



PLURALSIGHT



O.C. TANNER

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Building Health Savings™



Ten #Failed Forecasting Plan Assumptions

By Troy Magennis
@t_magennis
FocusedObjective.com



**Option
1**

Option 1 & 2 need
analysis, or do they?

B

**Option
2**

A



**Option
3**

> 2x Option 3 is
excluded



Network Throughput Test

Slides and spreadsheets at

Bit.ly/SimResources

(Case SENSITIVE)

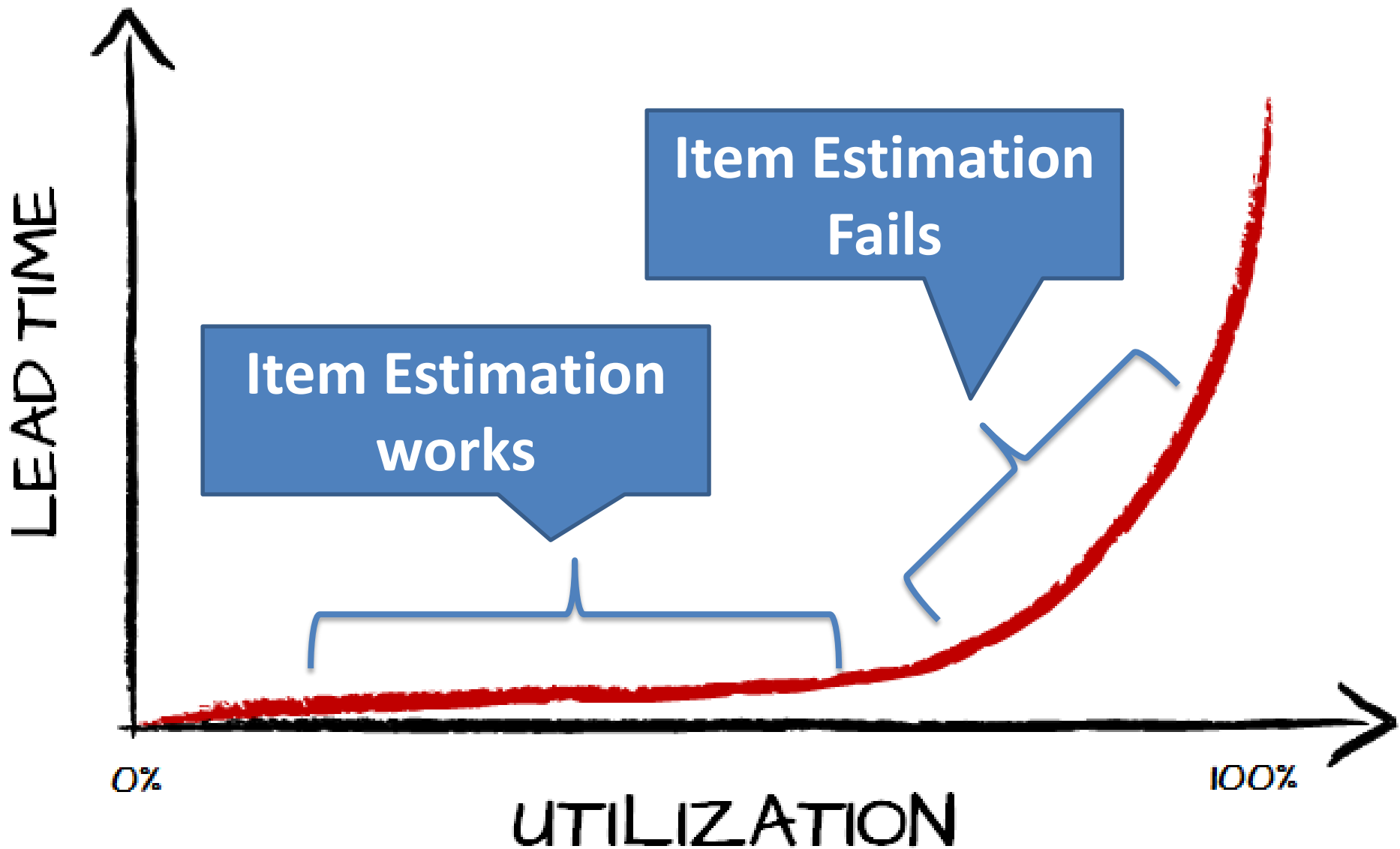












See full story at <http://brodzinski.com/2015/01/slack-time-value.html>



Can't forecast high utilization systems using item size

Trucks move at same speed as cars



**For high utilization systems
we need to track system
level impediments**

**“Things that impact EVERY item”
And “System Utilization”**



1: Missed Start Date



**Mistake when
planning
portfolios**



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- How the planned date was chosen?
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2: No Team (Team not ready)



3: Partial Team (Team < planned)



4: Partial Body Staffing

Centre forward

Centre forward



Left midfield



Right midfield

Centre midfield

Centre midfield



Left-back



Centre-back



Centre-back



Right-back



Goalkeeper

5: Missing Skillsets

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3, 4 & 5: Team Skill and Strength



- How were the skill-sets required determined
- Did skill level factor into team planning
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- Plan what skills are necessary for the project
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Capability Matrix

	CSS	Javascript
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Player Coaches: Ability to create	● 1	● 1
Players: Ability to Maintain	● 1	● 1
Bench: Ready to Train Up	● 1	● 0

General guidelines: 0 = bad, 1 = single point of failure, >2 cool!

Player Coaches: These are the people/teams who can create new work and teach others. You need

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COMPUTER
PICO

ALEXIS DA

Amdahl's Law indicates that the speedup from parallelizing any computing problem is inherently limited by the presence of serial (non-parallelizable) portions

