



Version 6.1 Updated for the 2021
Project Management Professional (PMP)[®] Exam



Crosswind Success Series: PMP[®] Exam Bootcamp Manual

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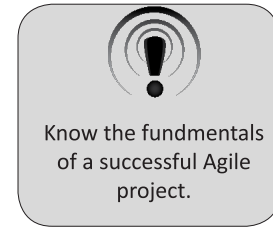
Version 6.1 aligned with the Project Management Institute, *A Guide to the Project Management Body of Knowledge, (PMBOK[®] Guide)* - Sixth Edition, Project Management Institute Inc., 2017

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8.4. Fundamentals of a Successful Agile Project

A successful Agile project is predicated on **the coach/facilitator**:

- Advocating for Agile principles by modeling those principles and discussing Agile values in order to develop a shared mindset across the team as well as between the product owner/customer and the team
- **Helping to ensure that everyone has a common understanding of the values and principles of Agile** and a common knowledge of the Agile practices and terminology that are employed in order to work more effectively
- **Supporting change at the system or organization level** by educating the organization and influencing processes, behaviors, and people in order to make the organization more effective and efficient
- Practicing visualization by **maintaining highly visible information radiators** showing real progress and real team performance in order to enhance transparency and trust
- **Contributing to a safe and trustful team environment** by allowing everyone to experiment and make mistakes so that team members can learn and continuously improve the way they work
- **Protecting the team from interruptions** and removing roadblocks
- **Enhancing creativity by allowing the team to experiment** with new technologies and process ideas in order to discover more efficient and effective ways of working
- **Encouraging team members to share knowledge** by collaborating and working together in order to lower risks around knowledge silos and to reduce bottlenecks
- **Encouraging emergent leadership** by establishing a safe and respectful environment in which new approaches can be tried in order to make improvements and foster self-organization and empowerment
- **Practicing servant leadership** by supporting and encouraging others in their endeavors so that they can perform at their highest level and continue to improve



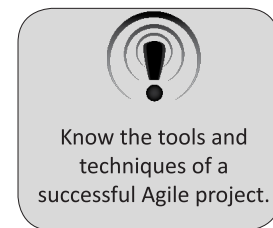
8.5. Tools and Techniques

While Agile utilizes some traditional project management tools and techniques, it relies heavily on tools and techniques specifically created for use with the Agile approach.

8.5.1. Team Space

Innovation is the result of the effect that creative individuals have on each other.

The team space, sometimes referred to as a “**war room**,” is the area where the Agile team can work in an atmosphere that promotes collaboration, productivity, and innovation. Furnishings, lighting, and ventilation should be carefully selected to ensure this atmosphere. The information radiators should be visible to all.



8.5.2. Information Radiator

The information radiator is a tool used to track progress. It can be as non-technical as a task board utilizing index cards (the task board is typically divided into columns representing each status and the index cards representing each task are placed in the appropriate column). It can be as technical as an automated tool accessible via a dashboard or the Internet.

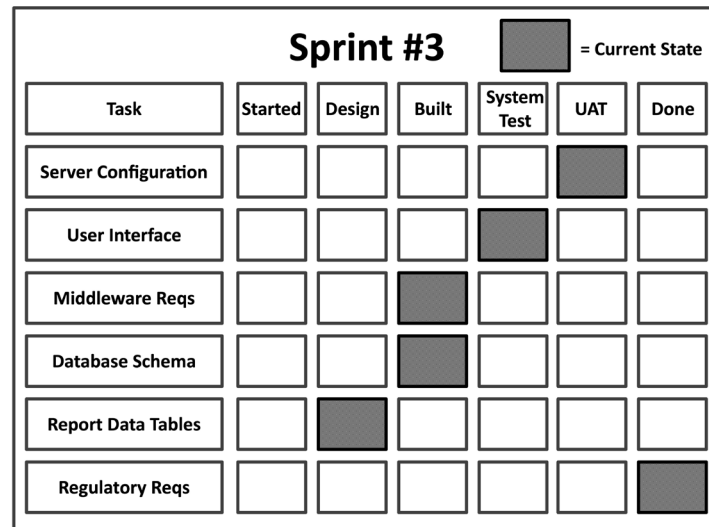


Figure 8-2: Information Radiator

Typically, the radiator also contains the most recent burndown chart and information regarding what is expected in the next two iterations or sprints.

