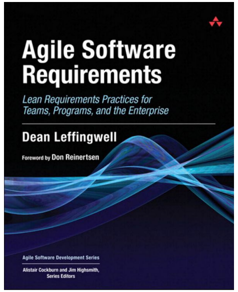
CE Department

Software Requirements Engineering

40688

These slides are designed to accompany Agile Software Requirements (2011) by Dean Leffingwell and support the university course Software Requirements Engineering, instructed by Mehran Rivadeh. Created and designed by Mahnaz Rasekhi.



Agile Software Requirements (2011)
Dean Leffingwell

Release Planning

Chapter 16

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Contents

1. Preparing For Release Planning

This part is optional. You may review it separately if you wish to explore background material.

Slides Address:

Release Planning – The Introductory Section

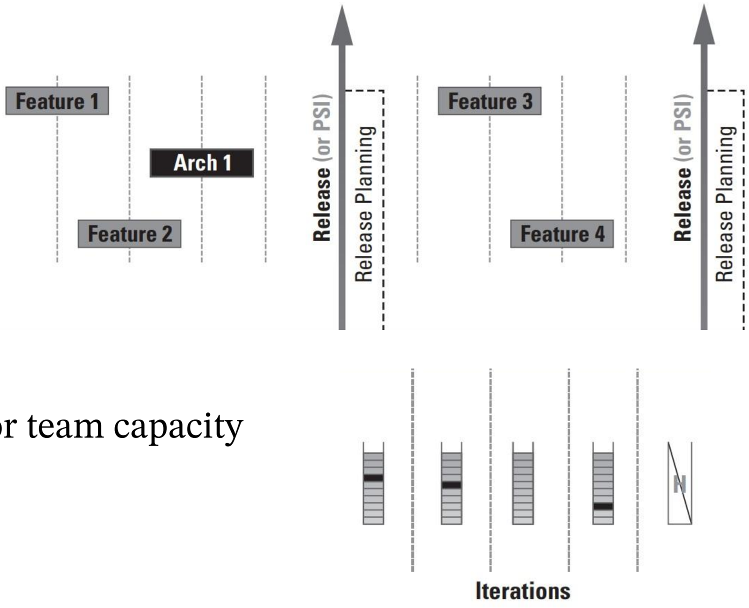
Contents

Opening

- The release planning *facilitator* opens the meeting:
  - Provides any necessary introduction
  - Reviews the objectives and agenda
  - Reviews planning rules and expectations
  - Reviews amenities and other logistics items

Opening

- The ***facilitator*** also presents the upcoming calendar of events, including
  - The iteration and release cadence
  - Future PSI / planning dates
  - Any scheduled releases
  - Any company holidays
  - Other events that may affect planning objectives or team capacity



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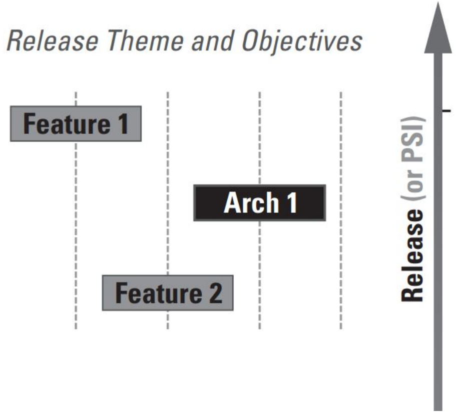
Business Context

- Next, ***a senior executive*** or ***line-of-business owner*** typically sets the business context for the planning session. This may include
  - Discussion of current business performance
  - Revenue or market share
  - Measures of customer satisfaction, and so on.

Business Context

- It may also include
  - Updates to operating plans
  - Organizational developments
  - Strengths, weakness, opportunities, threats (SWOT) analysis
  - Strategies
  - Competitive context
- The presenter will typically conclude with a discussion of the current strategic investment themes and business objectives for the upcoming periods.



Business Context

- The ***meeting organizers*** should reach as high into the organization as possible for this opening speaker, because
  - It is an important opportunity to align the entire development team to a common Vision for the business.
  - It also gives the teams the opportunity to meet and interact with some of the executives who drive the business Vision.

