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# The Rise of Agile

Breakfast and Discussion Powered by Accenture and Mayer Brown

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# Contracting for Agile Software Development

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# Presenters



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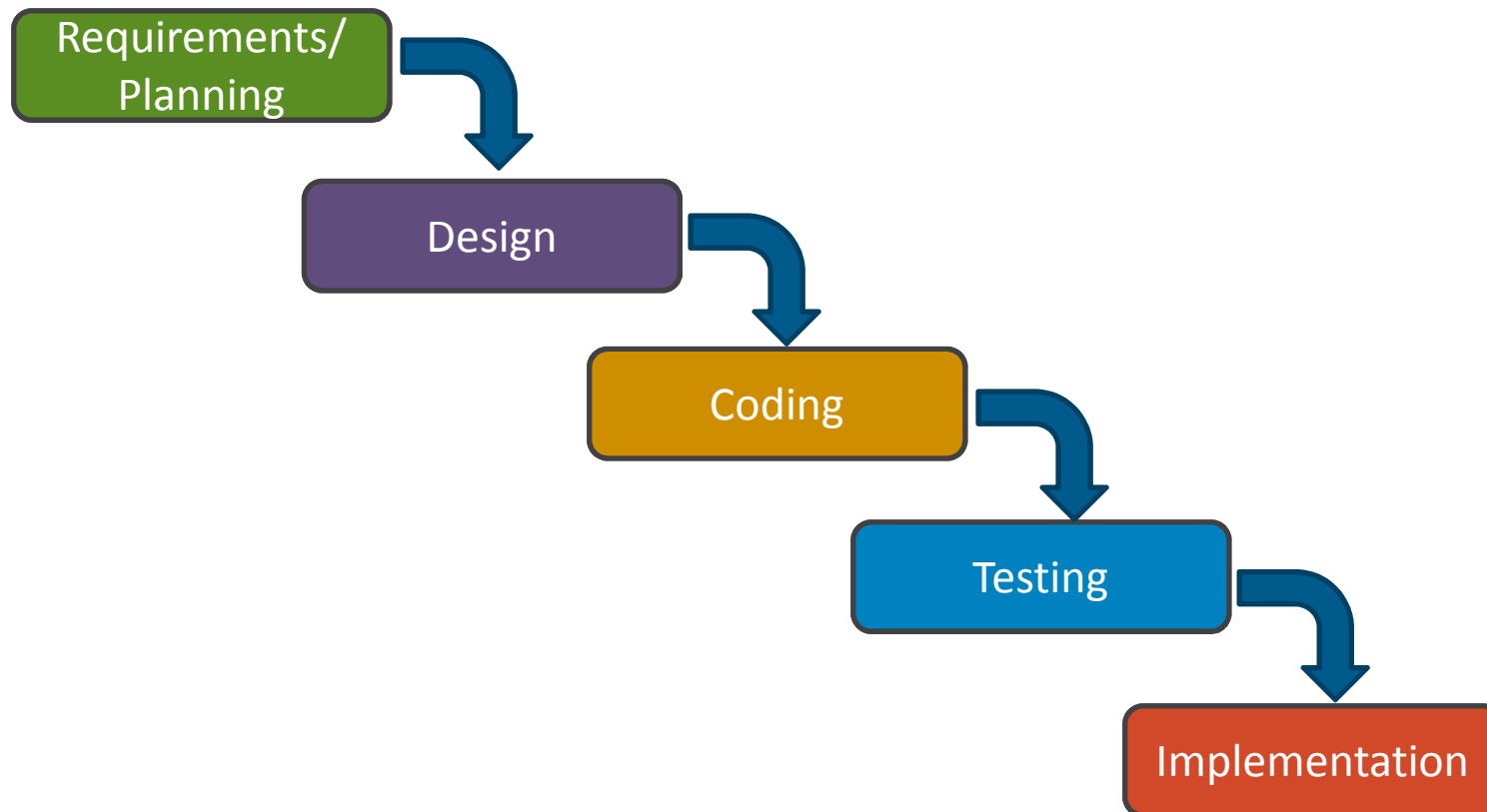


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# Agenda

- Overview of Agile Software Development
  - Waterfall explained
  - Agile Software Development explained
- Challenges of contracting for Agile Software Development
  - Pricing
  - Termination Rights
  - Assurances the “thing” will be built
  - IP Rights
  - Warranties
  - Other Contractual Concerns

