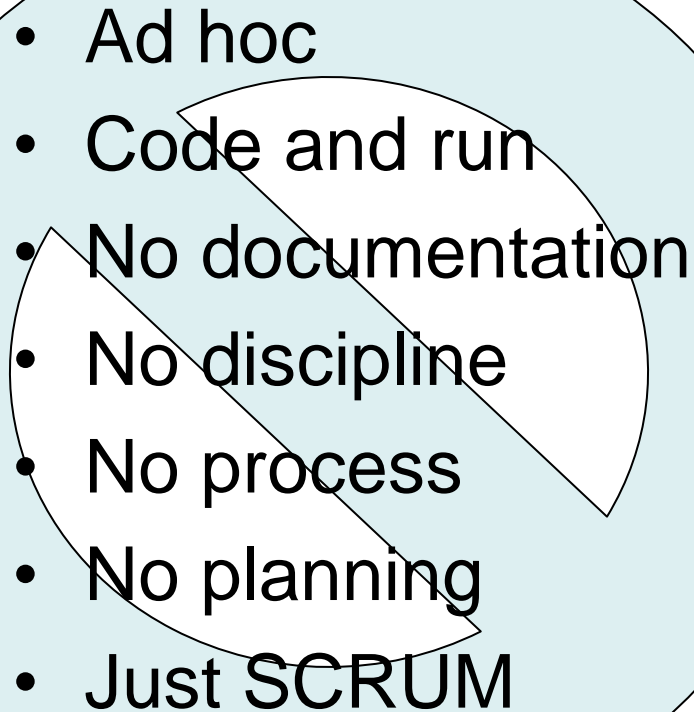

Agile Estimation Using Functional Metrics

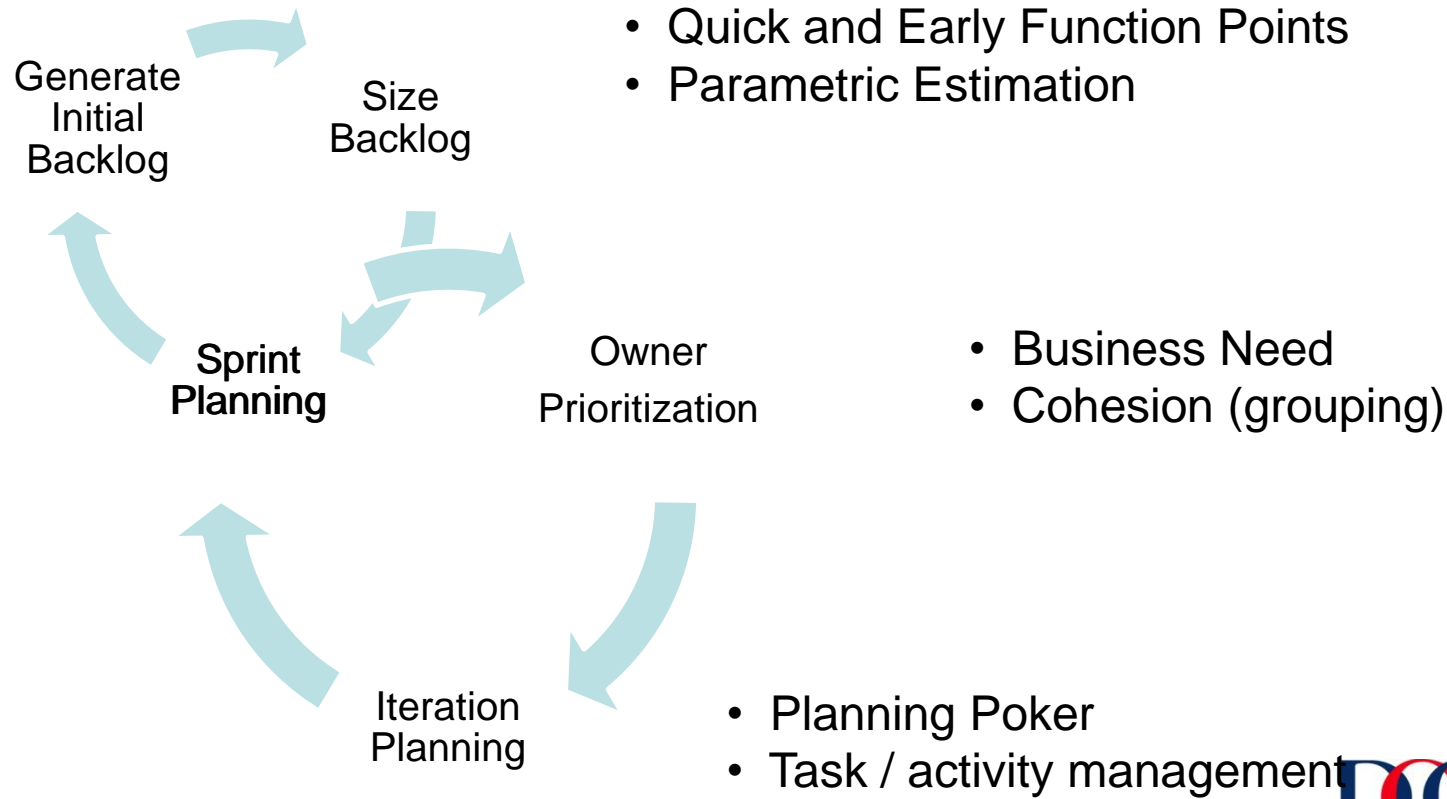
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What Agile Manifesto Doesn't Mean