6: Overstated Parallel Effectiveness

$$S(N) = \frac{1}{(1-P) + \frac{P}{N}}$$

Parallel Portion

50%

75%

90%

95%

Speedup

8 parallel teams with 75% parallelizable work = 3x

16.00

14.00

12.00

10.00

8.00

6.00

4.00

2.00

0.00

1

2

4

8

16

32

64

128

256

512

1024

2048

4096

8192

16384

32768

65536

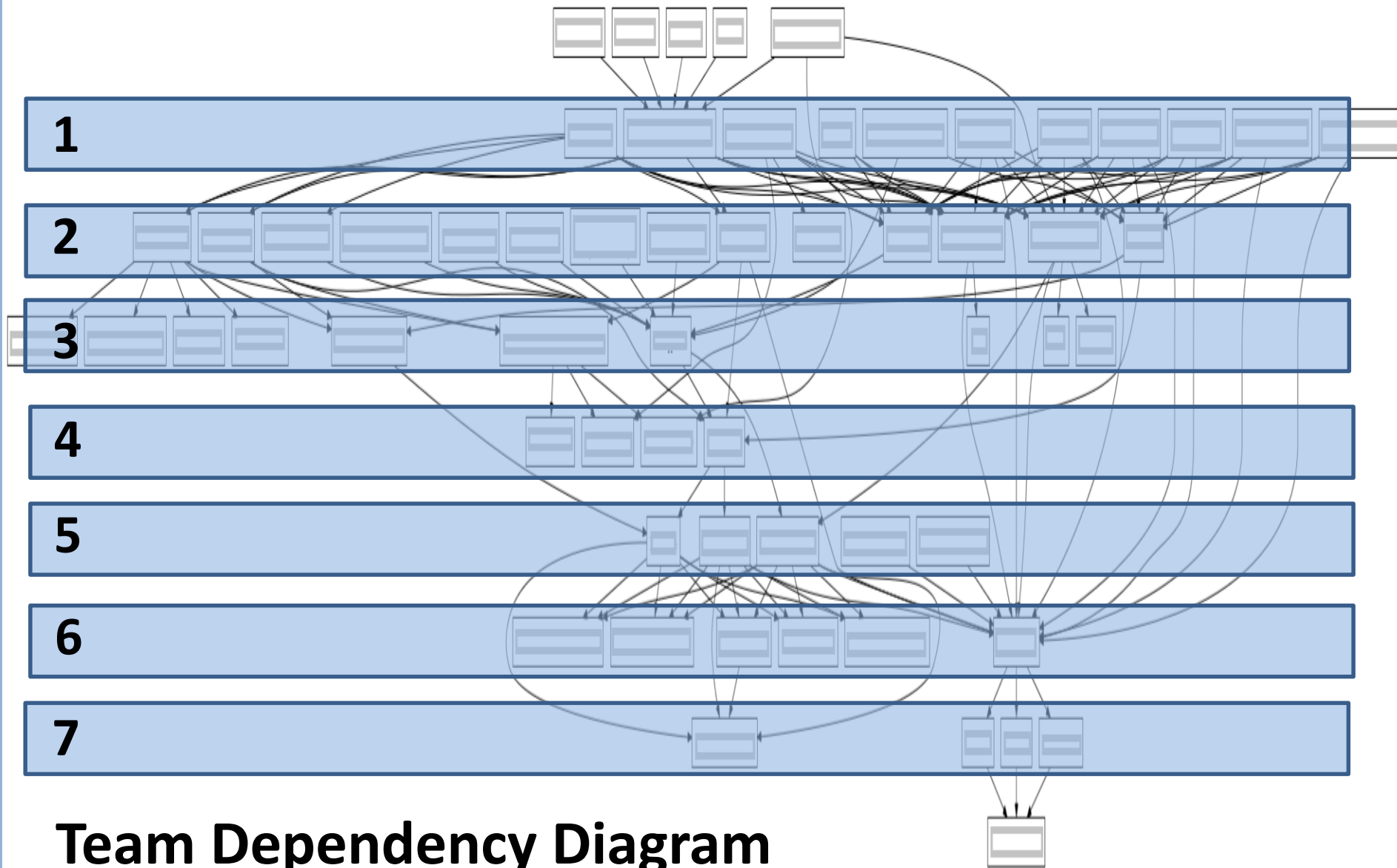
Number of Processors

7: Dependencies and Friction



Error for high
team count

Amdahl was an Optimist



Team Dependency Diagram



Chances at least one team not delayed

1 in 2^n

or

1 in 2^7

or

1 in 128





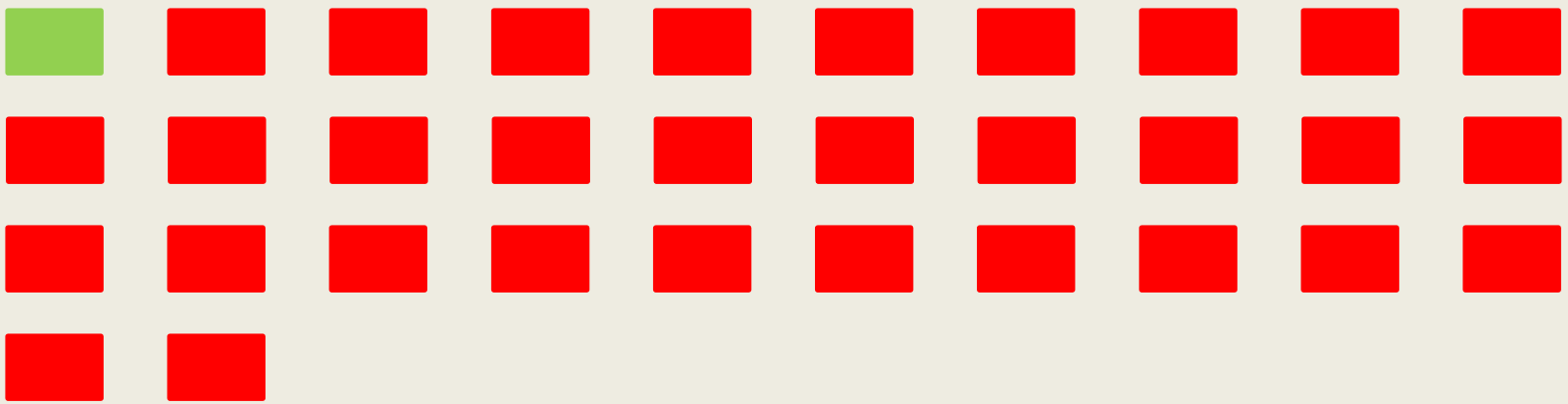
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7: Dependency Impacts

Your timetable != Someone else's



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- Look for re-organization opportunities to reduce dependencies
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Defects

**Technical
Debt**

Mistake for
startups &
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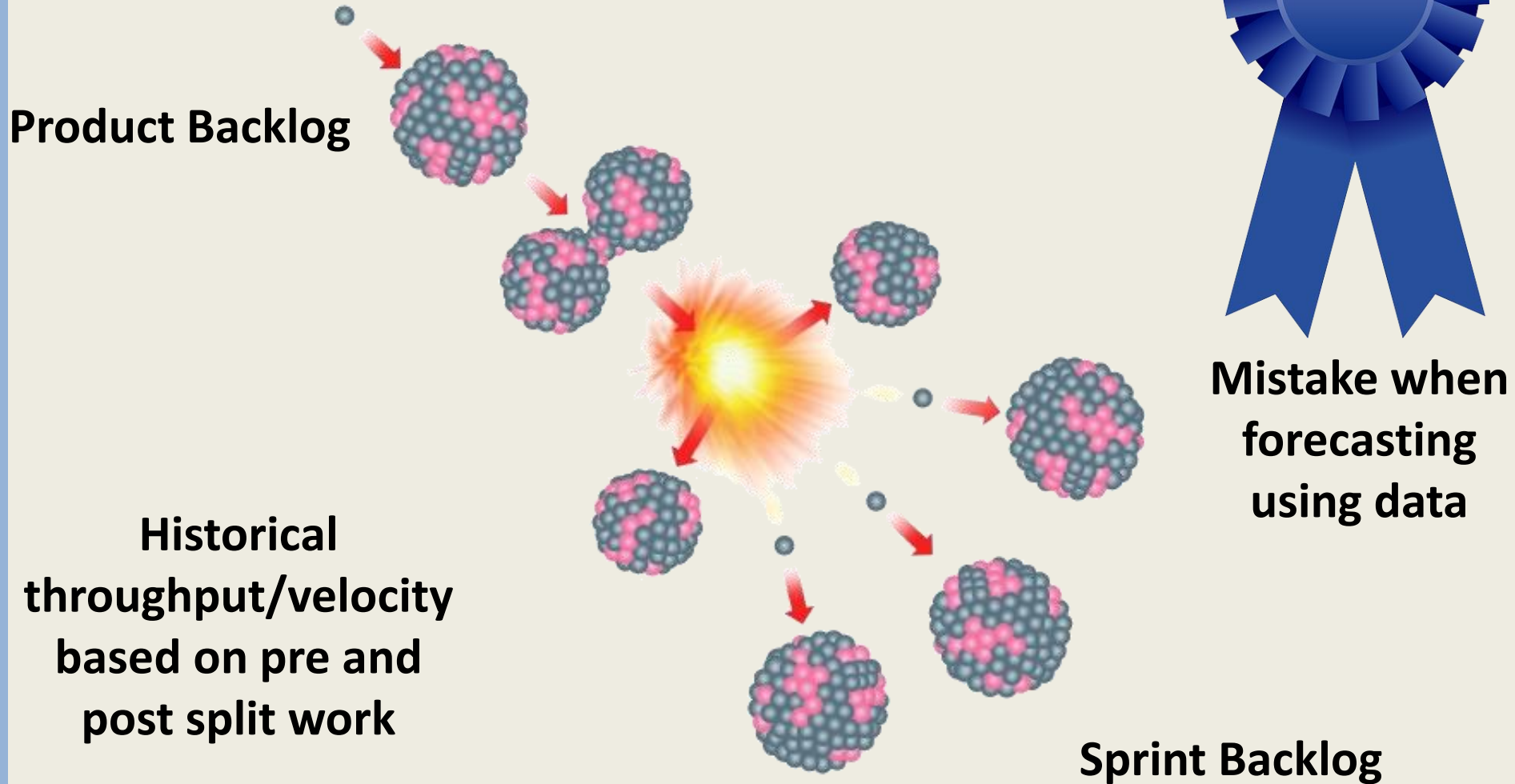


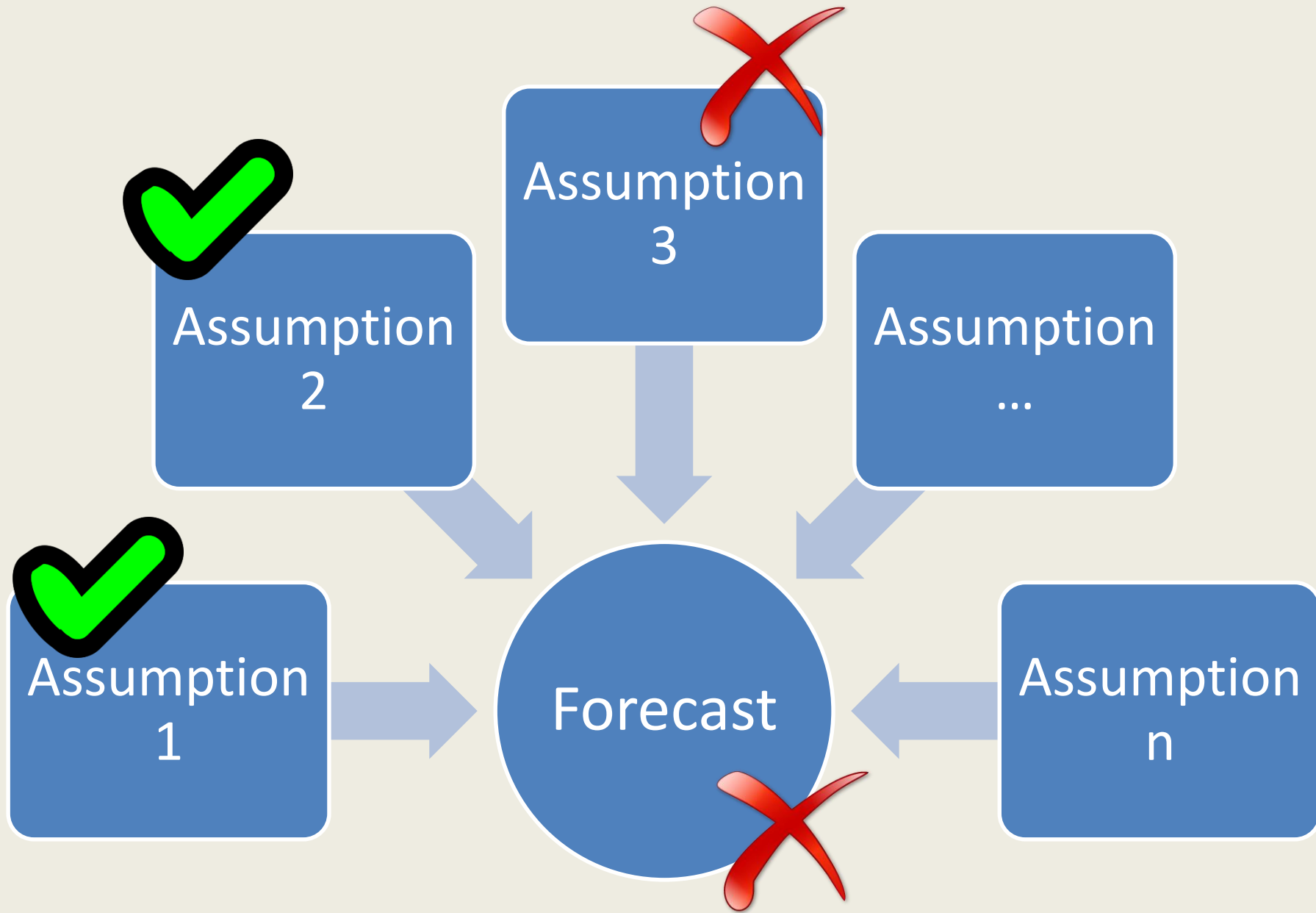
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9: Ship Stoppers