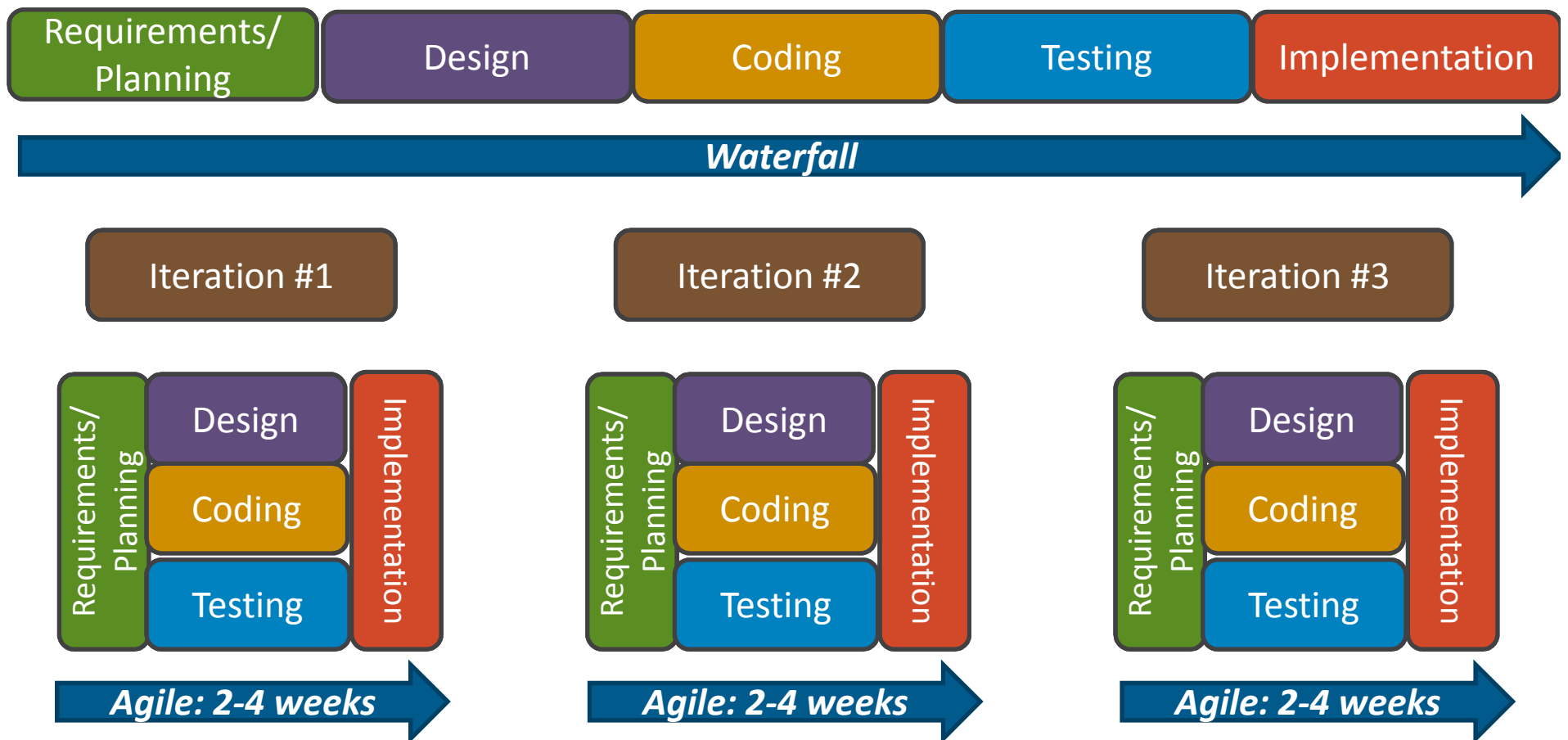
# The Waterfall Approach



# Criticisms of the Waterfall Approach

- Not appropriate if project requirements are uncertain/fluid.
- Does not promote (and perhaps discourages) creativity during the process.
- Client has little interaction with the developer after initial specifications are created.
- Problems may not be discovered for a long time (e.g., in testing).
- Client does not receive value until the end of the process.
- Difficulty of specifying all requirements upfront combined with a rigid change management process leads to a perceived higher failure rate for waterfall projects.

