

Agile Estimation Using Functional Metrics ICEAA June 2015


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Podcast: www.spamcast.libsyn.com

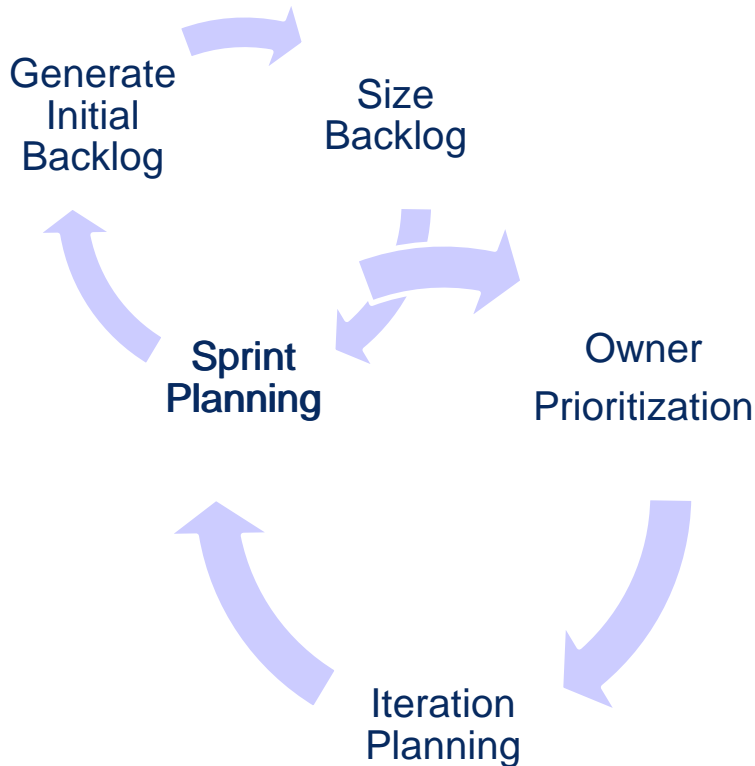
Measure. Optimize. Deliver.

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What Agile Manifesto Doesn't Mean

- 
- Ad hoc
 - Code and run
 - No documentation
 - No discipline
 - No process
 - No planning
 - Just SCRUM

The Proposed Solution (Foreshadowing)



- Quick and Early Function Points
- Parametric Estimation
- Business Need
- Cohesion (grouping)
- Planning Poker
- Task / activity management

Why Estimate Better and Faster

- Improved ability to provide status
- Higher quality (better behavior)
- Better coordination between teams
- Better long term budgeting
- Early warning risk information
- Indicates we have mismatches between targets, estimate and commitments
- Better than guessing

External Impact of Ineffective Estimating

- Impact of major schedule slippage is often dramatic:
 1. Unrecoverable revenue losses
 2. Not first to market
 3. Public failure
 4. Possible legal repercussions
- Corporations are more significantly impacted by schedule pressures than any other factor.

Estimation v Planning v Budgeting

Budgeting

- Defines how much we have to spend and influences scope
- Tends to ignore the cone of uncertainty

Estimation

- Rough or approximate size extent or nature
- Focused by the cone of uncertainty

Planning

- Definition of tasks and allocation of resources
- Focused on the narrow part of the cone of uncertainty

Effective Estimating

- The Software Engineering Institute (SEI) requirements for good estimating:
 - Corporate historical database
 - Structured processes for estimating product size and reuse
 - Mechanisms for extrapolating benchmark characteristics of past projects
 - Audit trails
 - Integrity in dealing with dictated costs and schedules
 - Data collection and feedback processes foster correct data interpretation

What Defines Good

- Hitting the midpoint of the original range?
 - Making your stakeholders happy?
 - Assuring a correct profit margin?
-
- A good estimate is an estimate that provides a clear enough view of the project reality to allow the project leadership to make good decisions about how to control the project so that it hits its target.
McConnell

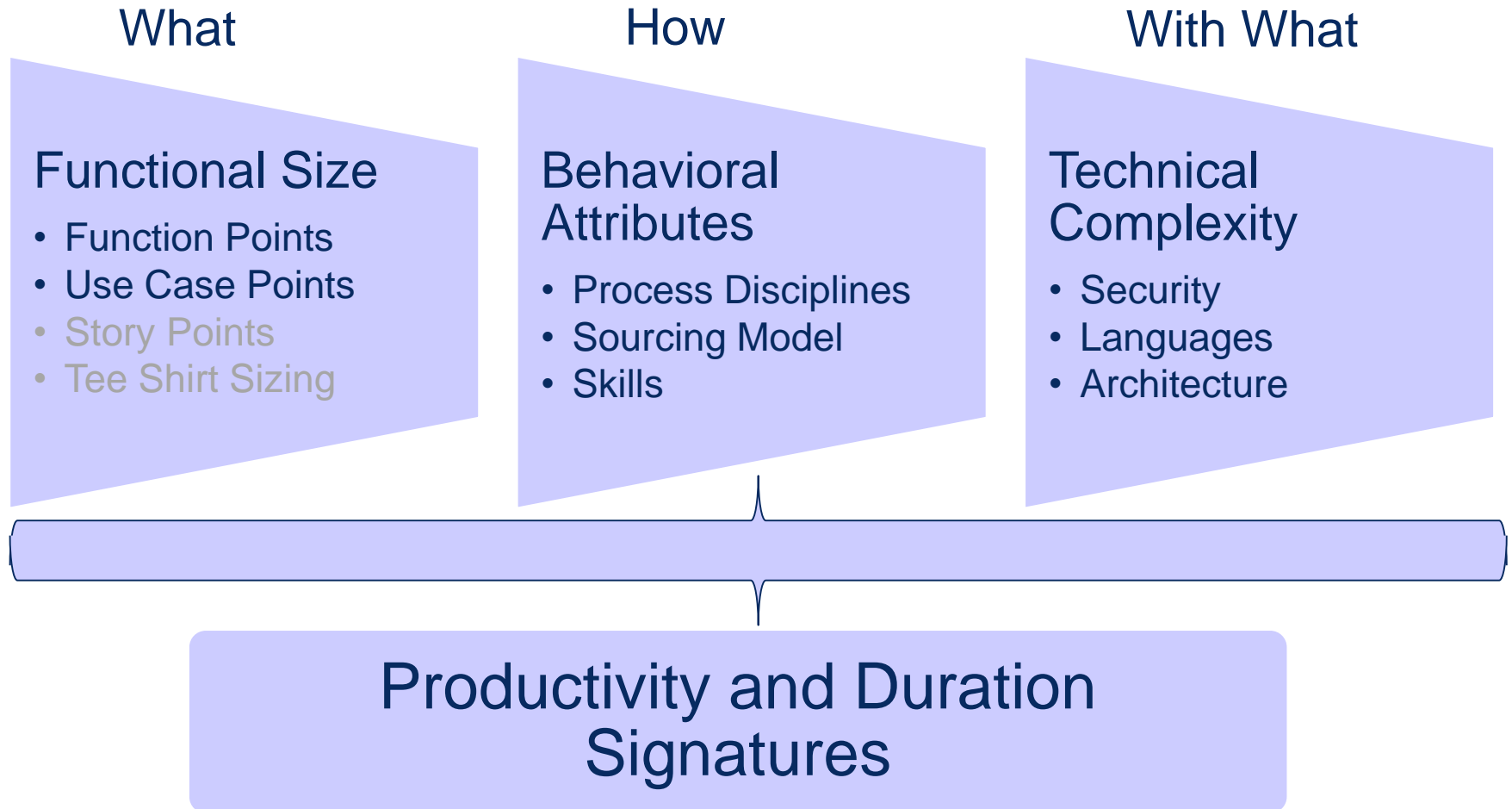
Basics: Inputs and Outputs

- Inputs
 - Sized Requirements
 - Skills
 - People
 - Equipment
- Estimate Outputs
 - Effort
 - Cost