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Solution Vision

- Next, the ***product managers***, ***solution managers***, or ***program managers*** responsible for the planning domain present the current Vision for the product and the tentative Roadmap going forward.
- The briefing includes
  - The objectives (or themes) for the upcoming PSIs
  - The specific feature priorities
- If there are multiple product managers, each may need some time in this slot to present the Vision for their particular aspect (product, feature, component) of the solution, but presentation time is rigorously timeboxed.

Solution Vision

- At the conclusion of this session, product managers will often provide a handout, provide pointers to where the release backlog can be found, or otherwise make their feature priorities and descriptions fully visible to the teams, because those features are the driving elements for the breakout planning sessions.

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Architecture Vision

- In small to medium-sized projects, the architecture for the system is the responsibility of the development teams themselves, and no special time or consideration for architecture discussion may be necessary in planning.
- However, as we will discuss in Chapter 20, Agile Architecture, in the larger program or enterprise setting, system-level architecture (and system-level architects) often play an important role in defining cross-cutting aspects of the solution.

Architecture Vision

- In this next session, the ***CTO*** or ***senior system architects*** typically present the Vision for architecture in this session. This may include
  - Descriptions of new architectural epics for common infrastructure
  - any large-scale refactors under consideration
  - New system-level frameworks
  - Emerging new technologies or platforms, and so on, that must be addressed in the solution
  - Any system-level nonfunctional requirements are also highlighted in this session.
    - NFRs such as operating platforms; governing regulatory or industry standards; and usability, performance, reliability, and security requirement

Contents

Team Planning Breakout

- The next session is the longest and most critical session of the two-day event.
- In this session, the teams break out into separate meetings and draft their initial plan to achieve the objectives of the next PSI.

Team Planning Breakout

In this session, the ***teams*** iterate through a process that proceeds roughly as follows.

1. Meet with product managers to better understand features and feature priorities.
2. Estimate the capacity (velocity) the teams will have during each iteration.
3. Brainstorm and identify the user and other stories that are necessary to meet the input objectives and prioritized features of the release.
    a. Stories are kept at “backlog-level detail.”
    b. The objective is to get a first, high-level feel for how the plans unfold.
    c. There is no time for story elaboration or discussion of acceptance criteria.
    d. Too much detail bogs down the process and creates false precision and excessive WIP.

Team Planning Breakout

In this session, the ***teams*** iterate through a process that proceeds roughly as follows. (Cont.)

4. Understand the impact of architectural initiatives on the plan, and identify stories for those initiatives as well.
5. Factor in local dependencies as well as interdependencies with other teams.
6. Estimate the stories and place them on iterations in sequenced order until capacity (velocity for each iteration, excluding maintenance allocation) is exhausted.
7. Create a backlog of things that can't be accomplished in the period and that will have to be postponed.
8. Itemize objectives of things the team can accomplish during the PSI period.

Team Planning Breakout

- During this process, there will also be variety of **interactive discussions** with product managers, system architects, and other teams to understand scope, priorities, necessary infrastructure development, interdependencies, potential for common code, and so on.
- It is a very **intense** and **active time**.
- **Plans** are **created visually**, with wall charts and story cards so that all plans are visible for all to see.
- Teams build their plans with one wall chart sheet per iteration, another **sheet for objectives**, and one final **sheet** to capture **risks** and **impediments**.

