

# Agile/SAFe

In a Waterfall World

# Steve Moubray, SPC, PMP

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- I form Communities at work, at home and for fun
- 20+ years in IT
- 1,000s of people, countless teams
- 5 Continents
- Amateur photographer
- Proud father

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[Co-Coaching Circles](#)

[Meetup Agile Coaching DC](#)



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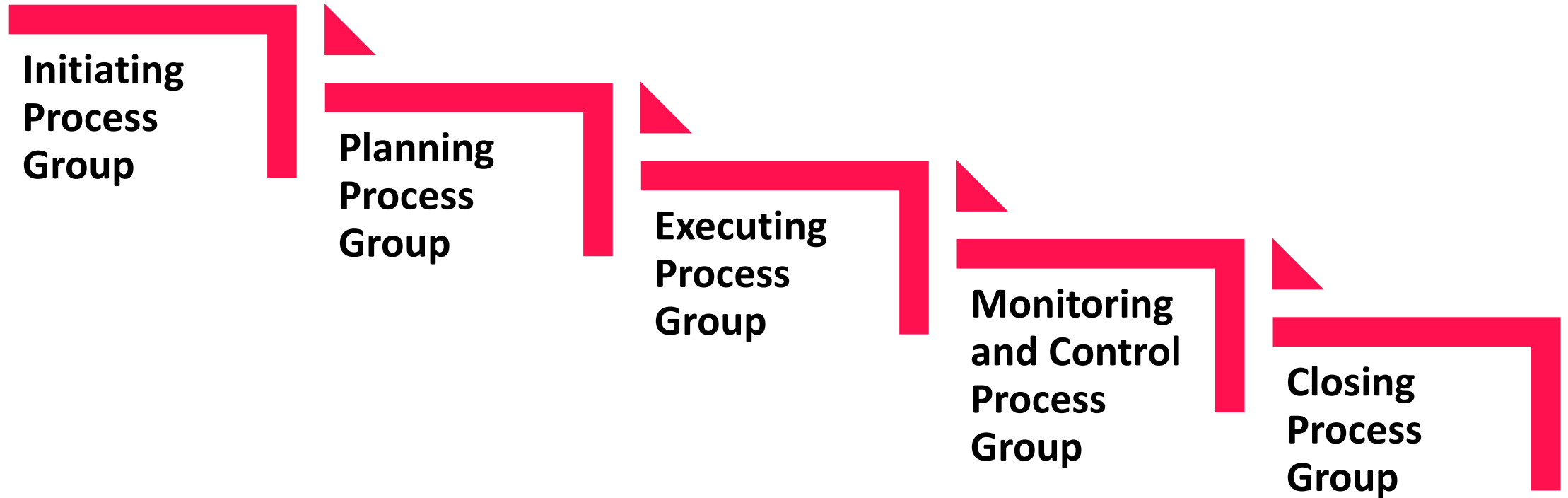


# Waterfall

What is Waterfall (according to PMI)?

# PMI Process Groups

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# PMI Code of Ethics

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- Responsibility
- Respect
- Fairness
- Honesty
- Cultural Competence

# Agile/SAFe

## Overview

# Agile Manifesto

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

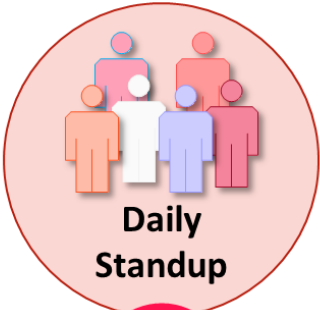
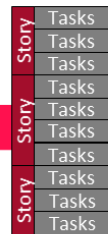
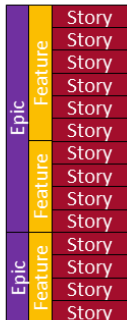
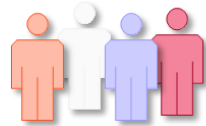
**Individuals and interactions** over processes and tools  
**Working software** over comprehensive documentation  
**Customer collaboration** over contract negotiation  
**Responding to change** over following a plan

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

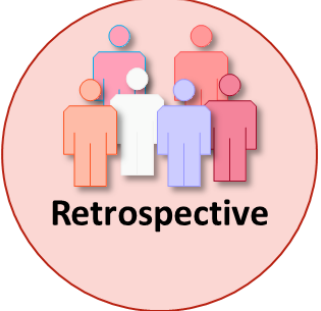
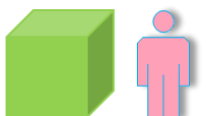