10: Splitting





Monte Carlo Forecasting

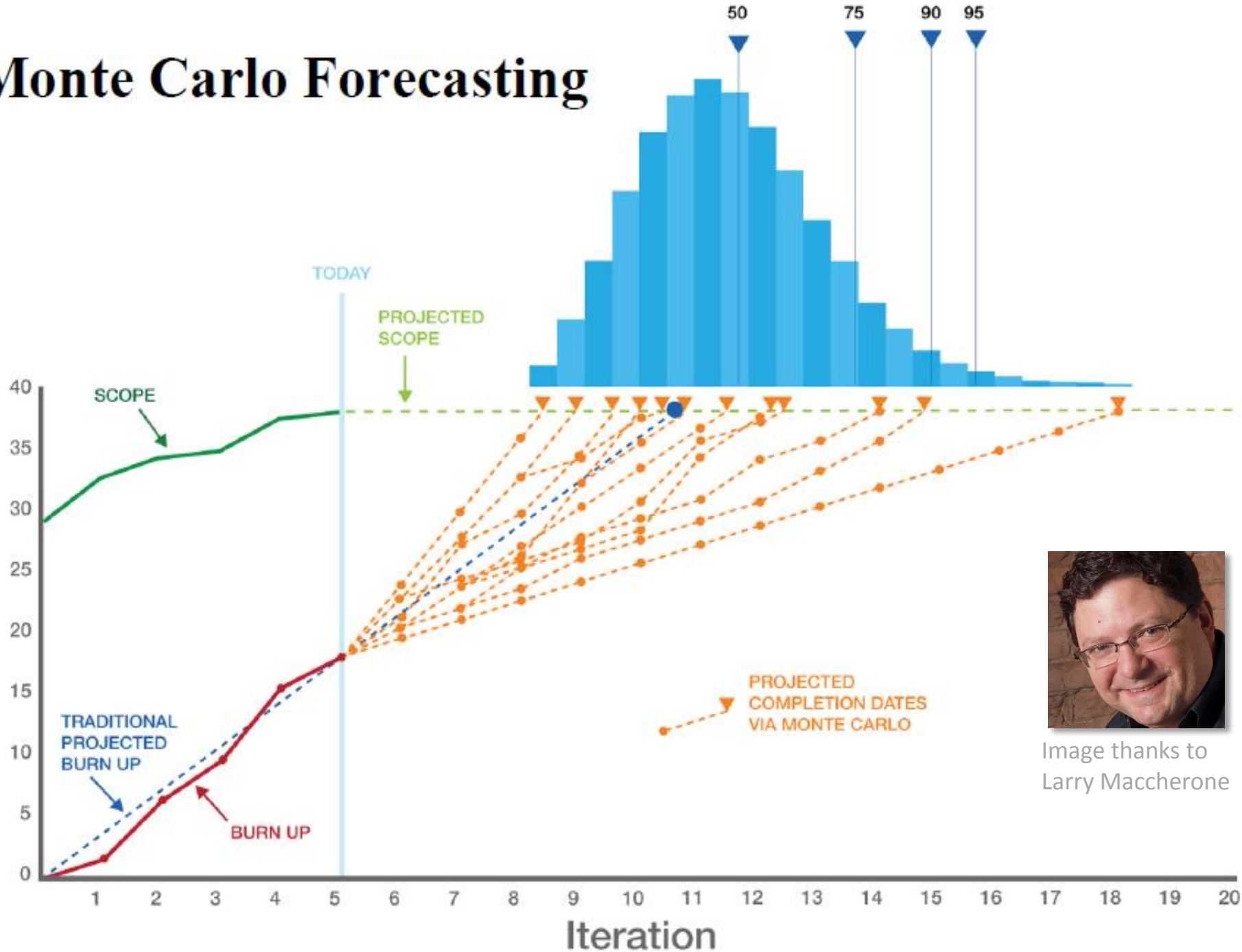
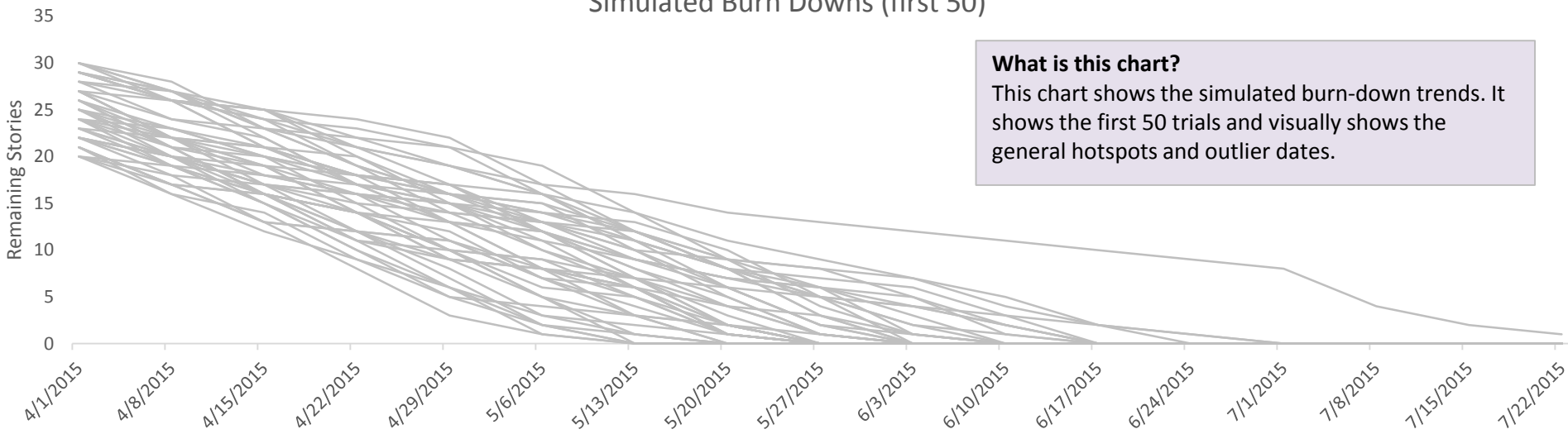


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Simulated Burn Downs (first 50)



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3. Throughput. How many completed stories per week or sprint do you estimate low and high bounds?

Throughput estimate/samples are per

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Use historical throughput data OR enter a low and high estimate below. Use:

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5

Calls to action...

- Understand when estimation is NOT needed
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 - Free tools / Spreadsheets / Exercises
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**Ability to alter investment
once committed**

Flexible

Fixed

Nirvana

**Staff
driven**

**Cost
driven**

**Risk
driven**

Low Loss

High Loss

Penalty of being late – lost revenue, etc.



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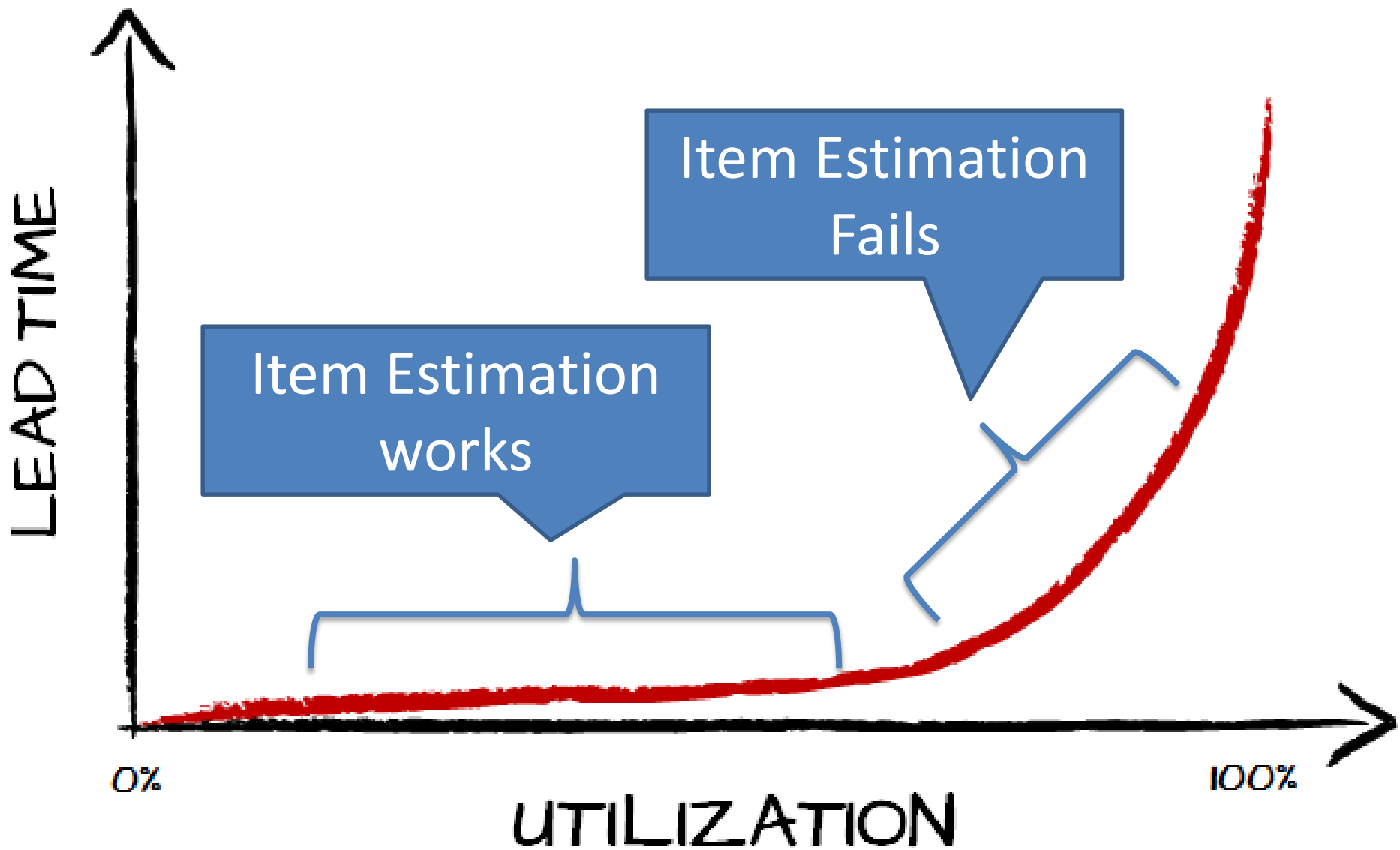












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For the same distance:

Time of Day

Day of week

Multiple lanes?

