

# Agile Software Requirements

Software Requirements Engineering – 40688

Computer Engineering department

Sharif university of technology

Fall 402

# Chapter 15:

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## Agile Release Train

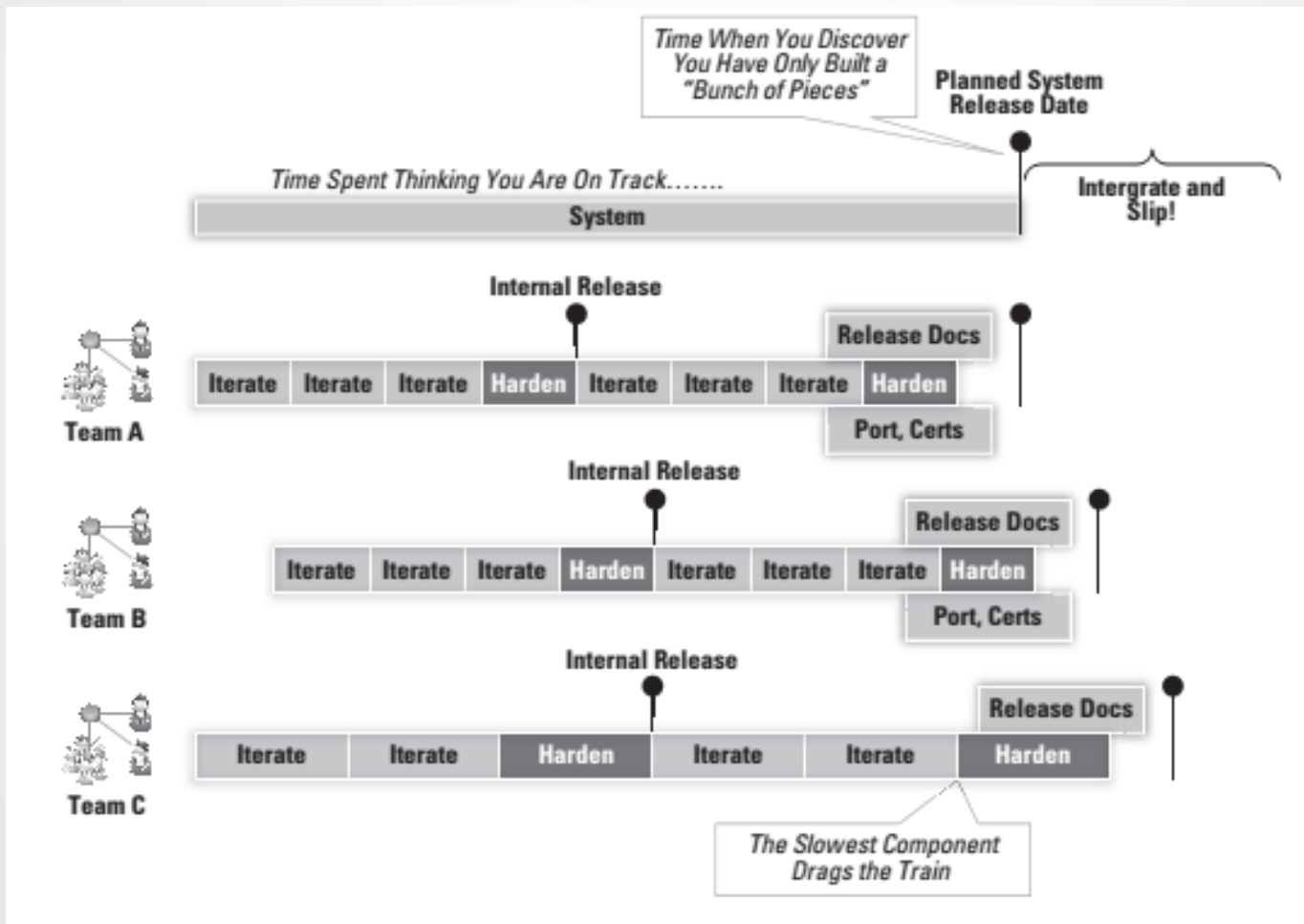
# Agile Release Train (ART)

- Teams and activities are organized around an ongoing series of incremental releases.
- The releases may be **internal** and used for evaluating the system as a whole. In which case we call them **PSIs**, or potentially shippable increments.
- The releases may be made **external**, in that they are made generally available to our customers. In which case the **Release** label is more appropriate.