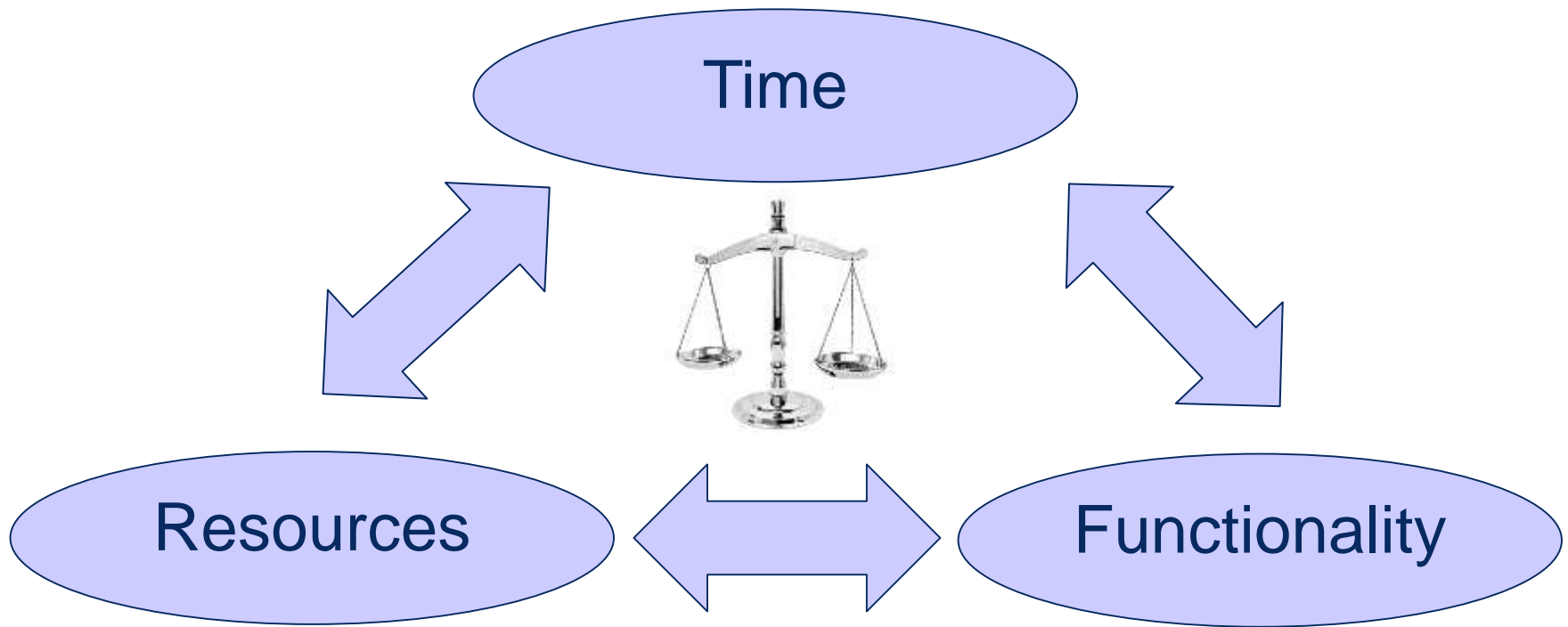
All data should be leveraged when planning

