An Approach to Fixed Price Agile

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Why is this important?

The industry has justifiably bought into the benefits of Agile development for, primarily, improving customer satisfaction and, secondarily, for improving value delivery and shorter time to market.

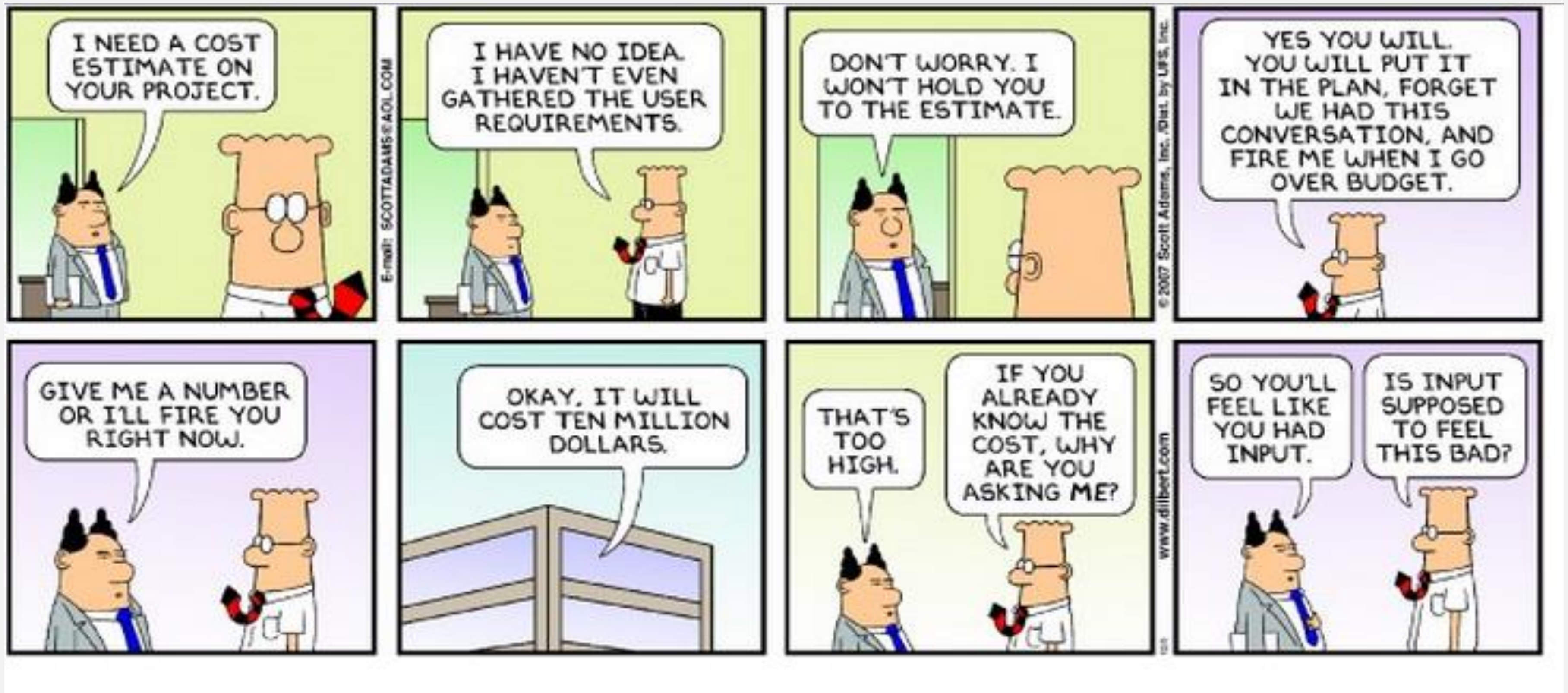
BUT there is a group of people who find Agile development hugely frustrating – the business managers, program managers, business owners, venture capitalists, etc. – collectively, the "investors."

Agile teams will not even provide estimates of cost and duration to allow them to incorporate change.

The presentation describes an approach for cost and duration predictability as an alternative to paying for all Agile development from outsourced software development vendors on a T&M basis.

The approach has subsequently been refined through work with other clients and experts in the field.

Does this seem familiar?



