

# SOFTWARE DEVELOPMENT PROCESSES - II

DR. VIVEK NALLUR

VIVEK.NALLUR@SCSS.TCD.IE

# OUTLINE OF THIS TALK

- eXtreme Programming (XP)
- Scrum

# PHASES OF AN XP PROJECT

- Planning
- Design
- Coding
- Testing

# EXTREME PRACTICES

Good Practice	Pushed to the Extreme
Code Reviews	Pair Programming
Testing	TDD and constant regression
Software Design	Relentless Refactoring
Simplicity	The simplest thing that could possibly work
Integration Testing	Continuous Integration
Short Iterations	The Planning Game

# RELEASE PLANNING

A project can be quantified by four variables:

- Scope: How much is to be done?
- Resources: How many people are available?
- Time: When will the release happen?
- Quality: How well-tested is the release?

Choose any 3. Management chooses 2, dev team chooses 1.

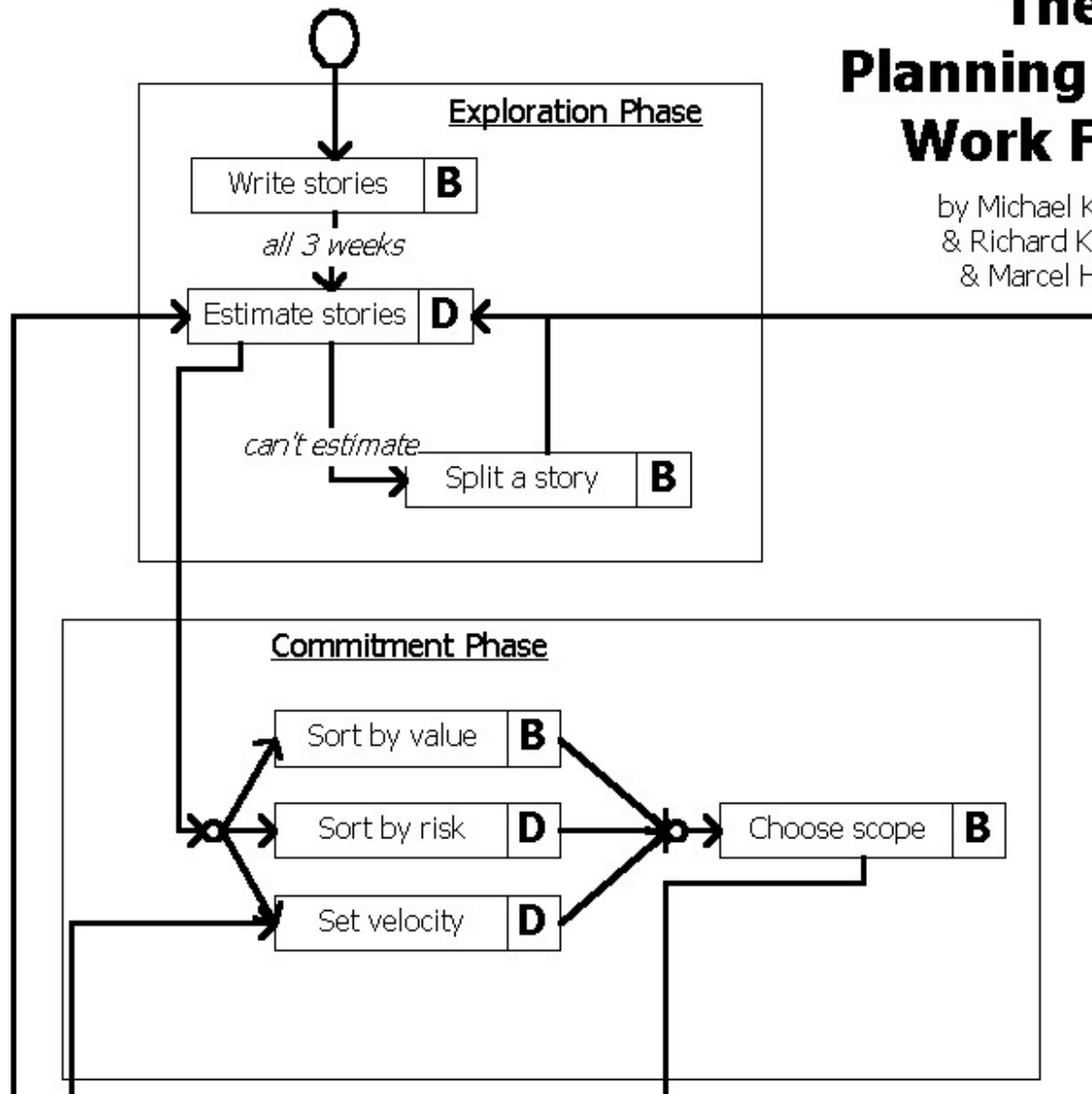
## RELEASE PLANNING - II

- Create user stories
- Estimate ideal programming weeks for each story
  - No dependencies, no extra work
  - Include tests
- Customer decides which story has highest priority
- Project velocity is used to calculate number of iterations left