- Planning Outputs
 - Schedules
 - Resource Allocation

Basic Estimation Model

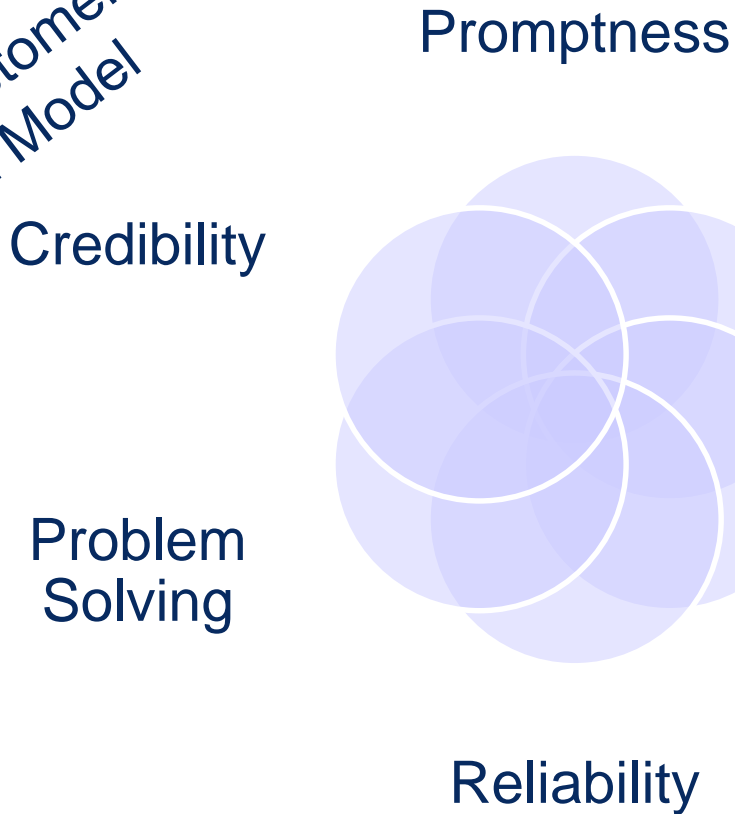


What Are Your Options



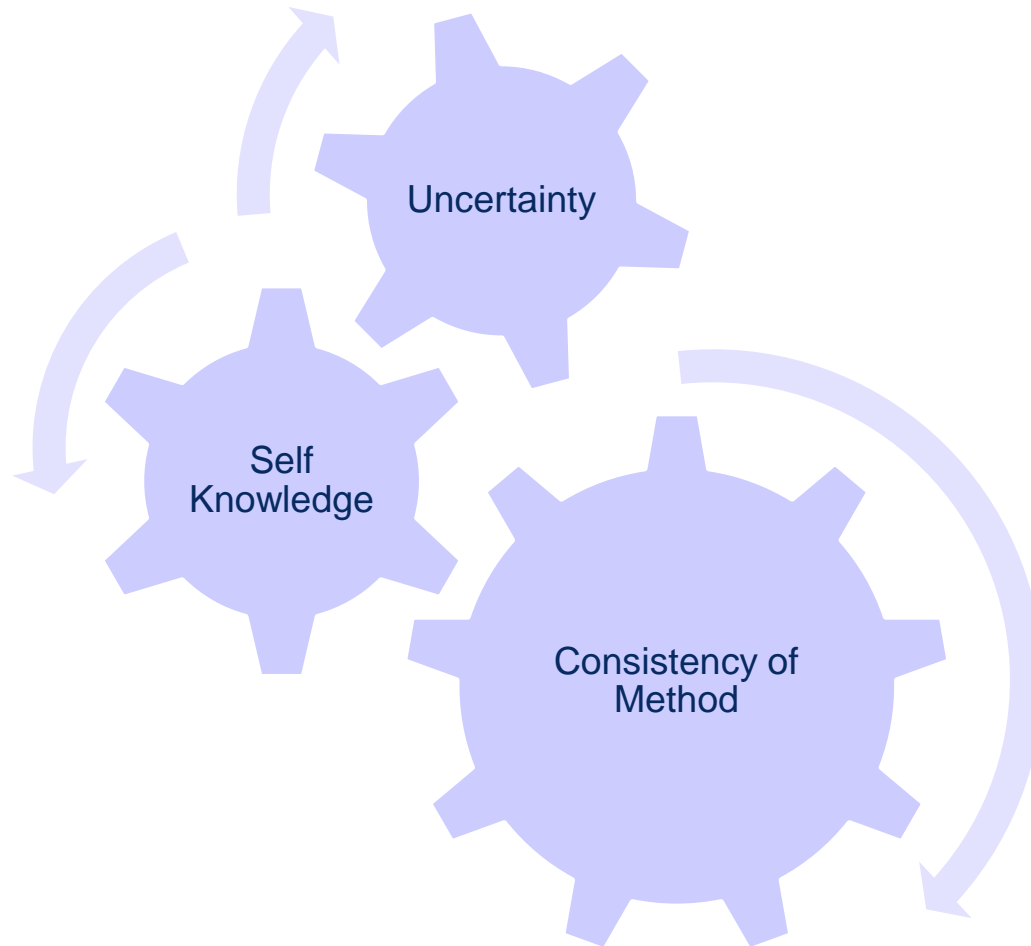
Customer Satisfaction?

Standard Customer Satisfaction Model



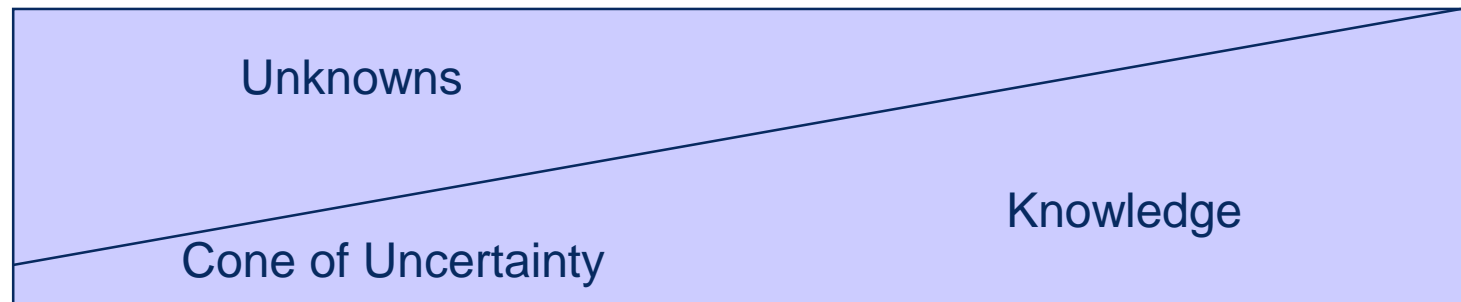
What Should The Focus Be?

So Why Doesn't This Stuff **Always** Work?



Uncertainty

- You start projects knowing very little (as compared to when a project is implemented)



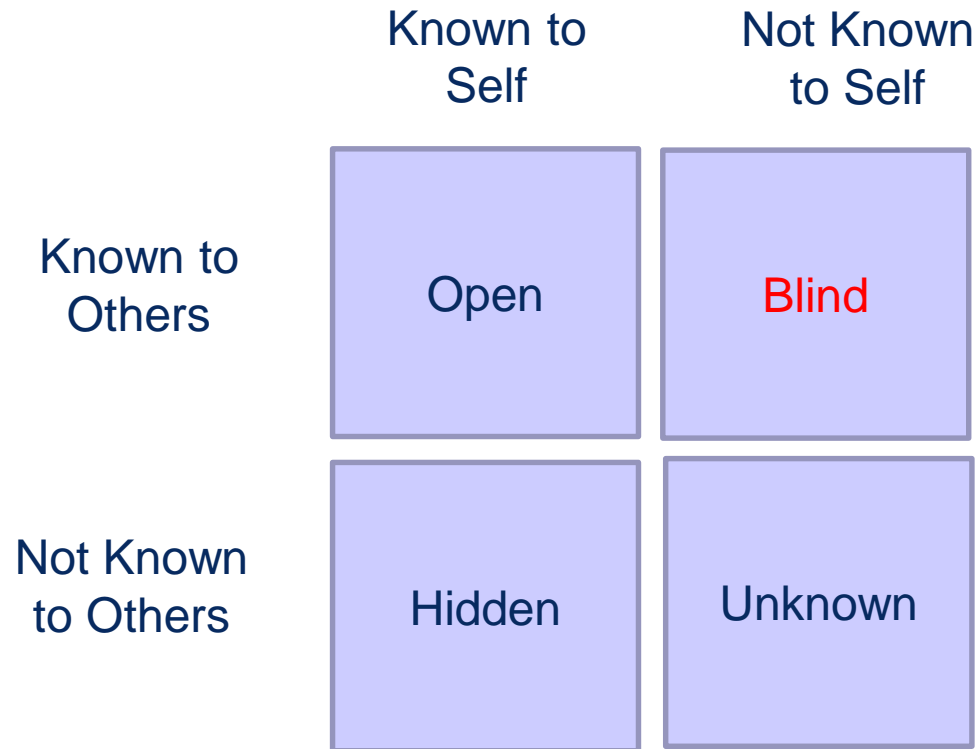
Budgeting

Initiation

Implementation

- Words are the only thing typically known before a project is initiated (usually not very many)