# Rationale for the ART (1)

- We could release it when we felt like it and whenever the market required it.
- We could do that by just talking among ourselves in the hallways.
- Meet with other stakeholders; quality, sales, marketing, and so on, would all be present.
- How do we harness all that new, empowered, but potentially entropic, energy into a cohesive team of teams that can deliver ever larger and more integrated piles of value to our customers?

# Rationale for the ART (2)



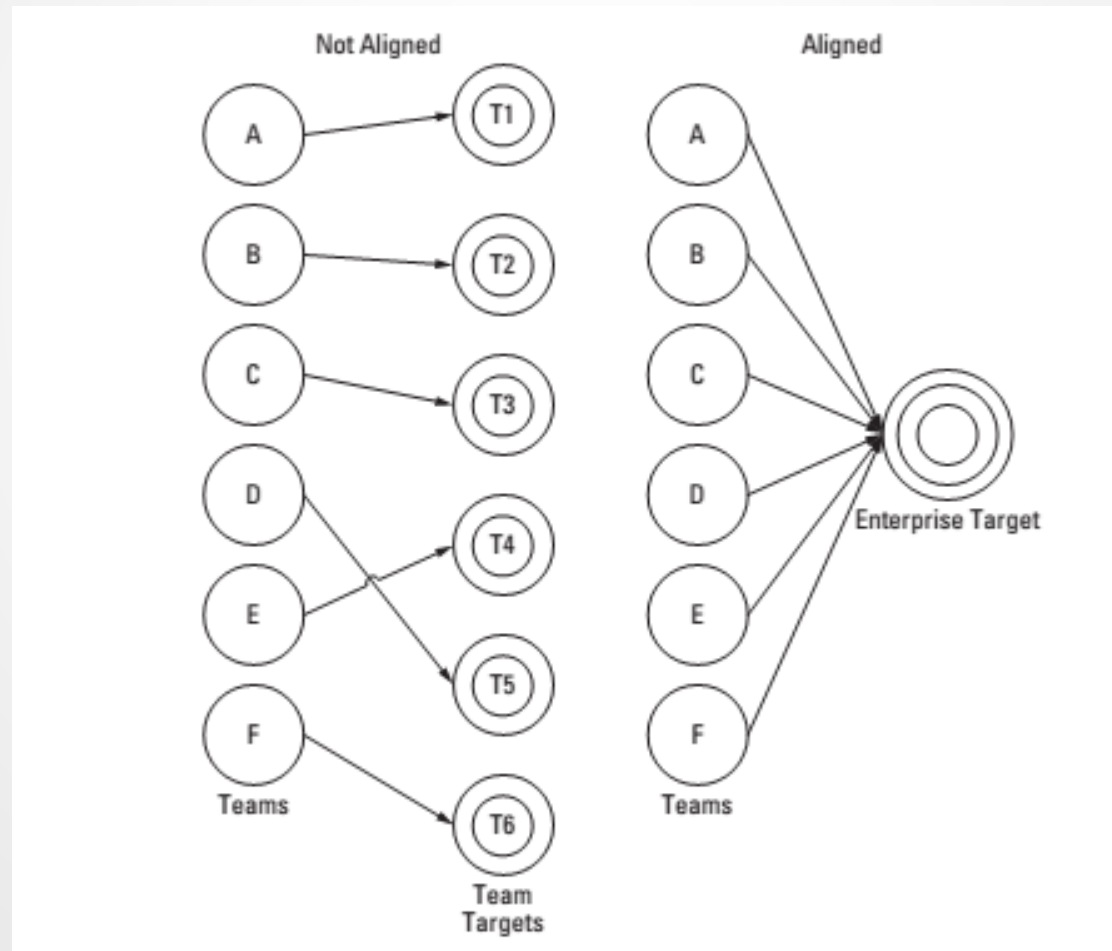
# Principles of the ART (1)

- Frequent, periodic planning and release (or PSI) dates for the solution are fixed.
- Teams apply common iteration lengths.
- Intermediate, global, objective milestones are established.
- Continuous system integration is implemented at the top, system level, as well as at the feature and component levels.
- Release increments (PSIs) are available at regular (60- to 120-day typical) intervals for customer preview, internal review, and system-level QA.

