

ESTIMATION

WHY WE ESTIMATE

To pretend we are in control

To forecast

- What will be true by when
- When something will be true



FINDINGS OF A 1998 HBS STUDY OF LARGE SOFTWARE PROJECTS

The first flawed assumption is that it is possible to plan such a large project.

The second flawed assumption is that it is possible to protect against late changes.

The third flawed assumption is that it even makes sense to lock in big projects early.

SINGLE POINT ESTIMATE - THE EXPERT

Ask the Manager

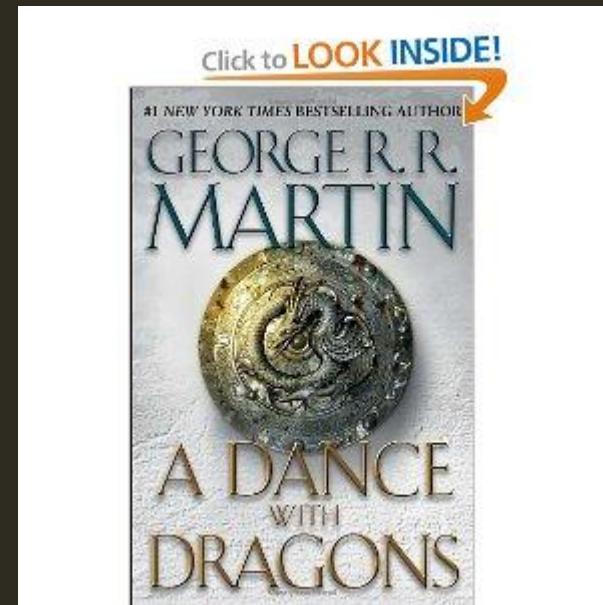
- Wants the team to look good
- May discounts technical risks
- May amplify management and interdependency risks
- Tend to under promise

Ask the Architect

- Wants the system to look good
- May discount management and dependency risks
- May amplify system capabilities
- Tend to over promise

HOW LONG WILL IT TAKE TO...

Drive to Los Angeles?



Read A Dance with
Dragons?

ESTIMATE SIZE – DERIVE DURATION (MIKE COHN)

Estimate Size

- How far is it to Los Angeles?
- How many pages is A Dance With Dragons?

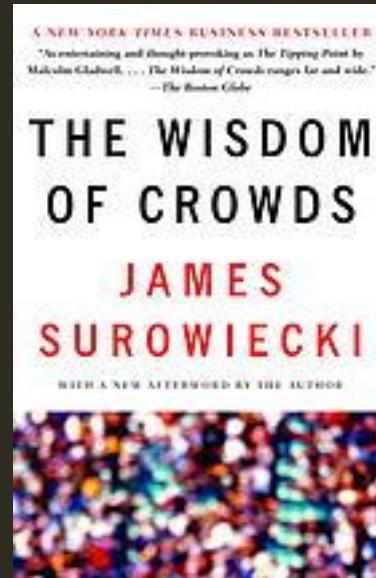
Derive Duration

- Based on experience
- For example:
 - I drove to San Francisco once and it took me n hours
 - I read a previous book from George RR Martin and it took me this long

THE WISDOM OF CROWDS

Why the Many Are Smarter Than the Few and How Collective Wisdom Shapes Business...

The opening anecdote shows that the crowd at a county fair accurately guessed the weight of an ox when their individual guesses were averaged (the average was closer to the ox's true butchered weight than the estimates of most crowd members, and also closer than any of the separate estimates made by cattle experts)



KEYS TO WISDOM OF CROWDS

Diversity of Opinion

Independence – people are not influenced by the people around them

Decentralization – people are able to specialize and draw on local knowledge

Aggregation – Some mechanism exists for turning private judgements into collective decision

LET'S TRY AGAIN...



CONCLUSION

Group estimates are more accurate than single point estimates

YESTERDAYS WEATHER

Future
performance is
best informed by
historical
performance



RELATIVE ESTIMATION

FIBONACCI SEQUENCE



ESTIMATION IS FRACTAL

<http://dannorth.net/2009/07/01/the-perils-of-estimation/>

To compound this, it turns out that estimation is fractal. The more fine-grained you break down the requirements, the more “edges” you will discover. This means that the more detailed you estimate, the more the total will tend towards infinity, simply due to rounding errors and the fear factors that we multiply into fine grained estimates.

