

Are Agile Methods Compatible with the PMBOK?

The Agile Methods have generated a lot of interest in the software development industry. Anyone who is committed to employing disciplined project management methods will have legitimate concerns about the effects that the Agile Methods will have on his or her projects. This presentation will explore those effects, and attempt to determine the degree to which the Agile Methods are compatible with the PMBOK.

Mr. Koch will begin with a brief orientation on Agile methods and a discussion of iterative development; identifying how the PMBOK Process Groups map into the phases of the iterative development model employed by the Agile Methods. He will then step through those iterative development phases, exploring compatibility with the relevant PMBOK Knowledge Areas. Finally, he will draw conclusions and answer questions.

This presentation will be of interest to any manager or practitioner who needs to understand how the Agile Methods will affect his or her projects.

Alan S. Koch

Alan S. Koch is a speaker, writer, trainer and consultant on effective software development. He is president of ASK Process, Inc., a consultancy that evaluates companies' software development practices and provides training and guidance to improve them.

Mr. Koch's new book, *Evaluating Agile Methods For Your Organization*, will be released by Artech House Books in the second half of 2004. In this book, Mr. Koch provides a balanced and objective view of the various Agile methods and guides the reader through the evaluation and adoption decision.



Mr. Koch:

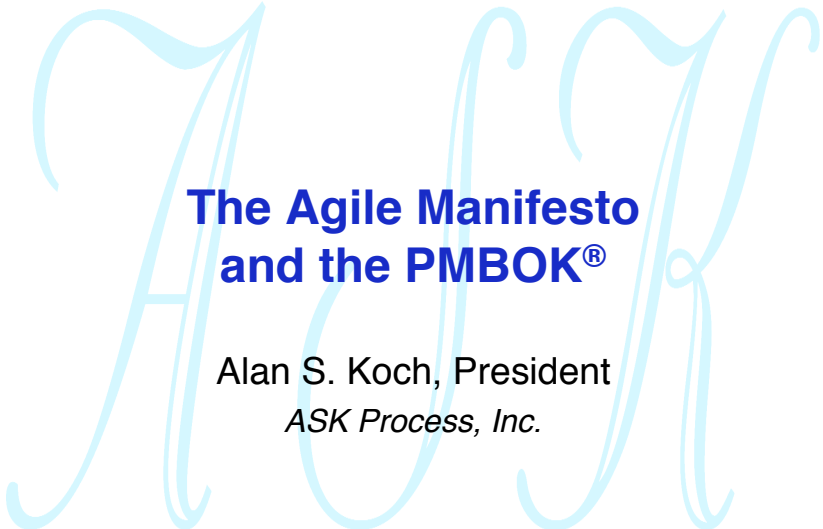
- Was a Member of the Technical Staff with the Software Engineering Institute (SEI) at Carnegie Mellon University (CMU) for 13 years,
- Has consulted with a variety of organizations in their process improvement programs,
- Contributed to the accomplishment of several successful CMM/CMMI[□] efforts,
- Taught as an adjunct professor of Computer Science, and
- Mentored students in CMU's Master of Software Engineering (MSE) Program.

He is:

- A sought-after presenter at software quality and process conferences,
- An SEI-authorized PSPSM Instructor and TSPSM Coach,
- An SEI Transition Partner for the PSP and TSP, and
- A member of the Project Management Institute (PMI).

□ "CMM", "Capability Maturity Model", "CMMI" and "Capability Maturity Model Integration" are registered by Carnegie Mellon University with the US Trademark and Patent Office.

SM "PSP", "Personal Software Process", "TSP", and "Team Software Process" are sales marks of Carnegie Mellon University.



The Agile Manifesto and the PMBOK®

Alan S. Koch, President
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Agile Software Development Methods

- Adaptive Software Development (ASD)
- Dynamic System Development Method (DSDM)
- Extreme Programming (XP)
- Feature-Driven Development (FDD)
- Lean Software Development (LD)
- SCRUM

Plan of Attack

- Introduction
 - Agile Manifesto
 - 12 Agile Principles
- Iterative Development
 - Centrality to Agile Methods
 - Mapping of PMBOK Process Groups
- For each PMBOK Process Group
 - Discuss the impact of Agile Methods on each PM Process
- Conclusions & Q&A

The Agile Manifesto

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

Individuals and interactions over processes and tools
Working software over comprehensive documentation
Customer collaboration over contract negotiation
Responding to change over following a plan

That is, while there is value in the items on the right, we value the items on the left more.