Team Planning Breakout

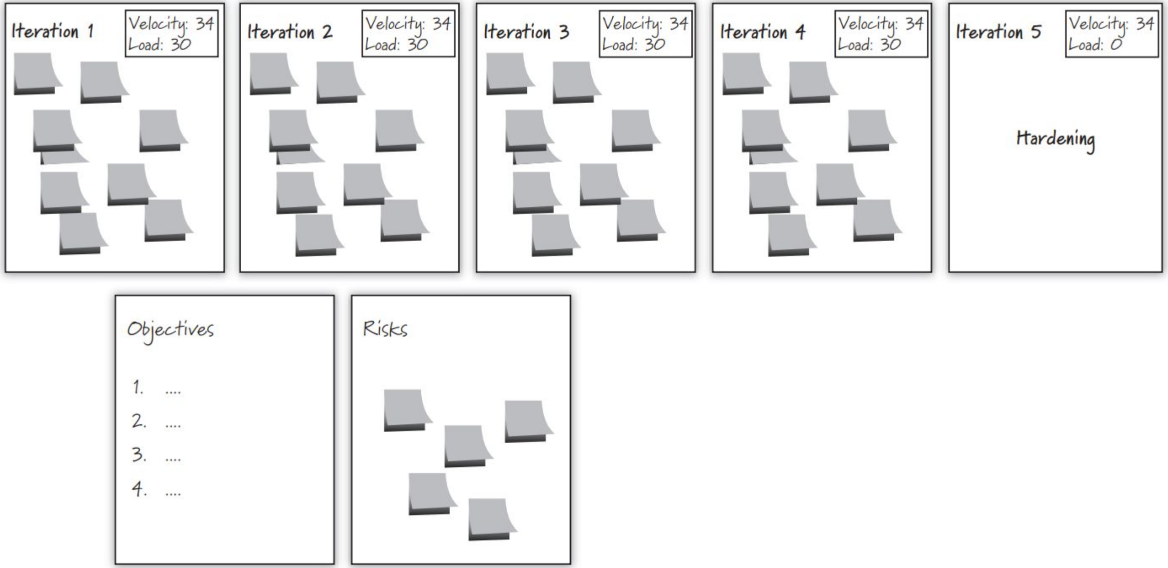
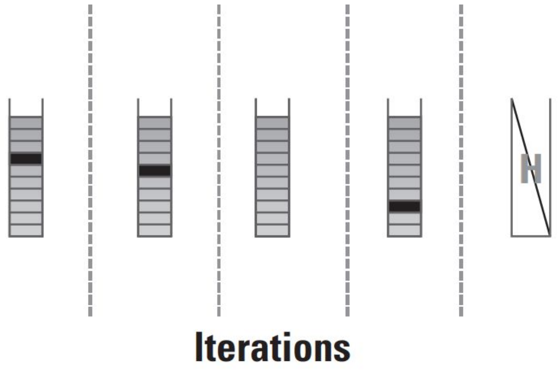


Figure 16–1 Example visual release plan

Team Planning Breakout

- Note that the **hardening iteration** should not contain any user value stories, though the teams may identify some stories dedicated to special hardening activities, such as **load** and **performance testing**, **system documentation**, and so on.
- Teams may also use color-coded story cards (sticky notes) to help identify various types of stories. These often include colors for new user value stories, maintenance stories, interdependencies, spikes, help needed, and so on.



Team Planning Breakout

Hourly Scrum of Scrums Planning Checkpoints

- Typically, teams will have a variety of interdependencies that must be worked out with other teams during the planning process.
- To avoid some of the constant interruptions implied by such a process, many programs have adopted an hourly, five- to ten-minute "Scrum of Scrums" planning checkpoint.
- In this short stand-up meeting, Scrum Masters work out interdependencies, report status, and state any looming impediments.
- The facilitator uses this meeting as a clocking mechanism to keep release planning moving at an acceptable pace.

Team Planning Breakout

Hourly Scrum of Scrums Planning Checkpoints

- ➔ Line management, product management, and other key stakeholders typically also attend this short meeting.
- ➔ It will often turn into a problem-solving meeting with line managers involving themselves with
  - resource adjustments
  - impediment removal
  - adjustments to release scope
  - or ad hoc modifications to the planning agenda, based on progress.
- ➔ Although the meeting is intended to be short and timeboxed, the time for problem solving is now—or else the plans may not converge.

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Draft Plan Review

- At the designated time, the group reconvenes in plenary session to review each of the plans.
- Many of the plans will not be complete; however, the preliminary review is still held on time so the groups can see the planning process and get an initial look at the assumptions, dependencies, and initial objectives that their counterpart teams are putting together.
- Each team presentation is strictly timeboxed, with five to ten minutes per team, based on the size of the planning domain.