8.5.3. Osmotic Communications for Co-located and/or Distributed Teams

Osmotic communication is the information that team members absorb from background conversations between other team members. The word osmotic is derived from osmosis, which indicates absorption that requires no effort and may even be unconscious.

Obviously, this method is easily adapted to co-located teams. For distributed teams, video conferencing, shared information repositories, telephone calls, and e-mail are the key methods of effective information sharing.

8.5.4. Timeboxing

Timeboxing consists of dividing a project into separate time periods, then planning the deliverables for each time period. For scrum, a process devised to create something useful (software) from complex problems, thirty-day timeboxes are recommended.

If the team is unable to complete the planned number of deliverables for the timeboxed period, then the development team and the product team must decide what to do: it may even be necessary to involve executives.

In traditional project management using the triple constraint (time, cost, and scope), the scope is typically static and time and costs usually increase, sometimes dramatically, at the end of the project. When timeboxing is applied to an Agile project, issues are typically detected early on and decisions can be made to minimize problems and update velocity accordingly.

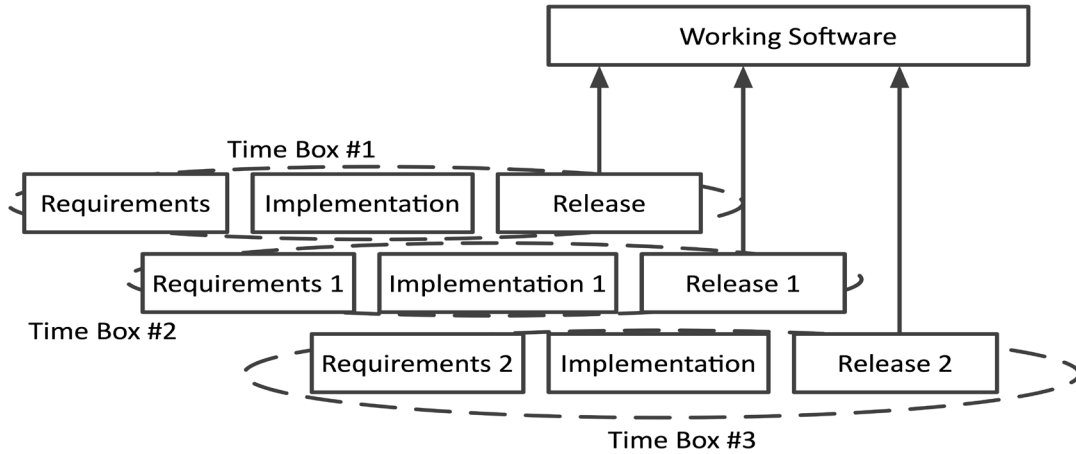


Figure 8-3: Timeboxing

8.5.5. Task Board

A task board is a board that contains columns that are typically headed: To Do, In Process, To Be Verified, and Done.

Each project task is placed in the appropriate column so that everyone involved can see the overall progress of the project at a glance.

Task Board					
Task	To Do	In Process	To Be Verified	Tests Ready	Done
Server Configuration					
User Interface					
Middleware Reqs					
Database Schema					
Report Data Tables					
Regulatory Reqs					

Figure 8-4: Task Board

Some tasks boards include a column headed Tests Ready so the team can indicate if the automated tests have been written for the task.

8.5.6. Card Wall (Kanban Board)

The card wall (Kanban board) is similar to the task board used in Agile projects, but the columns are typically headed: Input Queue, Analysis - In Progress, Analysis - Done, Dev Ready, Development - In Progress, Development - Done, Build Ready, Test, Release Ready, Stage, and Production. A card representing each piece of work is placed in the appropriate column.

Kanban is a process developed in Japan for Just-in-Time (JIT) production, that is production that produces only what is needed when it is needed in order to reduce stock.

8.5.7. Work In Progress (WIP) Limits

Work in Progress (WIP) limits is a concept borrowed from Kanban. In Agile, the maximum number of story points (a unit of measurement that represents the size of a user story relative to the other user stories in the project) on which a team member can work during an iteration is set by the team in an effort to prevent team members from becoming overwhelmed.

8.5.8. Burndown Chart

A release burndown chart depicts the number of story points (a unit of measurement that represents the size of a user story relative to the other user stories in the project) that remain in the project at the start of each iteration. If work is added to the release, the burndown chart may reflect a burnup.

An iteration burndown chart depicts the number of iteration hours that remain in the project at the start of each day. This is only useful for iterations with a duration of two weeks and over.