# Overview of Agile Software Development



# Why Do Developers Like Agile?

- The software development process is more fluid, requiring greater interaction between business and technical teams as the project moves through the development life cycle.
- Agile enables software to be developed in continuous cycles based on short iterations, which developers find more efficient and creative (i.e., more quick wins, fewer long slogs).
- Focus is placed on producing working code (fun) and not on documentation and testing (dull).
- The need to test the entire system is minimized since testing (and acceptance) occurs at each iteration.
- More client participation throughout the process.



# Making the Shift to Agile

- How do you deal with the client concern that the contractual clarity and upfront planning /milestones under waterfall are absent under agile?
  - Not truly a leap of faith
  - Each party's interests are more aligned; at a well-run scrum meeting, you cannot tell which sides the members are from
- Clients need to have some people trained in an agile methodology
  - But don't need to know how to program; agile brings developers and business teams closer together via iterations/sprints
- Does agile scale for large, mission-critical projects?
  - Yes (e.g., SITA)
  - Some enterprises are moving away from an annual IT project funding process to a quarterly process thereby matching the speed at which software is developed and the agile iterative approach.

# Contractual Issues: Pricing

- Waterfall: good for fixed fee projects – deliverables and scope of work are well-defined.
- From a developer's perspective, fixed fee models do not work well for agile projects – specs are not refined.
- Instead, many developers prefer a time & materials ("T&M") model for agile projects.
  - However, T&M models provide no certainty for achieving defined outcomes.
  - Clients also get very nervous when presented with an unknown cost for a loosely-specified product.



# Summary of Agile Pricing Models

| Pricing Model              | Pros                                                                                          | Cons                                                                                                                                              |
|----------------------------|-----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| T&M                        | <ul style="list-style-type: none"><li>• Supports fluid work flow</li></ul>                    | <ul style="list-style-type: none"><li>• Total project fee uncertain</li><li>• Increased monitoring</li><li>• Incentive to rack up hours</li></ul> |
| Fixed Fee (Entire Project) | <ul style="list-style-type: none"><li>• Fee certainty</li></ul>                               | <ul style="list-style-type: none"><li>• Difficult to estimate given lack of specs</li><li>• Scope changes more difficult</li></ul>                |
| Fixed Fee (Per Iteration)  | <ul style="list-style-type: none"><li>• Fee certainty (but only for that Iteration)</li></ul> | <ul style="list-style-type: none"><li>• Total project fee uncertain</li><li>• Continual negotiations</li></ul>                                    |

# Contractual Issues: Mitigation Techniques to Control T&M

- Need to avoid developers “gaming” the system
  - Tie early completion to client success
  - Include a certain number of iterations/sprints in the contract
  - If requirements don’t change and project is late, contract for free sprints until completion
- Pool of development hours paid on a fixed basis
- More flexible termination rights (but also a risk)
- Familiar partners less inclined to price gouge – fear of losing work
- Fixed-fee per iteration/sprint or fixed-fee for “must-haves”
- Use of milestones/outcome-based contracting to align interests



## Contractual Issues: Use of Outcomes in T&M

- Outcome-based contracting via milestones can be used under agile T&M projects like waterfall; for example,
  - Create a milestone tied to payment when your application successfully connects to Google Maps
  - Contract for a certain outcome by the 3<sup>rd</sup> iteration/sprint, but provide an incentive if completed by the 2<sup>nd</sup>
- Three options to pay T&M upon milestone completion:
  - Pay all T&M upon completion
  - Hold back a certain percentage (e.g., 25%) until a defined scope of work is completed under multiple iterations/sprints
  - Pay T&M weekly, but contract for a bonus mechanism weighted more for early delivery

# Contractual Issues: Termination Rights

- T&M is palatable under Agile Software Development due to more relaxed termination rights.
  - Remember, the goal of each agile iteration is to produce workable code.
- The typical Agile Software Development agreement allows the client to terminate at the end of each iteration with no termination charges.
  - If the client does not see value, it can walk away.
- No termination charges due to lack of future requirements, so bench costs should be minimal.
  - But a client should weigh the lack of bench costs against the need for developer personnel continuity.



## Contractual Issues: Termination Rights (cont'd)

- To fully take advantage of this termination right, the client should contract for other protections such as:
  - Limiting the developer to only use tools and code that the client can license from third parties or the developer; and
  - Commitments from the developer to conduct knowledge transfer.
  - ***Risk:*** *Agile Software Development involves minimal software documentation, so restarting a terminated agile project may be more costly since new developers will need to get up to speed.*
- Developers know switching costs are high and will try to lock-in clients throughout the project.