Key lessons or concepts

A better way to measure Agile development to help manage investor expectations

Transition from paying for Agile development as T&M to fixed price

Implementation issues that might arise and how to manage them

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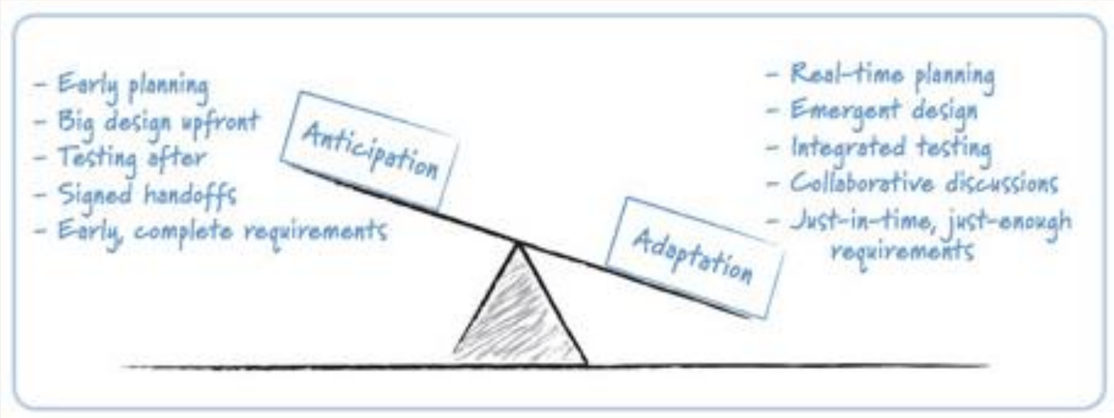
So, When Are You Going to Deliver?

Traditional Planning Approach



Agile Planning Approach

“A big part of an organization’s becoming agile is finding the appropriate balance between anticipation and adaptation”

- Jim Highsmith, *Agile Software Development Ecosystems*

Biography

More than 30 years of broad management experience in the IT field

Periods in consulting, R&D, software development, manufacturing, business, academia & (yes) Central Government!

An author and speaker on a range of topics related to Software Development. Most recent book: “The Business Value of Software” (2017) published by CRC Press.

President & CEO (now Chairman) and majority owner of the David Consulting Group (now PREMIOS) in 2006

Previously held numerous senior executive positions including: Fidelity National Information Services (NYSE: FIS), Sanchez Computer Associates (NASDAQ: SCAI) and MasterCard International (NASDAQ: MA).

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Software planning

- Agile Performance Metrics
- Software Estimation
- Software Vendor Management
- Requirement development
- Software Risk Assessment
- Application Architecture

Integration & Development

- Cloud-Based Transformation
- Custom Product Development
- API Integration
- Application Migration

Consulting

- Agile Delivery Management
- Fixed Price Development Consulting
- Performance Coaching
- Agile Metrics Training

The PREMIOS Guarantee

We commit to deliver measured value in each short, time-boxed iteration or we will make it right.

If the value in the next iteration does not justify the cost, we won’t do it.

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Agenda

Common beliefs

The problem

How to establish fixed price contracts (with specific example)

Functional measurement

Planning & Budgeting using historical data

Conclusion

Are Fixed Price Contracts Possible With Agile Development?

They're not only possible, they're essential!

AND

This can all be done without significant impact on the agile teams

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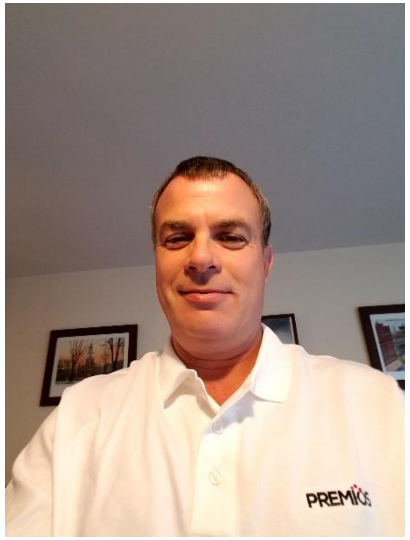
Common Beliefs

Agile is the best way to develop software.