Johari Window



Basic Methods of Estimating

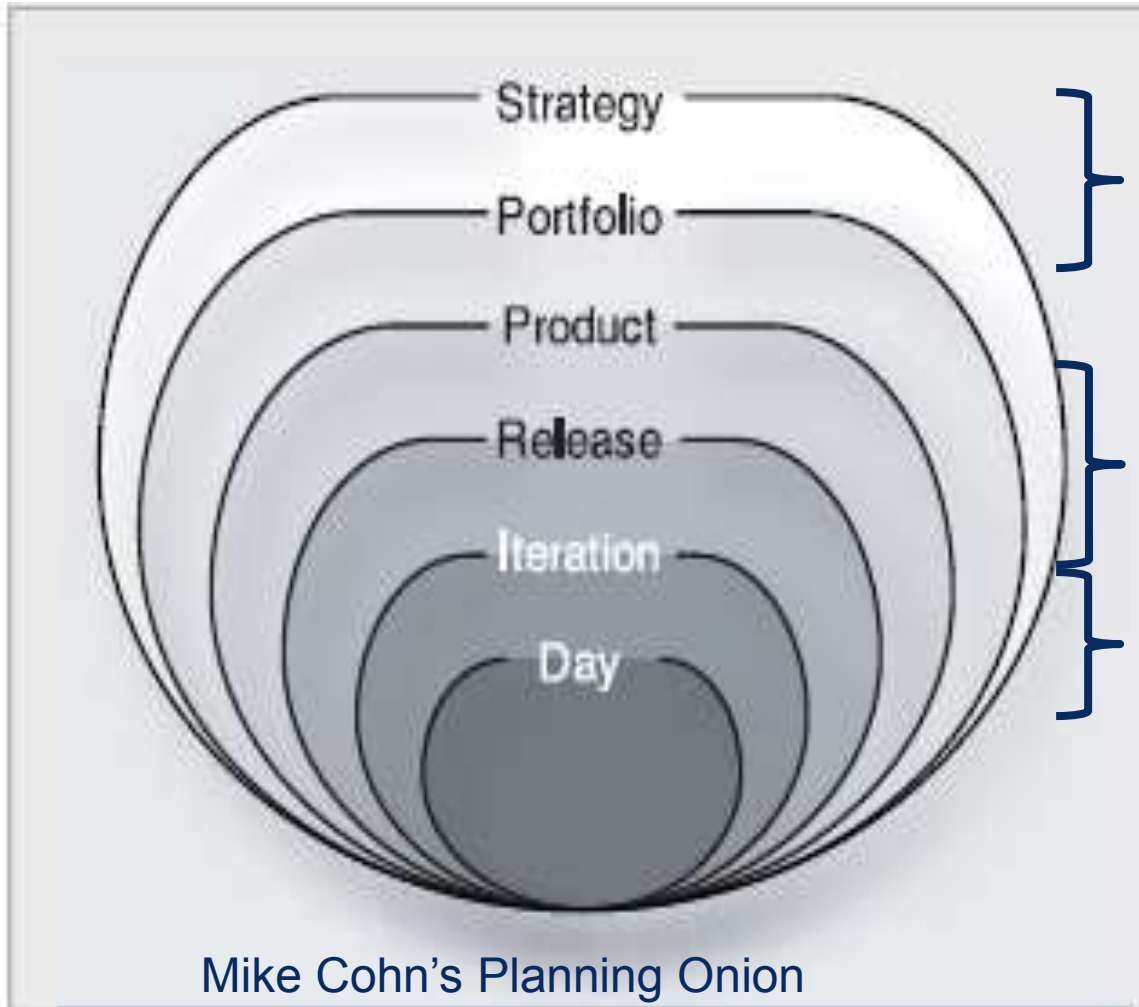
Analogy

Bottom Up

Parametric

Iteration
Planning

Planning Onion and Timing



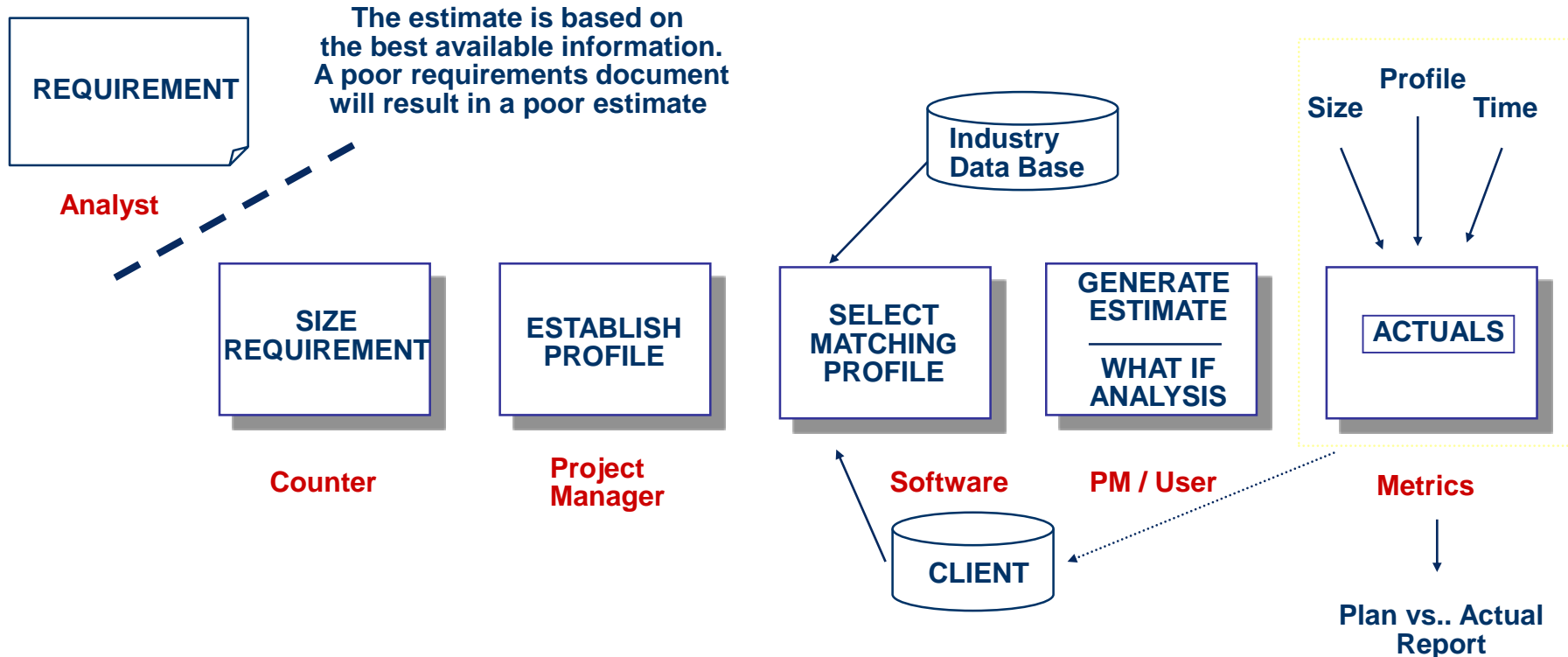
Budgeting
Analogy

Estimating
Parametric - Light

Planning