# Agile Scrum Process

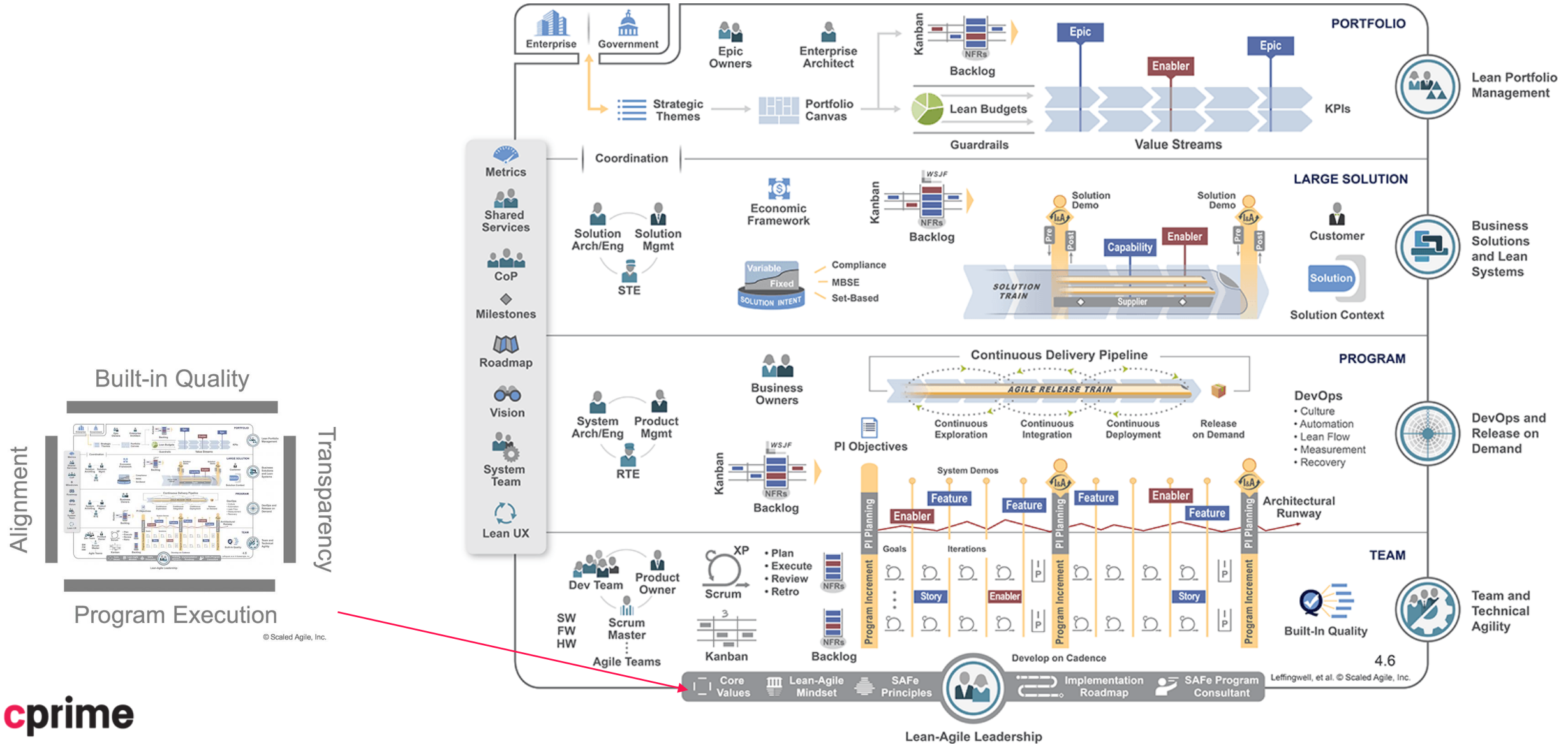
Stakeholders (*Executives, customers, users*)



Daily



# Full Scale SAFe Diagram



Alignment

Transparency

Built-in Quality

Program Execution

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# SAFe Principles

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1. Take an economic view
2. Apply systems thinking
3. Assume variability; preserve options
4. Build incrementally with fast, integrated learning cycles
5. Base milestones on objective evaluation of working systems
6. Visualize and limit work-in-progress, reduce batch sizes, and manage queue lengths
7. Apply cadence (timing), synchronize with cross-domain planning
8. Unlock the intrinsic motivation of knowledge workers
9. Decentralize decision-making

# Typical Results Reported by SAFe Enterprises

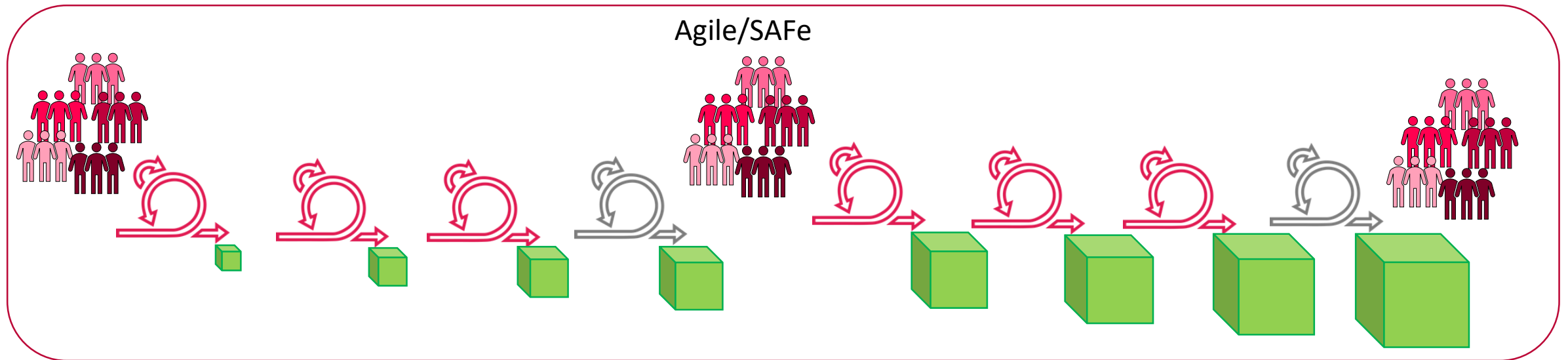
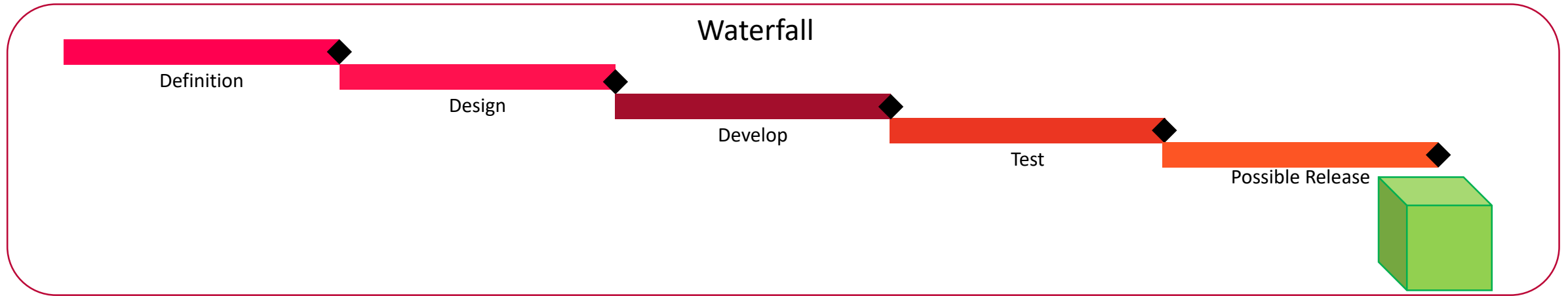
- 20 – 50 percent increase in productivity
- 25 – 75 percent improvement in quality
- 30 – 75 percent faster time-to-market
- 10 – 50 percent increase in employee engagement and job satisfaction



# Agile/SAFe and Waterfall

How do they co-exist?