We agree 100%



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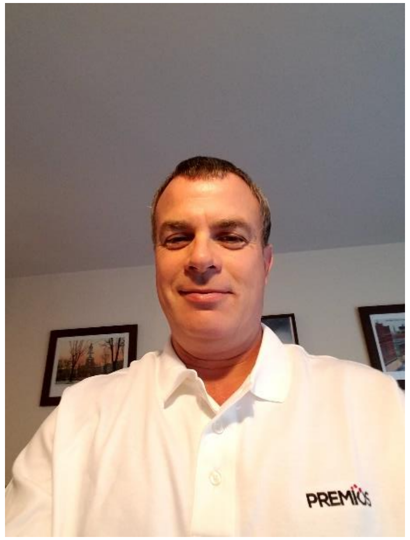
Common Beliefs

Agile projects can't/shouldn't be measured for estimation or contracting, as is done under other development frameworks.

#noestimates

This belief stems from the fact that detailed system requirements aren't needed/desired at the beginning of a project in the agile framework so it seems to follow that measurement isn't necessary or even possible for agile.

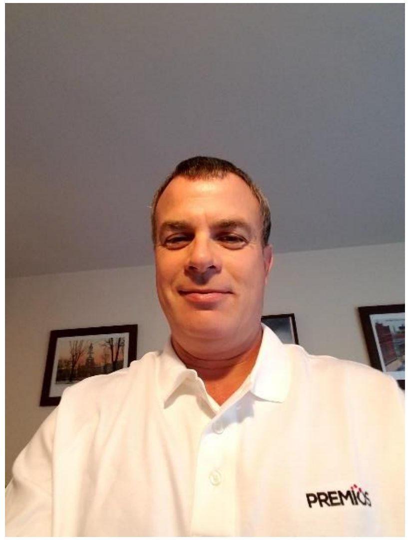
How can we be measured against expectations if expectations are not well defined? Fair point



Common Beliefs

The estimation and measurement that is done on an agile project is centered around the work done by an individual team working on a specific sprint, providing few metrics that can be aggregated for overall financial management.

The various techniques used for measurement and estimation at the individual team level are worthwhile and should be retained.
BUT measurement can and must be performed in an agile framework to measure and predict output at an aggregate level.
In turn, the historical data from measuring the outputs of such contracts can be used so an organization can plan better.
This can all be done without significant impact on the agile teams and their sprint level planning and measurement.



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The problem with T&M contracts is they measure inputs not outputs/outcomes

Inputs
Effort
Requirements
Resources
Changes

→

Software Development

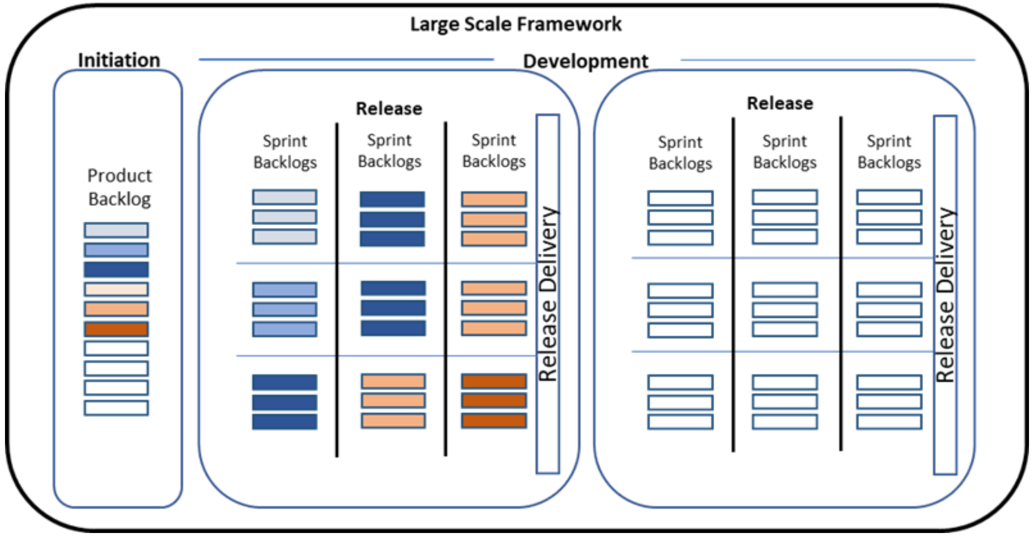
→

Outputs & Outcomes
Functionality
Performance
Capability
Defects

- The problem is that without measurement of an agile project's output, contracting must be done on a time and materials basis.
- This severely hampers the ability of an organization to perform the financial planning, allocation and monitoring necessary for sound fiscal management.