Integration Planning
Standup Meetings

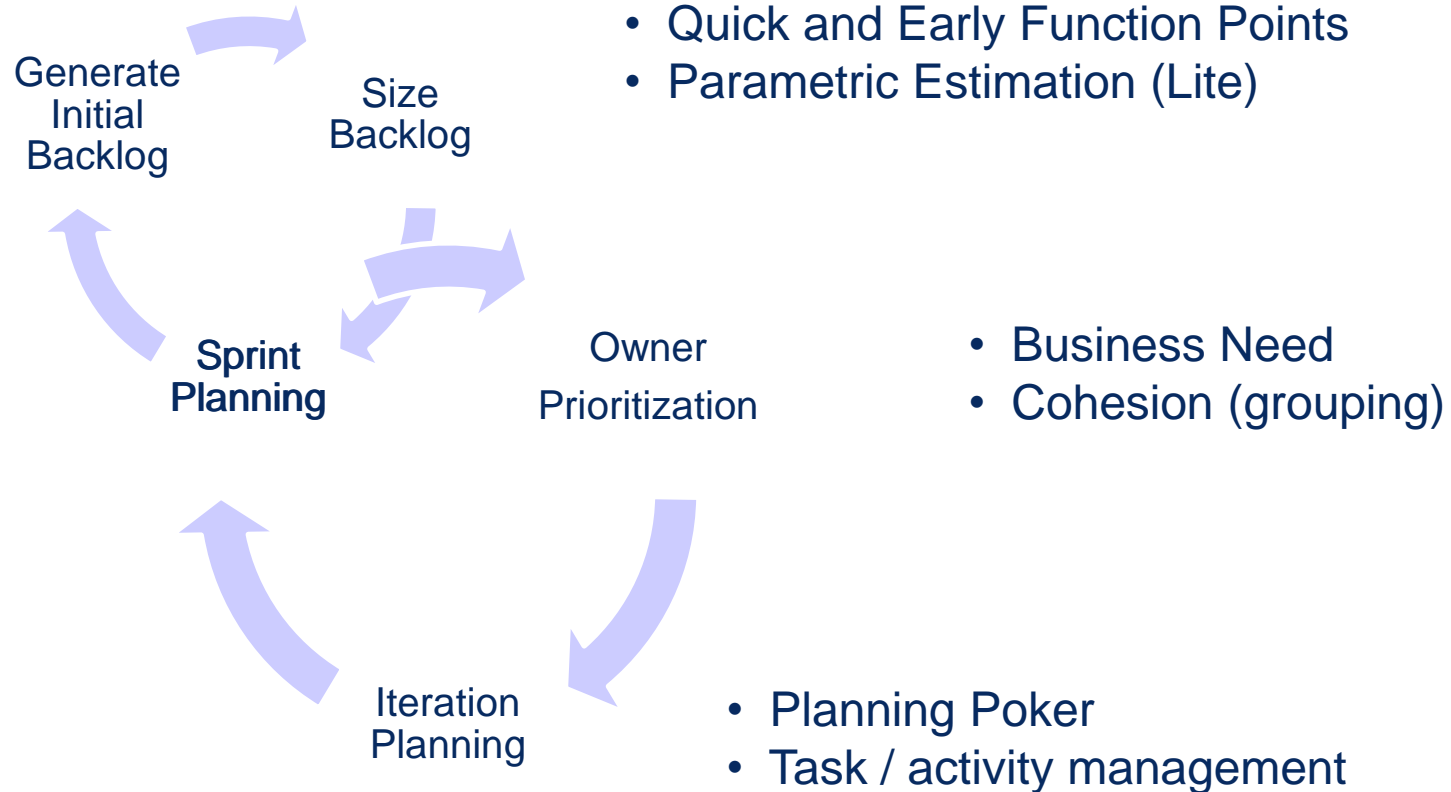
Mike Cohn's Planning Onion

Estimating Process

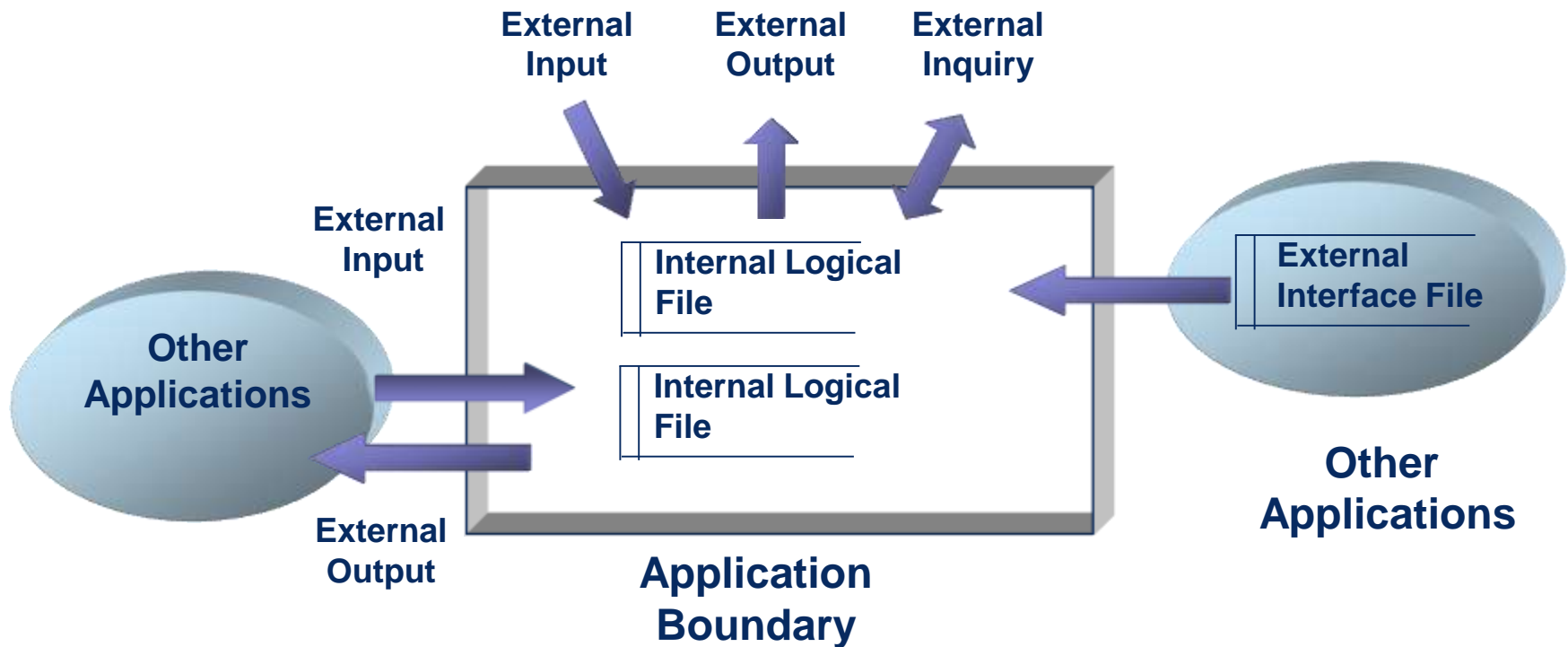


Accurate estimating is a function of using historical data with an effective estimating process.