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Draft Plan Review

- To keep the sessions focused and comprehensive in the team presentations, the facilitator might tell the teams to be certain to address the following items.
  - Where are you in the planning process?
  - Describe your plan in brief.
  - Highlight any identified draft objectives.
  - Highlight any major impediments and risks discovered so far.
  - When do you think your plan will be complete?

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Draft Plan Review

- ➔ There will typically be a minute or two left for Q&A.
- ➔ During Q&A, the facilitator has to walk a fine line between abruptly cutting off important discussions about interdependencies, trade-offs, misunderstandings, and so on, and keeping the plan review sessions within the allocated timebox.
- ➔ The session proceeds until all teams have presented their draft plans (even at the risk of slipping out of the allocated timebox a bit).
- ➔ For most attendees, this is often the end of day 1, and they may be dismissed from the meeting room at that time.

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Managers' Review And Problem Solving Meeting

- For others, however, day 1 planning is not yet over.
- In all likelihood, the draft plans present substantial challenges to the management team, product management, and other key stakeholders.
- Challenges may come from a number of directions.
  - The input expectations for the PSI will likely be over-scoped. After all, what self-respecting product manager would under-scope a set of target release objectives?
  - Critical paths, resource constraints, and bottlenecks should now be obvious.
  - Team dynamics and inter-team dynamics are obvious as well.

Managers' Review And Problem Solving Meeting

- To this end, **line managers**, **Scrum Masters**, **product owners**, and **product managers** will typically meet to address the larger challenges identified in the draft review session.
- If these issues are allowed to persist, day 2 may come out badly for either of two reasons.
  - The process will not converge on agreed-to release objectives because of these unresolved issues.
  - Convergence will appear to happen, but the release is at risk because underlying problems have not been addressed.
- Action is necessary. This may involve cuts to scope, rethinking prior commitments, coming to understand that some critical date will not be met, or moving resources (or even entire projects) from team to team.

Managers' Review And Problem Solving Meeting

- The facilitator plays an important role, because many of the challenges noted may be politically charged or historical in nature.
- The facilitator holds the key stakeholders together as long as necessary to make the decisions necessary to improve the probability of a successful outcome of the next PSI (or at least the next day's planning session).
- Any such decisions reached should be carefully and clearly stated, because they will serve as input to the day 2 session.

Contents

Opening

- In the day 2 opening session, the ***facilitator*** provides an overview of the agenda and the objectives for the final day, including the timeboxes in which the teams should complete their plan and be ready for presentation.

Contents

3. Release Planning Narrative, Day 2

Planning Adjustments: A United Front

- Even though management will have attempted to communicate most of the key decisions prior to the day 2 opening, it is inevitable that in this "frenzy of the last responsible moment," some of the decisions reached in the prior day will come as a surprise to some team members.
- Many decisions will be greeted with enthusiasm, since they often simplify scope, assign additional resources to critical bottlenecks, or resolve key impediments.
- Some decisions, however, may be received less enthusiastically, because many are the results of compromises among key stakeholders or even between teams.

Planning Adjustments: A United Front

- To make management's full support for the key decisions unambiguously clear, **a senior manager**, or perhaps **the management team** as a group, takes the responsibility for describing the results of the review meeting at the end of day 1, highlighting those decisions that may affect the planning process, organization, or objectives.
- This presents a united front in support of the key decisions and changes, controversial or not. After all, we are going to need a united effort from the development teams to accomplish the release.
- The least we can do is know that management stands behind them, also united as a team.

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Planning Continues

Team Planning Breakouts Session II

- With planning adjustments in hand, this next session is a continuation of the prior day's team breakouts.
- By now the teams should be planning smoothly.
- The facilitator's role is the same as the day before:
  - Keep the teams moving forward
  - Keep the business owners, product managers, engineering managers, and architects circling
  - Watch for new developments that require additional decision making
  - Provide assistance to the team members whose work is being refactored, are still struggling with estimating, or are still over-scoped; and so on.

Planning Continues

Team Planning Breakouts Session II

- And, like the day before, the planning Scrum of Scrums convenes hourly to assure that plans and timelines converge for the final review.

