EXIN Agile Scrum Master

Lesson 6—Agile on Complex Projects

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What's In It For Me

After completing this lesson, you will be able to:

- List the challenges in implementing Agile on enterprise-scale projects.
- Coordinate the work of multiple Scrum teams working on the same project using different techniques.
- Correlate the Scrum Framework with enterprise Agile Frameworks like Scaled Agile Foundation.
- Explain when to apply Agile.
- Evaluate the role of tools in managing the work of Agile teams.

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Agile at Scale is Challenging

Agile was initially developed with smaller projects, smaller teams. For bigger projects:

There is a need for larger team sizes than what Scrum advocates. Multiple Scrum Teams need to work in parallel.

The backlog is larger and needs multiple POs to manage it.

Stories, themes, and epics require work from multiple teams.

There are functional, personnel, and technical dependencies across teams.

It is not easy to integrate the work of multiple teams.

There may be a greater need for specialization.

Non-functional requirements like performance, deployment architectures, and cannot be compromised.

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Managing Backlog

One backlog per product, scale up the responsibilities of the Product Owner (PO).

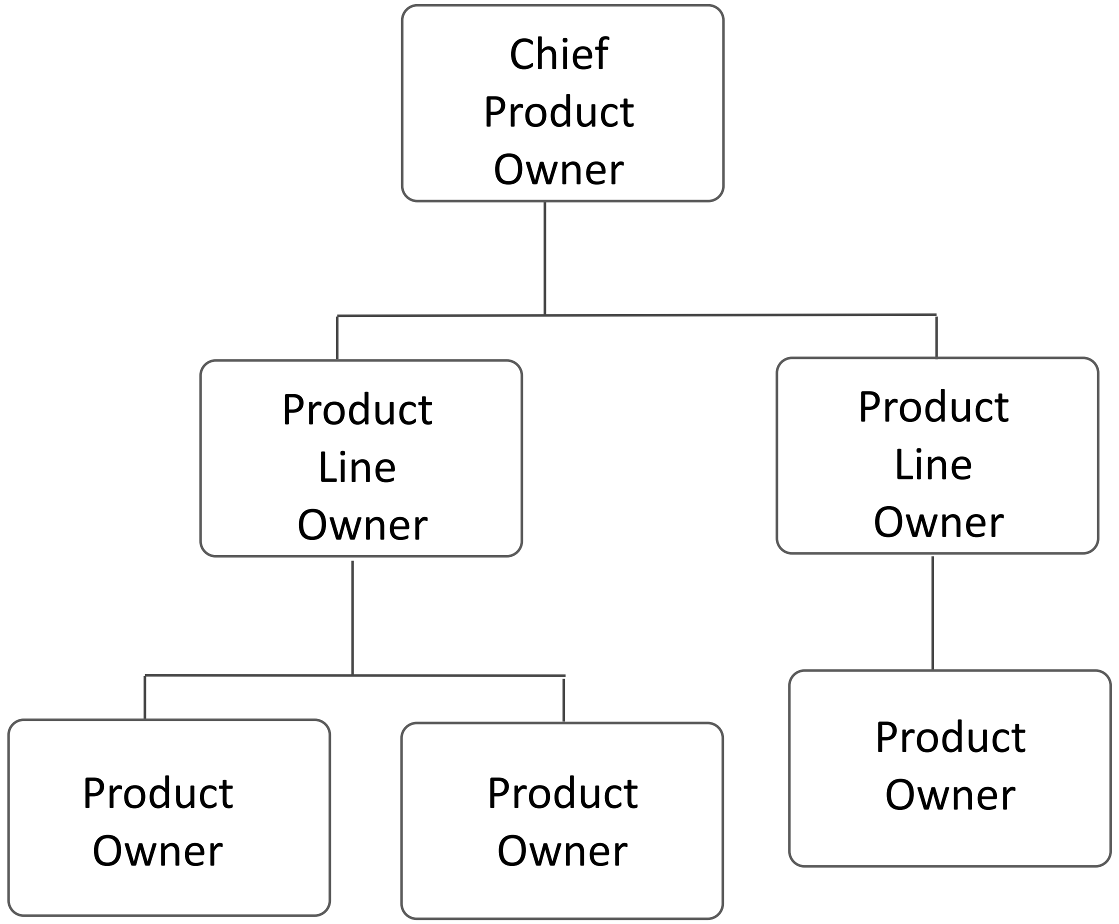
The backlog for each product should be in one place; irrespective of how many teams are working on it. Each team can have their own access into the backlog.