# Principles of the ART (2)

- System-level **hardening** iterations are used to reduce technical debt and to provide time for specialty release-level validation and testing.
- For teams to build on top of like constructs, certain infrastructure components—common interfaces, system development kits, common installs, user stores, licensing utilities, and the like—must typically track ahead.

# Aligning agile teams to a common target





# Institutionalizing Product development flow

- Theme 1, Take an economic view
- Theme 2, Actively manage queues
- Theme 3, Understand and exploit variability
- Theme 4, Reduce batch sizes
- Theme 5, Apply WIP constraints
- Theme 6, Control flow under uncertainty
- Theme 7, Get feedback as fast as possible
- Theme 8, Decentralize control

# Designing the ART

Determine the **release train domain**.

- Who will be planning and working together.
- What products, services, features, or components the train will deliver.
- In the smaller enterprise or business unit, the ART domain consists of everyone.
- If the assets you are building can be built with five to eight agile teams, then the planning domain is the program.

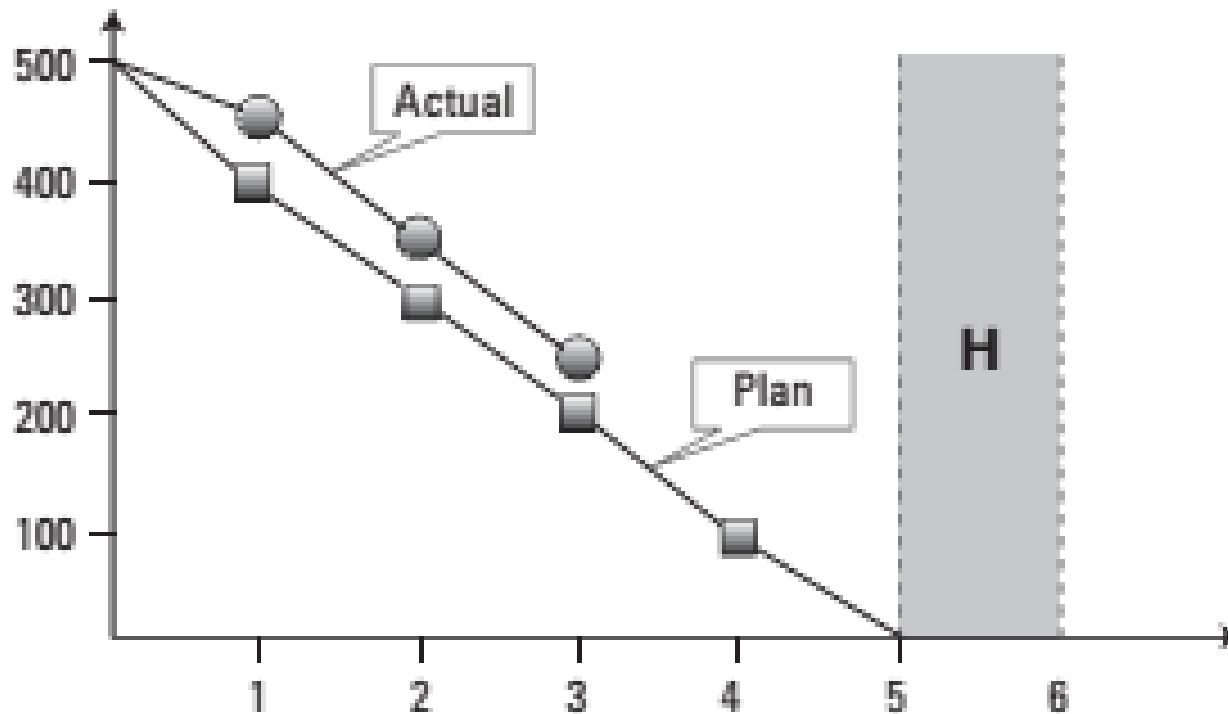
# Domain in Large Teams

- Trains should be focused on a single, primary product, solution, or value theme objective.
- Trains work best when between 50 to 100 people, including stakeholders outside the team, contribute to the train.
- Teams with features and components that have a high degree of interdependencies should plan and work together.
- Locale is a major consideration. Wherever possible, train teams should be co-located, or at least geographic distribution should be as limited as feasible, because that simplifies planning logistics and cooperation among the teams.