Contents

Establishing Release Objectives

- Sometime during this second breakout session, the teams will start to finalize their individual objectives for the release.
- Although they do not appear in the requirements meta-model, release objectives are a key artifact of the release planning session, and they provide the primary mechanism the program will need to track and assess progress and manage scope.
- Release objectives are brief summaries, in business terms, of the specific features the teams intend to deliver in the upcoming PSI.

Establishing Release Objectives

- Many of these objectives will simply be features taken directly from the backlog.
- As such, their importance and the value they deliver are immediately recognizable.
- Others may be aggregations of a set of features but stated in more convenient, and more concise, terms.

Establishing Release Objectives

- Some, however, may not represent user value delivery directly but may represent some milestone or infrastructure or architectural epic The team must achieve.
  - Example: Trade show demo by 3/15 → Milestone
  - Example: Gateway pointing re architecture → Arch Epic
- Still others are clarifications or mitigations _ perhaps things the teams will not be able to accomplish.
  - Example: The thermostat upgrade will support only model 300X
- Whatever they are, they are negotiated outputs, rather than inputs, to the release planning session.

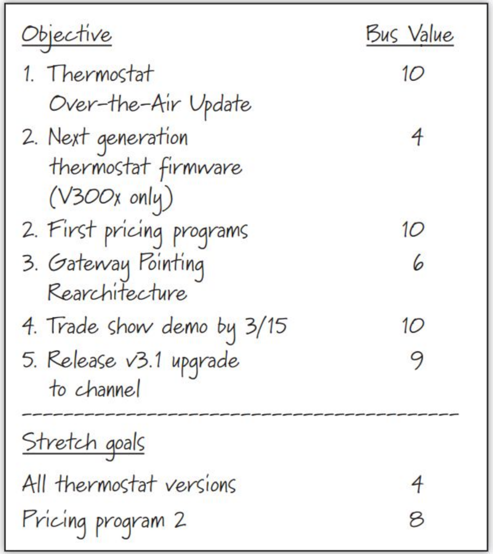
Establishing Release Objectives

- They represent an important commitment from the team:
  - They understand the Vision
  - They understand their velocity
  - They understand what the business would like to do but these are the things they can and will do.

Establishing Release Objectives

Business Owners Rank Release Objectives by Business Value

- ➔ To assure alignment and to help the teams understand the relative value, objectives should be ranked by business value by **the team's business owner** (typically a product or solution manager, program manager, or executive).
- ➔ Each individual objective could be ranked on a scale of 1 to 10.

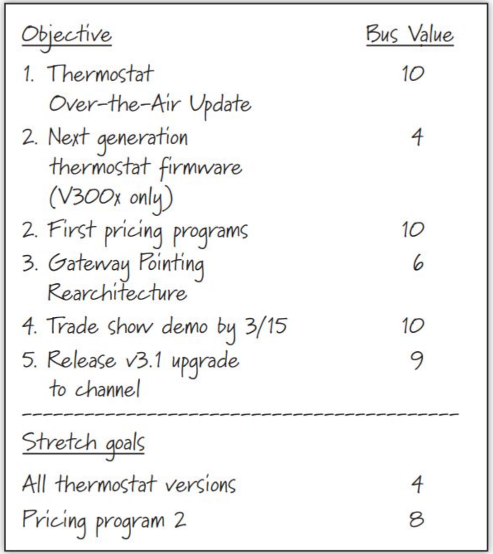


Objective	Bus Value
1. Thermostat Over-the-Air Update	10
2. Next generation thermostat firmware (V300x only)	4
2. First pricing programs	10
3. Gateway Pointing Rearchitecture	6
4. Trade show demo by 3/15	10
5. Release v3.1 upgrade to channel	9
Stretch goals	
All thermostat versions	4
Pricing program 2	8

Establishing Release Objectives

Business Owners Rank Release Objectives by Business Value

- ➔ This is an important two-way, face-to-face dialogue between the team and their most important stakeholders.
- ➔ It is an opportunity to develop a personal relationship upon which a mutual commitment can be based and to better understand the business objectives and their relative value.
- ➔ Most importantly, it is an opportunity to extend the boundaries of the "team" to include these key stakeholders.