Traffic lights (luck, #)

Other drivers (stupidity)

Weather / Road conditions



For the same project:
When we start
Time of year/season
Number of teams/people
Dependencies
Other project timelines
Interruptions



1: Missed Start Date

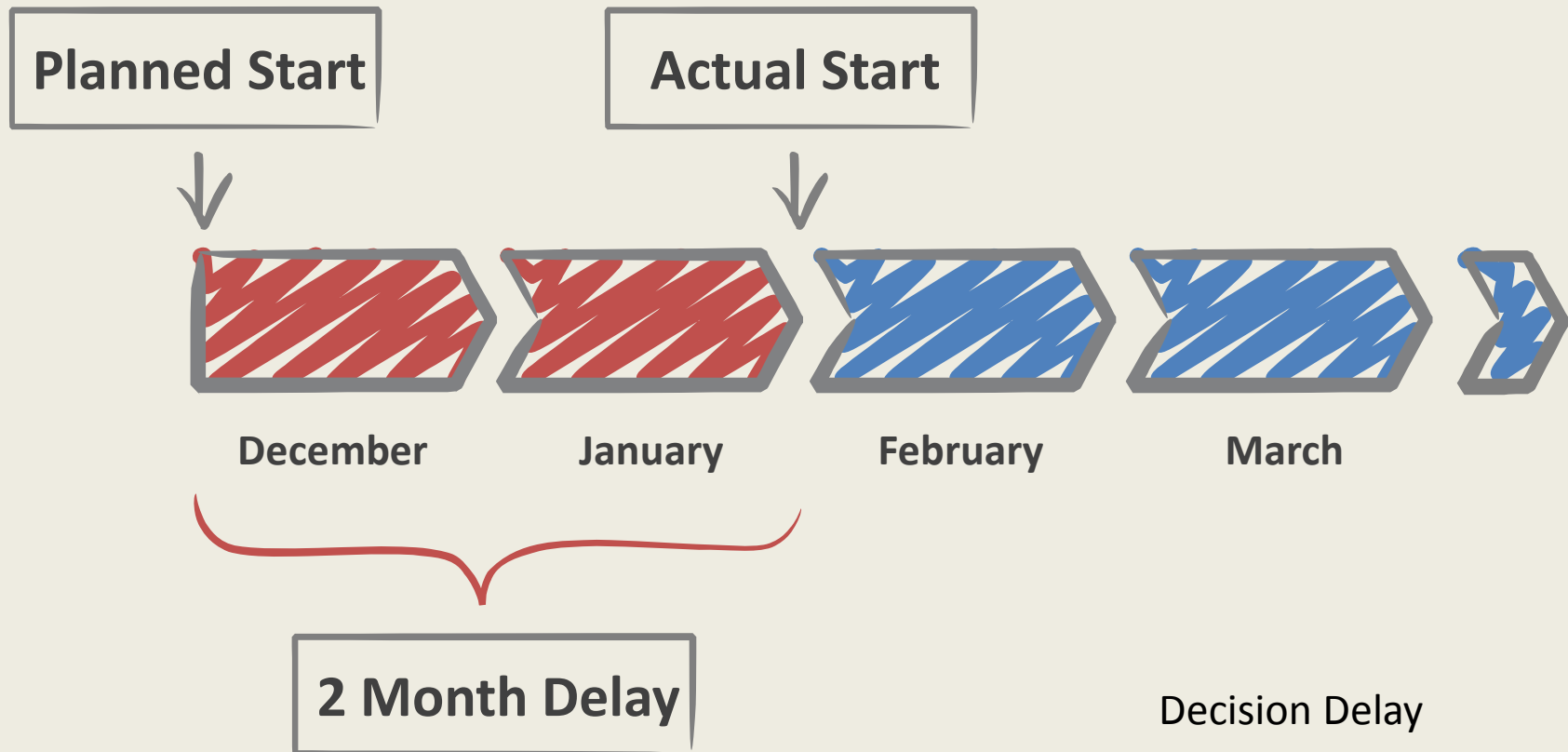


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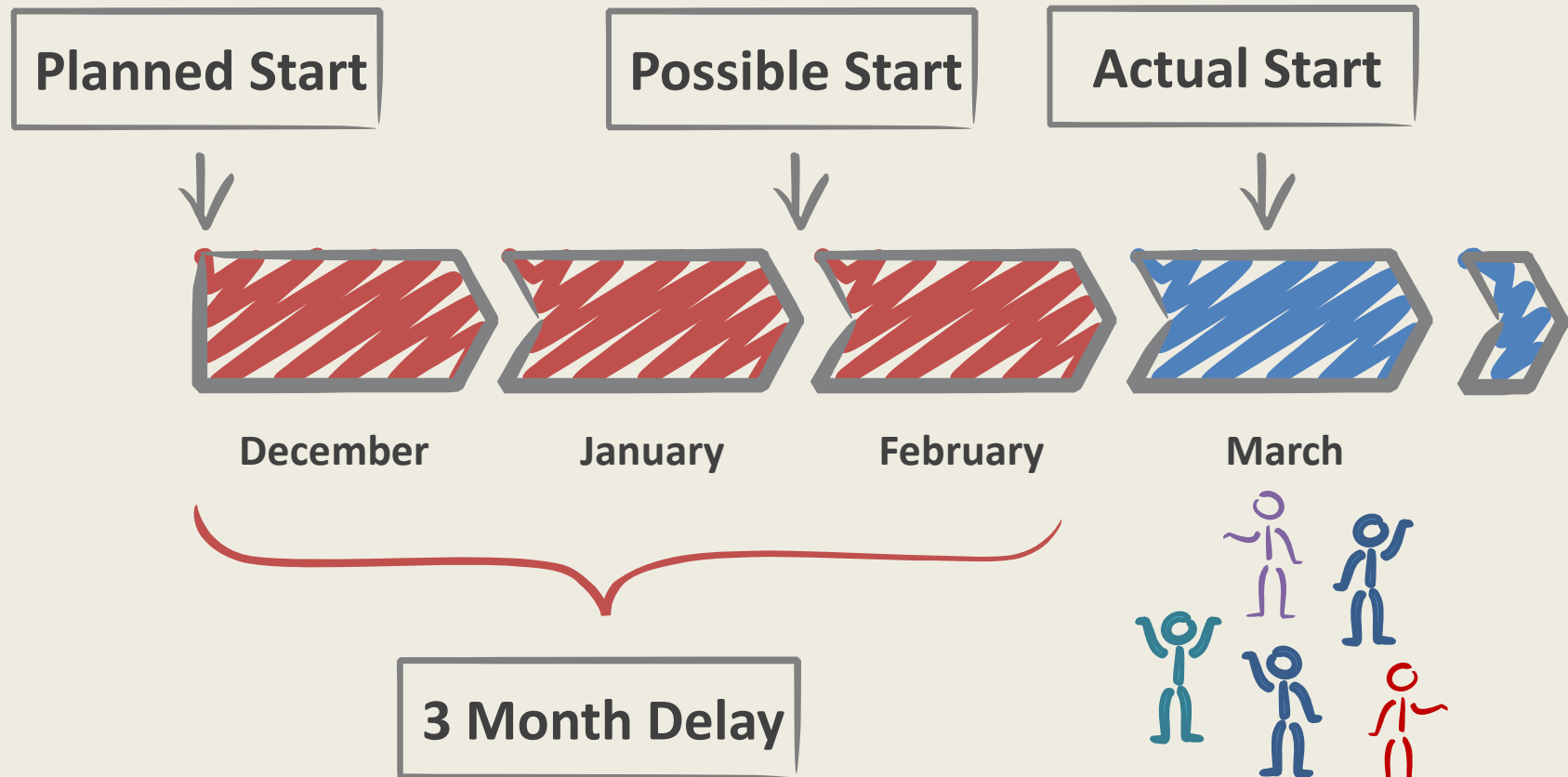


2: No Team (Team not ready)



2: Team Not “Ready” at Start Date

Actual Team = 0



2: Team Not “Ready” at Start Date

Actual Team = 0



- Is the team in place already? Can I see them?
- What are they working on now? Is it likely to be delayed?
- Higher priority projects?



- Plans to hire aren't always achievable by given date
- Plan environment factors: space to sit, equipment, meeting space
- What infrastructure does the team need to “start” work?

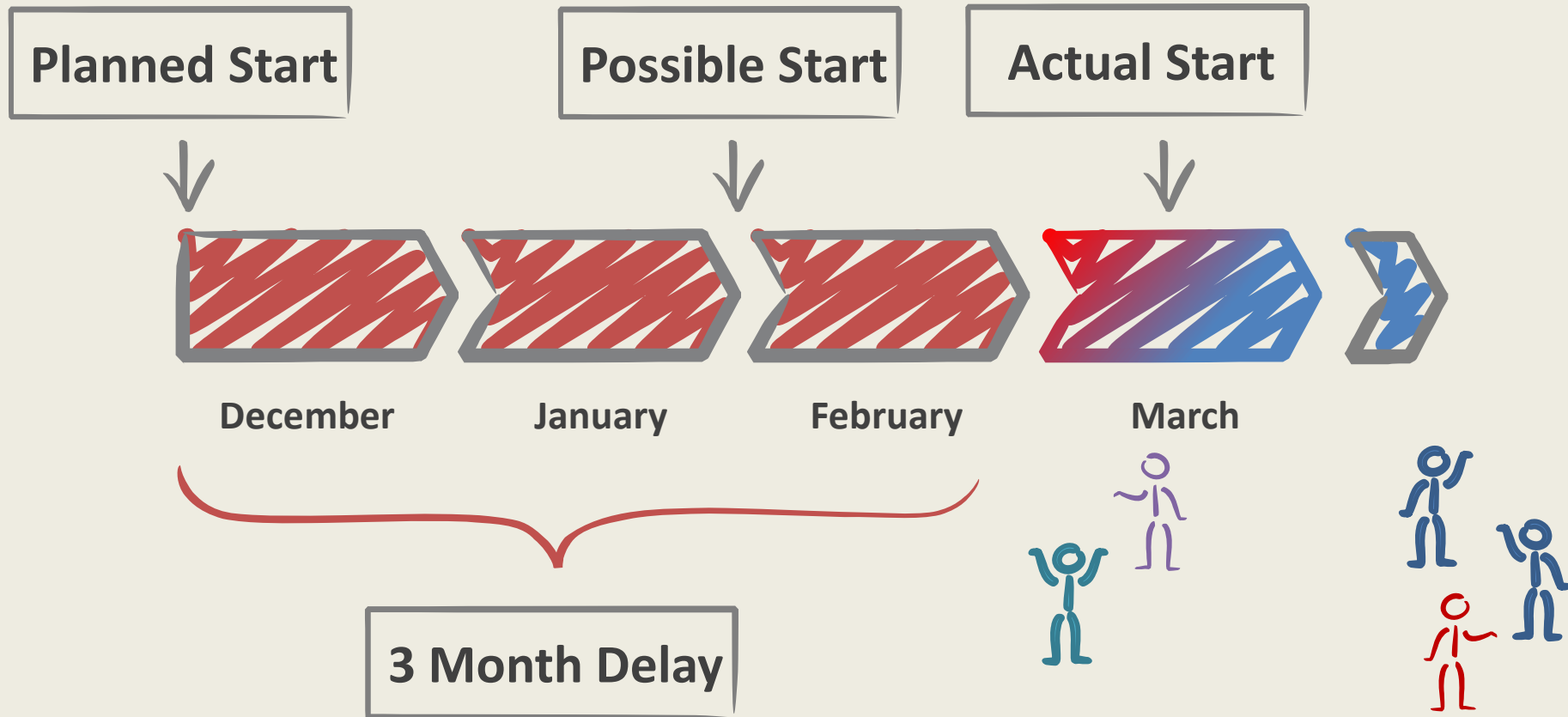


3: Partial Team (Team < planned)



