
Cost (K \$)	Size (T-Shirt)
< 50	XS
50 -150	S
150-350	M
350-1000	L
> 1000	XL

EC: Relative Size Estimation

- Research in the psychology of planning shows that people fare better at relative than absolute estimation; in fact the grounding for this claim is at best tentative
- So why do we ask people to do something they are not good at?

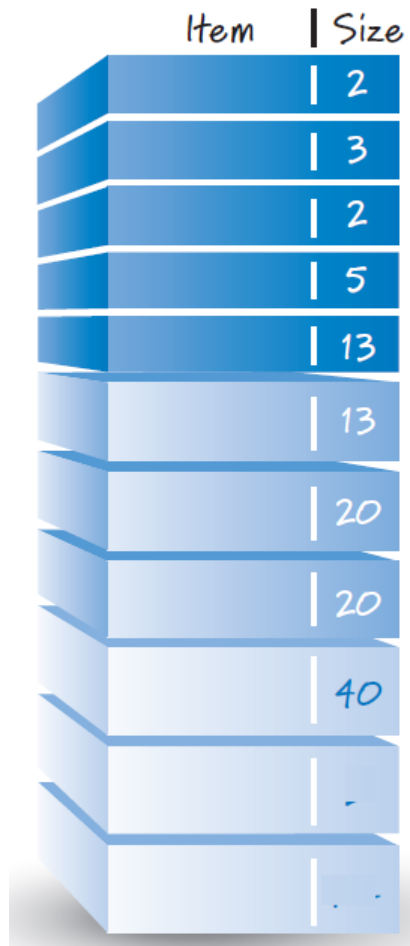


BC: Backlog, So Close, So Far



Credit: Essential Scrum

BC: Backlog, Sprintable or Implementable Stories



Credit: Essential Scrum

EC: Assumptions (unvalidated knowledge, Complex Domain)

- Assumption
 - ▶ An assumption is a guess, or belief, that is assumed to be true, real, or certain even though we have no validated learning to know that it is true.
- Assumptions represent a significant development risk.

Estimation

Next Session

Next Session

- Planning Poker
- Estimation Size for Tasks and User Stories
- Exercise

Exercise

Steps

- Product Owner
- Identify Use Story
- Break-down User Story

Thanks

- Faezeh Eshragh
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