# Waterfall vs. Agile/SAFe



# Integrated Portfolio Management Office (PMO)

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## High-performing PMOs tend to:

- Closely align their work with the organization's strategic initiatives
- Lead (or play a significant role in) the implementation of strategic initiatives
- Fulfill important change management functions
- Adapt and adopt new skills

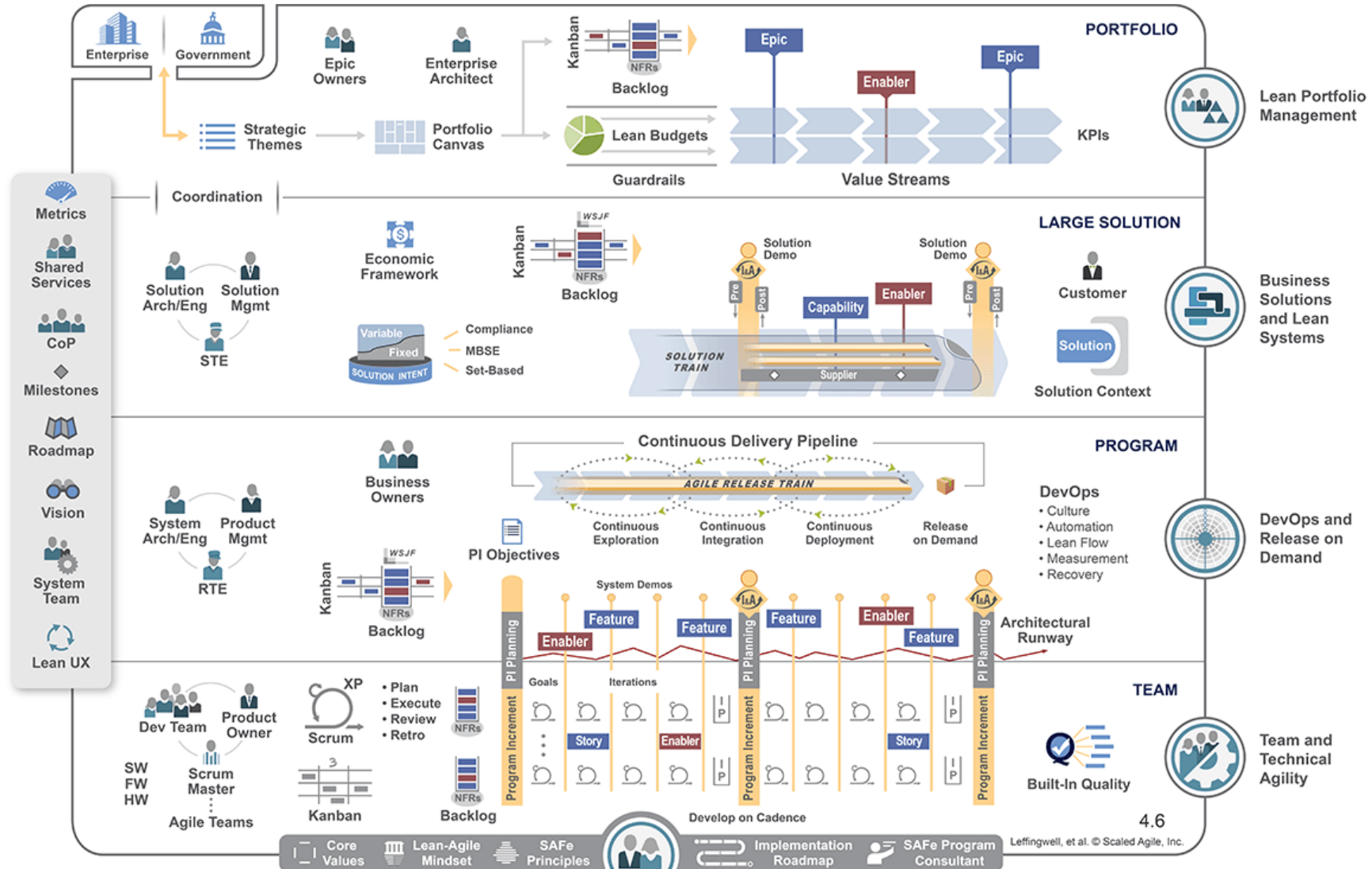
## A Call for Action

It's a brutal business reality: The PMO must evolve.

*Capgemini (2018). The Next Generation PMO. November 2018*

<https://www.pmi.org/learning/thought-leadership/series/disruptive-technologies/the-next-generation-pmo>

# Full Scale SAFe Diagram



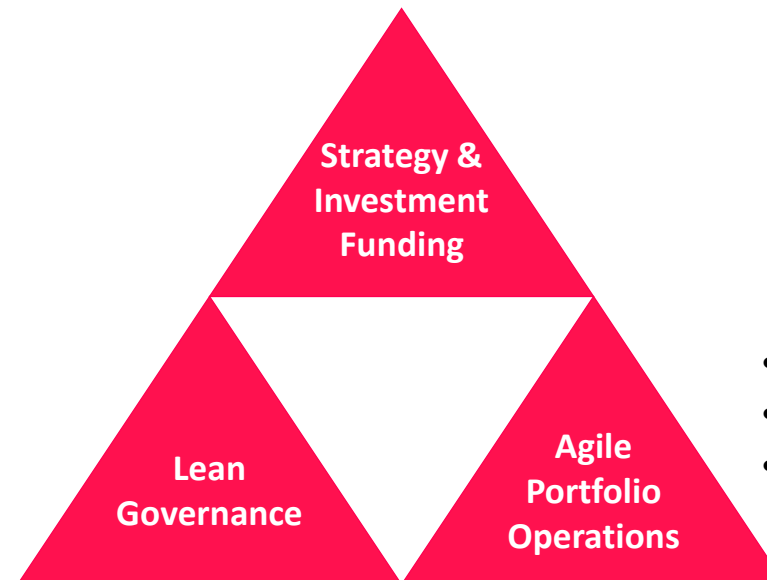


# Lean PMO

Integrate Lean Portfolio Management into your current PMO where possible.