3: Team Not at Strength

Actual Team < Planned Team



4: Partial Body Staffing

Centre forward

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Left midfield



Centre midfield



Centre midfield



Right midfield



Left-back



Centre-back



Centre-back



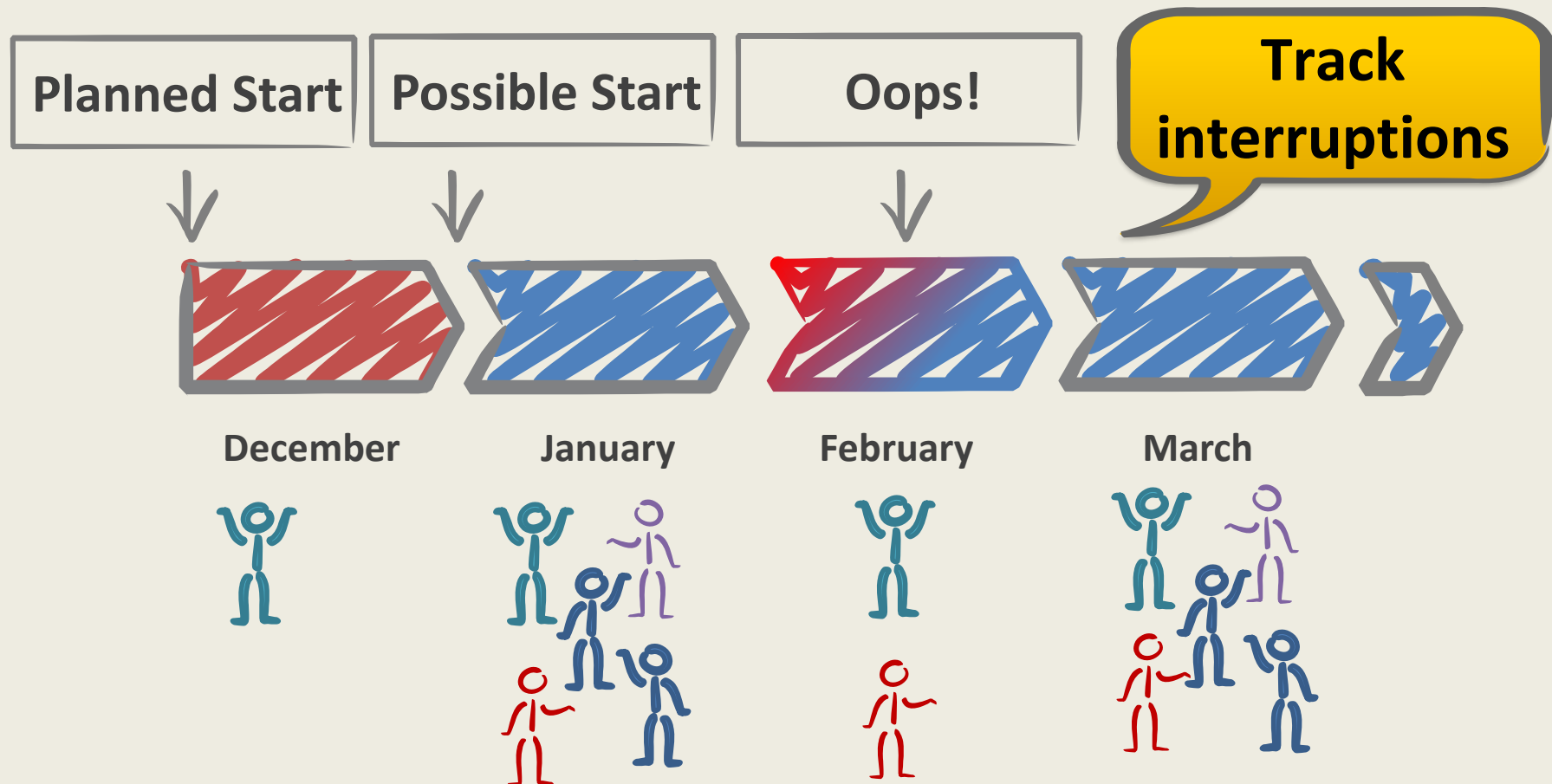
Right-back



Goalkeeper

4: Partial Body Staffing

Actual Team “sometimes =” Planned



5: Missing Skillsets

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Centre forward

Left midfield

Centre midfield

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Right midfield

Left-back

Centre-back

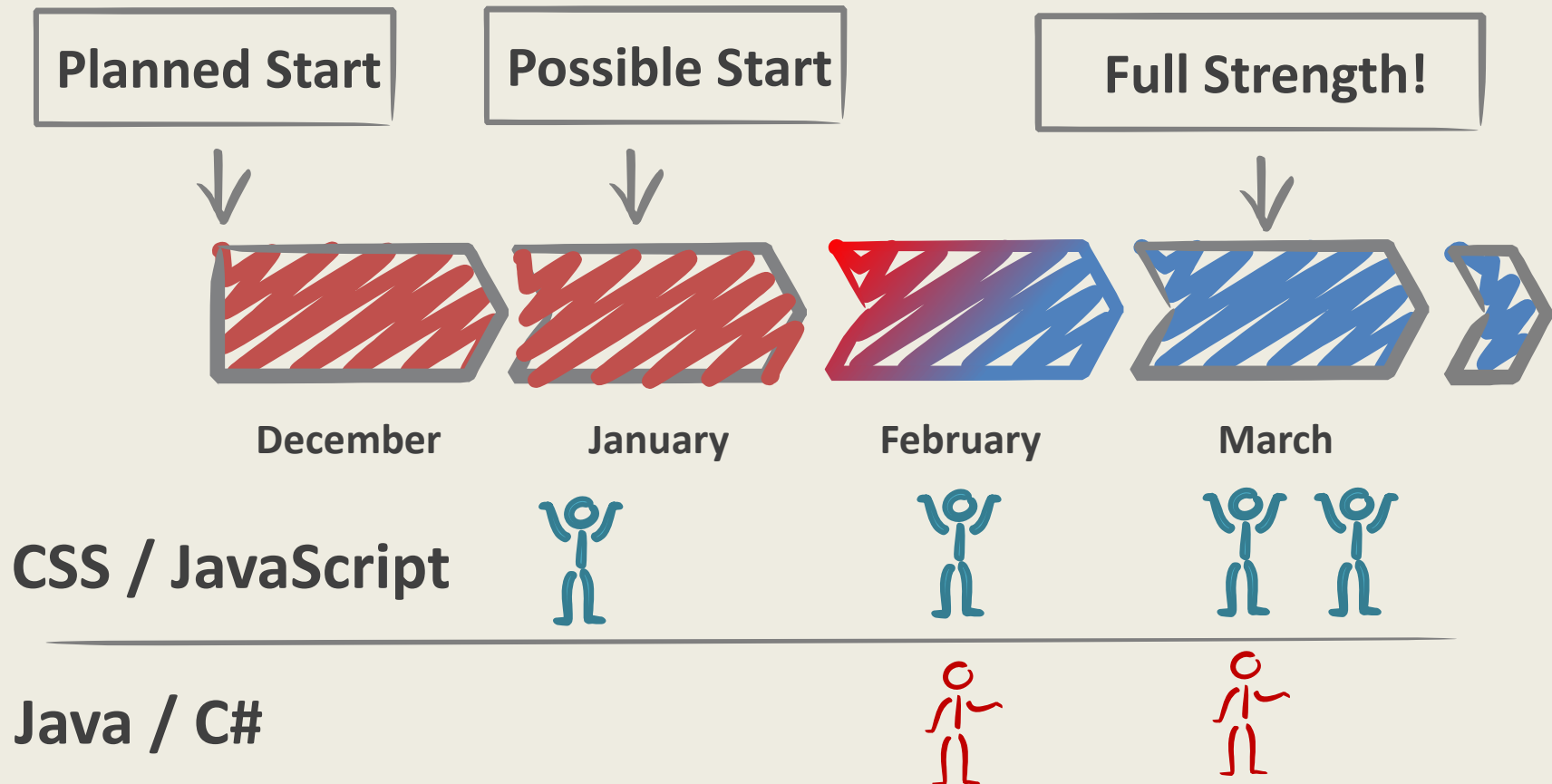
Centre-back

Right-back

Goalkeeper

5: Team Does Not Have Needed Skills

Actual set(skills) < planned set(skills)