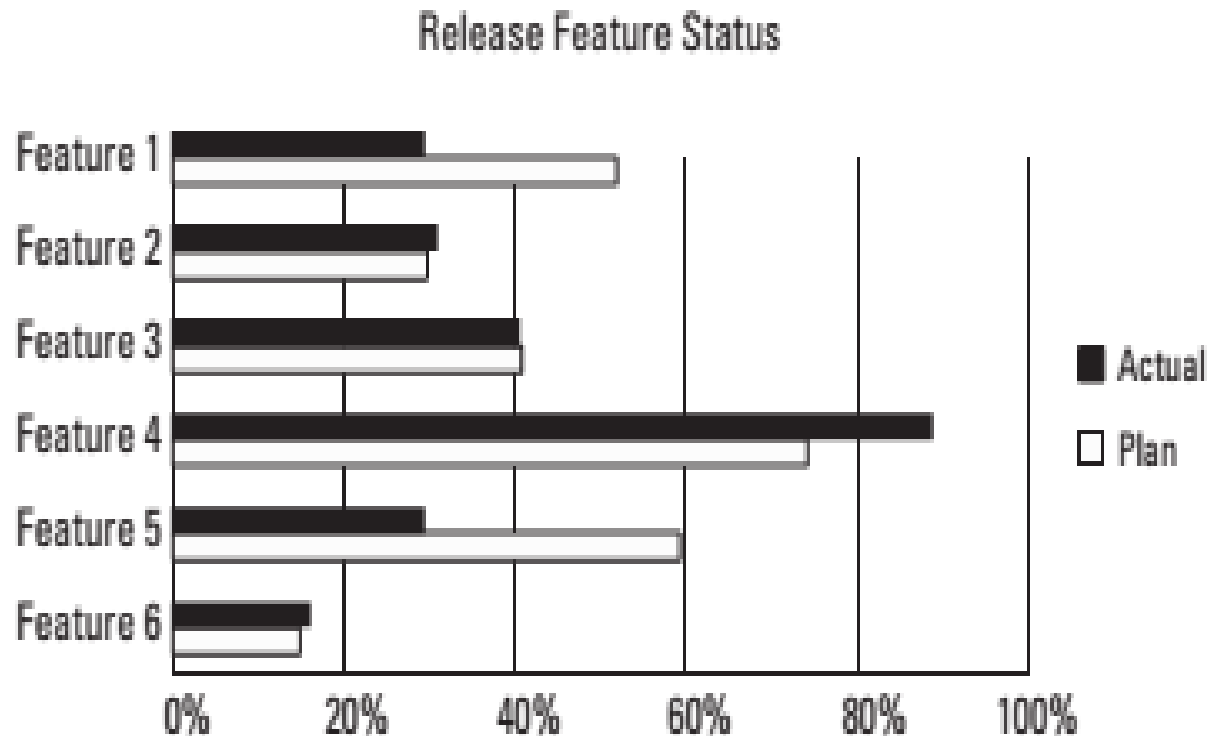
# Release Objectives

<u>Objective</u>	<u>Bus Value</u>
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
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<u>Stretch goals</u>	
All thermostat versions	4
Pricing program 2	8