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

The Proposed Solution



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

Functional Size

- Function Points
- Use Case Points
- Story Points
- Tee Shirt Sizing

How

Behavioral Attributes

- Process Disciplines
- Sourcing Model
- Skills

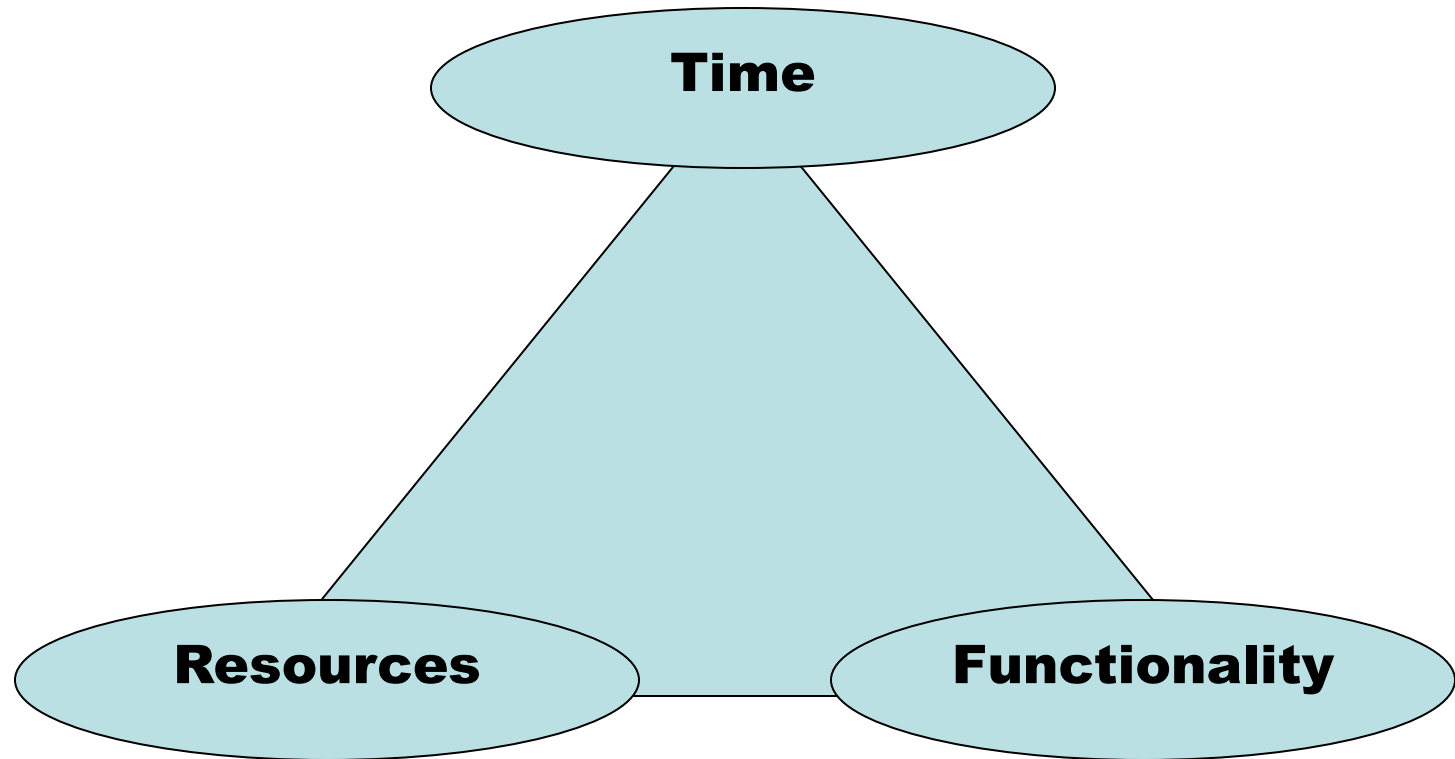
With What

Technical Complexity

- Security
- Languages
- Architecture

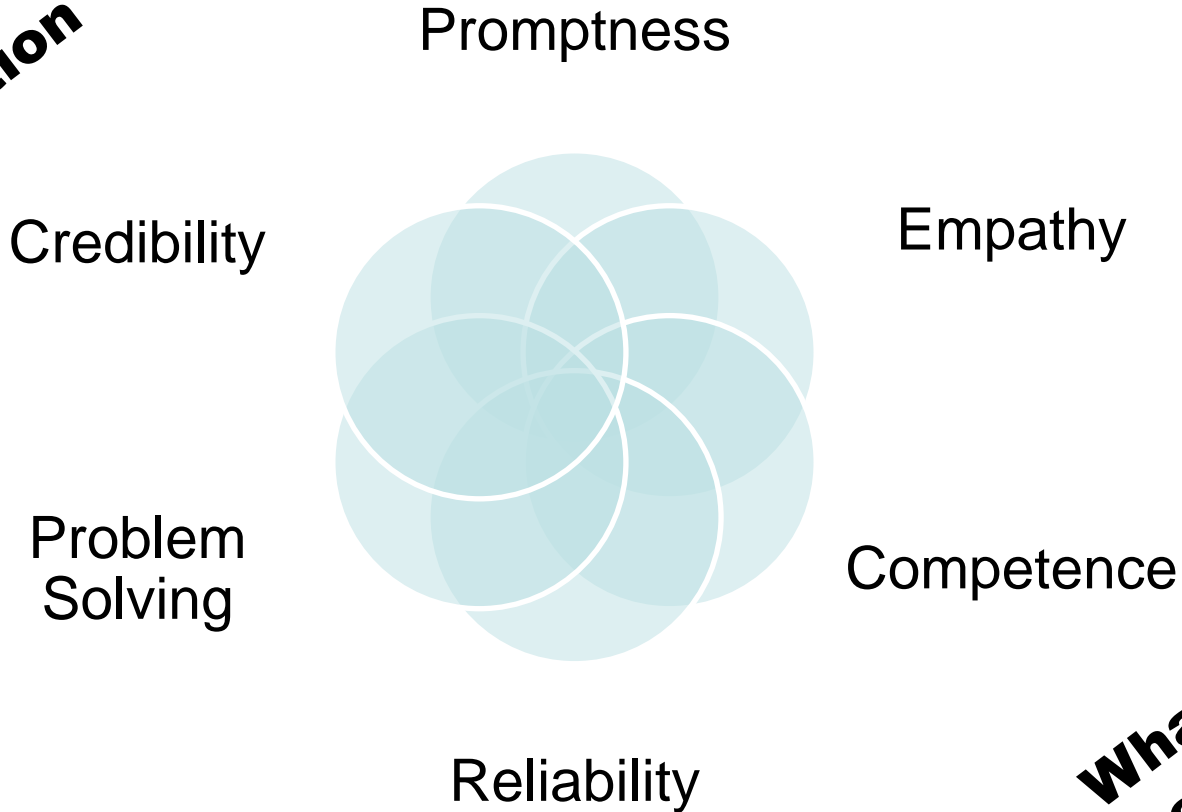
Productivity and Duration Signatures

What Are Your Options



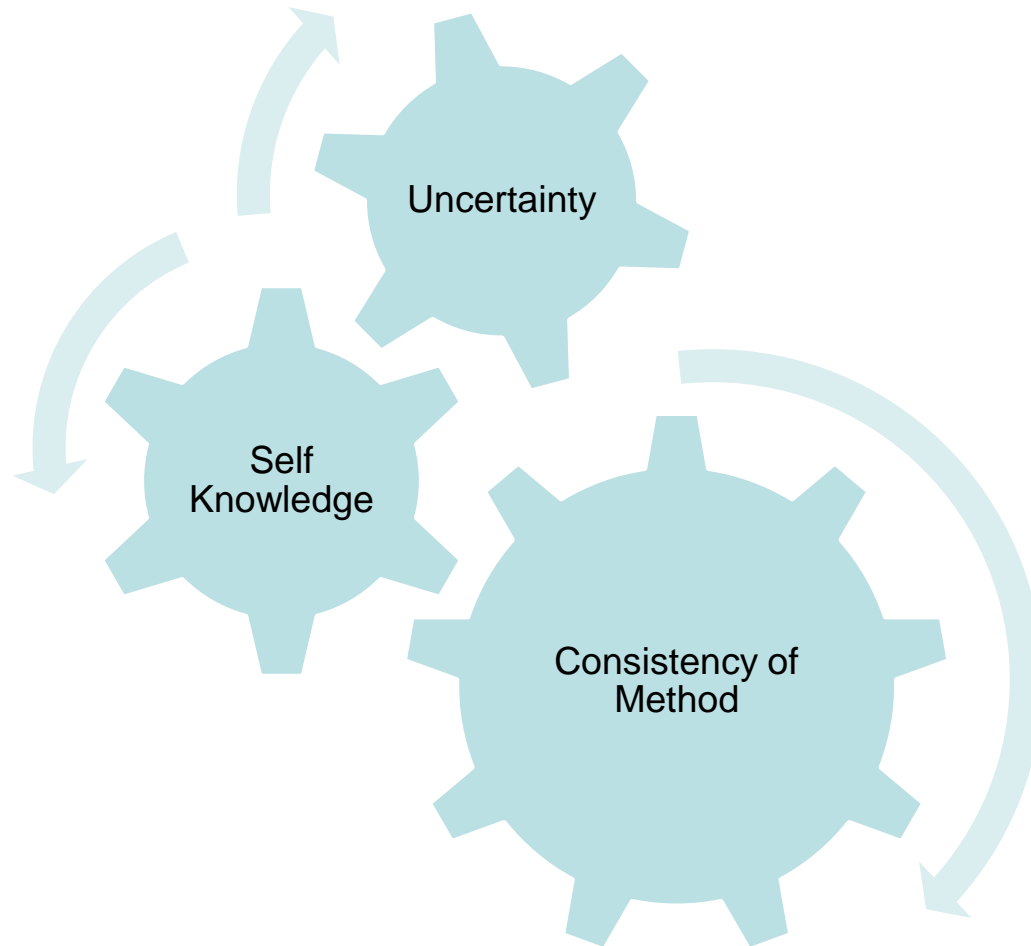
Customer Satisfaction?