- Most importantly, it also means that business planning is difficult to the point that it's not useful.

Organizations extend agile across multiple teams and organizations for large projects



This is a lot of T&M!

- Product requirements defined with epics and product backlogs
- Grouped projects made up of releases, each working a subset of product backlog
- Each release made up of multiple sprints
- Development on the sprints is done by multiple teams, each working through a sprint backlog

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Case Study – context 1

- A Financial Services corporation
- Transitioning from Waterfall to Agile
  - Digital Transformation group – 100% Agile
  - Legacy < 30% Agile
- 80% outsourced, 2 major vendors, several minor vendors
- Most recent outsourcing contracts included payment based on output metrics:
  - Variable = “functionality delivered”
  - Fixed = Delivery standards e.g. quality, performance, etc.
  - Price Paid = functionality delivered * price per unit functionality

Case Study:
The good old waterfall way

1. Fix the requirements for the project
2. Get functional size from the vendor
3. Validate the functional size
4. Vendor starts
5. Manage change and impact on functional size
6. Vendor finishes
7. Validate final functional size and delivery standards
8. Finalize vendor payment

Case Study – Transitioning to Agile
Same contracts, Same output pricing …

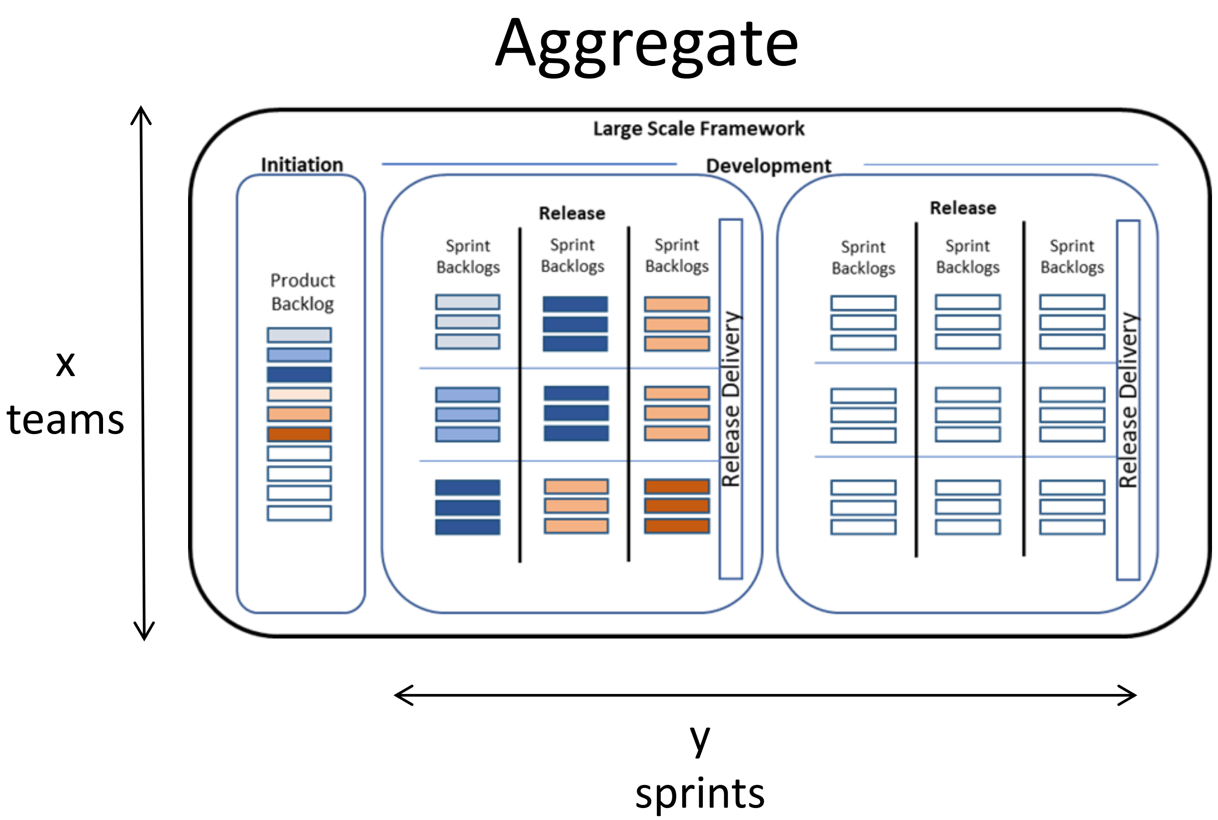
1. Fix the requirements for the project

STOP
RIGHT
THERE!

Case Study – Transitioning to Agile
Same contracts, "Different" output pricing

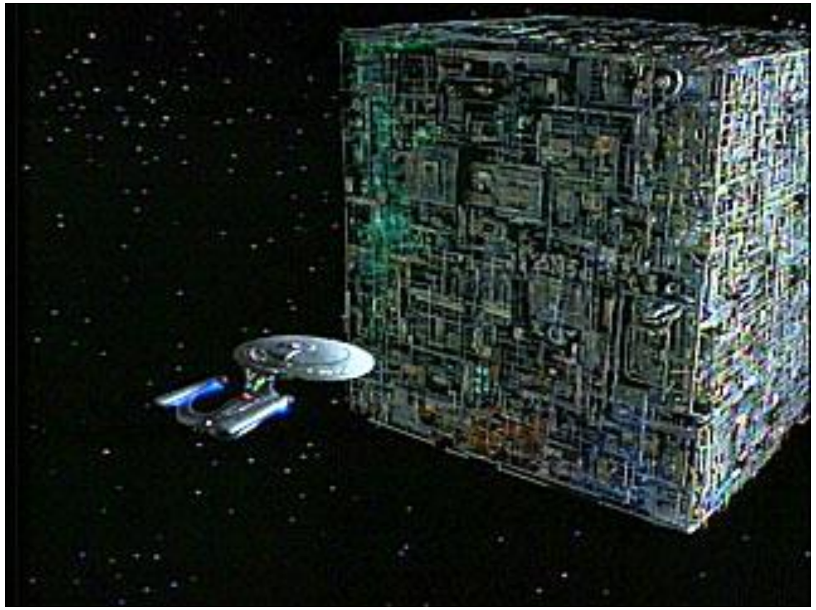
…

1. Stipulate and communicate that this does not apply to organizations with 1-3 teams
2. Stipulate that this will not and must not change the existing Agile process
3. Decide on the aggregation model to be used:
   a. x teams * y sprints
   b. Teams working on similar value stream is sensible
   c. Monthly or quarterly number of sprints is sensible
   d. Some organizations will have some/many Aggregates.
4. Note that aggregation at the right level helps to avoid the challenge of trying to measure "bleeding" of stories from one sprint to another.

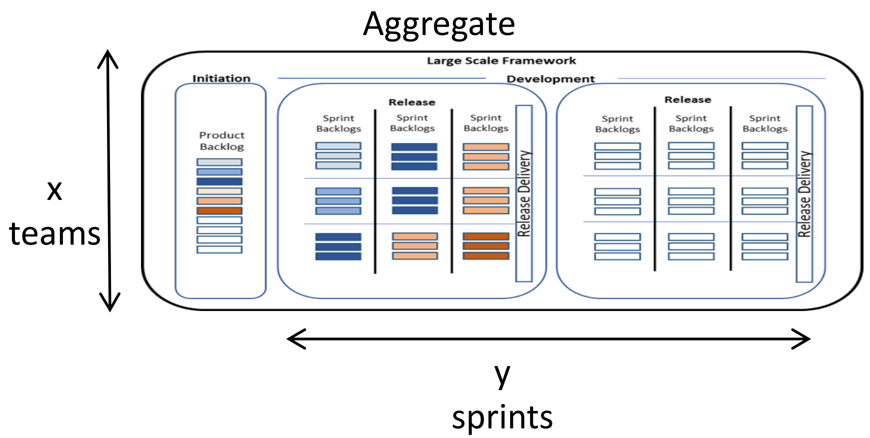


Sidebar:

- There are some fixed aspects of large Agile contracts that we can leverage at our aggregation level:
  - Even though we are paying T&M to start with, for our x teams we have a fairly predictable team membership and cost e.g. 6 teams with 40 known individuals/roles with fixed rate cards
  - Hence, +/- 5%, for our “Aggregate”, we have a fixed cost.