ACCEPTANCE CRITERIA FOR AN ESTIMATION TECHNIQUE

Utilizes

- Yesterdays Weather
- Relative Estimation

Detailed – but not too detailed

Harnesses the Wisdom of Crowds

Builds on Shared Context

EXERCISE: FLOW AND COMPLEX SYSTEMS

Goal: Understand and Improve System Throughput

Setup: Clear the room

Rules

- You are one big team – everyone must touch each ball once for a point to count
- Balls must have airtime
- No ball to your direct neighbor
- Start point = End Point
- Sprints = 2 minutes
- Retrospective = 1 minute
- We do 5-10 sprints
- Duration: 30-45 minutes

STORY POINTS (MIKE COHN)

How long a user story should take

Influenced by complexity, risk, amount of work and team

Relative Value is important

- A login Screen is a 5
- A Project Page is a 13

Basic Math Properties Should Hold

- $5 + 13 = 18$

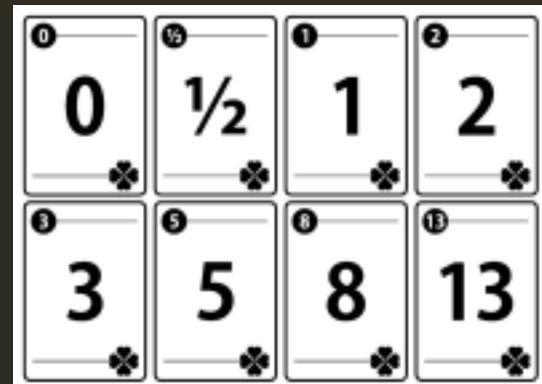
PLANNING POKER



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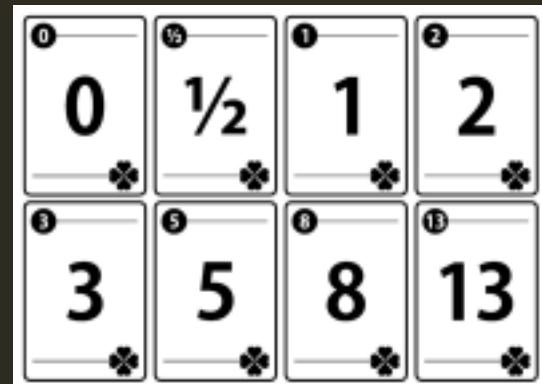
PLANNING POKER