**Standard
Customer
Satisfaction
Model**



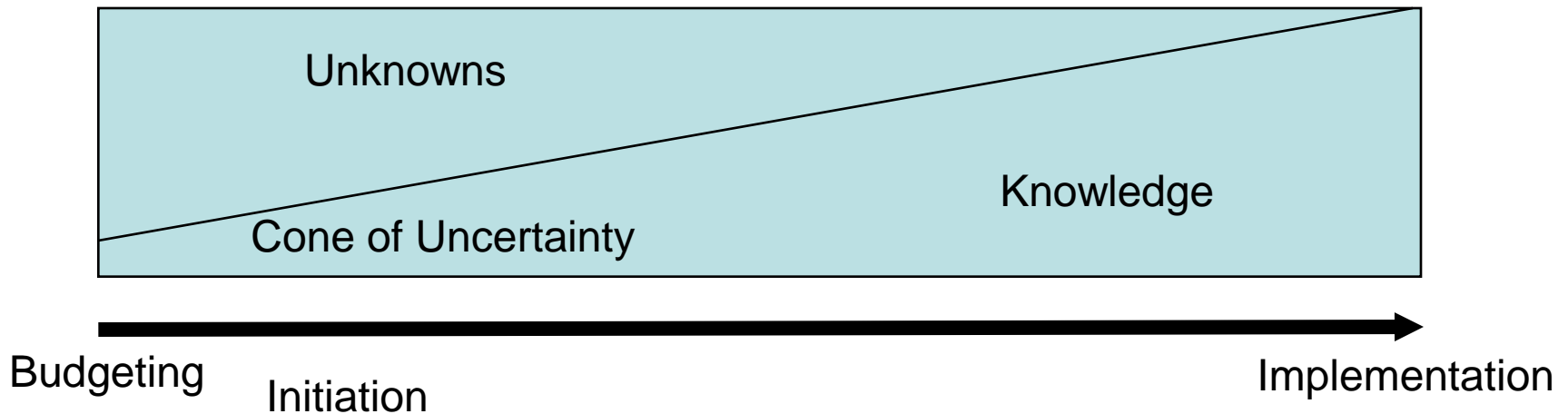
**What Should
The Focus Be?**

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



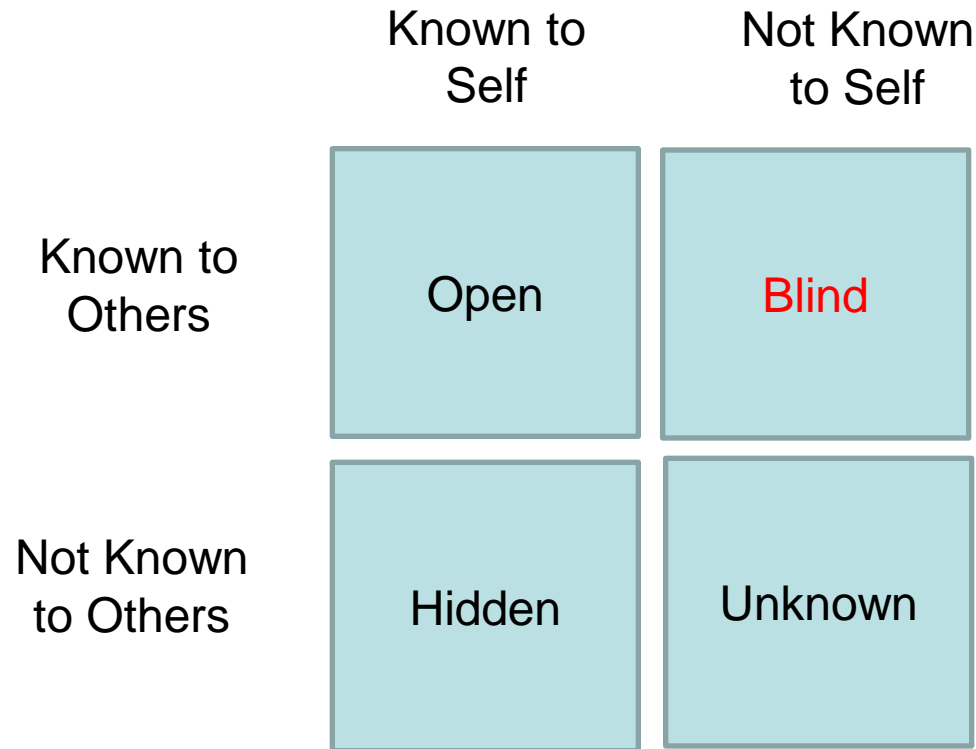
Uncertainty

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



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

Johari Window



Basic Methods of Estimating

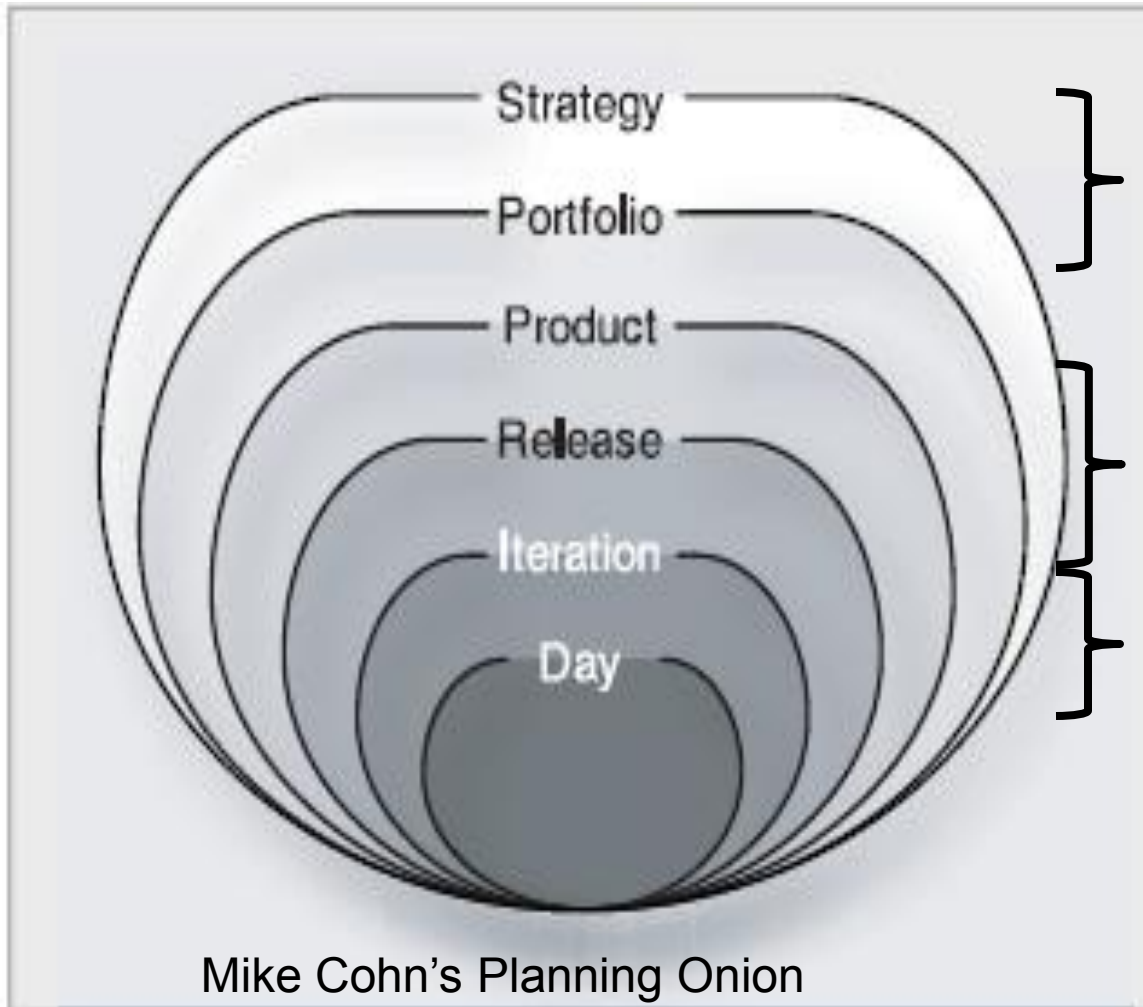
Analogy