## Sample Contractual Provision: Termination Rights

**“Provision of Source Code.** Within three (3) business days after termination, Developer will provide to Client, in electronic and hardcopy form, copies of all tangible embodiments (including all Source Code, executable code, interim versions, Documentation, memoranda and other written materials) of the then-current form of the Developed Technology.”

## Contractual Issues: Delivery Commitments

- *Risk: Lack of clearly-defined specs and easier termination rights jeopardize final delivery of the “thing.”*
- An agile project begins with a high-level concept of the product to be developed (the “product vision”).
- The product vision is used as a guide to create the “product backlog” - a list of items to be developed during the project.
- The parties decide on prioritization of items from the product backlog and define what the successful completion of each iteration means.
- The lack of milestones and continual re-assessment allows the parties to adjust on the fly; the final product may be very different than what was originally envisioned.

## Sample Contractual Provision: Delivery Commitments

**“Amendments to Project Work Plan.** Developer will provide Client with access to a mutually-agreed shared source code repository for the purpose of communicating project status and roadmap.

Unless the Parties establish in writing an alternative means of coordinating with respect to Iterations under this Agreement, no later than five (5) business days prior to the end of each Iteration commencing with the second Iteration after the Effective Date, Developer will develop and submit to Client for review, comment and approval an updated Project Work Plan that enables Developer to deliver the Documentation and other Deliverables described therein for the next Iteration. “

## Contractual Issues: Delivery Commitments (cont'd)

- Developers will offer fixed fee for agile projects ...
  - But may add a risk premium to deal with uncertainty and ask for more money upfront to understand the unknowns;
  - And will seek to include a light-weight change control mechanism to modify the price as it learns more.
- Use the agile process to reduce the “cone of uncertainty” to plan and contract for outcomes:
  - Each party needs to understand the broad business outcomes and divide into smaller projects;
  - The agile team should then create high level specs for each project (“epics”) and then define the technical architecture;
  - With this information, the developer can provide “indicative” pricing; the client can then contract for “not to exceed” pricing for these outcomes to be further refined as code is developed.

# Sample Contractual Provision: Fixed Fee Tied to Outcomes

## INVOICING & PAYMENT SCHEDULE

The total amount payable to Developer for performance of this SOW under **Section 8.1** of the Agreement will be \$500,000 (the “**Total Price**”).

Such amount will be invoiced and payable as follows:

| Invoice Date                                                           | Invoiced Amount |
|------------------------------------------------------------------------|-----------------|
| SOW Effective Date, as prepayment for completion of Iterations 1 and 2 | \$100,000       |
| Completion of Iterations 3 and 4                                       | \$75,000        |
| Completion of Iterations 5 and 6                                       | \$75,000        |
| Completion of Iterations 7 and 8                                       | \$75,000        |
| Completion of Iterations 9 and 10                                      | \$75,000        |
| Completion of Iterations 11 and 12                                     | \$50,000        |
| Acceptance of all Deliverables and Developed Technology                | \$50,000        |

An Iteration shall be deemed completed once Developer completes all Developer tasks and services specified in the Project Work Plan for such Iteration and delivers to Client all Deliverables specified in the Project Work Plan for such Iteration.

# Contractual Issues: IP Rights

- More complicated due to client/developer collaboration.
  - Scrum masters should create a journal with notes on all code and ownership rights
  - Need to track daily and close out at the end of each iteration/sprint
- At a minimum, the client should have an unrestricted license to the developed product (including pre-existing materials brought by developer).
- Also, potentially seek restrictions on the developer's use of proprietary ideas contributed by the client.



## Contractual Issues: Warranties

- Lack of project specs, but the developer could warrant that the working code produced during each iteration meets the specs for that iteration.
- As more working code is built in later iterations, include warranties that (i) the integrated pieces will work together and (ii) the entire product will perform in accordance with the summation of the specifications from each iteration.



## Sample Contractual Provision: Iteration Integration

“Each Deliverable, as well as the Developed Technology as a whole, will be further subject to final Acceptance by Client. Once Developer has delivered the last of the Deliverables to be provided under the Project Work Plan and Client has provided Developer with an Acceptance Notice for all Deliverables, Client will determine whether the Developed Technology and the Deliverables perform together as a whole, are in Compliance. If the Deliverables and Developed Technology do not so perform, the process described above in Section 4.3(a) will again be initiated; if, however, the Deliverables and Developed Technology do so perform, Client will provide Developer with a final Acceptance Notice for the Developed Technology. Client agrees to not withhold giving Developer written notice of Client’s Acceptance of the Developed Technology as a whole after receipt of Developer’s express written request once Client determines that the Developed Technology as a whole is in Compliance.”