12 Agile Principles (1 of 2)

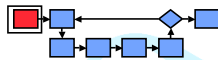
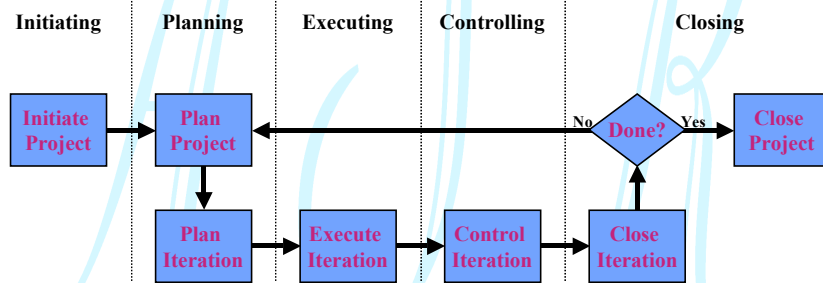
- Our highest priority is to satisfy the customer through early and continuous delivery of valuable software.
- Welcome changing requirements, even late in development. Agile processes harness change for the customer's competitive advantage.
- Deliver working software frequently, from a couple of weeks to a couple of months, with a preference to the shorter timescale.
- Business people and developers must work together daily throughout the project.
- Build projects around motivated individuals. Give them the environment and support they need, and trust them to get the job done.
- The most efficient and effective method of conveying information to and within a development team is face-to-face conversation.

12 Agile Principles (2 of 2)

- Working software is the primary measure of progress.
- Agile processes promote sustainable development. The sponsors, developers, and users should be able to maintain a constant pace indefinitely.
- Continuous attention to technical excellence and good design enhances agility.
- Simplicity—the art of maximizing the amount of work not done—is essential.
- The best architectures, requirements, and designs emerge from self-organizing teams.
- At regular intervals, the team reflects on how to become more effective, then tunes and adjusts its behavior accordingly.

Iterative Development

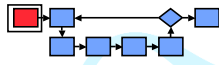
PMBOK Process Groups



Initiating Process Group

5. Project Scope Management

5.1 Initiation 😊



Initiating Analysis

PMI compatibility

- Each Agile method has an Initiation phase



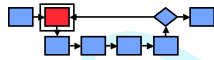
PMI *in*compatibility

- Specific steps may be overlooked by some Agile methods



✓ What can we do?

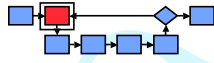
- Make full use of Agile methods' initiating phase
- Augment Initiation where needed



Planning (Project) Process Group

4. Project Integration Management
 - 4.1 Project Plan Development 😊
5. Project Scope Management
 - 5.2 Scope Planning 😊
 - 5.3 Scope Definition 😞
6. Project Time Management
 - 6.1 Activity Definition 😞
 - 6.2 Activity Sequencing 😞
 - 6.3 Activity Duration Estimating 😞
 - 6.4 Schedule Development 😊
7. Project Cost Management
 - 7.1 Resource Planning 😊
 - 7.2 Cost Estimating 😊
 - 7.3 Cost Budgeting 😞
8. Project Quality Management
 - 8.1 Quality Planning 😊

9. Project Human Resource Management
 - 9.1 Organizational Planning 😊
 - 9.2 Staff Acquisition 😊
10. Project Communications Management
 - 10.1 Communications Planning 😊
11. Project Risk Management
 - 11.1 Risk Management Planning 😞
 - 11.2 Risk Identification 😞
 - 11.3 Qualitative Risk Analysis 😞
 - 11.4 Quantitative Risk Analysis 😞
 - 11.5 Risk Response Planning 😞
12. Project Procurement Management
 - 12.1 Procurement Planning 😞
 - 12.2 Solicitation Planning 😞



Planning (Project) Analysis

PMI compatibility

- Strong emphasis on Scope, Quality, Staffing and Communication,



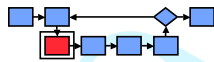
PMI *in*compatibility

- Little concern for Activity Planning, Budgeting, Risk Planning, and Procurement
- Weak documentation of plans



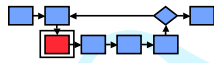
√ What can we do?

