Software Development Methodologies

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Lecture 13

Agile Methodologies: DAD
DAD: Disciplined Agile Delivery

- DAD is an agile process framework with the following characteristics:
  - People first
  - Learning oriented
  - Agile
  - Hybrid
  - IT solution focused
  - Goal-driven
  - Delivery focused
  - Enterprise aware
  - Risk and value driven
  - Scalable
DAD: Lifecycle

[Diagram showing the DAD lifecycle with phases such as Inception, Construction, and Transition, along with activities like Initial Vision and Funding, Initial modeling, planning, and organization, Initial Architectural Vision, Daily Work, etc.]

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### DAD: Phase Goals

<table>
<thead>
<tr>
<th>Goals for the Inception Phase</th>
<th>Goals for Construction Phase Iterations</th>
<th>Goals for the Transition Phase</th>
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</thead>
<tbody>
<tr>
<td>- Form initial team</td>
<td>- Produce a potentially consumable solution</td>
<td>- Ensure the solution is production ready</td>
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<tr>
<td>- Identify the vision for the project</td>
<td>- Address changing stakeholder needs</td>
<td>- Ensure the stakeholders are prepared to receive the solution</td>
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<td>- Bring stakeholders to agreement around the vision</td>
<td>- Move closer to deployable release</td>
<td>- Deploy the solution into production</td>
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<td>- Align with enterprise direction</td>
<td>- Maintain or improve upon existing levels of quality</td>
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<td>- Identify initial technical strategy, initial requirements, and initial release plan</td>
<td>- Prove architecture early</td>
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<td>- Set up the work environment</td>
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<td>- Secure funding</td>
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<td>- Identify risks</td>
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### Ongoing Goals

- Fulfill the project mission
- Grow team members’ skills
- Enhance existing infrastructure

- Improve team process and environment
- Leverage existing infrastructure
- Address risk

[Ambler & Lines 2012]
DAD: Inception Phase

- Initiate team
- Schedule stakeholders for envisioning sessions

Coordinate

- Build team
- Requirements envisioning
- Architecture envisioning
- Consider feasibility
- Align with enterprise strategy
- Release planning (initial)
- Develop shared vision
- Set up environment

Collaborate

- Light-weight milestone review
- Communicate vision to stakeholders

Conclude

Up to a few hours

Ideally: Up to a few weeks
Average: Four weeks
Worst case: Several months

[Ambler & Lines 2012]
DAD: Construction Phase

**Coordinate**
- Iteration planning
- Iteration modeling

**Collaborate**
- "Standard" practices:
  - Visualize work
  - Daily coordination meeting
  - Refactoring
  - Developer regression testing
  - Model storming
  - Continuous integration (CI)
  - Sustainable pace
  - Prioritized requirements
  - Architecture spike
  - Collective ownership
  - Burndown chart
  - Automated metrics

- "Advanced" practices:
  - Test-driven development (TDD)
  - Acceptance TDD (ATDD)
  - Continuous deployment (CD)
  - Look-ahead modeling
  - Parallel independent testing
  - Continuous documentation
  - Non-solo development
  - Look-ahead planning

**Conclude**
- Iteration demo
- Retrospective
- Release planning (update)
- Determine "go forward" strategy

Typical: One to four weeks
Average: Two weeks
Worst case: Six weeks
One hour per week of iteration length
Potentially consumable solution

Two hours for each week of the iteration length

[Ambler & Lines 2012]
DAD: Transition Phase

- **Coordinate**
  - Phase planning
  - Transition planning
  - End-of-lifecycle testing and fixing
  - Data and user migration
  - Pilot/beta the solution
  - Finalize documentation
  - Communicate deployment
  - Prepare support environment
  - Train/educate stakeholders

- **Collaborate**
  - Ideally: Nothing
  - Typical: One hour per week of collaborate time
  - Average: Four weeks
  - Worst case: Several months

- **Conclude**
  - Production readiness review
  - Deploy solution
  - Production ready
  - Delighted stakeholders

- **Actual usage**

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[Ambler & Lines 2012]  
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DAD: Roles

[Ambler & Lines 2012]
DAD: Teams

- DAD teams are typically small-to-medium sized.
  - We consider teams of 15 people or fewer to be small, and teams between 10 and 40 people to be medium-sized.

- DAD teams are also typically collocated or near-located.
  - The definition of collocation is that everyone, including primary stakeholders, is in the same work room.
  - The definition for near-location is that everyone on the team is close enough that they could drive in to attend a coordination meeting.

- DAD’s advice is to reduce the project risk by keeping the teams as small and as geographically close as possible.
DAD: Structure of Small Teams

Small DAD Team

- Team Lead/Architecture Owner
- Team Members
- Product Owner

Supporting Cast

- Technical Expert(s)
- Domain Expert(s)
- Independent Tester

Consumable Solution

Produces

[Ambler & Lines 2012]
DAD: Structure of Medium-Sized Teams

[Ambler & Lines 2012]
DAD: Strengths and Weaknesses

- **Strengths**
  - Iterative-incremental process
  - Based on modeling performed on the problem domain and the system
  - Early specification of the physical architecture
  - Flexible and configurable process framework
  - Design-based development
  - Special attention to enterprise issues
DAD: Strengths and Weaknesses

- **Strengths (Contd.)**
  - Based on careful planning and control
  - Scalability addressed
  - Early and frequent releases
  - Smooth transition from stage to stage
  - Active user involvement
DAD: Strengths and Weaknesses

**Weaknesses**

- Ambiguity due to framework nature
- No specific models are prescribed
- Lack of formalism
Reference