# Contractual Issues: Other Contractual Concerns

- Client Obligations:
  - Increased collaboration with the client throughout an agile project increases the probability that the developer can blame the client for a failed project.
  - E.g., weak/inexperienced scrum leader, the client tries to manage the development like a waterfall project.
- Sufficiency of Documentation:
  - Agile prioritizes working code over all else, which means deliverables like documentation may be less than what the client is accustomed to under a waterfall approach.
  - Therefore, include a contractual provision that commits to a certain level of documentation detail and quality.

## Sample Contractual Provision: Sufficiency of Documentation

“Developer shall provide Documentation to Client during each Iteration. The Documentation to be provided by Developer hereunder will describe fully and completely all functions of the version of the Developed Technology, and include all information reasonably necessary to enable a person reasonably skilled in computer software to efficiently modify the Developed Technology and to merge the Developed Technology into other software.”

## Conclusion

- Agile Software Development is the future.
- Contracting for software development projects using agile is not as simple as a waterfall approach.
- However, contract levers exist to motivate the right behavior under agile projects.

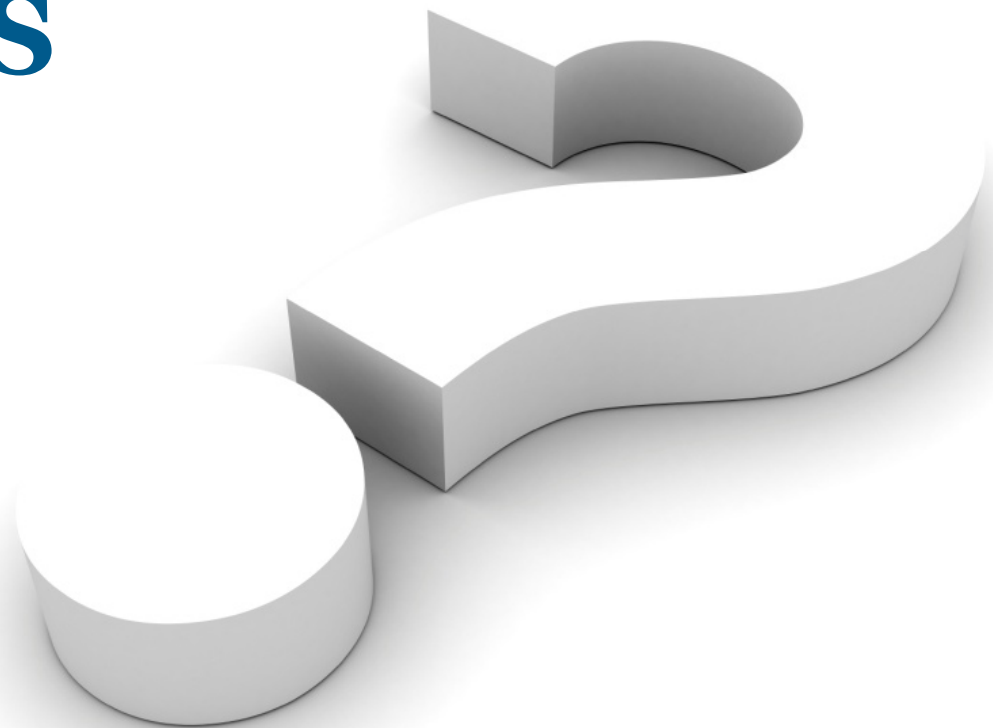
## Resources

- Agile manifesto *available at* <http://www.agilemanifesto.org>
- CIO.com “How to contract for outsourcing agile development” *available at* <http://www.cio.com/article/3090569/outsourcing/how-to-contract-for-outsourcing-agile-development.html>
- Law360: “Agile Software Development Brings New Contracting Issues” *available at* <http://www.law360.com/articles/809900/agile-software-development-brings-new-contracting-issues>
- Agile Contracts: Creating and Managing Successful Projects with Scrum, Opelt *et al* (ISBN: 978-1118630945)

# QUESTIONS

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