Team Member	Round 1	Round 2	Round 3
Tim			
Jim			
Troy			
Darren			



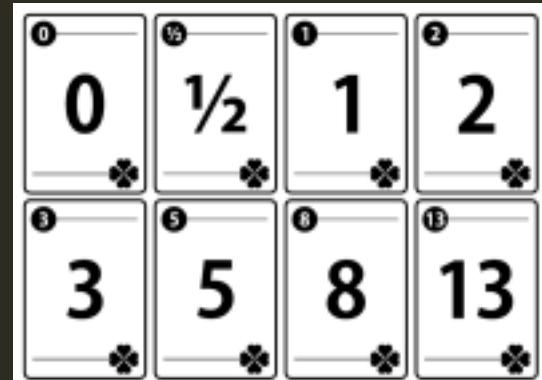
PLANNING POKER

Team Member	Round 1	Round 2	Round 3
Tim	8		
Jim	5		
Troy	2		
Darren	5		



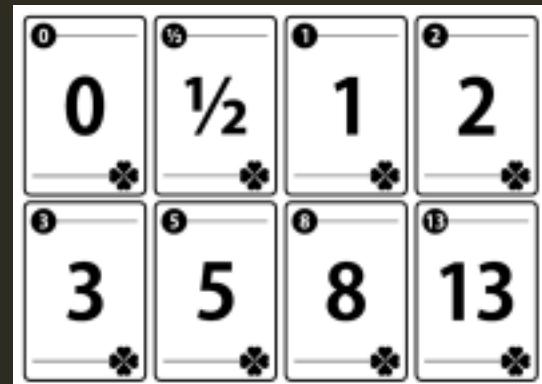
PLANNING POKER

Team Member	Round 1	Round 2	Round 3
Tim	8	13	
Jim	5	5	
Troy	2	5	
Darren	5	8	



PLANNING POKER

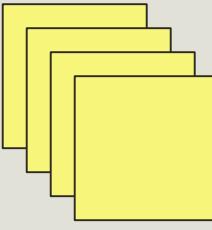
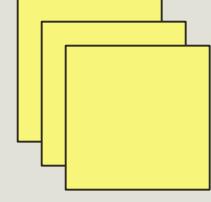
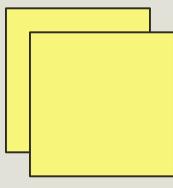
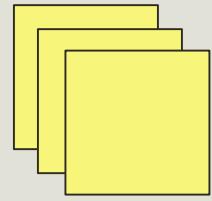
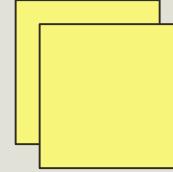
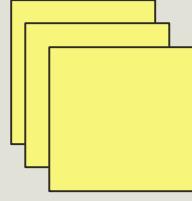
Team Member	Round 1	Round 2	Round 3
Tim	8	13	8
Jim	5	5	8
Troy	2	5	5
Darren	5	8	8



WHITE ELEPHANT ESTIMATION

1. Shuffle the User Stories
2. Pick the top card off the deck or after 5 user stories pick a card from the board for the purposes of resizing
3. Read the story on the card out loud to the group
4. Assign the card to one of the five columns on the board (1, 2, 3, 5, 8, 13)
5. Provide a reason to the group
6. Repeat starting at #2 – Continue until the cards are all on the board

WHITE ELEPHANT ESTIMATION

1	2	3	5	8	13
					

EXERCISE: WHITE ELEPHANT ESTIMATING

Goal: Have the development team estimate the stories from the product backlog on the following slide

Setup: Continue with your existing teams

Rules:

- Use the White Elephant Estimating Technique to estimate the cards
- Continue until each person passes on changing the cards

Duration: 20-30 Minutes

PRODUCT BACKLOG

1. Read and understand a detailed, 10-page article of agile software development in IEEE Magazine
2. Read and understand a high-level, 5-page overview of agile software development in a news magazine
3. Recruit, interview, and hire a new member for your team.
4. Create a 60-minute presentation about the Speculate phase of the Agile Delivery Framework
5. Change the brakes on your car
6. Read (and understand) a 150-page book on agile software development
7. Write a 5-page summary of this class for your boss
8. Upgrade your current version of Microsoft Office to Microsoft Office 2013
9. Change the hard drive on your computer
10. Research, test-drive, and purchase a new car

EXERCISE: PRODUCT BACKLOG ESTIMATION

Goal: Have the development team estimate the stories from the product backlog developed from an earlier exercise.

Setup: Continue with your existing teams

Rules:

- Use the White Elephant Estimating Technique or Planning Poker to estimate the stories

Duration: 20-30 Minutes

FIRST FEASIBLE DEPLOYMENT

FIRST FEASIBLE DEPLOYMENT

First Iteration in which the product could be deployed

Codeplex Example

- An open source project hosting site
- High Level Features
 - Source Control
 - Work-Item Tracking
 - Download Capability
 - Project Home Pages

Waiting for a full featured product is often a mistake

- Xerox Laser Printers

EXERCISE: FIRST FEASIBLE DEPLOYMENT

Goal: Have the development team determine the stories that make up the first feasible deployment

Setup: Continue with your existing teams

Rules:

- Use the stack rank determined earlier
- Draw a line indicating the first feasible deployment
- Summarize the estimates to indicate the estimated effort needed to complete the first feasible deployment

Duration: 15 Minutes

SPECULATE PRACTICES SUMMARY

Build a product backlog

Release Planning

Candidate Architecture

Estimating

First Feasible Deployment