Bottom Up

Parametric

Iteration
Planning

Planning Onion and Timing



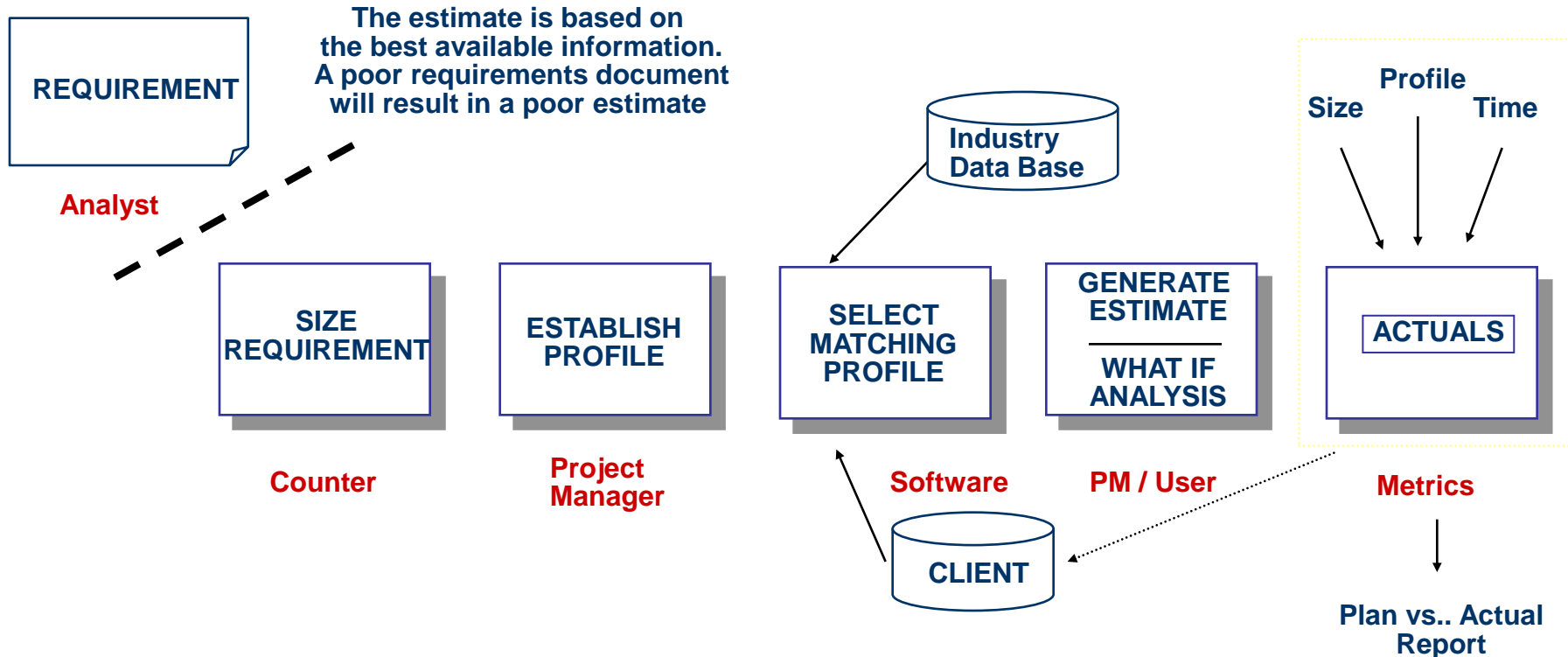
Budgeting
Analogy

Estimating
Parametric - Light

Planning
Integration
Planning
Standup Meetings

Mike Cohn's Planning Onion

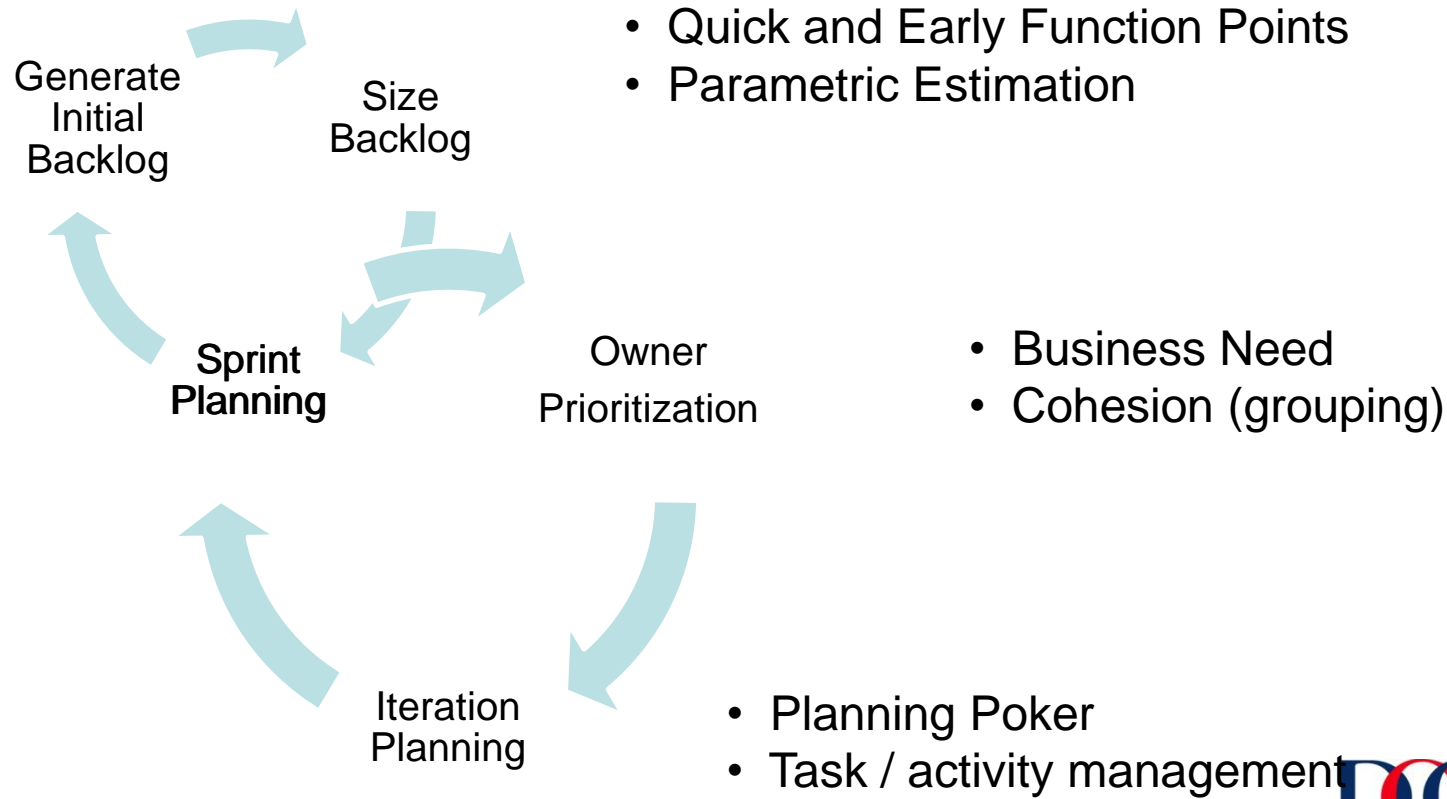
Estimating Process



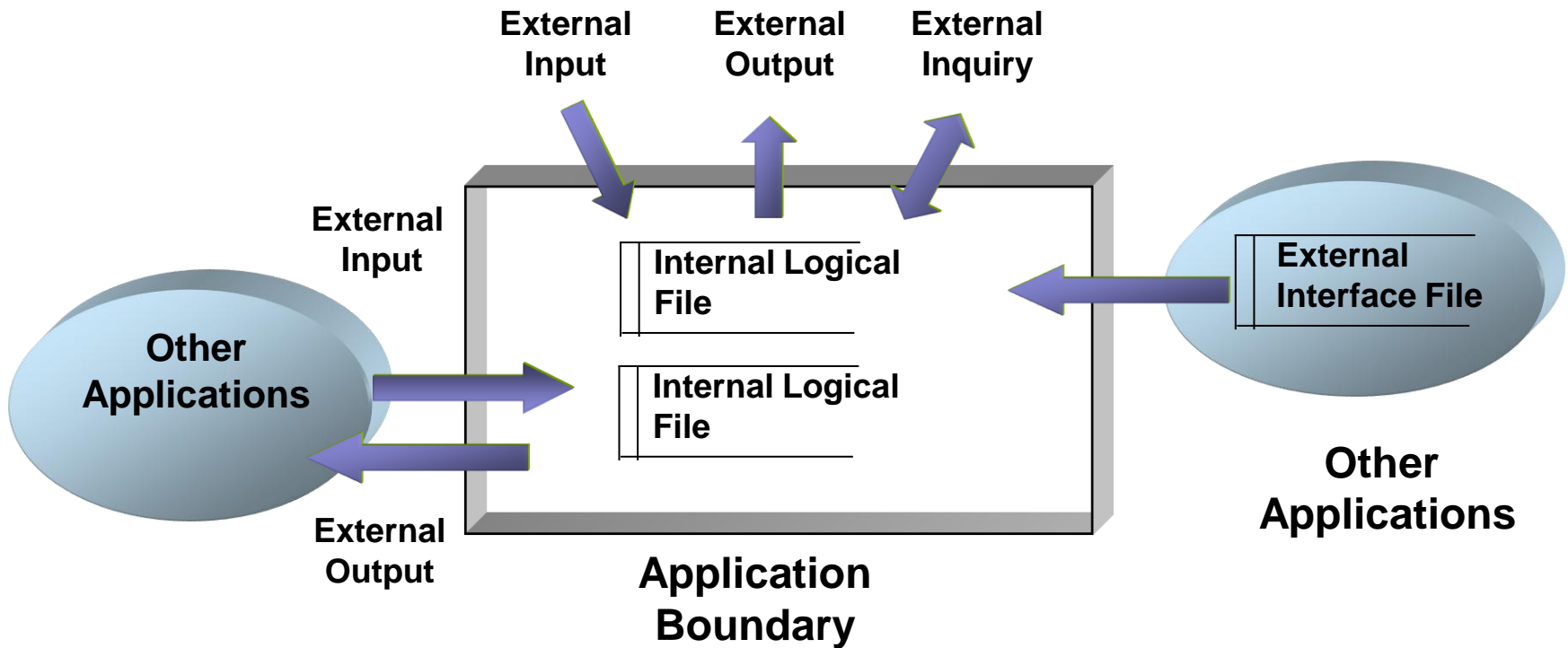
Accurate estimating is a function of using historical data with an effective estimating process.