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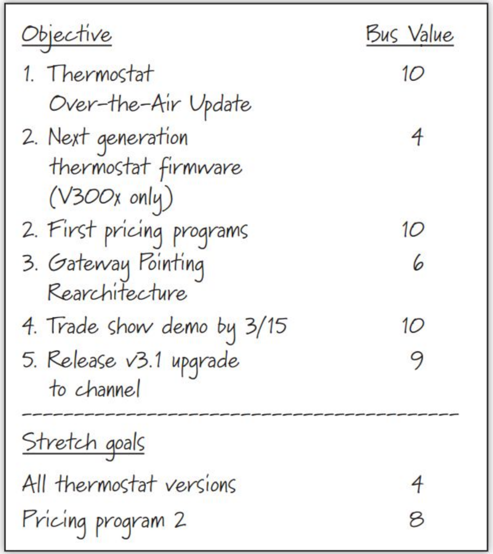
Establishing Release Objectives

Business Owners Rank Release Objectives by Business Value

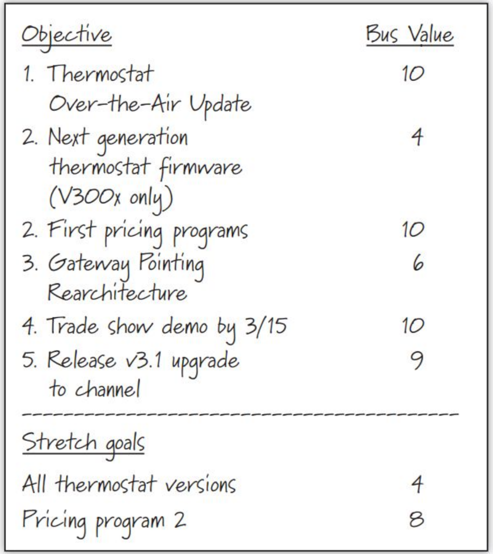
- During the ranking process, the user-facing features (pricing programs) will typically be ranked most highly by the business owners. That’s as it should be.
- But mature business owners know that architectural and other concerns (for example, gateway pointing re architecture) will also increase the velocity of the team in producing future business value, so placing some business value on those items helps drive ultimate velocity and is a sign of support for the team’s legitimate, technical challenges



Establishing Release Objectives

Business Owners Rank Release Objectives by Business Value

- In addition, because the road after PSI planning takes its inevitable twists and turns, having objectives ranked by business value gives the teams guidance in making trade-offs and minor scope adjustments in a manner that allows the team to deliver the maximum possible business benefits.



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Final Release Plans Review

This session is a repeat of the session of the prior day, but by now the teams should have completed their plans and are able to present them in final form.

1. All iterations are planned. Hardening iterations have only hardening stories. Work fits in the time (team velocity) available.
2. Out-of-scope work has been identified on a backlog sheet.
3. Team has a final set of release objectives.
4. Business owners have reviewed and agreed to the team's objectives and ranked them by business value.
5. Teams have also identified all critical dates.
6. Teams have identified the key risks and impediments that are outside of their local control but have the potential to cause the team to fail to meet the objectives.

Final Release Plans Review

- In a manner similar to the day before, each team presents their plan to the group in the allotted timebox.
- While so doing, the facilitator is looking for agreement—within the teams, across the teams, and with management and other stakeholders—as to the sensibility and appropriateness of the plan.
- Questions from the reviewers are asked and answered.

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Final Release Plans Review

- Even though the plans are complete, there is still work to do.
- During the planning, teams have been asked to identify the most critical risks and impediments_those issues they identify that could affect their ability to meet the agreed-to objectives.
- Addressing these is a must for the agile program, because they typically represent those things that can (and if not addressed, likely would) interfere with the success of the next PSI.