# Tracking and managing the release (1)



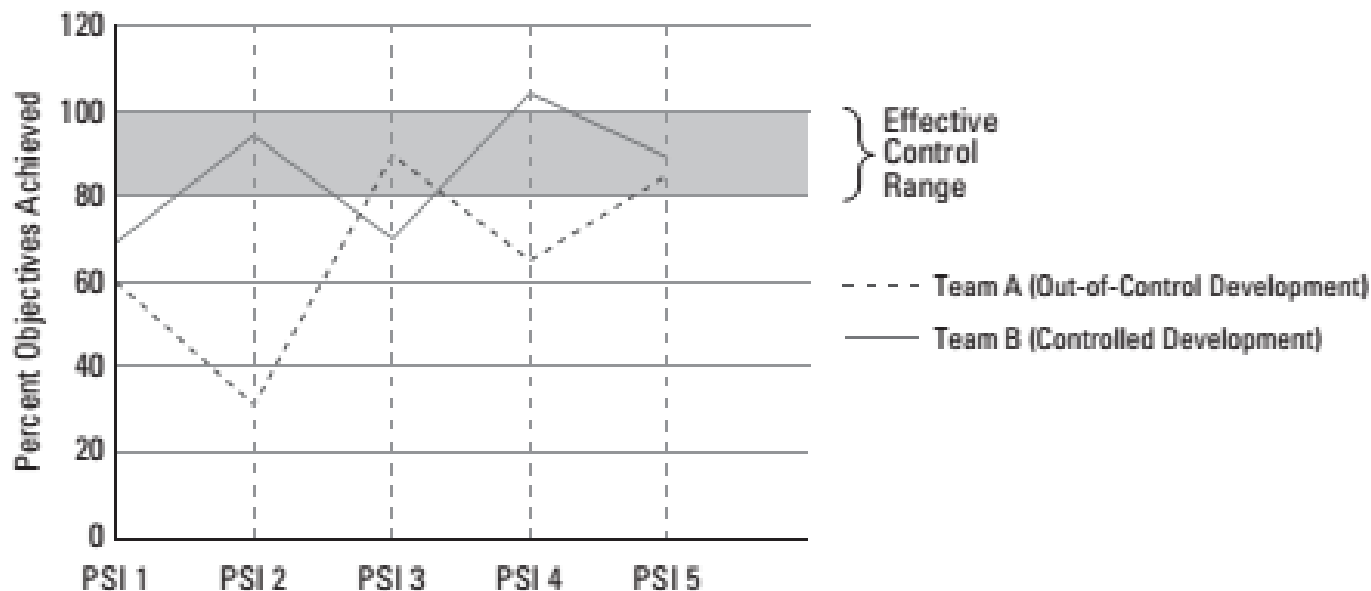
# Tracking and managing the release (2)



# Measuring release Predictability and retro

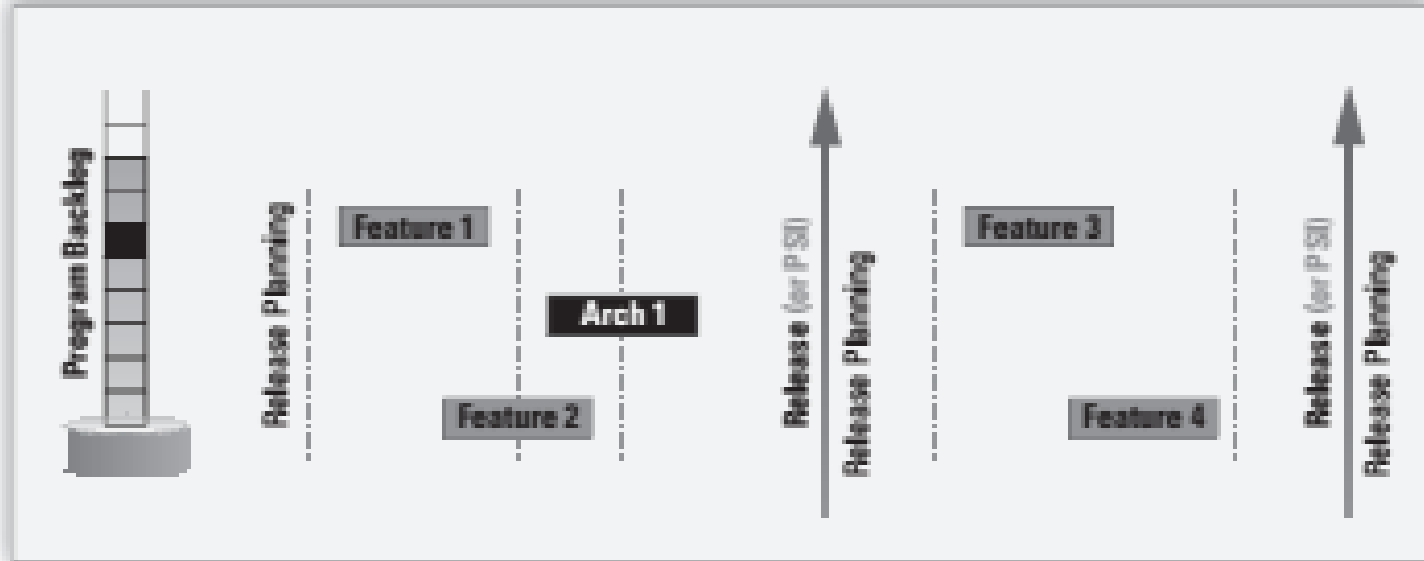
<u>Objective</u>	<u>Bus Value</u>	
	<u>(plan)</u>	<u>actual</u>
1. Thermostat Over-the-Air Update	10	8
2. Next generation thermostat firmware	4	0
2. First pricing programs	10	8
3. Gateway Pointing Rearchitecture	6	4
4. Trade show demo by 3/15	10	10
5. Release v3.1 upgrade to channel	9	9
Totals	49	39
% achievement:	79%	