- Connect the portfolio to enterprise strategy
- Maintain Portfolio Vision
- Fund value streams
- Establish portfolio flow

- Forecast and budget dynamically
- Measure portfolio performance
- Coordinate continuous compliance



- Coordinate Value Streams
- Support program execution
- Drive operational excellence

# PMI Plans vs. SAFe Ceremonies and Artifacts

PMI Plans	Scaled Agile Framework (SAFe)
Project Integration Management	ALM Tool, Cadence, Ceremonies and SAFe Processes
Scope Management Plan	Epics (Large Initiatives), Features/Capabilities (fulfill stakeholder needs), User Stories (building blocks)
Project Schedule Management	Vision (1-3 Years), Roadmap (8-10 Months) , Program Increment (PI) Objectives (10 Weeks) , Sprint Objectives (2 Weeks)
Cost Management	Lean Budgeting, Reviewed Twice Yearly
Quality Management	Constantly Check Quality, Shift Testing Left
People Management	Untangle dependencies when possible and fund teams (Value Stream Mapping)
Communications	Regular ceremonies and demos that inform Comms Plan
Risk	ROAM Board and regular ceremonies to uncover risks for RAID (Daily Standup, Scrum of Scrums, ART Sync ...)
Procurement	Tends to move decision making to the teams but you still have to buy stuff
Stakeholder	Ceremonies to Review Working Solution with Stakeholders Sprint Reviews, PI Review, Review of Objectives

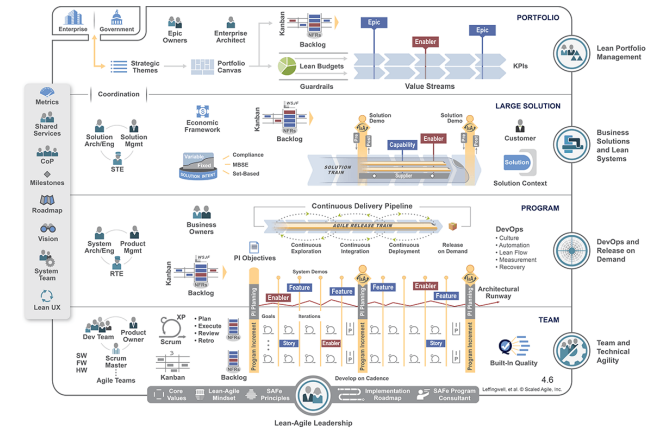
# Project Integration Management Plan

## PMI

- Direct and Manage Project Work
- Manage Project Knowledge
- Monitor and Control Project Work
- Perform Integrated Change Controls

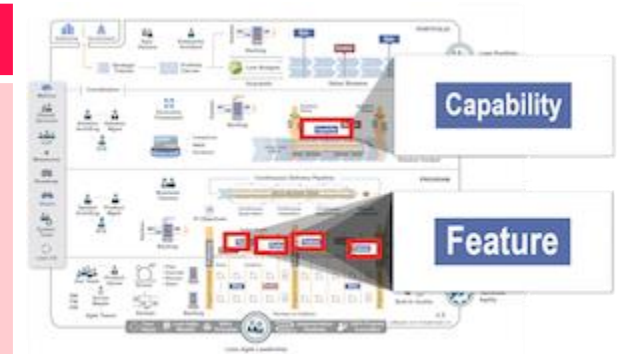
## SAFe

- Release (Solutions) Train Engineer
- ALM Tool
- Team Retrospectives 2-weeks
- Inspect & Adapt every 10-weeks
- Sprint Planning 2-weeks
- Full integration at least 2-weeks
- PI Planning Event  
(Multiple teams and leaders plan)



# Scope Management

PMI	SAFe
<ul style="list-style-type: none"><li>• Plan Scope Management</li><li>• Collect Requirements</li><li>• Define Scope</li><li>• Create WBS</li><li>• Validate Scope</li></ul>	<ul style="list-style-type: none"><li>• Focus on Learning and MVP</li><li>• Portfolio Creates a Vision</li><li>• Program Creates Roadmap</li><li>• Product Owner Verifies All Stories</li><li>• Stakeholders Verify Working System 2-Weeks</li></ul>



Vision (multiple years) (Epics and Strategic Themes)

9-Month Roadmap (Capabilities)

Current Iteration Objectives (Features)

Next Iteration Objectives  
(Features, Capabilities)

Current Iteration Objectives  
(Features, Capabilities)

Stories

Stories

Stories

Stories

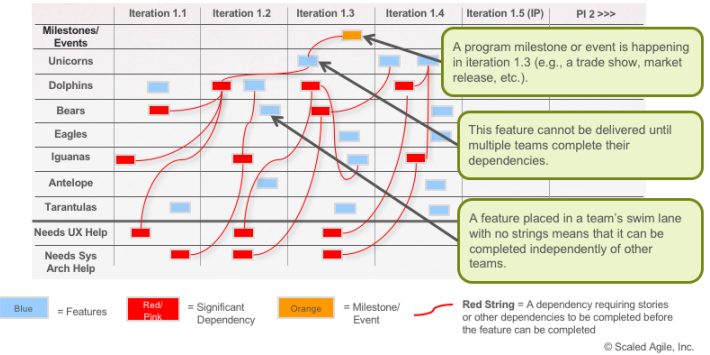
# Schedule Management

## PMI

- Plan Schedule Management
- Define Activities
- Sequence Activities
- Estimate Activity Durations
- Develop Schedule

## SAFe

- Teams Negotiate Dependencies in Real-Time
- Teams Measure Historic Velocity
- Work Products are Estimated
  - High-Level for Epics
  - Mid-Level for Features
  - Low-Level Stories