3, 4 & 5: Team Skill and Strength



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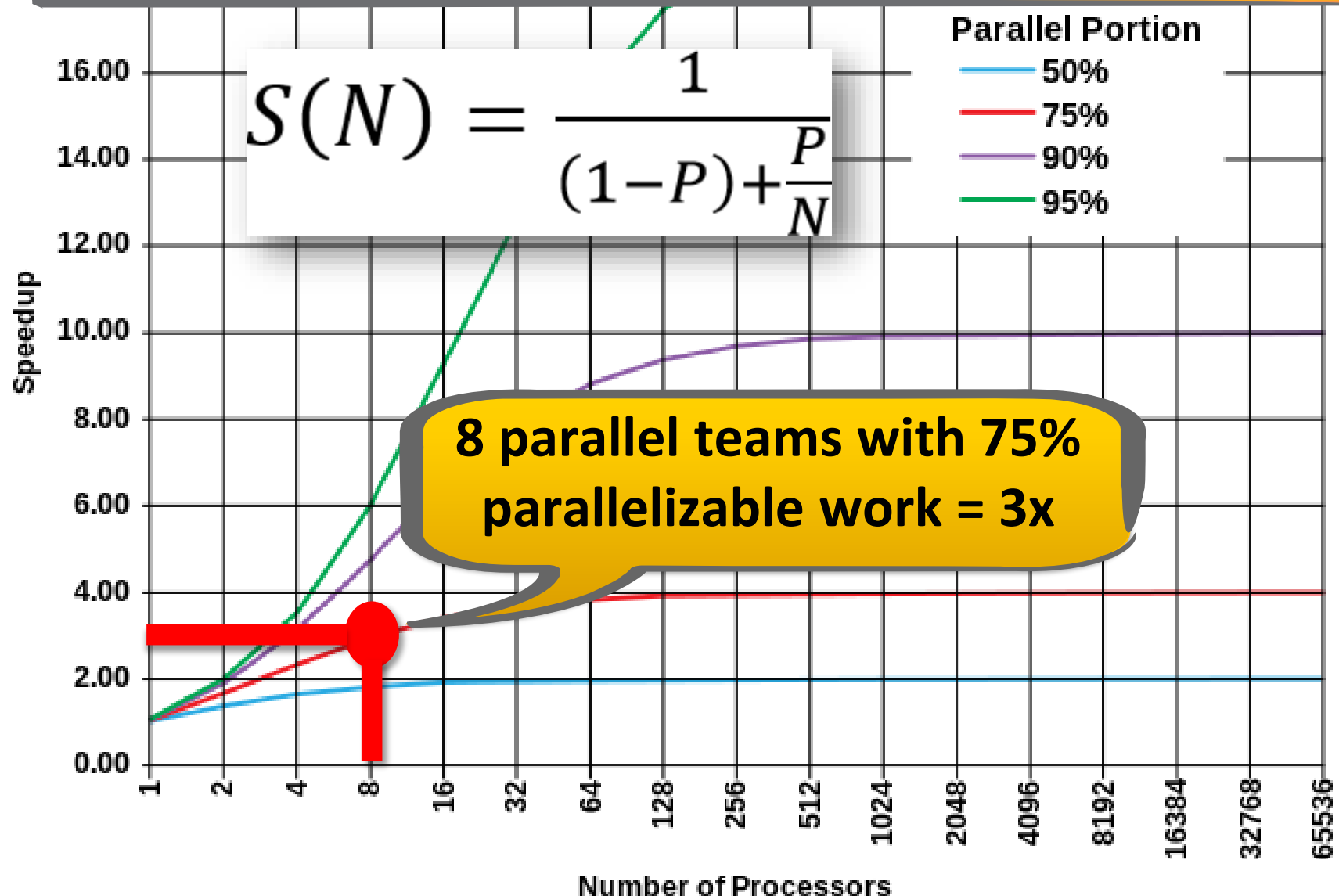
95%

Speedup

8 parallel teams with 75% parallelizable work = 3x

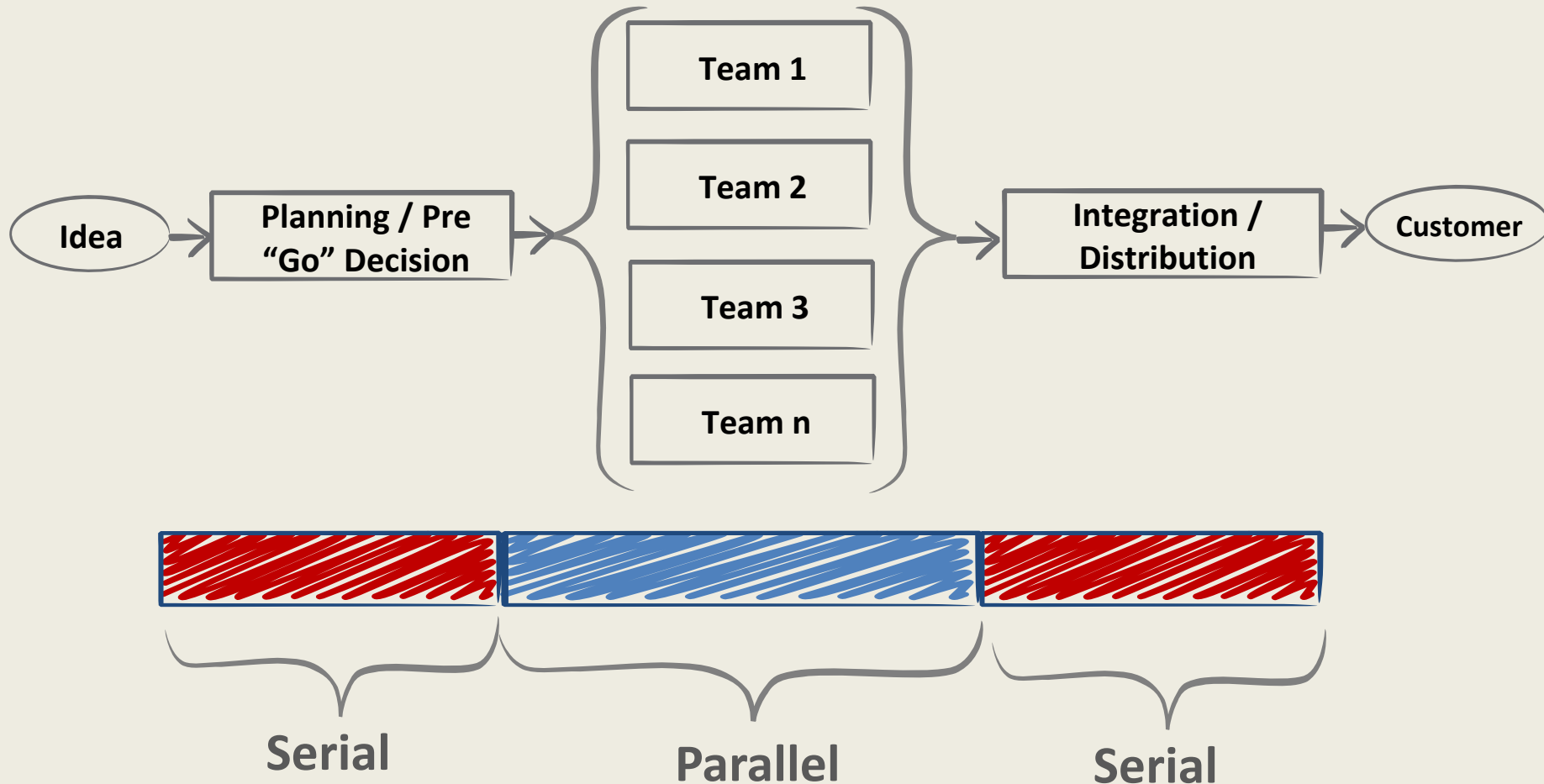
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6: Overstating Parallel Scalability

Actual Benefit < Assumed Benefit



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- What are the serial parts of a complete system path (often shared resources)
- How do teams plan to integrate work
- How do team co-ordinate and plan work
- What are the inter-dependencies between teams



- Find ways to eliminate serial paths
- Track and prioritize fixing blockers in serial paths
- Organize teams to reduce inter-dependencies
- Remind people non-linearity of parallel scaling