A Proposed Hybrid Solution

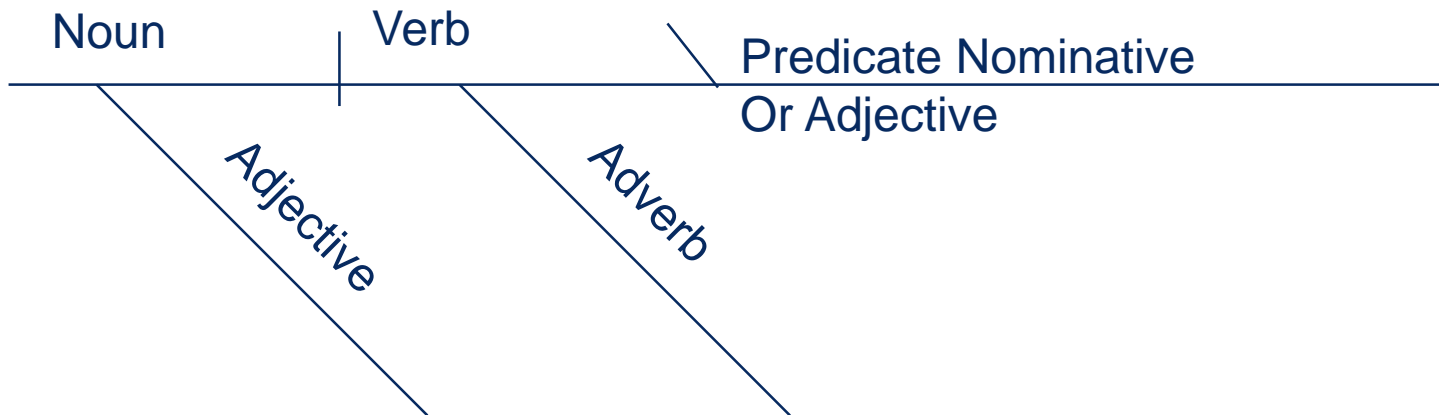


The Logical View



Revisiting Grade School English

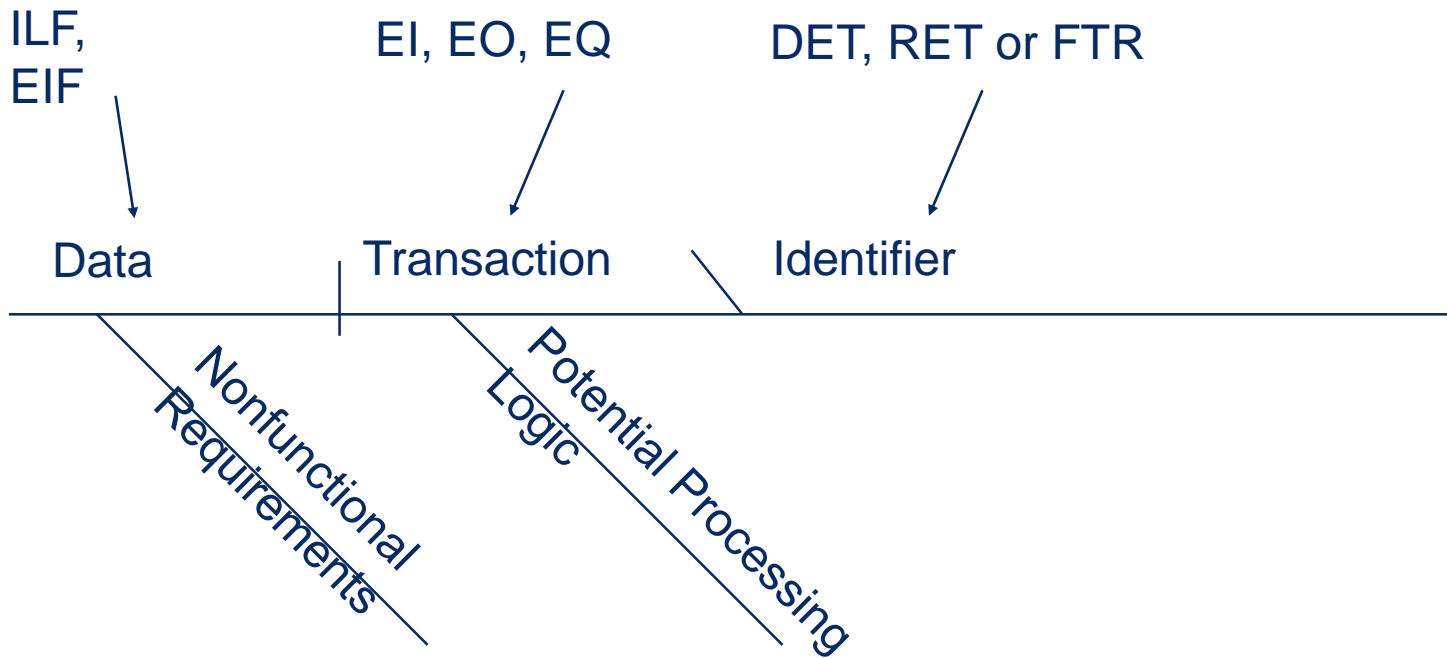
- Sentence Diagramming



In case you forgot - a predicate is an expression that can be true of something (the car is yellow)