Keep the backlog to a reasonable size, usually no more than 150 items at a time. Add details to stories sooner.

Use epics and themes to categorize stories.

A PO can support at most two teams. Ideally there should be one PO per team. Develop a hierarchy for the POs.

Divide teams and POs along the lines of features and functionality.



Chief Product Owner

Product Line Owner

Product Line Owner

Product Owner

Product Owner

Product Owner

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Planning Large Projects

Plan ahead and provide feeding buffers.

- Establish a common basis for estimates. Rationalize units, benchmark stories for common understanding
- Hold a release kick-off meeting
- Look-ahead planning: Apart from planning current Sprint, plan ahead for 2-3 Sprints. Identify and plan for bi-directional dependencies
- Provide feeding buffers for critical dependencies to protect project schedule
- Share team members or establish feature teams. Form integration teams

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Scrum-of-Scrums

This is used to co-ordinate work of multiple teams and solve problems related to dependencies, technical issues, scheduling, and so on.

Structure

A representative or two from each of the participating teams

Duration

Need not be held daily; it depends upon the criticality

Agenda

- What has the Team done since the last meeting that might affect other teams?
- What will the Team do till the next meeting that might affect other teams?
- What help does the Team need from the other teams?
- What are the issues in the backlog?

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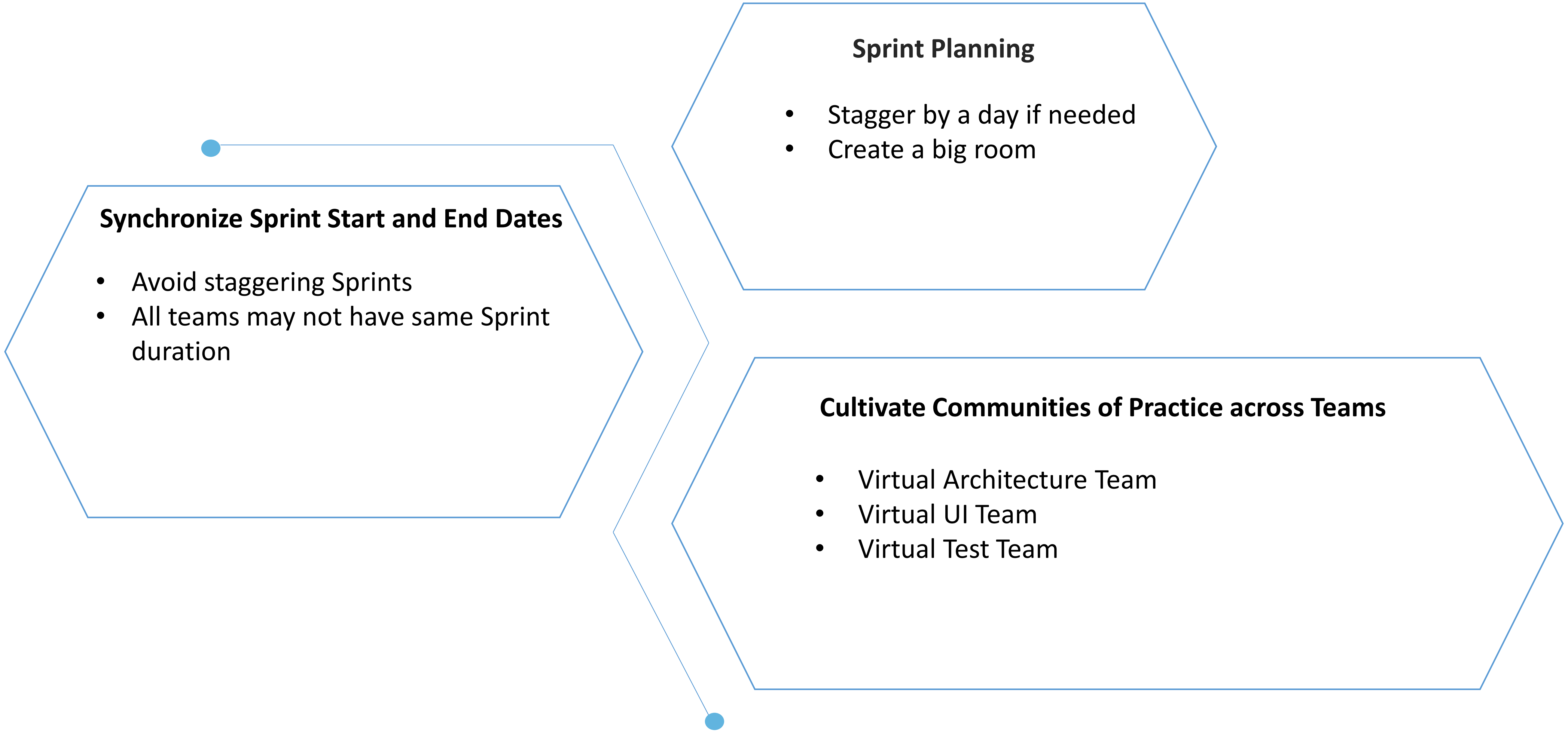
Scrum Events/Team Practices