Same contracts, "Different" output pricing



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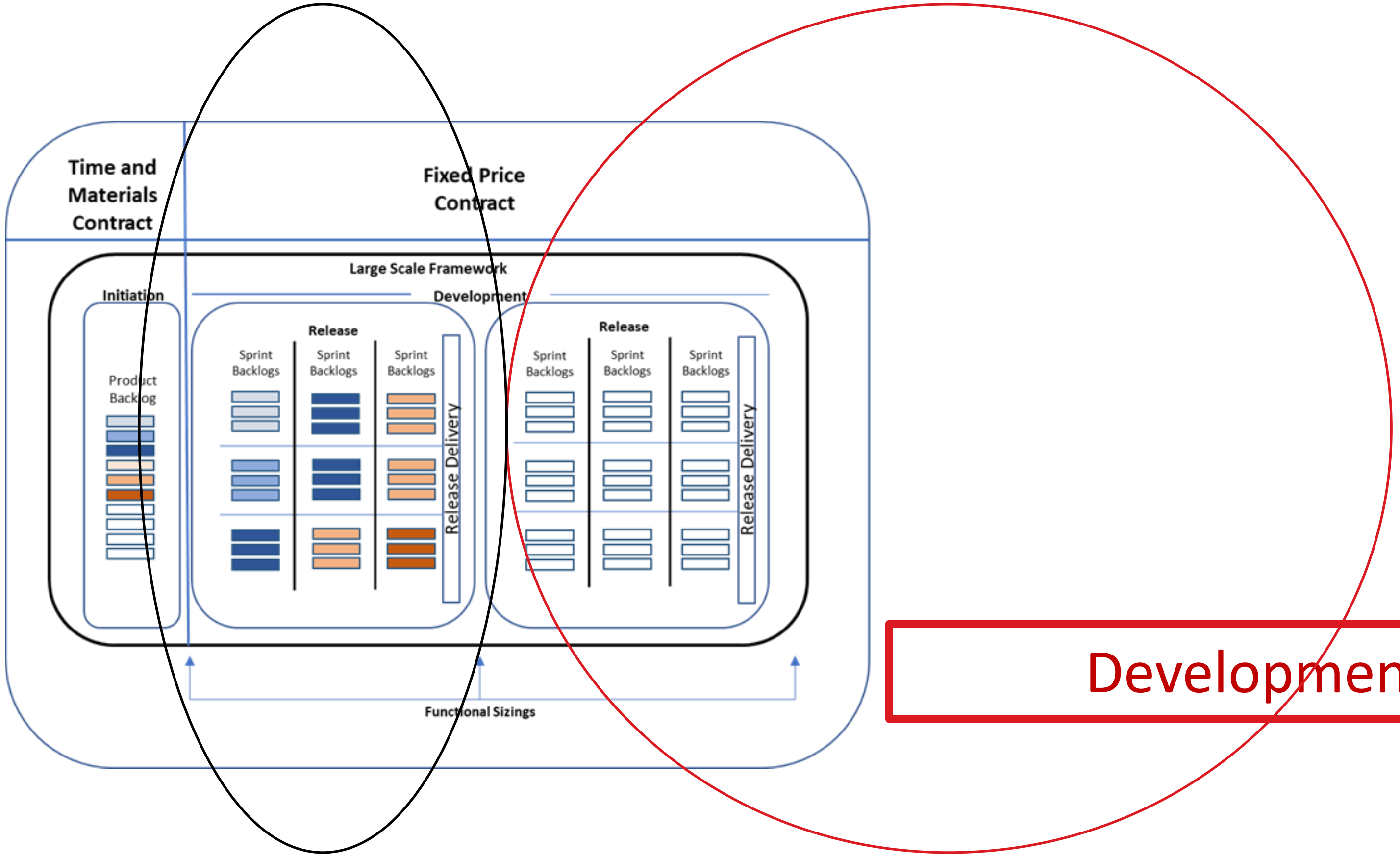
4. Note that aggregation at the right level helps to avoid the challenge of trying to measure "bleeding" of stories from one sprint to another.
5. Calculate the Fixed Cost of the Aggregate e.g. $400,000
6. Measure the "Delivery Rate" (Functional Output) of each Aggregate e.g. 1000 "points"
7. Establish a unit cost for each Aggregate e.g. $400 per point.
8. Use the unit cost for each aggregate as a guide for "Fixed Priced Agile" combined with incentives and penalties as appropriate