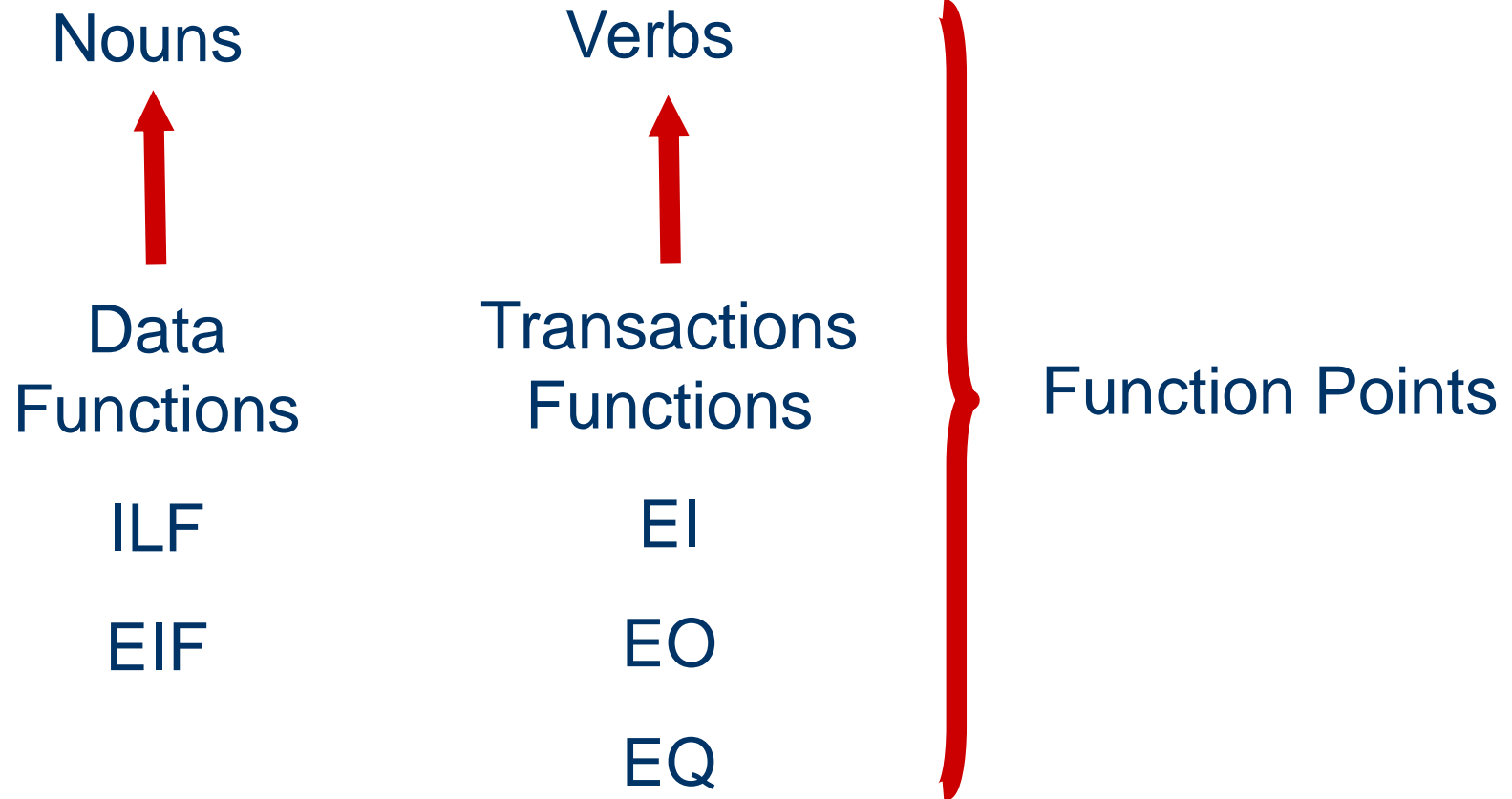
Translation

- Function Point Diagramming

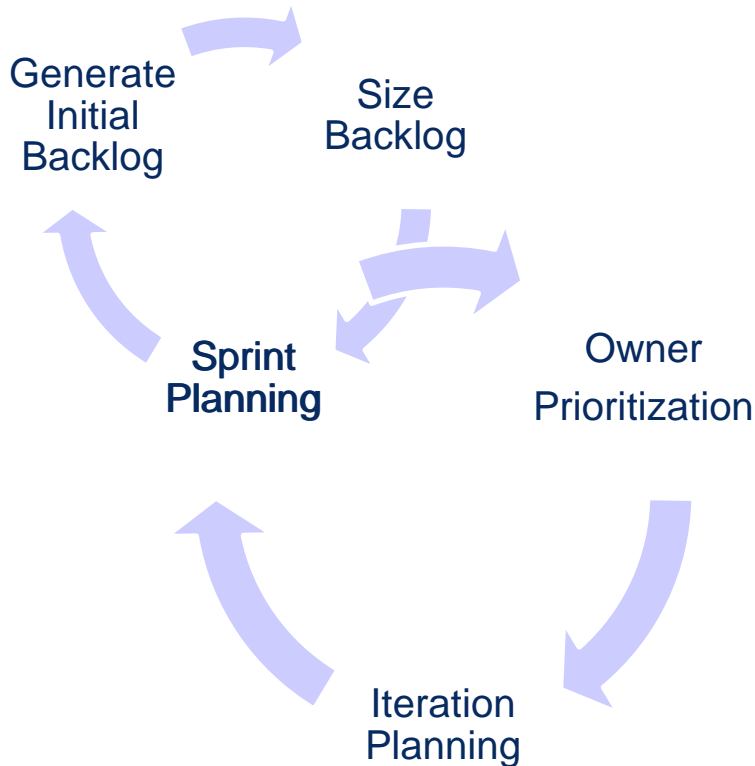


The goal is not diagram the whole requirement sentence but rather to use the logic of the diagramming process to get to the measureable component.

Translation Tool: Trigger Words

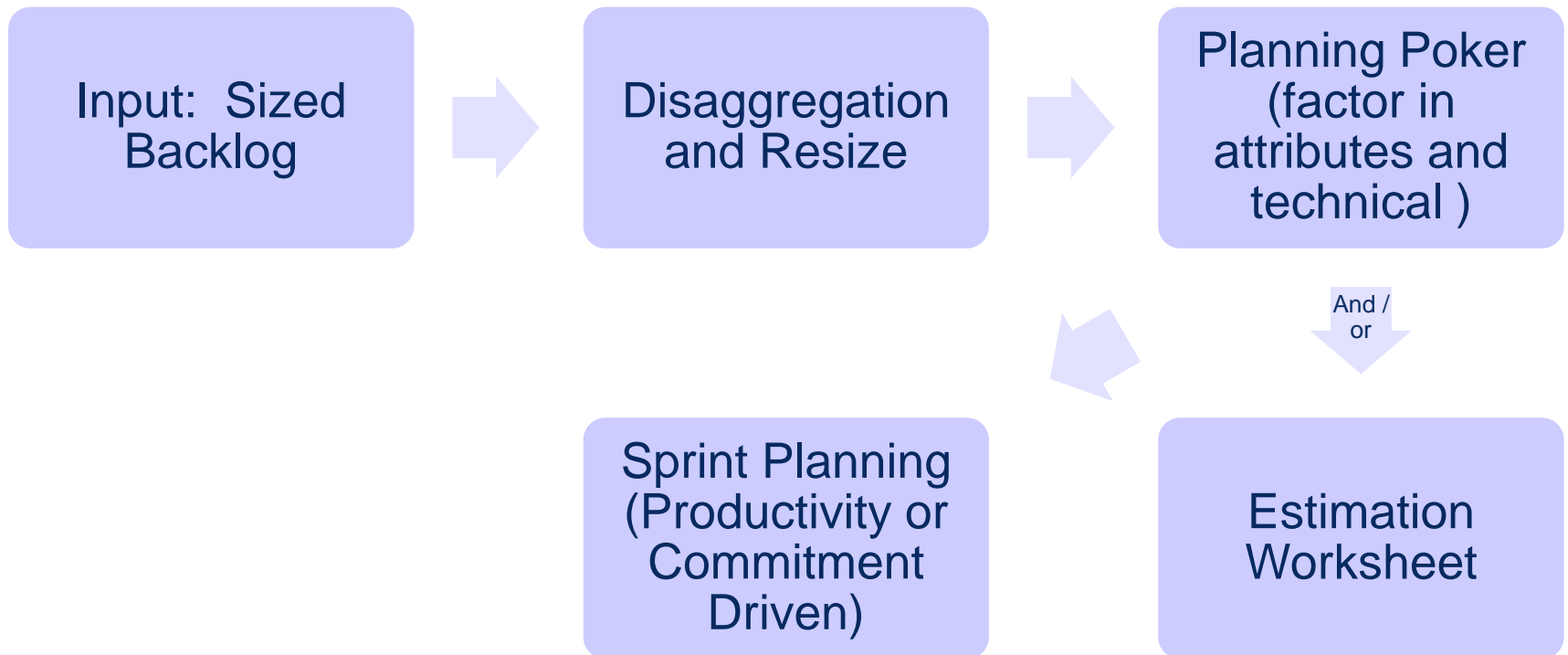


The Proposed Solution



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Translating Size Into An Estimate



Sprint Planning In This Environment

Product Owner Prioritizes

Teams Sequence

Apply Planning Estimates

Team Commits

Case One

Large software development firm, hierarchical culture and one very large project and many smaller