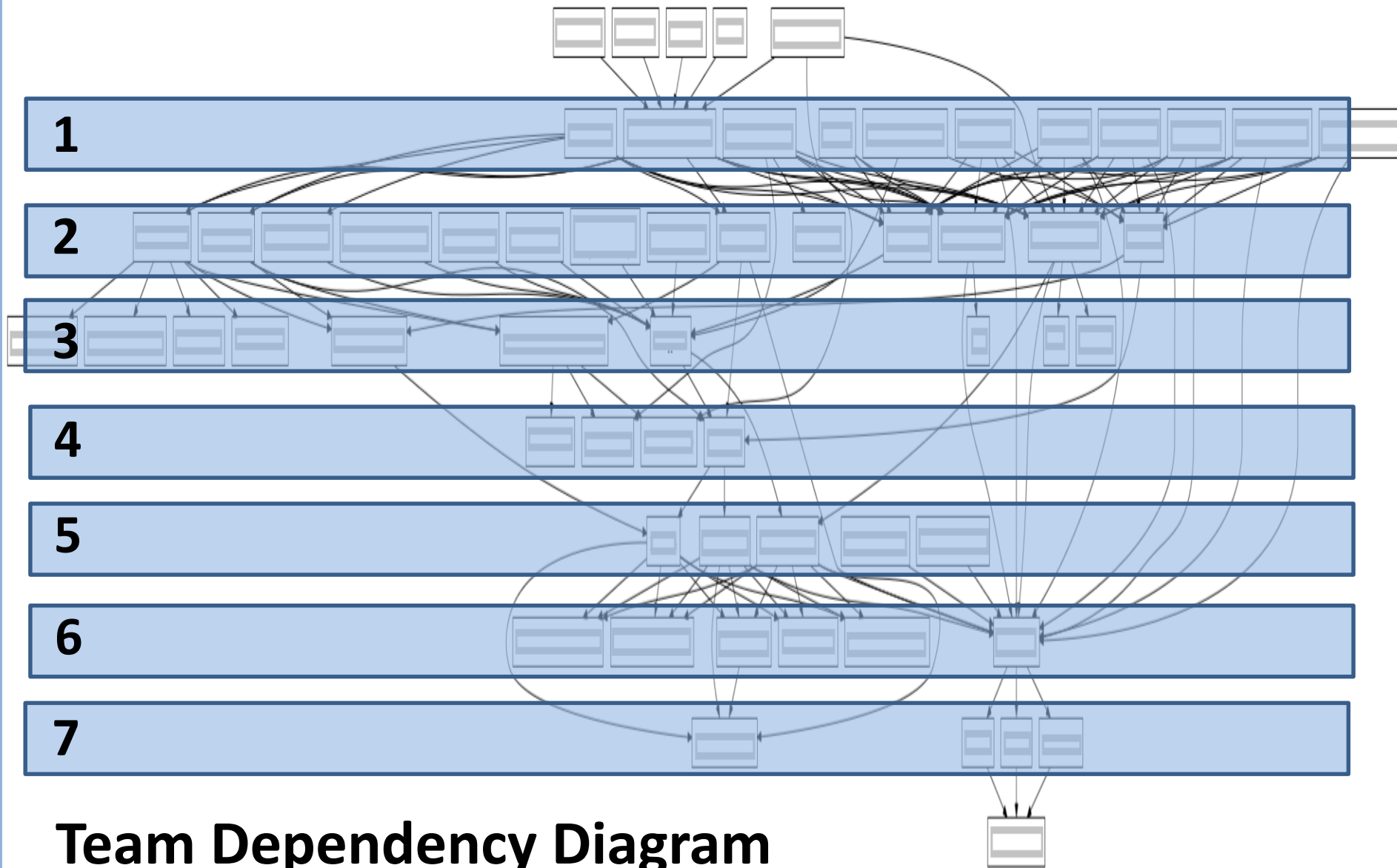


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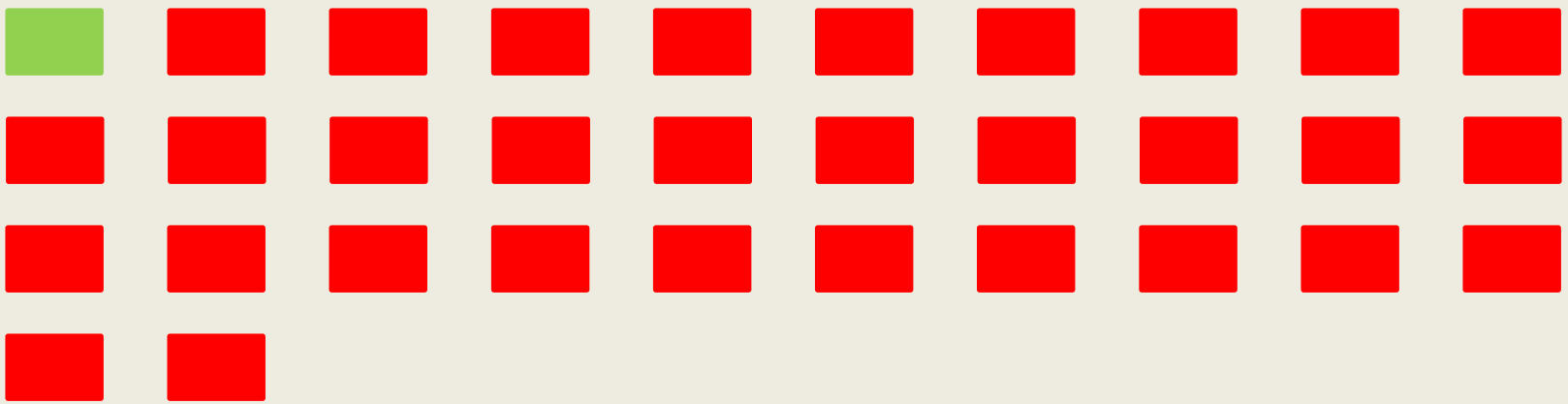
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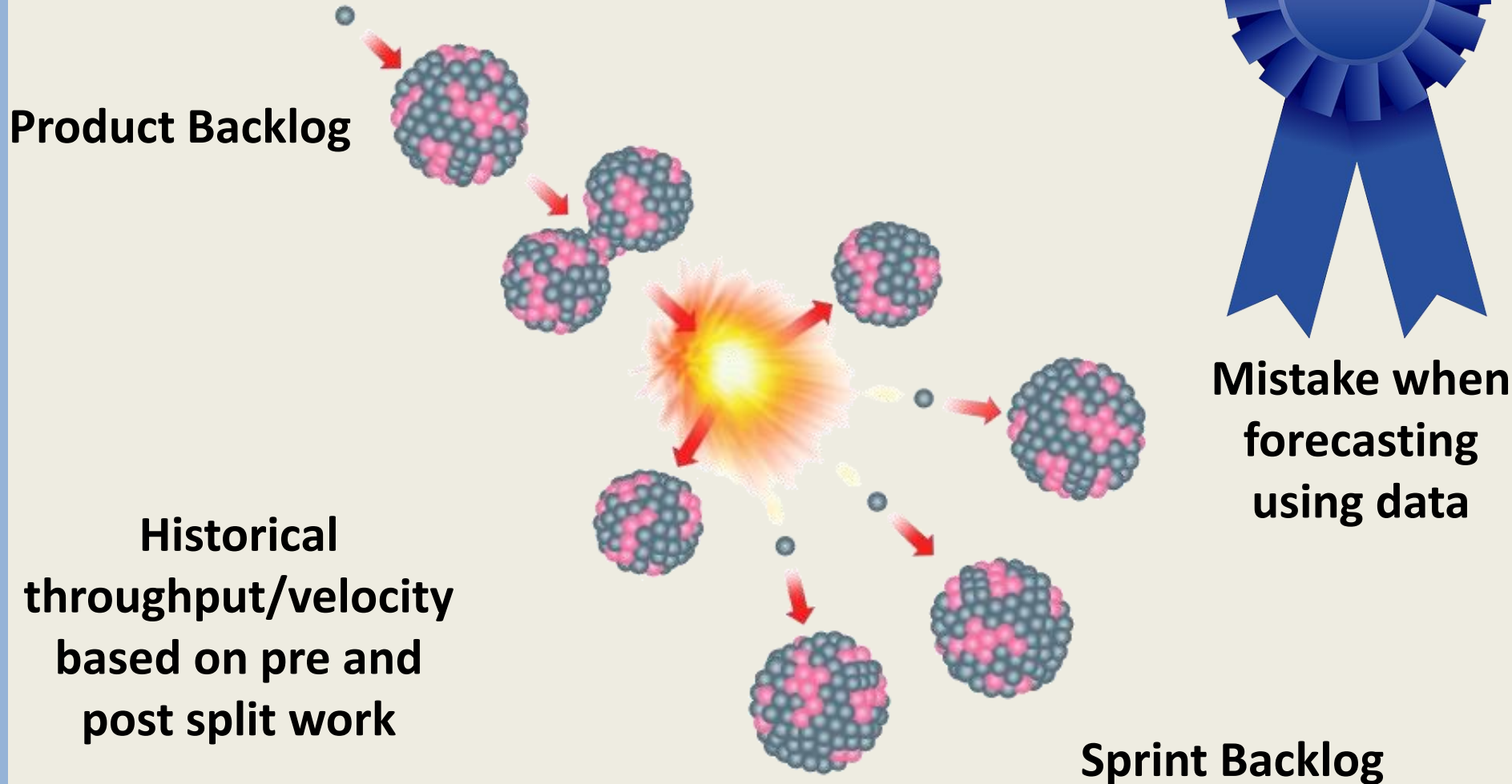