A Proposed Solution

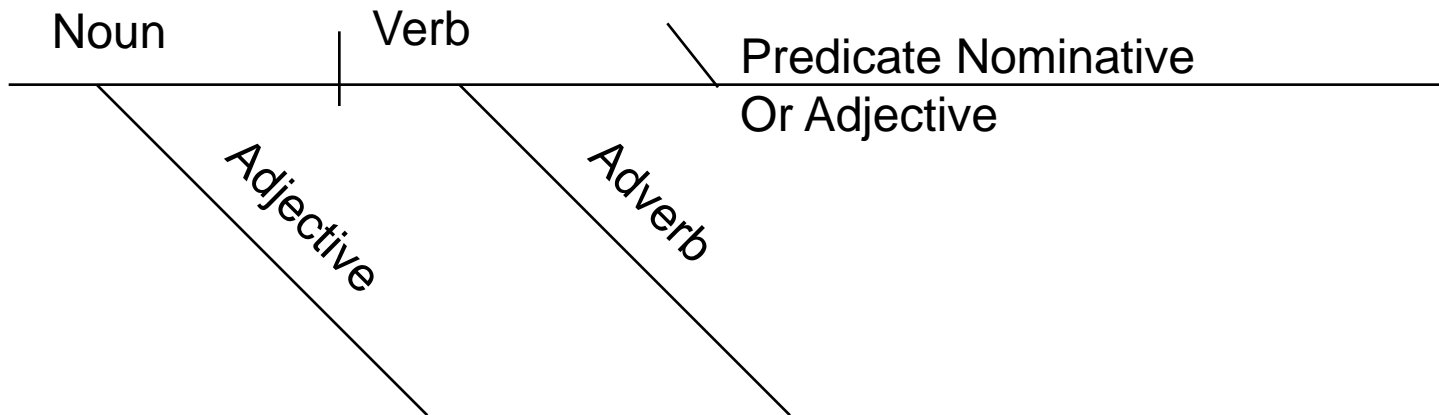


The Logical View



Revisiting Grade School English

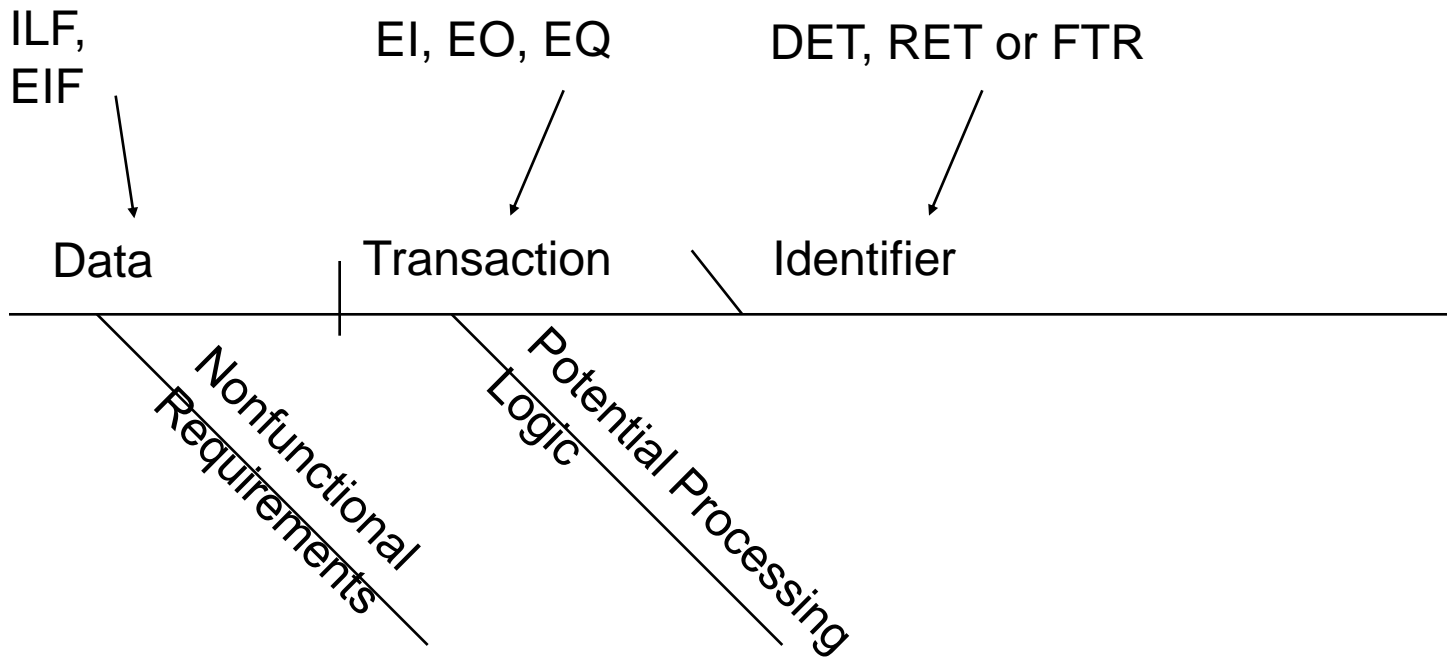
- Sentence Diagramming



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