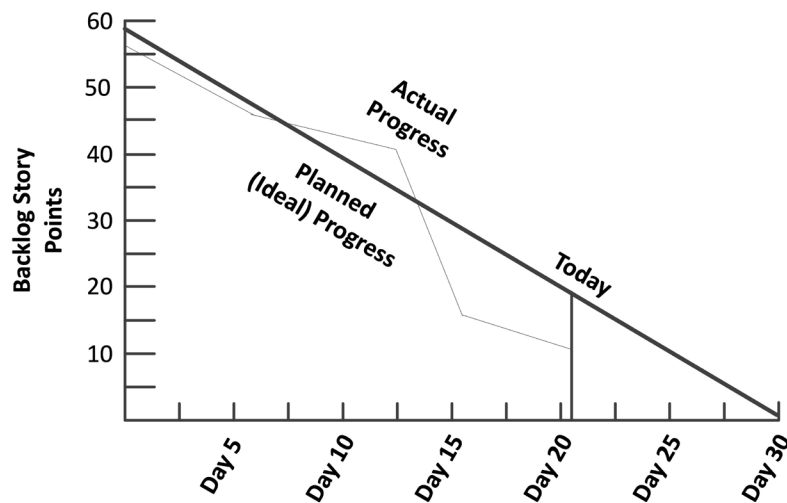


Figure 8-5: Burndown Chart

8.5.9. Burnup Chart

A burnup chart depicts the number of story points (a unit of measurement that represents the size of a user story relative to the other user stories in the project) that have been completed for the project.

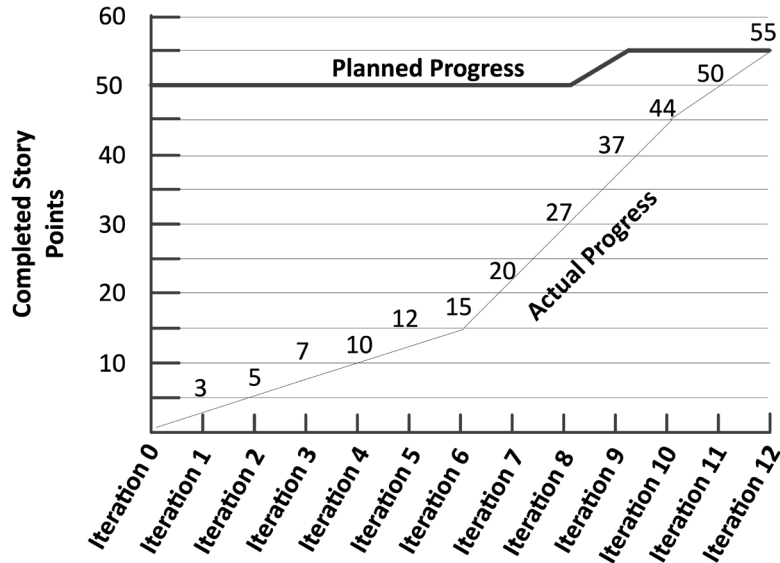


Figure 8-6: Burnup Chart

8.5.10. Backlog Refinement

Backlog refinement describes a meeting between the team and the product owner/customer, typically after receiving user feedback, in which:

- User stories that are no longer relevant are removed from the backlog
- New user stories are added to the backlog to fulfill newly discovered needs
- The relative priority of user stories are reassessed for business value
- Previously unestimated user stories are estimated
- Estimated user stories are re-estimated based on newly discovered information
- High priority user stories that do not fit into an iteration are split into more than one user story

Backlog refining should be performed continuously, but it is very important to ensure that it is performed just prior to starting a new iteration or sprint to ensure that relevant work is included in upcoming iterations based on prioritized needs.

8.5.11. Ideal Time

Assigning ideal time to a user story or a task is an estimation technique. Ideal time is a unit of time (typically days or hours) **exclusively dedicated** to the work of the project without interruption. Overhead, such as meetings, maintenance, participating in demos, training, and phone calls, is excluded from ideal time.

8.5.12. Relative Sizing

Relative sizing is an alternative to exact estimation. It represents the size of one piece of functionality in relation to the size of another piece of functionality.

8.5.13. Story Points

Assigning story points (a unit of measure) to a user story is an estimation technique. A story point is a unit of measurement that represents the size of a user story relative to the other user stories in the project. For example, a three-point user story is three times larger than a one-point user story.