Be flexible and try out different things and see what works best, while managing Scrum events



Synchronize Sprint Start and End Dates

- Avoid staggering Sprints
- All teams may not have same Sprint duration

Sprint Planning

- Stagger by a day if needed
- Create a big room

Cultivate Communities of Practice across Teams

- Virtual Architecture Team
- Virtual UI Team
- Virtual Test Team

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Scaled Agile® Framework (SAFe®)

It is a knowledge base for implementing Agile practices at enterprise scale.

- Describes three levels of scale: Team, Program, and Portfolio
- Team Level: Iterative development; aligned with a release cadence with strong emphasis on quality
- Program Level: Program-level epics, achieved by creating Agile "release trains" combining the output of different teams
- Portfolio Level: Multiple-release trains aligned with strategic objectives and portfolio vision
- Supplements Agile development practices like iterative and incremental approach with Lean and Kanban

! For more information, check the link: https:// www.scaledagileframework

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Principles of Scaled Agile ®

The nine basic principles of Scaled Agile ® Framework are the following:

- Take an economic view
- Apply systems thinking
- Assume variability; preserve options
- Build incrementally with fast, integrated learning cycles
- Base milestones on objective evaluation of working systems
- Visualize and limit Work In Progress (WIP), reduce batch sizes, and manage queue lengths
- Apply cadence, synchronize with cross-domain planning
- Unlock the intrinsic motivation of knowledge workers
- Decentralize decision making

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The advantages of Agile development over traditional development in distributed teams:

Traditional Development	Agile Development
One deliverable, which is provided several months after a hand off of the requirement document	Frequent deliverables with check points and opportunity to provide feedback