Vision (multiple years)

9-Month Roadmap (Estimated Feature Points)

Current Iteration Objectives (Teams Estimate the Work)

Next Iteration Objectives (Features, Capabilities)

Current Iteration Objectives (Features, Capabilities)

Stories

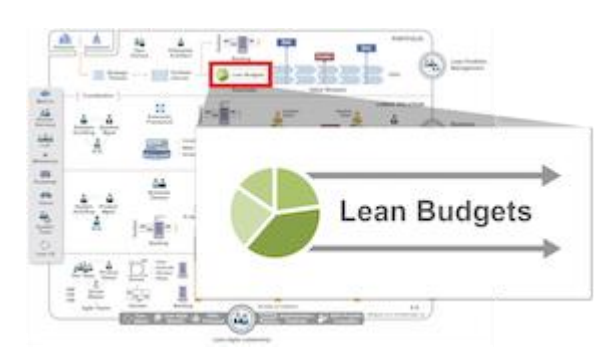
Stories

Stories

Stories

# Cost Management

PMI	SAFe
<ul style="list-style-type: none"><li>Plan Cost Management</li><li>Estimate Costs</li><li>Determine Budget</li><li><i>Annual budgets rarely change</i></li></ul>	<ul style="list-style-type: none"><li>Fund Strategic Themes and Teams</li><li>Estimates Come From Historic Velocity</li><li>Allows Business to Pivot</li><li>Big Room Budgeting<ul style="list-style-type: none"><li>Weighted Shortest Job First</li></ul></li></ul>



Vision (multiple years) \$\$\$

9-Month Roadmap (Estimated \$\$\$)

Current Iteration Objectives (\$\$\$)

Next Iteration Objectives  
(Features, Capabilities)

Current Iteration Objectives  
(Features, Capabilities)

Stories

Stories

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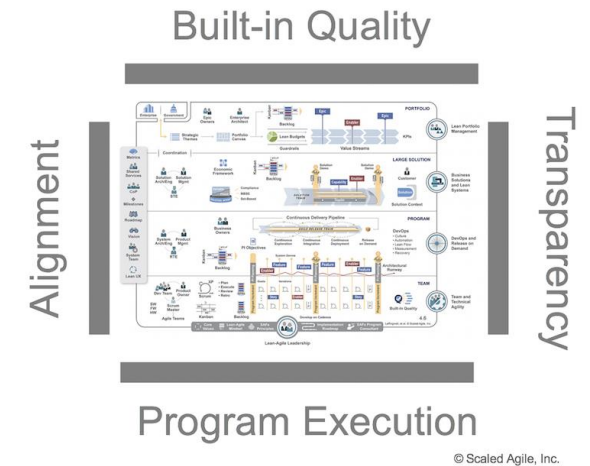
# Quality Management

## PMI

- Plan Quality Management
- Manage Quality

## SAFe

- Stories are Tested
- Integrated System 2-weeks
- Working System Demonstrated
- System Ensures Compatibility



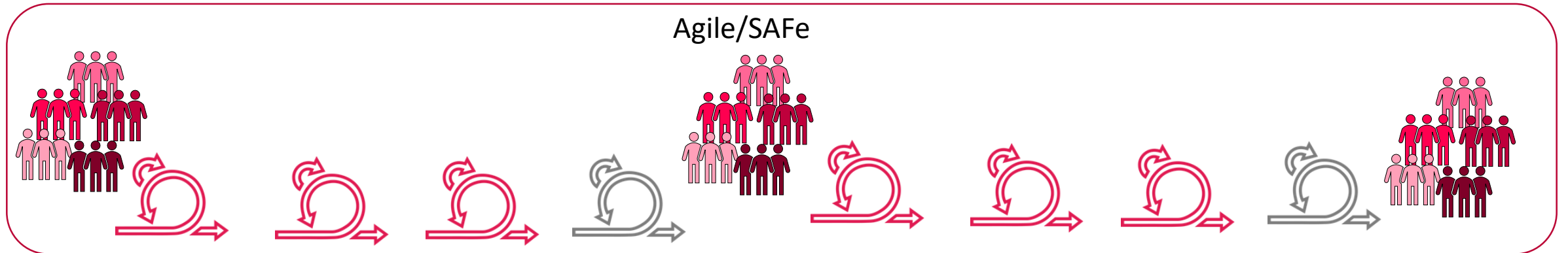
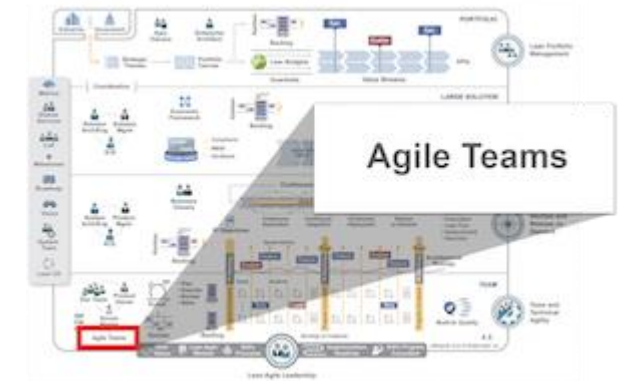
# Resource Management

## PMI

- Plan Resource Management
- Estimate Activity Resources
- Acquired Resources
- Develop Team
- Manage Team

## SAFe

- Teams Stay Together
- Form Teams Value Delivery
- Bring the Work to the Teams
- Often Teams Define, Build, Test and Deploy