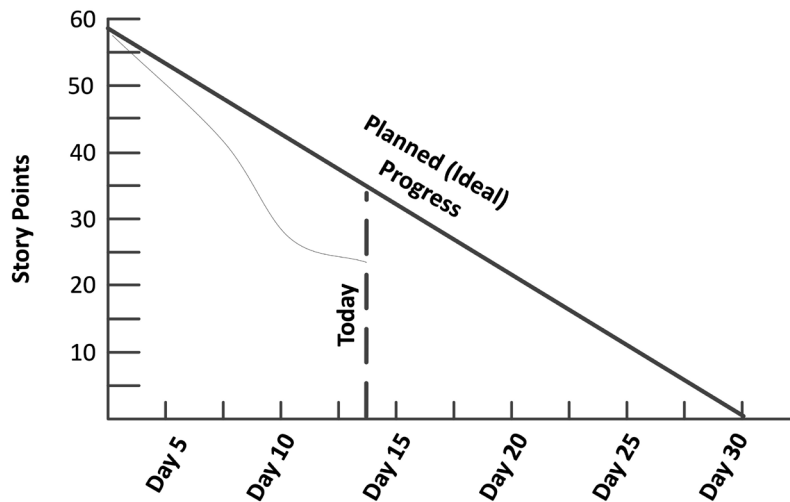


Figure 8-7: Story Points

8.5.14. T-shirt Sizing

For teams that are new to Agile, assigning points to a user story may be difficult since team members new to Agile tend to equate story points to development hours. An alternate approach is t-shirt size assignment (extra small, small, medium, large, extra large). This allows team members to express the relative size of the stories without equating size to development hours.

While this is a good method to promote an understanding of relevant story size, it does require the facilitator to convert t-shirt sizes to story points in order to perform tracking and determine team velocity. T-shirt sizing should only be used temporarily.

8.5.15. Planning Poker

Planning Poker is an estimation technique that is effective because it relies on multiple expert opinions. Each estimator (developers, programmers, testers, database engineers, analysts, designers, etc.) is given a deck of cards. The sequence of numbers that planning poker is based on came from the Fibonacci set (each number is the sum of the previous two numbers). Each card in the deck contains one valid estimate. The moderator, usually the product owner/customer or an analyst, presents a user story or theme and answers any questions the estimators may have. Each estimator selects a card and turns it over so that everyone can see the card. If the estimates vary, the estimators explain their selections and another selection takes place. This continues until the estimates converge. Planning Poker should be played before the project begins and as new stories are introduced.

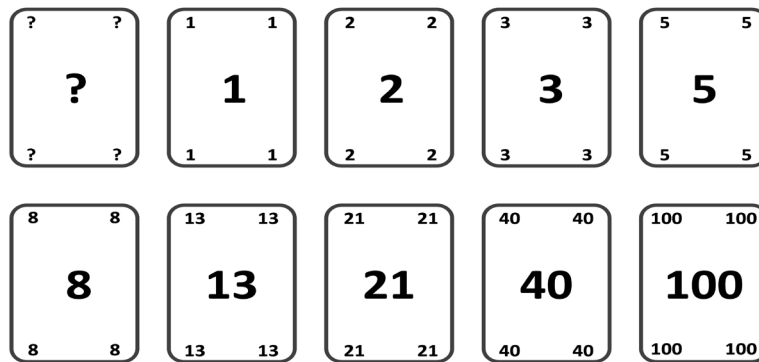


Figure 8-8: Planning Poker

8.5.16. Agile Modeling

Agile modeling is a set of practices and principles that will be applied to the modeling and analysis of requirements.

Agile modeling espouses the use of barely sufficient modeling: model only enough to proceed with the work. It considers modeling a form of communication.

A typical modeling session might include a diagram drawn on a white board while the team discusses the concepts the diagram is capturing. In areas where the team thoroughly understands the concepts, the diagram is executed at a very high level; in areas where the team's understanding of the concepts is not as thorough, the diagram is executed with more detail. Pictures are taken of the diagram, distributed to the team as a reminder of the discussion, and the white board is erased.

8.5.17. Product Roadmap

The purpose of the product roadmap is to depict the evolution of the product over the next three or four releases or time periods. The roadmap depicts the features or themes that will be delivered during each release or time period and designates the targeted product owner/customer, supporting architecture for the feature, and the anticipated business value for the release or time period.