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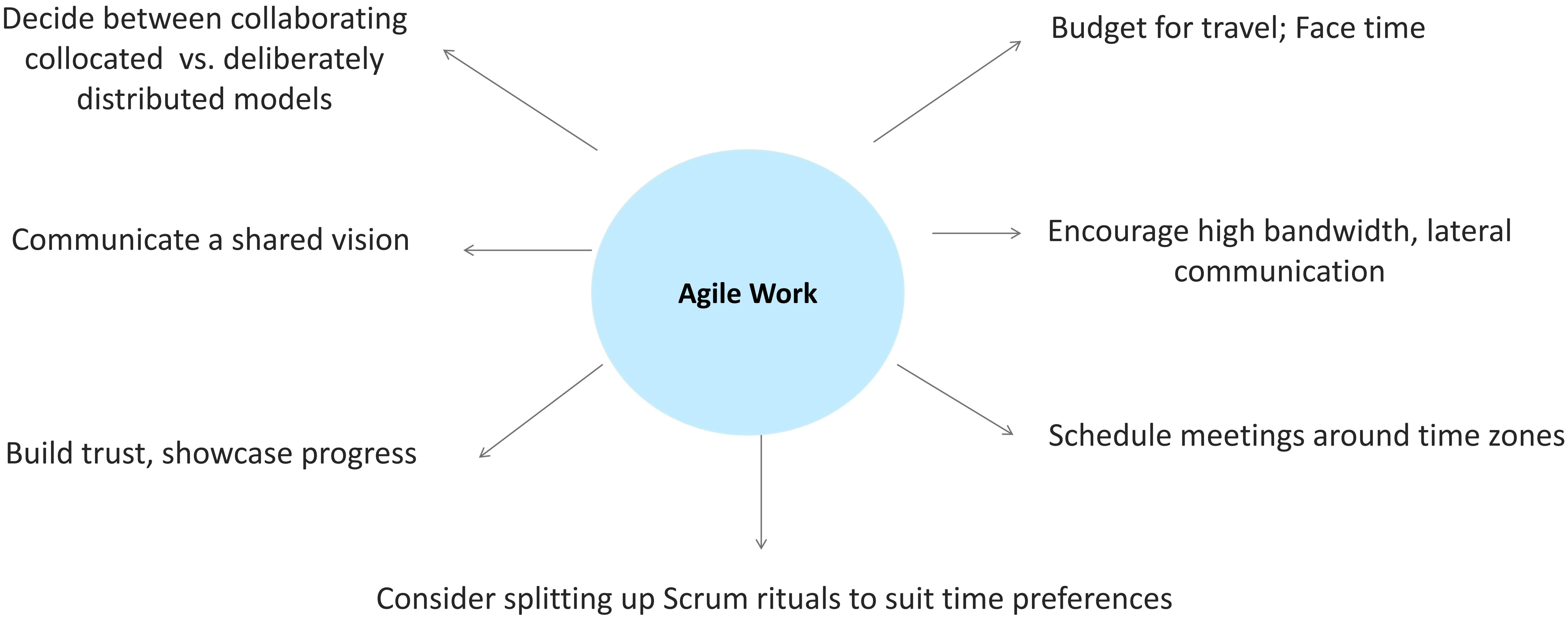
Things to Do If You Have Distributed Teams

To make distributed Agile work:



Agile Work

Decide between collaborating collocated vs. deliberately distributed models

Budget for travel; Face time

Communicate a shared vision

Encourage high bandwidth, lateral communication

Build trust, showcase progress

Schedule meetings around time zones

Consider splitting up Scrum rituals to suit time preferences

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Cultural Sensitivity

Be aware of cultural differences

Power-Distance Index (PDI)
The extent to which less powerful members accept unequal distribution of power

Uncertainty Avoidance Index (UAI)
Tolerance of ambiguity

Individualism (IND)
Prefer working as individuals vs. teams

Long-Term Orientation (LTO)
Long-term benefits or instant gratification

Achievement Orientation (ACH)
Orientation toward visible indicators of success

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Apply Agile

Suitability of projects to Agile and Agile to projects.

		Solution	
Goal	Not Clear	**MP**x Extreme	x**MP** Extreme
	Clear	**TPM** Linear Incremental	**APM** Iterative Adaptive

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Organizational and Project Related Factors

Conditions favorable for Agile development:

Project Related

- Complexity
- Novelty
- Changing requirements
- User facing
- Low cost of iterating
- Predictable work flow

Organization Related

- Maturity to collaborate
- Support from management, customers
- Willingness of team
- Dissatisfaction with traditional methods

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Agile Tooling

Project management tools and tools that help with software engineering:

Project Management Tools

- Capture backlog
- Define releases, Sprints
- Assign Stories, tasks
- Show burn down, other charts

Software Engineering

- Test automation tools, frameworks
- Build automation
- Continuous integration
- Software hygiene