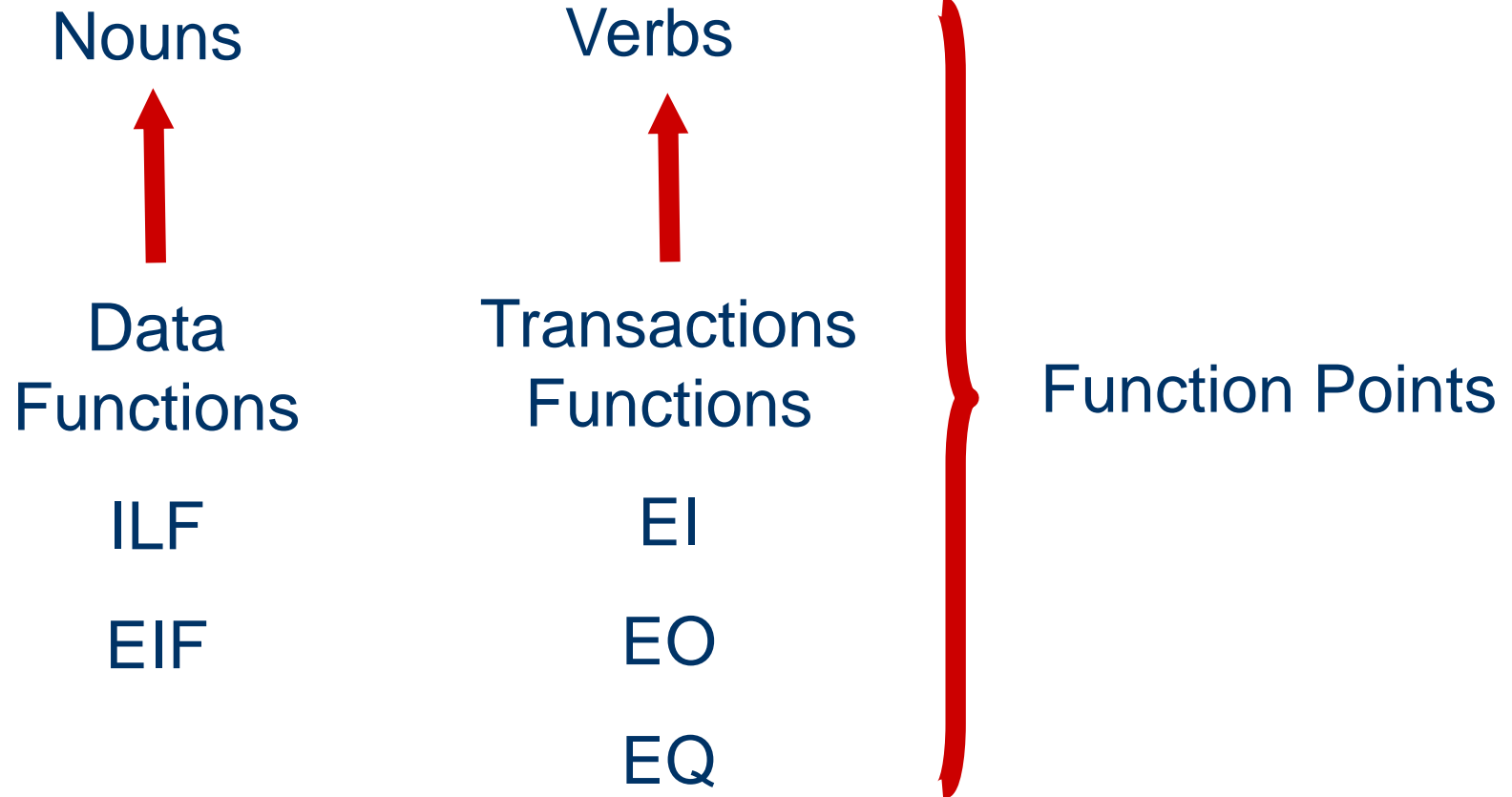
Translation

- Function Point Diagramming

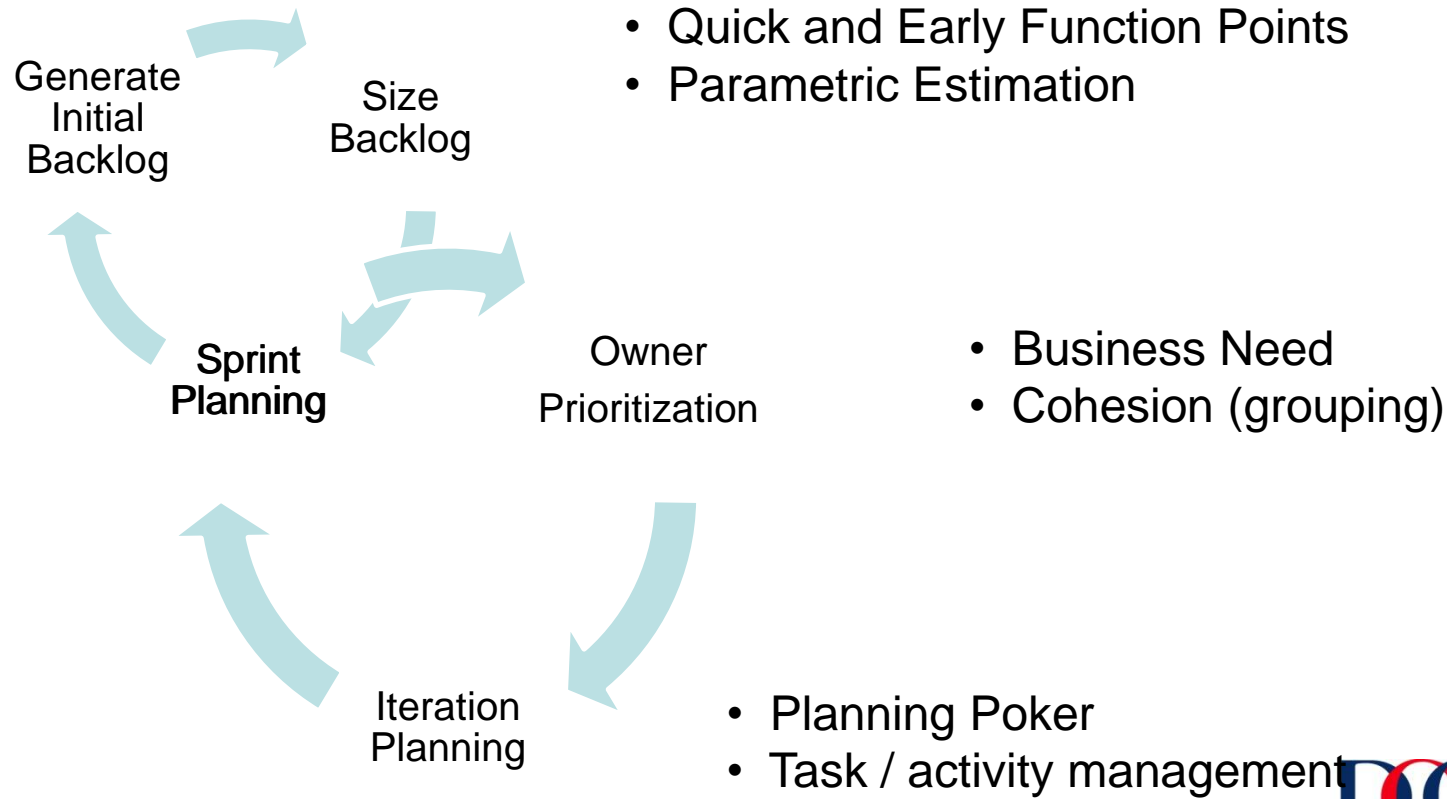


The goal is not diagram the whole requirement sentence but rather to use the logic of the diagramming process to get to the measureable component.