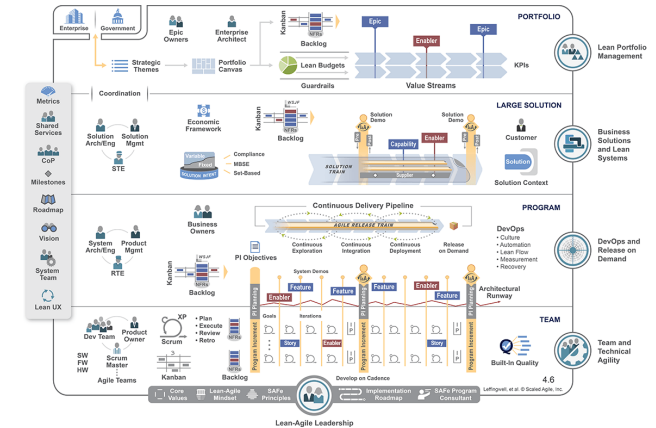
# Communications Management

## PMI

- Plan Communications Management
- Manage Communications

## SAFe

- Transparency and Alignment
- Ceremonies on Cadence (Demos, Reviews, Retros, I&A)
- Teams Interact with Stakeholders
- Issues are Escalated Quickly Through Cadence



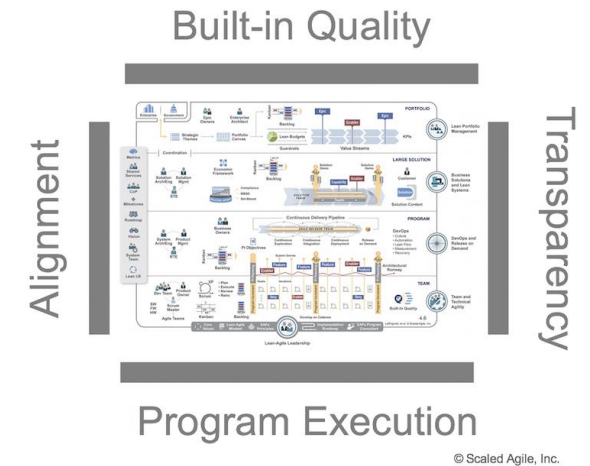
# Risk Management

## PMI

- Plan Risk Management
- Identify Risks
- Perform Qualitative Risk Analysis
- Perform Quantitative Risk Analysis
- Plan Risk Responses

## SAFe

- Transparency and Program Execution
  - Face-to-Face Discussions
  - Clear Escalation
    - Daily-Standups
    - Scrum of Scrums
    - ART Syncs
- ROAM Board in PI Planning
  - Resolved
  - Owned
  - Accepted
  - Mitigated



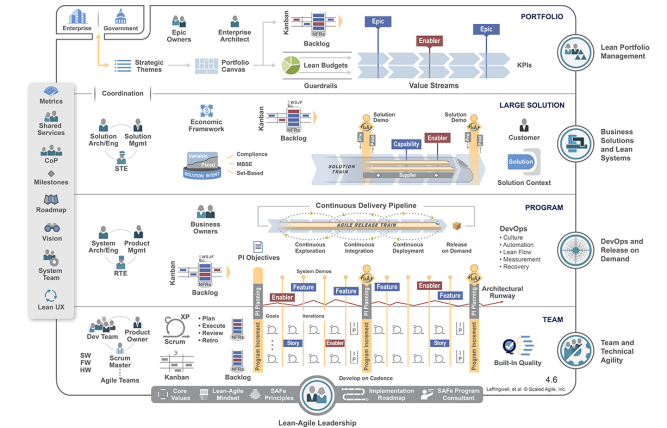
# Procurement Management

## PMI

- Plan Procurement Management
- Conduct Procurements

## SAFe

- Estimate Procurement Needs
- Regular Checkpoints to Validate



Vision (multiple years) (Epics and Strategic Themes) \$\$\$

9-Month Roadmap (Capabilities) \$\$\$

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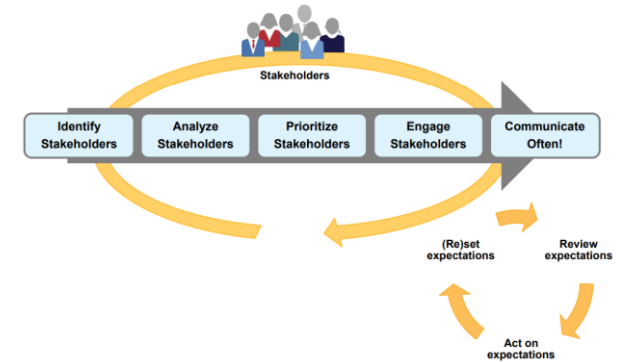
# Stakeholder Management

## PMI

- Plan Stakeholder Engagement
- Manage Stakeholder Engagement
- Monitor Stakeholder Engagement

## SAFe

- Cadence and Transparency Provide Stakeholder Opportunities
- Ceremonies Offer Touchpoints
  - Invite Stakeholders
  - Demo, Reviews, Inspect & Adapt



# Agile/SAFe and Waterfall

Integration Scenarios

# Integrating Agile/SAFe with Waterfall

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- Program Increment (PI) Planning
  - Waterfall teams attend or at least send representatives
  - Critical milestones are shared and aligned
- Align Integration Points and Milestones
  - Agile teams can often align more easily to Waterfall milestones
- Finalize Ceremony Cadence and Attendance
- Remember, Agile teams may start development sooner