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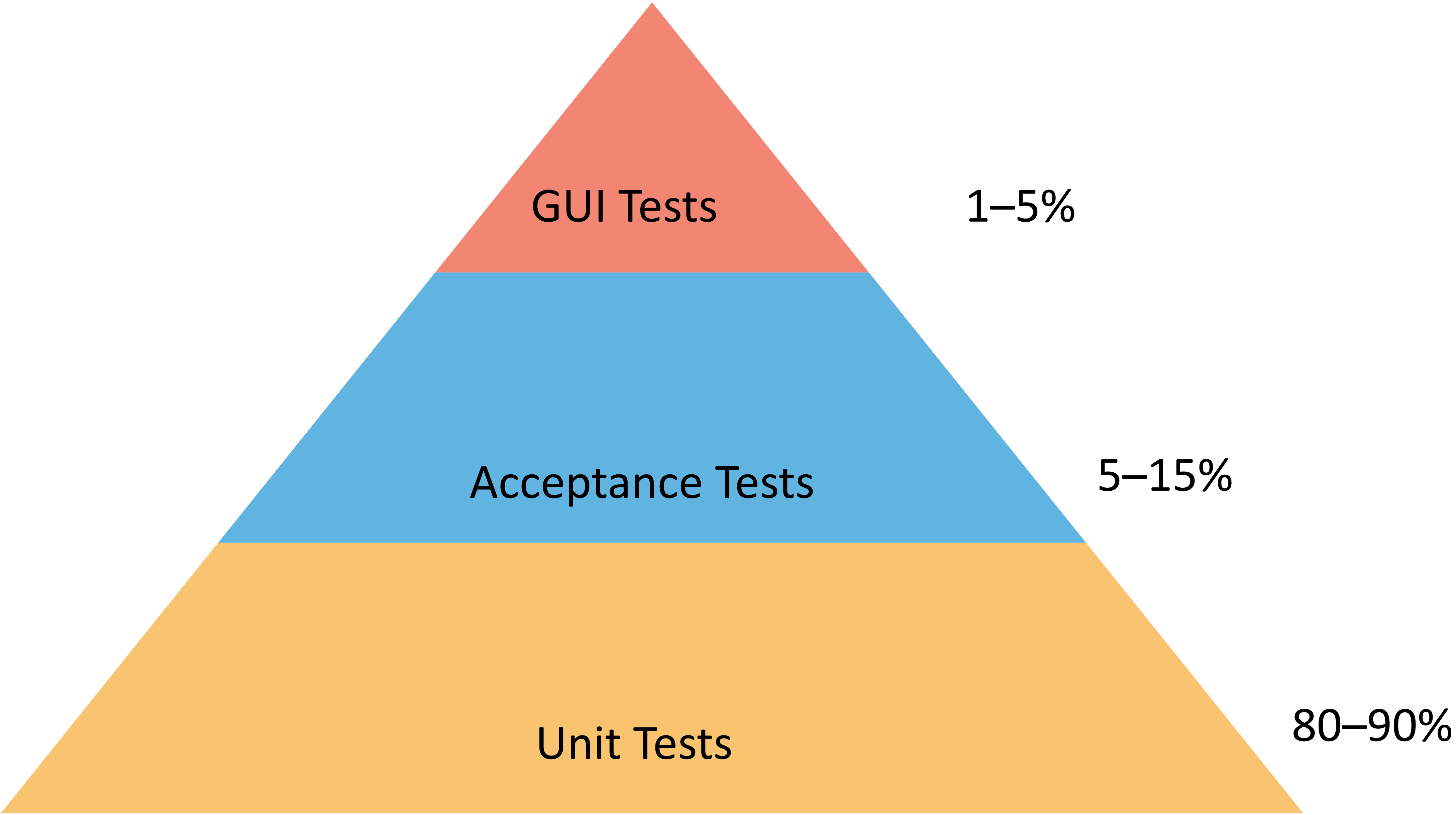
Testing Pyramid

Test early, test often, and design tests carefully



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Key Takeaways

Let us summarize the topics covered in this lesson:

- Though Scrum was designed originally for small projects, it can scale even for large, enterprise-scale projects.
- Assign one backlog to one product; determine the number and hierarchy of Product Owners according to the size of the project.
- Perform look ahead planning and provide feeding buffers for dependencies.
- Coordinate through Scrum-of-Scrums and integration teams.
- Use frameworks like Scaled Agile®.
- Consider project level factors favoring Agile adoption.
- Make use of project management and software engineering tools according to the project needs.

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Quiz

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QUIZ

1

Who should be the representative of your team for the Scrum-of-Scrum meetings?

a. Scrum Master

b. Product Owner

c. Technical Lead

d. Depends upon Team decision

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QUIZ 2

The Scaled Agile ® Framework looks at three different levels of scale: Team, Program, and ____.

a. Release

b. Agility

c. Portfolio

d. Organization

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QUIZ

3

Which of the following organizational factors is most detrimental to the adoption of Agile?

a. Geographical spread

b. Willingness to be responsive to customer needs

c. Large, complex projects

d. Technically capable teams

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QUIZ 4

Which of the following should be the primary focus of testing on a large, complex Agile project?

a. Integration Test

b. Acceptance Test

c. UI Test

d. Unit Test

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This concludes “Agile on Complex Projects.”

The next lesson is “Adopting Agile.”

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