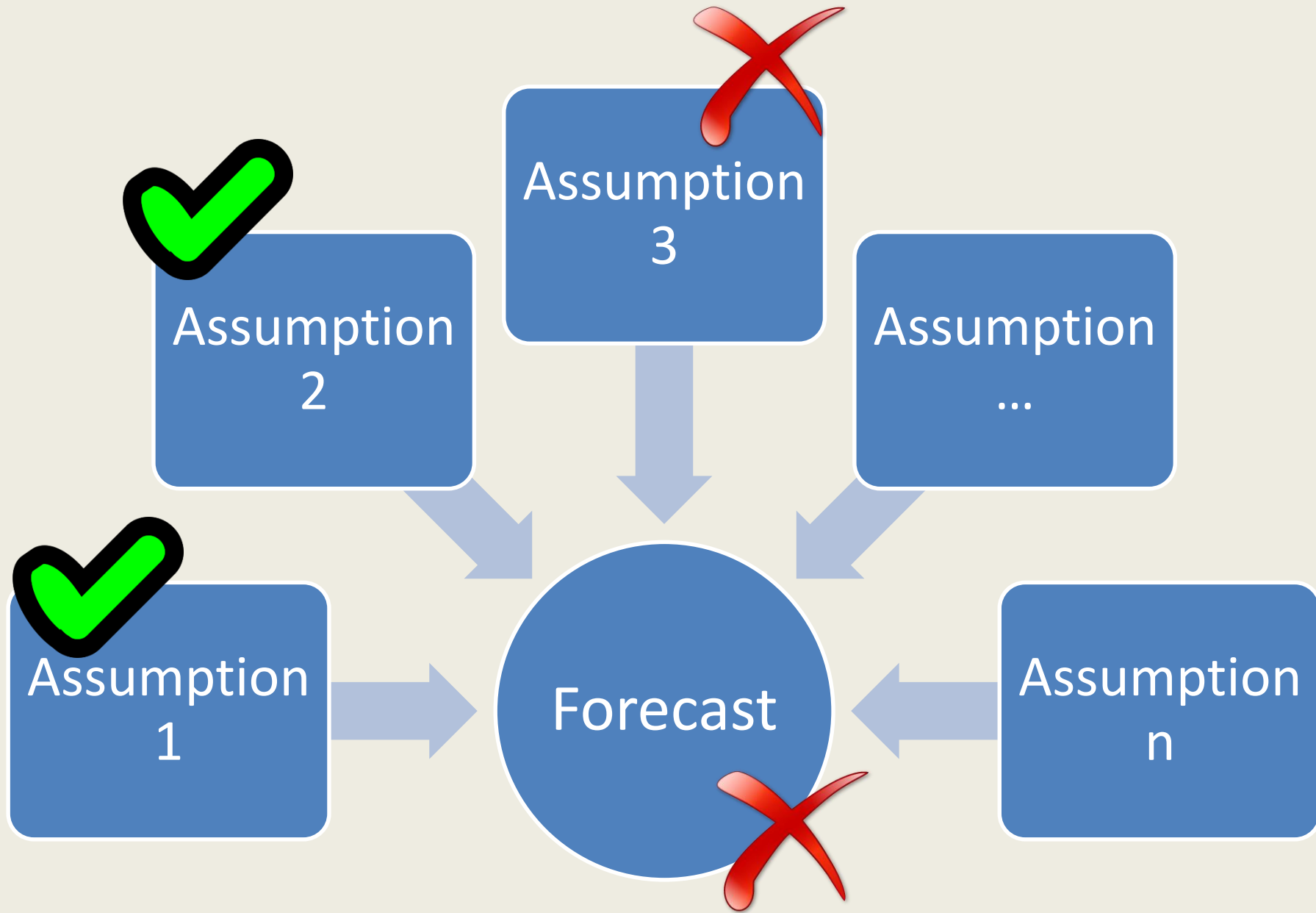
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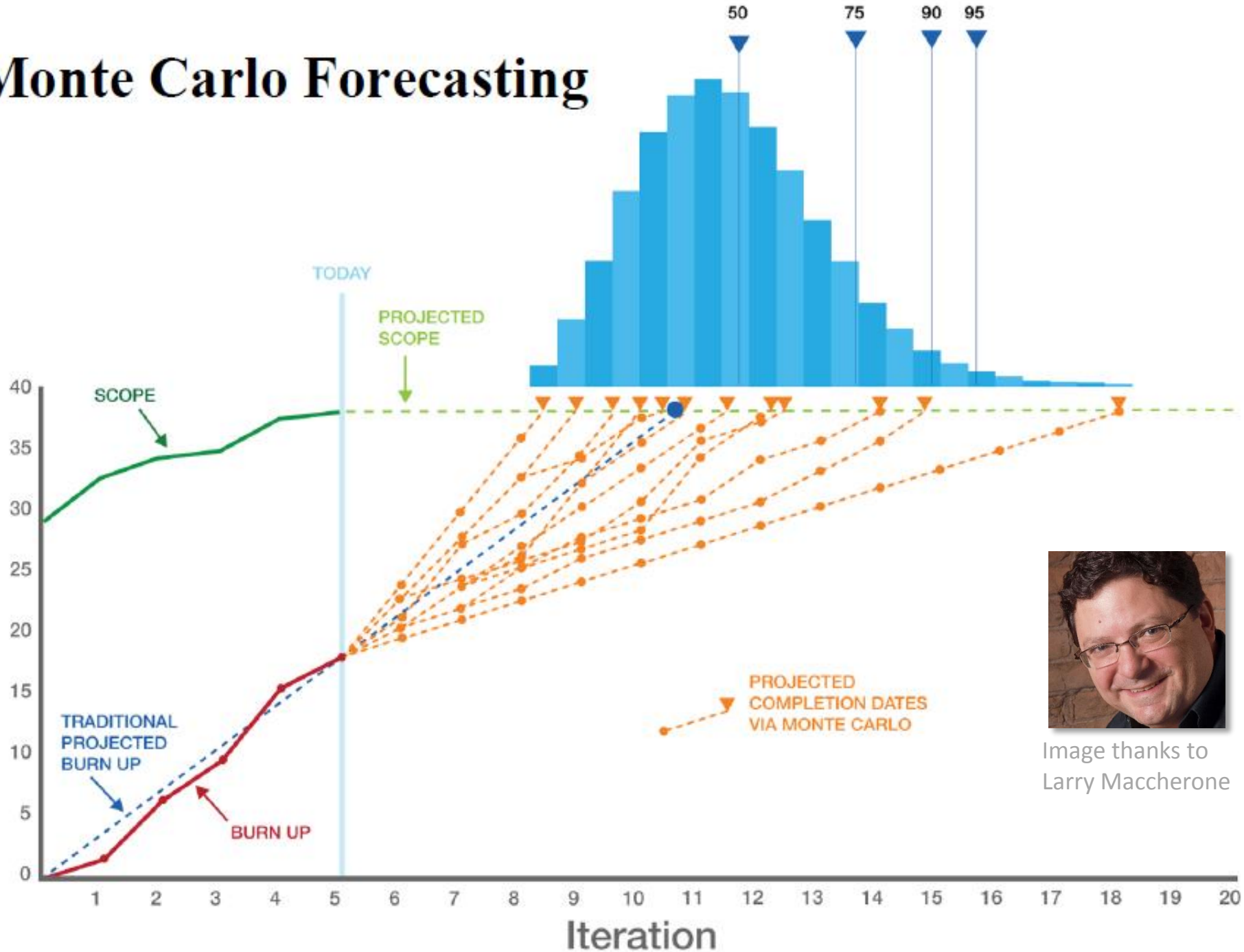
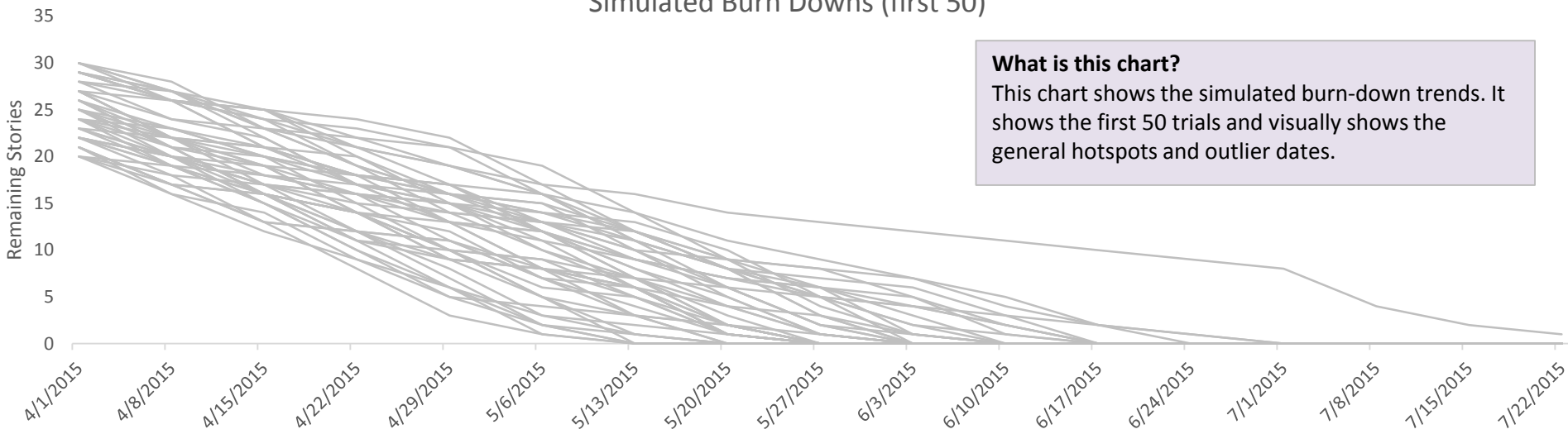


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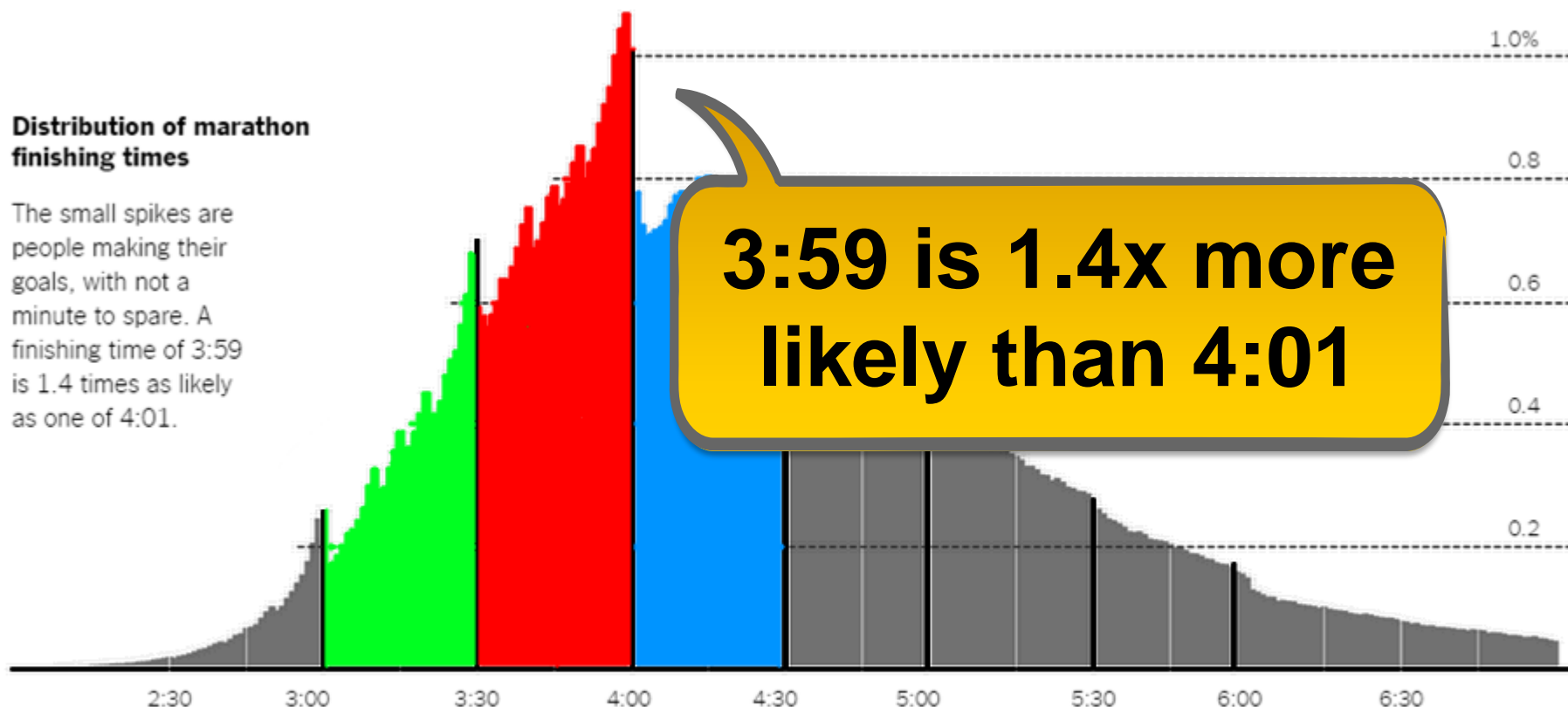
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Arbitrary goals, like round numbers, can be motivating – just ask 9 million marathoners.

Distribution of marathon finishing times

The small spikes are people making their goals, with not a minute to spare. A finishing time of 3:59 is 1.4 times as likely as one of 4:01.



Based on data from Eric Allen, USC, Patricia Dechow, U.C. Berkeley, Devin Pope and George Wu, University of Chicago.

Source: NYT:

http://www.nytimes.com/interactive/2014/04/22/upshot/100000002835671.mobile.html?abt=0002&abg=1&_r=0