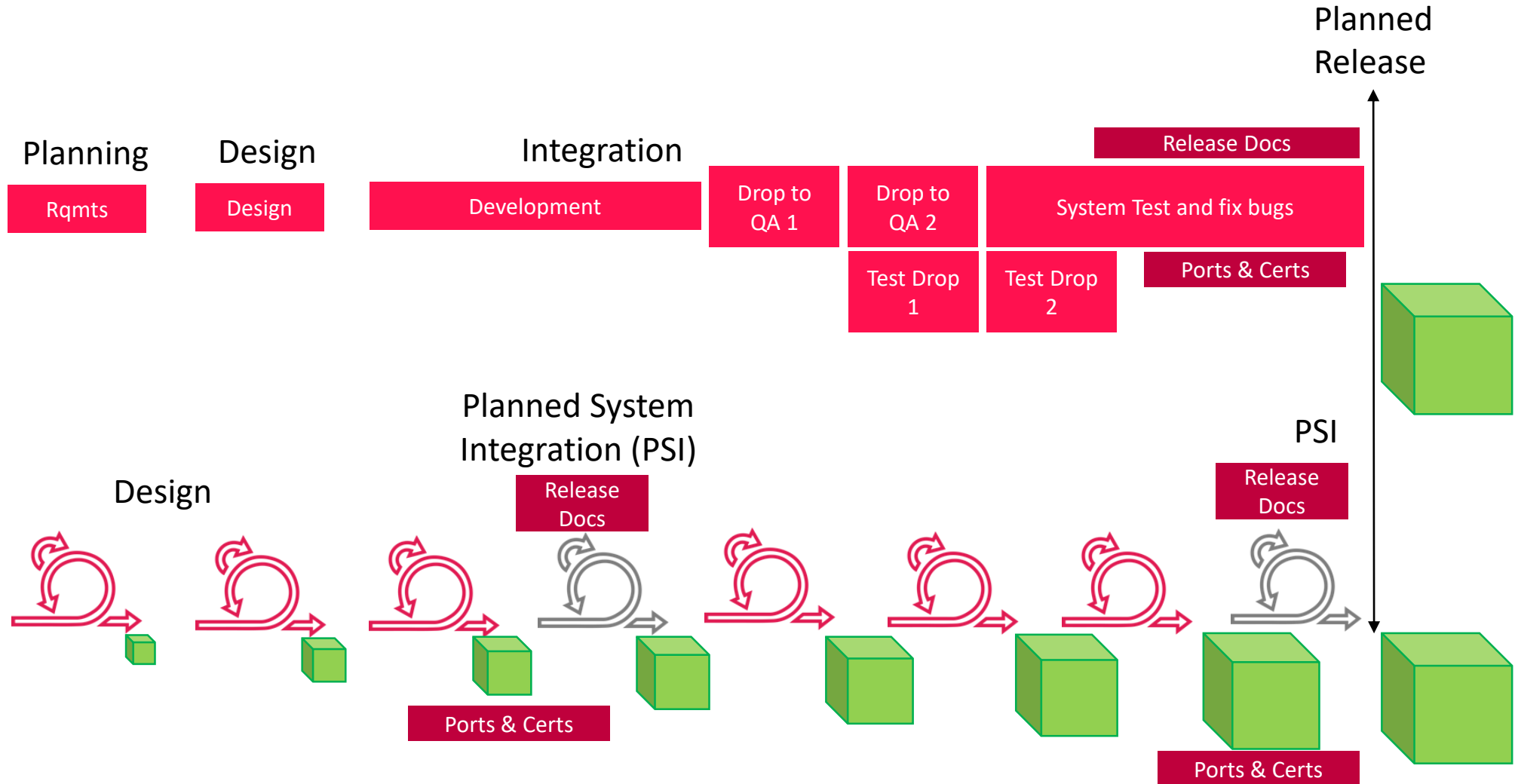
*Principle #7 Apply cadence (timing), synchronize with cross-domain planning*

# Integration Scenarios

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1. Independent Teams
  - Projects/programs are independent but same deployment resources
2. Low Dependency Teams
  - Some dependencies exist but not constant synchronization
3. High Dependency Teams
  - Dependencies throughout development require a high-level of interaction