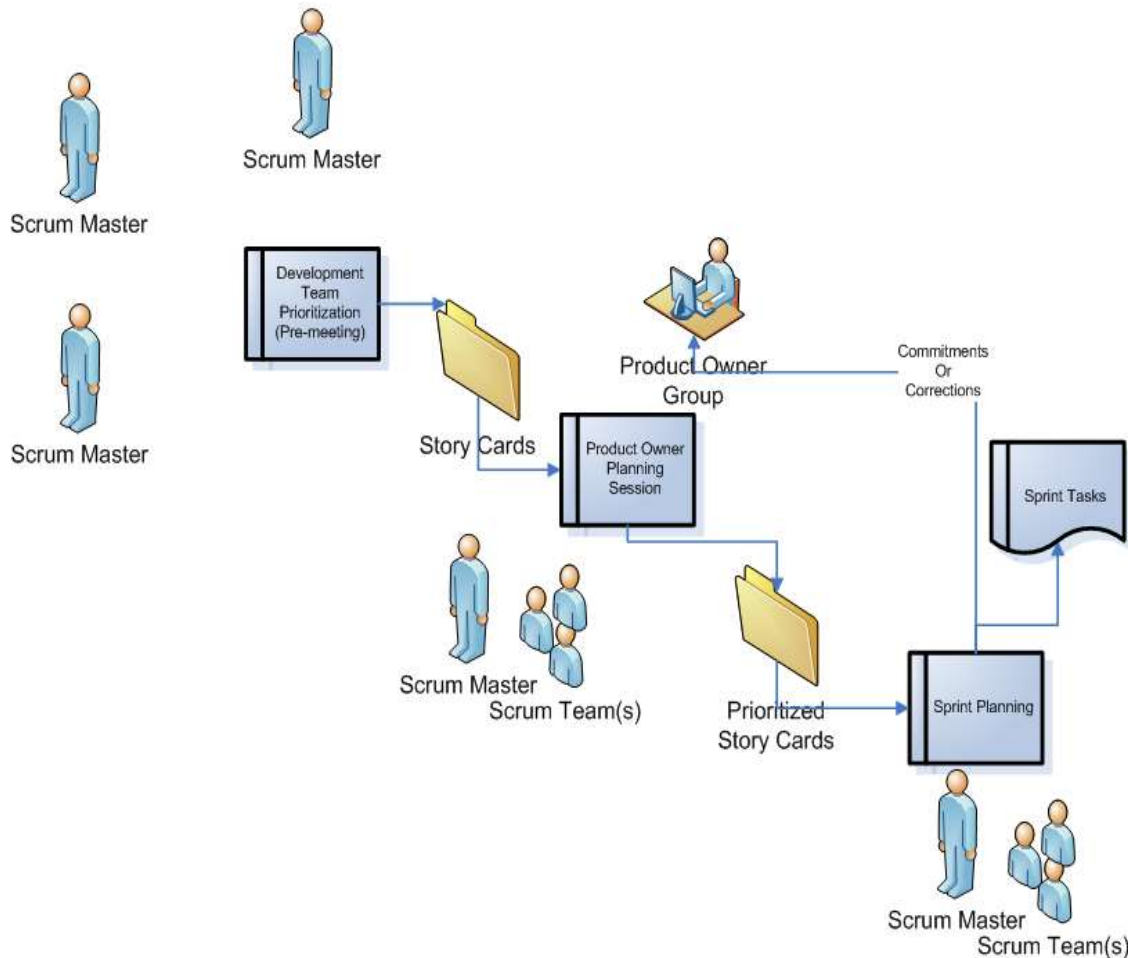
Mixed SCRUM/XP (recent addition) and Plan Based project environment

Strenuous budgeting process with tax accruals

Significant discovery was required to define, design and develop the large project

Experienced based estimation based on bottom up task planning – questionable on the large project!

The Answer



Techniques Used

- QEFP for sizing backlog
- QEFP for sizing items added during sprint planning
- Planning Poker

Impact

- Improved product owner satisfaction
- Increased perception of consistency
- Reduced number of stories escaping sprints

Case Two

Large consumer product firm, hierarchical culture and many very large projects and many, many smaller

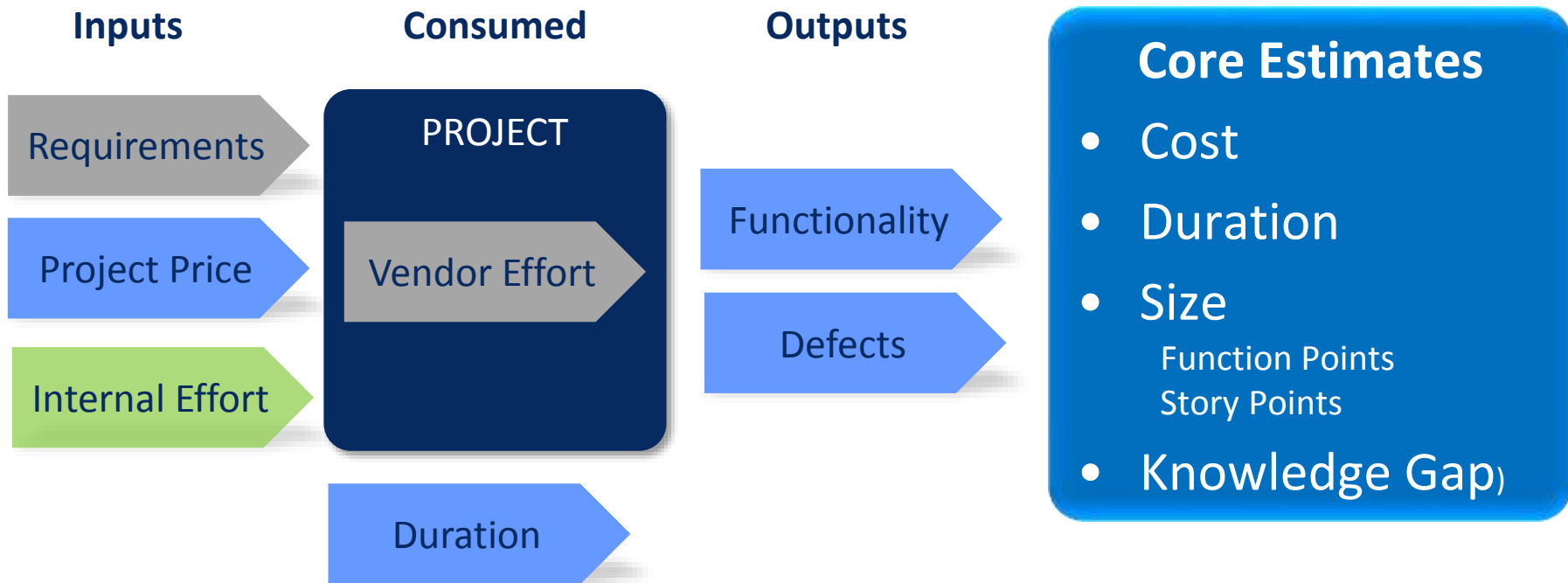
Outsourced Plan Based project environment

Strenuous budgeting process with tax accruals

Difficult to determine whether they are getting value for their money

Experienced based estimation based on bottom up task planning

Solution



Questions



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Software Process and Measurement Podcast

<http://www.spamcast.net> (or Itunes)

Software Process and Measurement Blog

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