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Final Release Plans Review

- Then, at the end of each team's time slot, the team states their risks and impediments.
- There is no attempt to resolve them in this short time slot.
- The facilitator captures those on a central, visible sheet.
- The team also brings their release objective sheet to the front of the room so that all can see the aggregate release objectives unfold in real time.
- In addition, the facilitator, or perhaps a project or program manager, often collects critical dates_releases, dependencies, milestone events, and the like_on a master schedule sheet at the front of the room.
- This process continues until all teams have had a chance to present their plan.

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Addressing Risks And Impediments

- By now, the teams should have been coached to address those risks that are under their control; otherwise, they couldn't be responsible for their own plan.
- The risks and impediments that remain in the final review will need to be addressed in a broader, management context.
- This is an important time for the management team and the facilitator. Every impediment or risk that has been identified by the team will be discussed and addressed in front of the full group as is illustrated in the figure.

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Addressing Risks And Impediments

- Each item is discussed until the group agrees that the item can be categorized in one of the following (**ROAM**) categories.
  - **R**esolved
  - **O**wned
  - **A**ccepted
  - **M**itigated

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Addressing Risks And Impediments

Resolved

➔ The teams agree that the issue is no longer a concern, and the item moves to the Resolved sheet.

- Owned
- Accepted
- Mitigated

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Addressing Risks And Impediments

Resolved, **Owned**

- ➔ The item cannot be resolved in the course of the meeting, but someone (usually a manager or a specific team) takes ownership of the item.
- ➔ Ownership means that the responsible party will take whatever action is necessary to assure that the issue will not negatively affect the release commitment.
- ➔ An owned item is moved to the owned sheet, and its ownership is recorded.
    - Accepted
    - Mitigated

Addressing Risks And Impediments

Resolved, Owned, **Accepted**

- ➔ Some risks are simply facts or potential occurrences that must be understood and accepted.
- ➔ For example, extraordinary support requirements for a prior release or late delivery of a component from a supplier often appear on the list and could potentially cause a team to miss a future commitment.
- ➔ However, allocating excessive resources just to assure that these risks will not affect the release will lower value delivery and may not be economically prudent. Some risks just have to be accepted.
    - Mitigated

Addressing Risks And Impediments

Resolved, Owned, Accepted, **Mitigated**

- ➔ However, we want to accept as few as possible.
- ➔ Often, the teams can identify a plan to mitigate the impact of a risk. This may be a workaround plan, a minor descoping, or other such actions that the teams can take to lessen the impact of a potential problem.
- ➔ If so, the mitigation plan is identified as notes on the back of the risk card as it is moved to the Mitigated sheet.
- ➔ In any case, the facilitator should assure that the issues are being addressed in a clear, honest, and visible manner, or the commitment, which (ideally) follows, will be flawed.

Contents

The Commitment

- At some point, the "backlog of risks and impediments" sheet is empty, because they have all been moved into a ROAM category.
- The consolidated statement of release objectives is apparent and visible in the front of the room. Risks have been addressed.
- Now is the time to ask for a commitment.

The Commitment

- However, a commitment, per se, is actually not quite the right thing to ask for, because no intelligent participant is going to indicate that they are not committed to the team's release objectives in front of their managers. Instead, we create a commitment by asking teams to vote on their confidence in their team's ability to meet the release objectives.
- For example, the question is often stated as "**how confident are you that you and your teams will be able to meet the objectives of this release**."

The Commitment

A public, “**show of hands, five-finger vote**” is then prompted, with the meaning as follows:

- ➔ 1 = **No** confidence; will not happen
- ➔ 2 = **Little** confidence; probably will not happen
- ➔ 3 = **Good** confidence; the team should be able to meet the objectives
- ➔ 4 = **High** confidence; should happen
- ➔ 5 = **Very high** confidence; will happen

The Commitment

- ➔ If the average is three to four fingers or more, that's about as good as it gets, and management should accept the commitment.
- ➔ If the average is fewer than three fingers, then the work is not yet complete.
  - Scope and resources are adjusted again as necessary and planning continues—that day, into the evening, or even rolling over into the next morning—until a commitment can be reached.

The Commitment

Assuming, however, that commitment has been achieved, the facilitator and managers should thank the attendees for their participation in planning, because a commitment represents a job well done.

