

Hybrid Agile/Plan-Driven Methods

Discussion Notes

Goals of Notes

Participants with email addresses

Discussion(s) including

- Introductions
- Questions For AC Needing Answers
- Critical Issues
- Opportunities
- Research Issues

Checkpoint/Restart

Issues, Opportunities, and Research revisited

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Introductions

Intro "definitions": see Agile Methods Hybrids – Light Agile and Plan-Driven"

- Components of a Methodology
- Matrix space
- MBASE & MBASE Models
- Basili's empirical Sw research [small-large] spectrum

Hybrid Agile/Plan-Driven

1. Can both be done?
2. What are characteristics for spectrum
Agile...plan-driven?
[And what's outside in the SE small-large spectrum]
3. What's Agile?
 - "[Any method that is] Reactive, appropriately, to environment" [but, how quickly?]

Introductions

Hybrid Agile/Plan-Driven

3. What's Agile? (cont.)

- Dimensions:
 - 4D from: Manifesto
 - + #of people
 - + success model
- Invariants/Variants
- Kivea Diagram?
- People :: Turnover
- Tacit vs. Explicit
- Risk ?vs.? value
- Team values = success model(s?)?

Questions For AC Needing Answers

People Involved = Team = Developers + Client + Customer?

A: (People who must be coordinated)

Planes of [AC's] Matrix = Focus of Attention

What's a Project?

A: Time Based ?Activity? [macro-task] with an outcome]

A: Produces a [release of a] product

- Product is outcome of a project
- Component is outcome of a project

Questions For AC Needing Answers (cont.)

How does "Project" relate to MBASE Continua of applicability? [Spectrum from eBASE shared vision]

[Method Patterns?]

- 1. Small EUI Apps.
- 2. Large EUI Apps.
- 3. Infra-structure¹
- 4. Device-Embedded
- 5. Complex Systems of Systems

¹ Linux, Apache, Networks, OS, DBMS, Middleware

Discussions with AC

Plan Driven: Responding to change
Serial vs. Concurrent

Other foci

Accountability (Maintainability)

Critical Issues

- Issues:
 - Plan vs. Independent Variable
 - Reactive vs. Plan

Investigation of continua

For a Decision tree; Expert system?

- What are the dials
- What are the classes/categories of sets of dials

Critical Issues (cont.)

- More parameters than manifesto
- Set of Dials: “project” characteristics

– collocation	– environment
– complexity	– external constraints
– Size	– "level"

- Project level: (System of Systems; SubSystem; Component; ...)
 - where in some peoples terminology
 - o program ≈ system of system
 - o product ≈ system
 - o product ≈ subsystem
 - o product ≈ component
 - where a component might be a "product" decomposition: a module? a unit?
 - where a component might be a service

NB: this lead to a discussion of a "project" per AC

"an activity(?) with a start point, end point, and clear exit condition"

Critical Issues (cont.)

- Still More parameters than manifesto: consider COCOMO drivers

EAF	SF
– Product: TIME; STOR; PVOL	–
– Platform: RELY; DATA; RUSE; DOCU	–
– Project: TOOL; CPLX; SITE; SCHED; PREC	– RESL; FLEX; PMAT
– Personnel: ...	– TEAM

Still More parameters than manifesto:

- Consider COCOMO Suite ratings
- Set(s) of Dials: Project Success Criteria/Expectation
 - # of [incremental] deliveries & frequency
 - Manual/Training/Docs vs. Just [Working] Software [Customer “Program”/Ancillary Requirements]

What’s Missing from Manifesto?

[that is needed for Plan-driven method selection]?

Critical Issues (cont.)

Process Documentation

= Anything Not Delivered to Customer

[If not for delivery,] At what point is any artifact other than CODE committed to persistent form? Where

- Persistent ==> put into tool
- Persistent ==> more than white board/back of envelope
- Persistent ==> more than “conversation”
- Persistent ==> Snapshot; possibly maintained
- Persistent ==> Explicit (no longer tacit)

For instance, [XP view] "Stories on cards are promises of a conversation between customer and developer", and therefore not persistent

**Promising Parameters: Number of customers;
Number of stakeholders + stakeholder classes**

Research Suggestions

Dial sets [mappings] to COCOOMO II Suite ratings

**Can COCOMO II's EAF/SF be used to
[or is there a new set based on Agile/PD? to]**

- Suggest or predict appropriate “ agile” model
- Predict success [or risk?] of using an [AC] “ methodology”
- Suggest a possible [AC] method?

**Can CII Suite factors be introduced as predictive
elements of an ADL [or it will kill ADL]?**

Check point/ Restart Working Group Guidelines

Product: briefing, preferably with notes and priorities

Topics should include:

- –Most critical issues in area
- –Most promising opportunities
- –Results from prioritization surveys
[Importance vs. Difficulty; looking for degree of
concurrence across Affiliates]

Research suggestions:

- general,
- CSE/SEI/CeBASE,
- CSE Affiliates

Critical Issues

- Not Plan-Driven vs. Agile (these are apples and oranges) we agree hybrids exist;
- What are the decision criteria
 - for determining the appropriate "practices" [researcher to find the right word] for a given project
 - Is it important/critical to know which ones [or values] affect each other? [i.e. dependencies, constraints and conflicts]
 - What are the other things: environment,

Critical Issues

**A list of things that impact the research; focus on
What has to be done to determine if one can have an
effective hybrid Agile/Plan-Driven?**

Getting clearer definitions of terms [an ontology]

- Processes; process instances:
- Methods [between Techniques and Lifecycle Models]
- Frameworks
- Concepts
- Values
- Views

What are the [business] drivers?

- Life-cycle return on investment [tempered by corporate environment; ...]
 - e.g. degree of dynamism (wrt. agile/PD hybrid method selection)

Opportunity

Identification of Method Categories

- AKA Labels on the dials

Decision Guidance Tool

**Range of tools could satisfy;
Better to have something simple, fast**

- Decision Tables
- upto [passing through VQI and OT]
- Expert System

Contracting Methods ...

Flexibility/Maneuverability [both systems & software]

Contracting issues

- Structuring the Contract
contracting methods that do not stifle contractors
- Evaluate appropriateness of given approach
- Expected oversight/insight / oversee ability

Additional Research Suggestions

Agile vs. Plan-Driven System Engineering

NOTE: is there only minimal change needed to apply to Agility to system engineering? [Are there many more boundaries?]

Procedure or Tool for Method Selection

(with "opportunity" 2 being inputs; 3 & 6 being internal rules; Assumption Output comes from list of known methods [appropriately attributed])

- Appropriate to Life cycle stage (1st time; evolution; maintenance) and level of "product" (system of systems ... component)

Building the tool might be easy, But building the "data set" is hard

Identification of Method Categories (selection factors)

Method compatibility matrix:

- support or clash
- miscibility