# Release predictability process control band

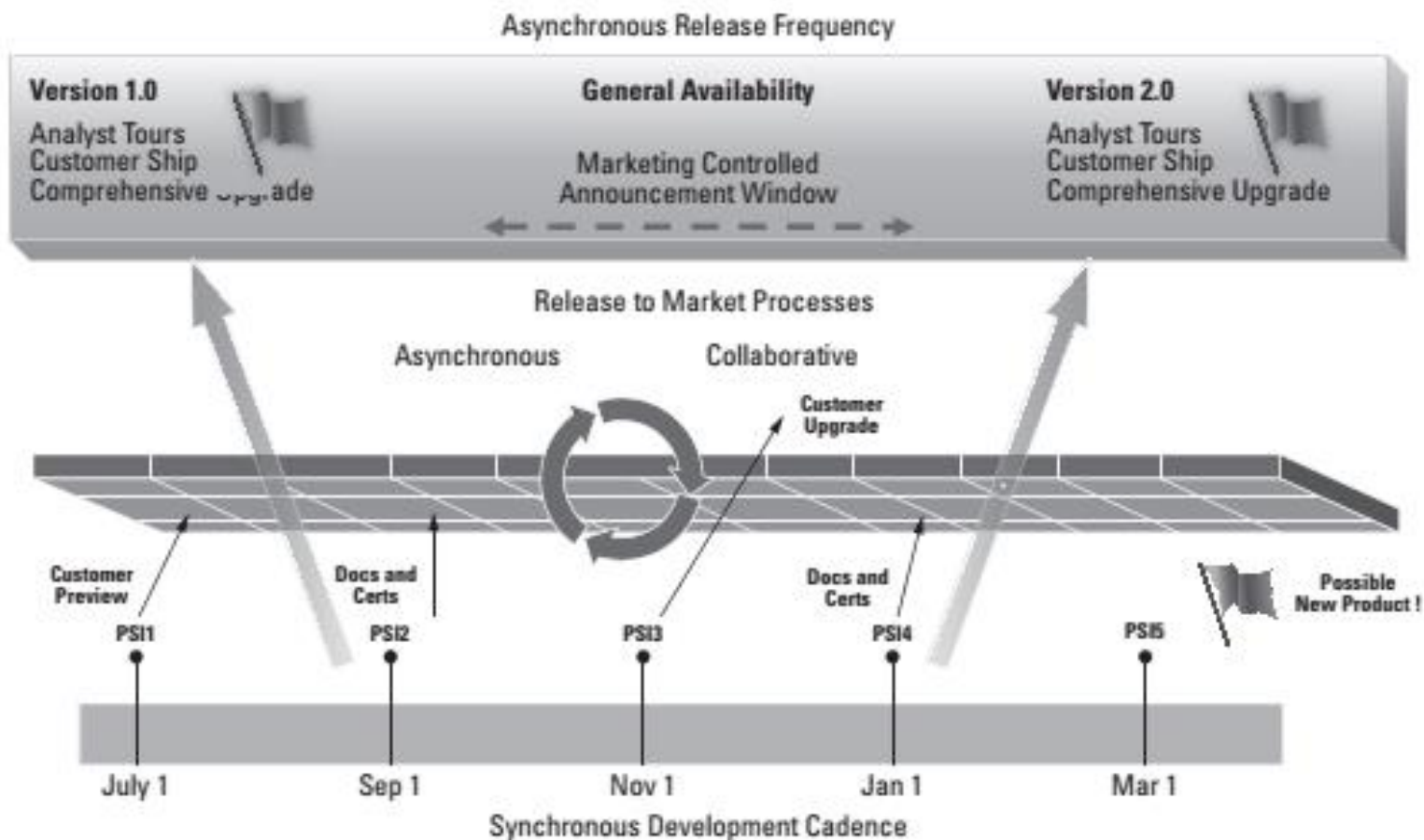




# Releasing on the ART cadence



# Releasing Less Frequently Than the ART Cadence



# Releasing More Frequently Than the ART Cadence