# Independent Teams



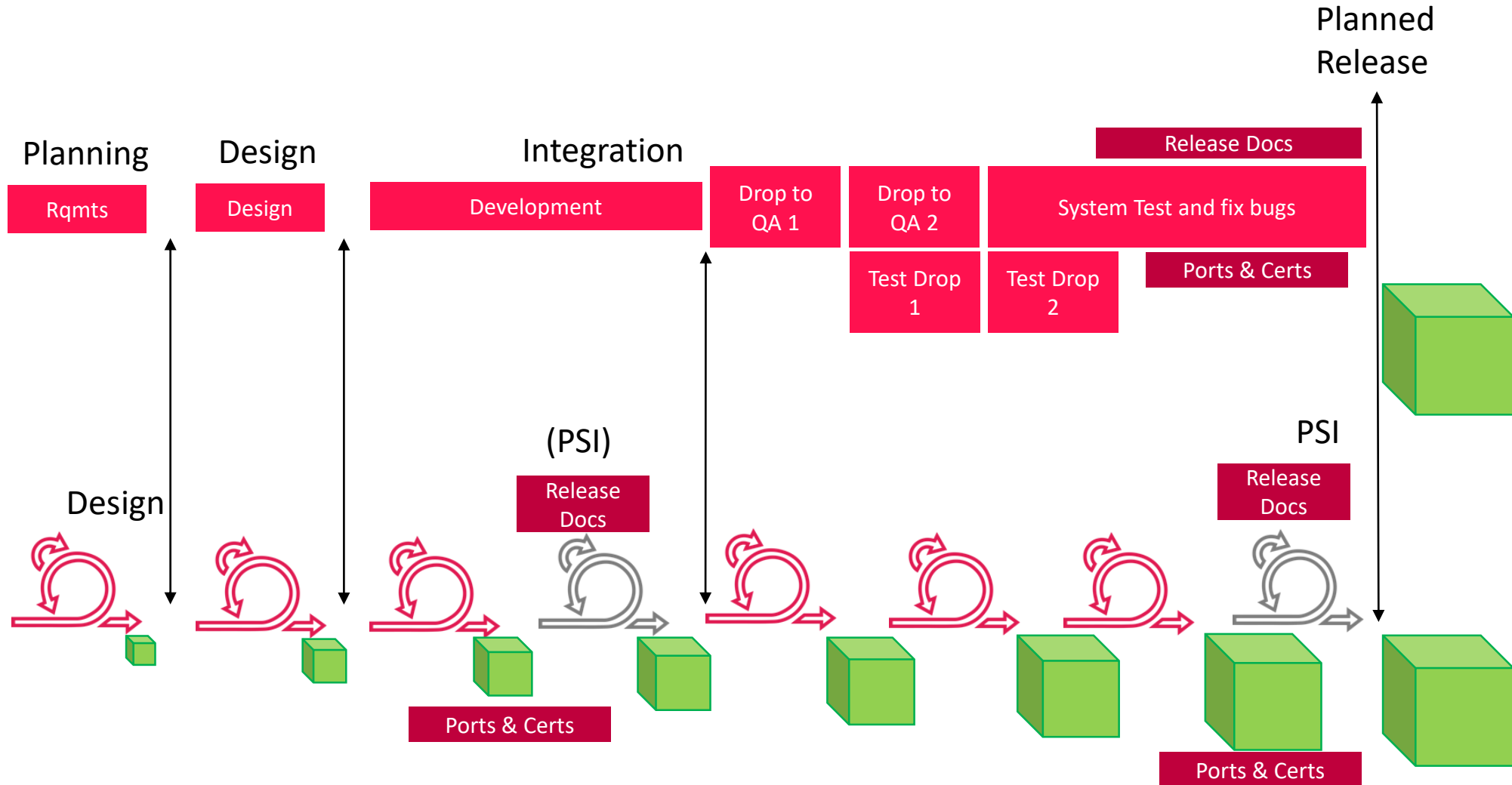


# Independent Teams - Tips

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- Do:
  - Synchronize the Agile Release Train (ART) to the Waterfall milestones at the SAFe Program Level
    - ART has the fastest “clock speed” and can more easily adjust
  - Leverage IP sprints around Waterfall milestones to provide slack for integration activities
  - Strive toward increments within Waterfall project over time to offer more integration opportunities prior to the end of the project
  - Project/program capacity
- Don't:
  - Let integration lag too far behind development – understand that continuous rework / refactoring will be needed
  - Get stuck in ongoing analysis and ‘spike’ work – make appropriate assumptions and stub out Waterfall design specs to continue development in Agile teams

# Low Dependency Teams

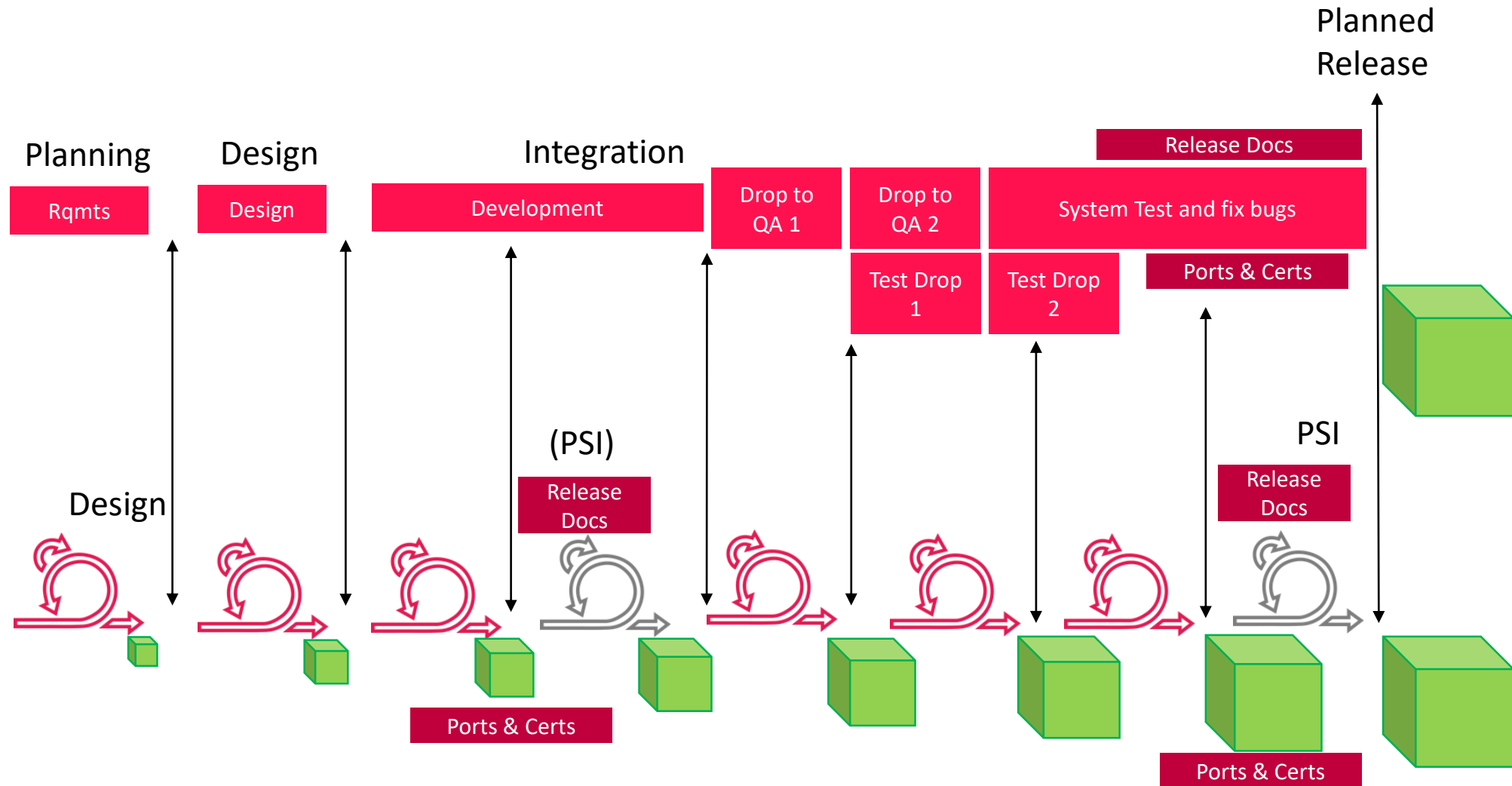


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# High Dependency Teams



# High Dependency Teams - Tips

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- Do:
  - Synchronize the Agile and Waterfall projects at the SAFe Team Level, at a minimum at Sprint (2 week) and PI (10 week) boundaries do not have dependencies
    - More frequent information communication as needed
  - Align Agile sprint/release plans with the Waterfall activities
  - Focus on the work that represents the highest risk first
  - Maintain a list of assumptions for tracking to ensure they are being confirmed or refactored
  - Make educated assumptions on the Agile project and refactor as needed
- Don't:
  - Let the scope between the two projects diverge
  - Let the agile teams be blocked from making progress by waterfall teams (embrace refactoring)