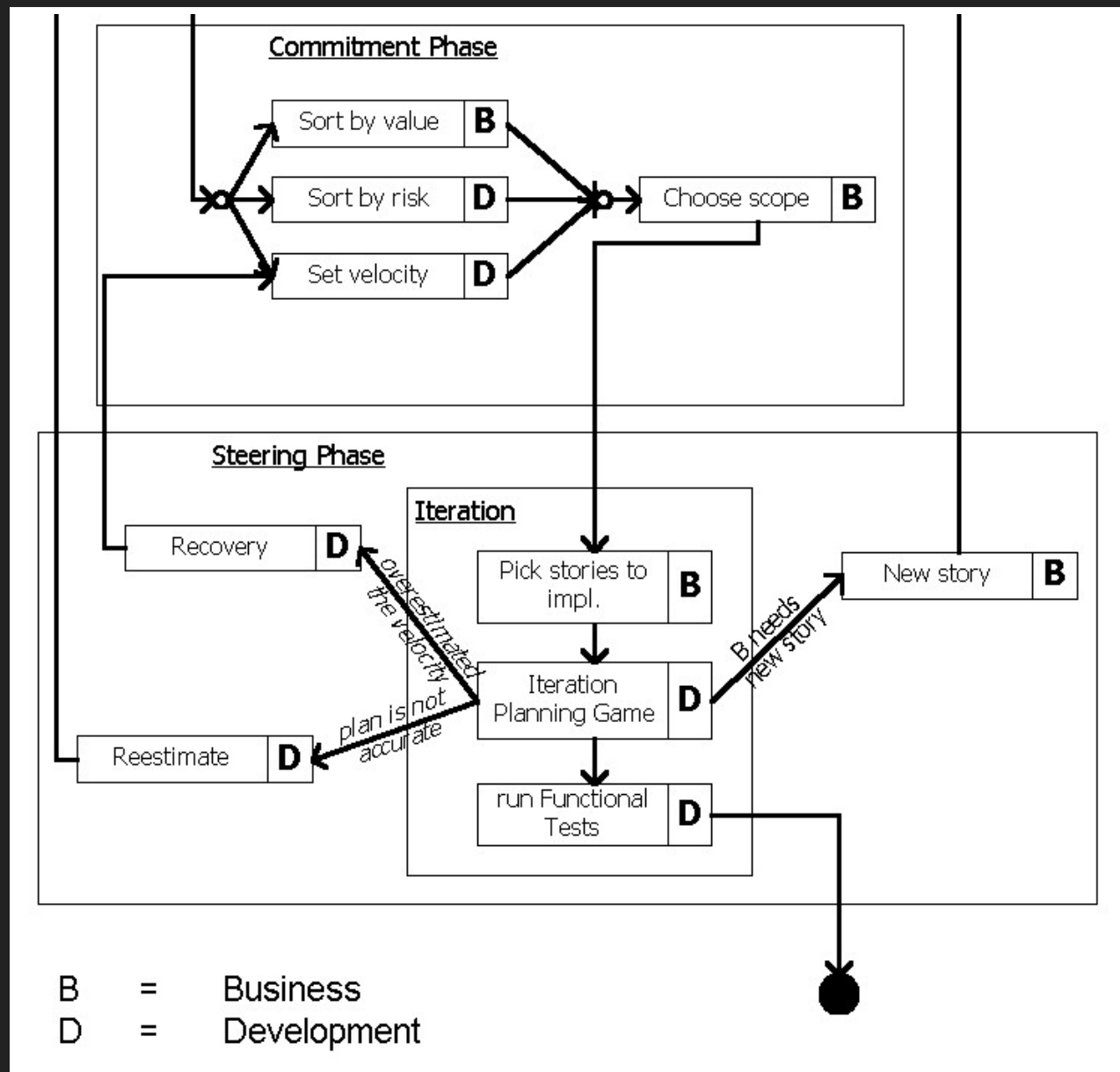
# THE PLANNING GAME - I

## The Planning Game Work Flow

by Michael Karneim  
& Richard Karneim  