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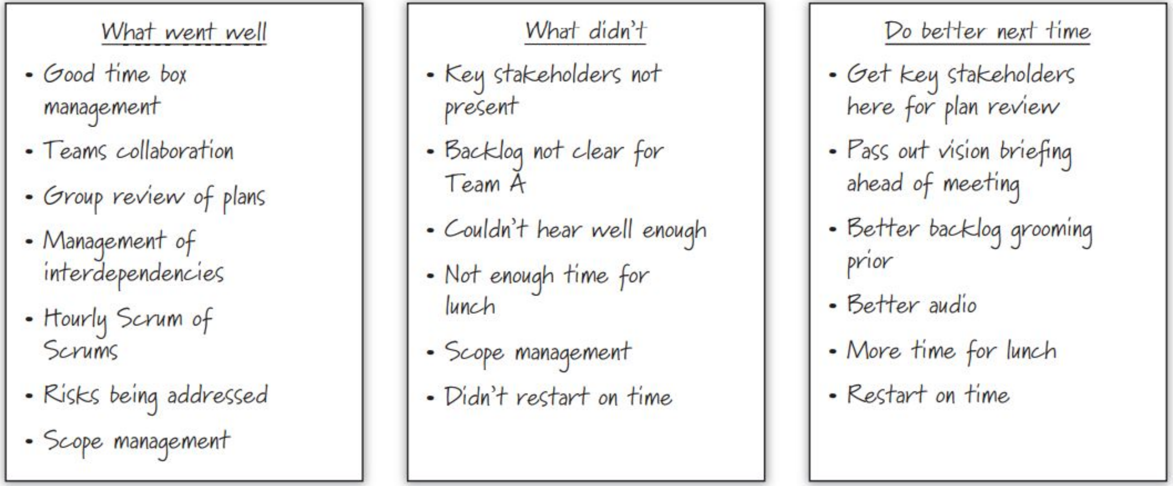
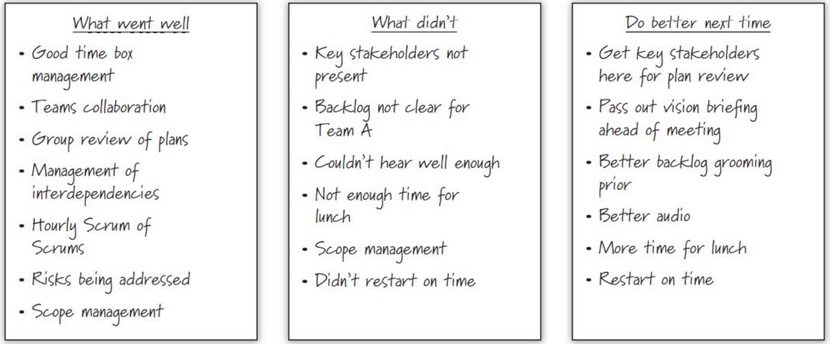
Planning Retrospective

The next session is a brief retrospective led by the facilitator. The Figure shows a simple format to capture such data, along with a few example comments.



Planning Retrospective

- ➔ This session should last no longer than about 15 to 20 minutes.
- ➔ Toward the end of the timebox, the facilitator may ask the teams to rank the items in the third column (what we could do better) in order to focus on the process improvement steps that can be taken before the next planning session.



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Final Instructions To Teams

The last session is typically a brief set of final instructions to the teams. Such instructions often include the following:

- ➔ Capturing the objectives and stories in the agile project management tool
- ➔ Updating the Roadmap
- ➔ Cleaning up the room
- ➔ Scheduling key events and activities in the next few days

Thereafter the meeting is (thankfully) adjourned.

End of Chapter 16

Contributions

- ➔ Author of Reference Book: **Dean Leffingwell**
- ➔ Course Instructor: **Mehran Rivadeh**
- ➔ Slide Creator: **Mahnaz Rasekhi**
  - These slides are primarily based on Agile Software Requirements by Dean Leffingwell, with occasional adaptations to enhance clarity and engagement.