- Capitalize on emphasis:
 - Scope, Quality, Staffing, and Communication
- Assess project need and augment where necessary:
 - Detailed Activity Planning, and Budgeting
 - Risk Planning
 - Procurement
 - Documentation



Planning (Iteration) Process Group

4. {Iteration} Integration Management
 - 4.1 {Iteration} Plan Development 😊
5. {Iteration} Scope Management
 - 5.2 {Iteration} Scope Planning 😊
 - 5.3 {Iteration} Scope Definition 😞
6. {Iteration} Time Management
 - 6.1 Activity Definition 😊
 - 6.2 Activity Sequencing 😊
 - 6.3 Activity Duration Estimating 😞
 - 6.4 {Iteration} Schedule Development 😊



Planning (Iteration) Analysis

PMI compatibility

- Strong emphasis on Scope



PMI *in*compatibility

- Weak concern for Activity Planning
- Weak documentation of plans



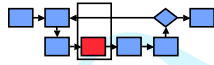
√ What can we do?

- Capitalize on emphasis on Scope
- Assess project need and augment where necessary:
 - Detailed Activity Planning
 - Documentation



Executing Process Group

4. Project Integration Management
 - 4.2 Project Plan Execution 😊
8. Project Quality Management
 - 8.2 Quality Assurance 😊
9. Project Human Resource Management
 - 9.3 Team Development 😊
10. Project Communications Management
 - 10.2 Information Distribution 😊
12. Project Procurement Management
 - 12.3 Solicitation 😞
 - 12.4 Source Selection 😞
 - 12.5 Contract Administration 😞



Executing Analysis

PMI compatibility

- Strong emphasis on Execution, especially:
 - Technical Activities, Quality, Team Development, and Communication



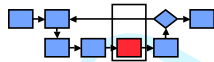
PMI *in*compatibility

- No consideration for Procurement



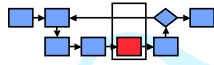
✓ What can we do?

- Capitalize on Agile emphasis on Execution
- Augment with Procurement activities if needed



Controlling Process Group

- | | |
|-----------------------------------|---------------------------------------|
| 4. Project Integration Management | 7. Project Cost Management |
| 4.3 Integrated Change Control 🟢🔴 | 7.4 Cost Control 🟢🔴 |
| 5. Project Scope Management | 8. Project Quality Management |
| 5.4 Scope Verification 🟢 | 8.3 Quality Control 🟢 |
| 5.5 Scope Change Control 🟢🔴 | 10. Project Communications Management |
| 6. Project Time Management | 10.3 Performance Reporting 🟢 |
| 6.5 Schedule Control 🟢🔴 | 11. Project Risk Management |
| | 11.6 Risk Monitoring and Control 🟡 |



Controlling Analysis

PMI compatibility

- Strong emphasis on Quality, Communicating Status, and Handling Changes



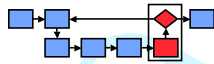
PMI *in*compatibility

- Change is *not* controlled, it is always welcomed and accommodated



✓ What can we do?

- Capitalize on emphasis on:
 - Quality and Communicating Status
- Actively evaluate changes:
 - Welcome change when appropriate
 - Control change when needed



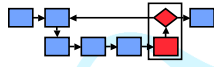
Closing (Iteration) Process Group

10. Project Communications Management

10.4 Administrative Closure 😊

12. Project Procurement Management

12.6 Contract Closure 😞



Closing (Iteration) Analysis

PMI compatibility

- Each iteration is formally closed



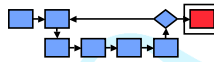
PMI *in*compatibility

- Iteration Closure does *not* include archiving of administrative and technical data



✓ What can we do?

- Augment iteration Closure activities with archiving of necessary data.



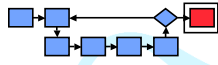
Closing (Project) Process Group

10. Project Communications Management

10.4 Administrative Closure 😞

12. Project Procurement Management

12.6 Contract Closure 😞



Closing (Project) Analysis

PMI compatibility

- {none}



✓ What can we do?

- Add appropriate project Closure activities

PMI *in*compatibility

- Little attention paid to project Closure



Agile Compatibility with PMBOK

- Nothing in the Agile methods is *incompatible* with PMBOK processes
- Augmenting Agile methods with some PMBOK processes may be advisable
 - Augment only where really needed
 - Do not compromise the methods' agility



Thank you!

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