A hybrid contracting model using both time and materials, and fixed price provides the best option

Initiation



Development

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Fixed Price Agile Contracts:
How do we start tomorrow?

- Set up a centralized metrics team (to avoid impacting individual teams)
- Identify the Aggregates
- Calculate the Fixed Cost per Aggregate
- Measure the Delivery Rate for a few Aggregates
- Hold Vendors/Teams accountable for achieving Continuous Improvement of the Deliver Rate
- If transitioning from waterfall to Agile, do the above but expect better productivity in Agile e.g. Lower price per FP

Fixed Price Agile Contracts: A word on impacting individual teams

- Setting up a small centralized metrics team is key to avoiding impacting individual teams AND it will give better reliability of metrics
- BUT Holding Vendors/Teams accountable for achieving Continuous Improvement of the Deliver Rate means the vendors/teams will have to look at ways to change their behaviors/processes/tools/resources to improve. Lean software engineering can help.
- This should be happening anyway in retrospectives but …

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Story points or Function points?

- The answer to the question, “Story points or function points?” is: **“Both, depending on the problem we’re trying to solve.”**
- Story points:
  - Useful, easy-to-use team-level tool for sizing user stories (requirements)
  - Used with team level-metrics like Velocity (story points per sprint), they provide a valuable capacity planning tool for agile teams – note that Velocity is an important individual team metric and should be retained but it cannot be aggregated up to Delivery Rate because …
  - BUT don’t scale beyond the team-level as there is no standard definition for a story point
- Function points:
  - Frowned upon by the agile community with some justification at the individual team level because it is not practical or good use of their time to train developments teams to get consistent FP counts BUT they are the best way to establish fixed price contracts based on consistent measurement of delivered functionality across all technologies and platforms.
  - Industry standard measurement they can be used for sizing, estimation and metrics, and compared across teams, organizations and industries

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Planning & Budgeting using Historic Data – The Delivery Rate

- On a major Product or Program, best practice is to define an initial prioritized product backlog then identify the MVP as being the top x items on that list
- If we calculate the rough functional size of the items on the list AND we know the Delivery Rate of the Aggregate that will do the work, we can calculate the number of Aggregates required to deliver the MVP.

Feature 1	1500 pts
Feature 2	800 pts
Feature 3	1000 pts
Feature 4	1200 pts
Feature 5	600 pts
Feature 6	1500 pts
Feature 7	200 pts
Feature 8	3000 pts

MVP (Features 1–5): 5100 pts

Deliver Rate = 1000 pts/Aggregate

MVP delivered in 6 Aggregates (+ Feature 7?)

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The use of an agile framework does not limit us to time and materials contracts

- For organizations with more than four Agile teams, quantifying projects in terms of output (functionality delivered) against fixed costs enables the flexibility Fixed Price Agile Contracts

- Care is needed in setting up Fixed Price Agile Contracts to ensure that the benefits of Agile are not lost and teams productivity is only impacted in a positive way

- Once established, an understanding of Delivery Rate can greatly assist high-level planning, budgeting and expectation management

- So …

Are Fixed Price Contracts Possible With Agile Development?

They’re not only possible, they’re essential!

AND

This can all be done without significant impact on the agile teams

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Questions

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DON'T BELIEVE IT CAN WORK?

PREMIOS CAN HELP YOU IMPLEMENT THIS WITH YOUR VENDORS

OR

PREMIOS WILL CONTRACT FOR OUTSOURCED SOFTWARE DEVELOPMENT
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Mulesoft
AS FIXED PRICE AGILE

Contact Mark Richtermeyer on info@premiosgroup.com