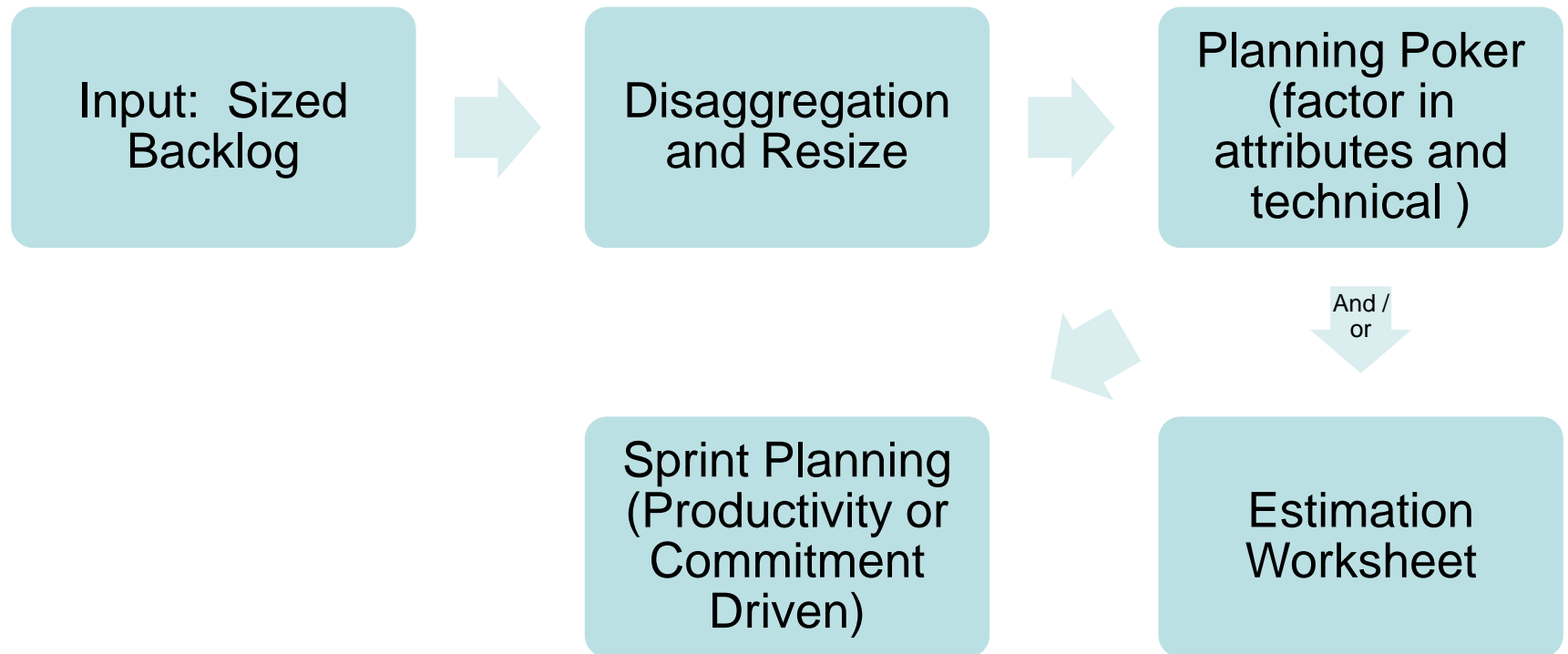
Translation Tool: Trigger Words



A Proposed Solution



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

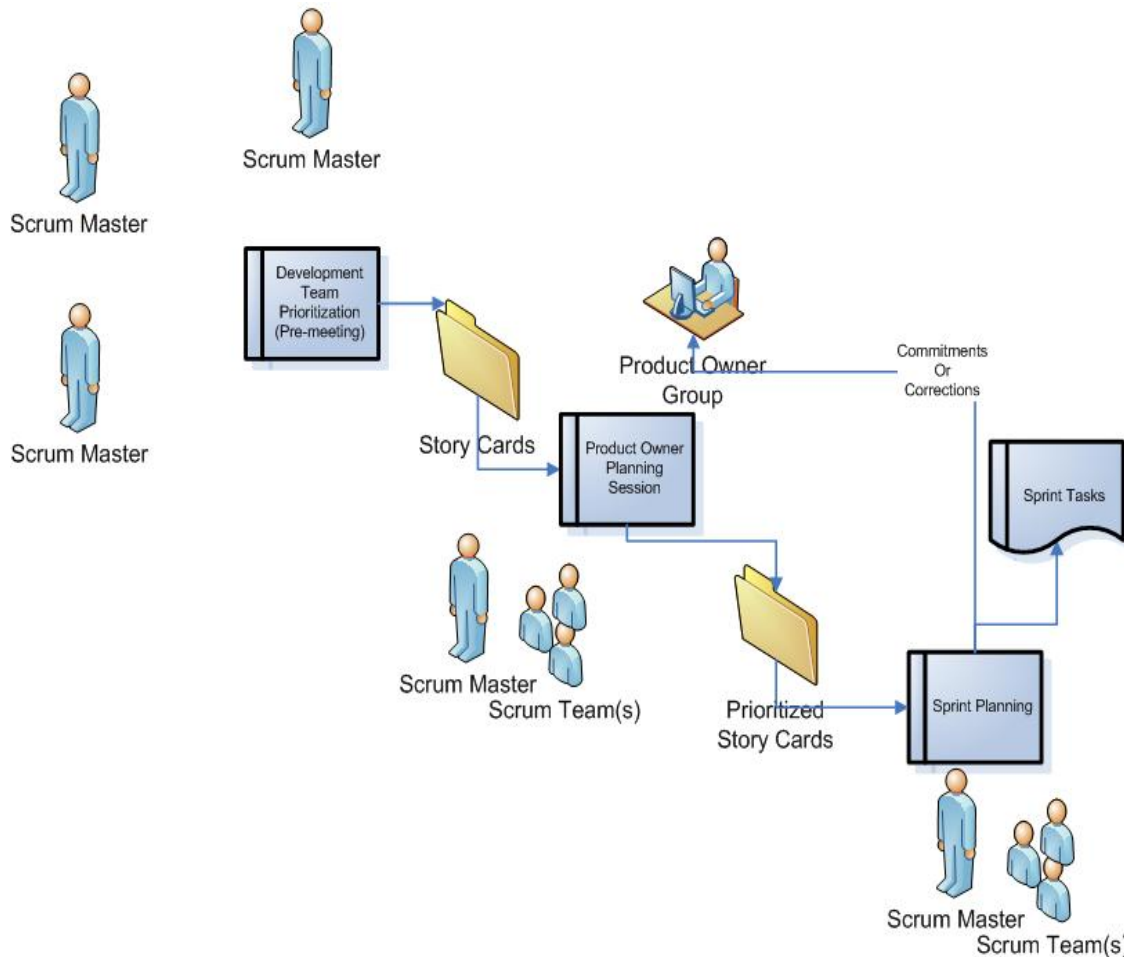
Mixed SCRUM/XP (recent addition) and Plan Based project environment

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

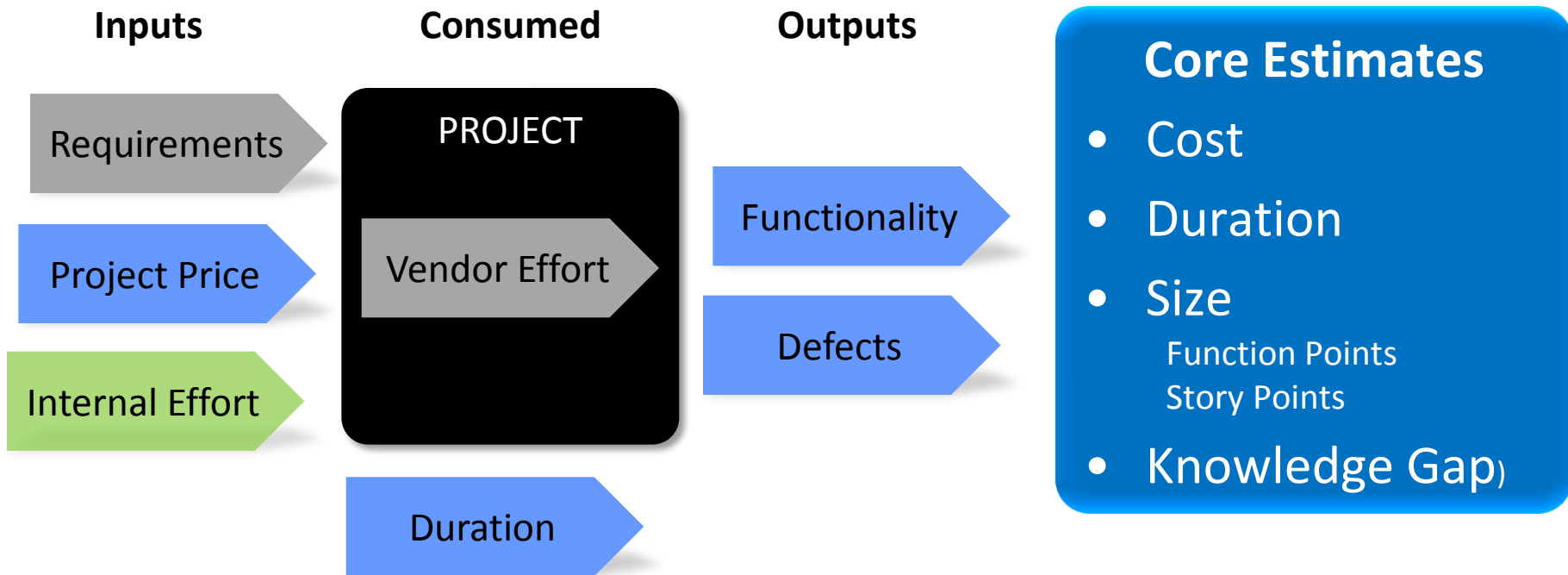
Outsourced Plan Based project environment

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



Your Turn

• Questions?

Agile Techniques Workshop

Agile Estimation

Measurement Roadmap Workshops

Intro to CMMI (SEI)

Estimation Seminar Workshop

Estimation

PSM Estimation

Function Point Fundamentals

Advanced FPA

Prep for CFPS

Reviews and Inspections

Training

Agile Techniques

Agile Practical Techniques Workshop

Agile Practical Techniques

Using Agile frameworks and techniques usage will impact your development outcomes in positive and significant ways. However, incorporating Agile practices and methods into your culture effectively and supporting your objectives require understanding what changes are necessary to your current way of doing things.

DCG's two and half day Agile Practical Techniques Workshop is designed to help you learn the simple and powerful software social dynamics available in the Agile way of doing things and how to apply them in your business workstreams and culture.

Available exclusively as a 2 1/2 day on-site course

Agile Techniques Workshop

Agile Estimation

Measurement Roadmap Workshops

Intro to CMMI (SEI)

Estimation Seminar Workshop

Estimation

PSM Estimation

Function Point Fundamentals

Advanced FPA

Prep for CFPS

Reviews and Inspections

Training

Estimating in an Agile World

Estimation Methods for Agile

Agile Estimation

This course will increase an Agile Team Leader's understanding of the principles and methods of estimating in an Agile environment.

DCG's two day Agile Estimation Class is designed to help you learn the multiple options available to size and estimate your team workloads and provide better predictions as to productivity and time to delivery.

Available exclusively as a 2 day on-site course

From the Agile Manifesto: We are uncovering better ways of developing software by doing it and helping others do it. Through this work we have come to value:

Read a client's own words on the impact of this class on their plans...