& Marcel Helling



# THE PLANNING GAME - II



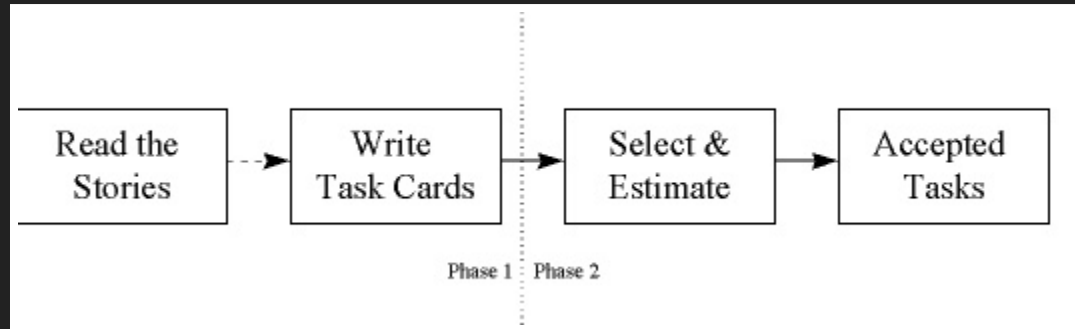


# STORY POINT

Story point



# ITERATION PLANNING

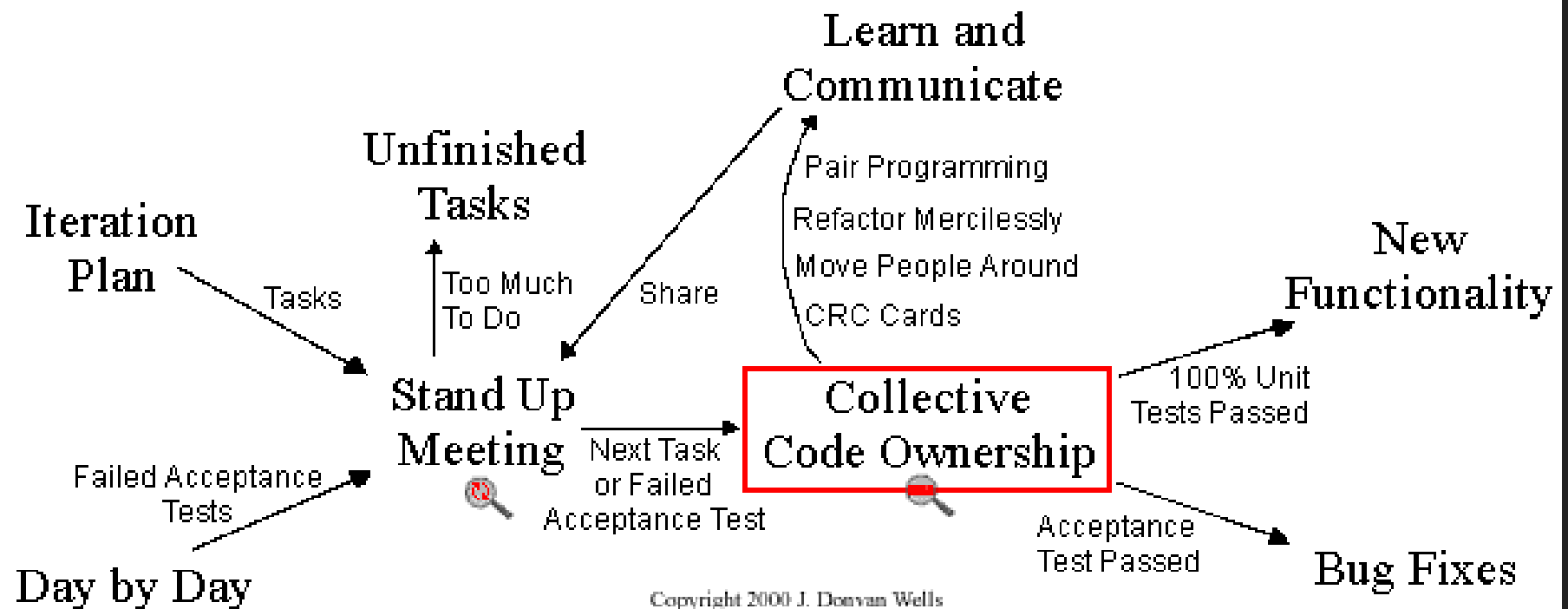


# DEVELOPMENT

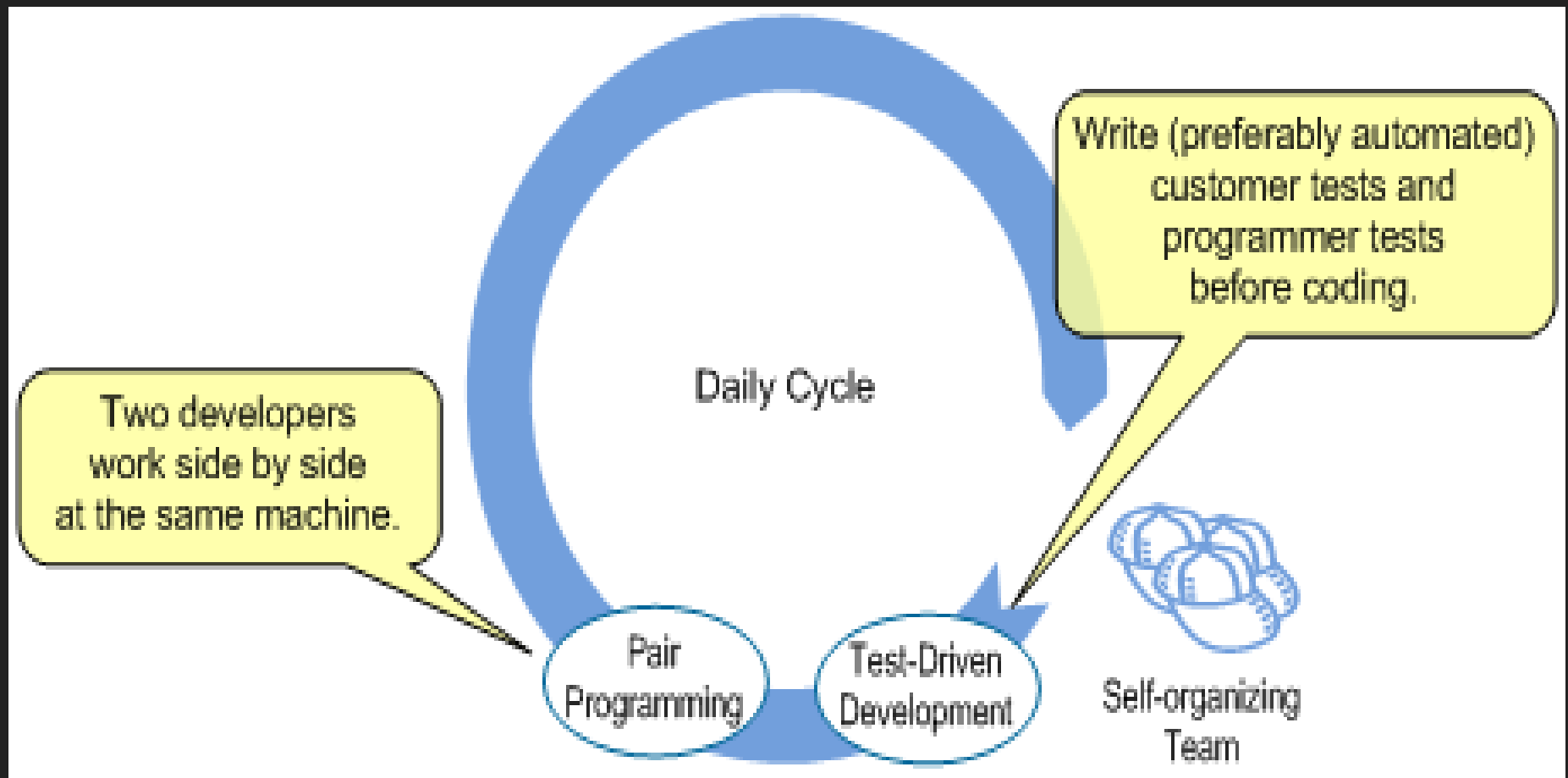


## Development

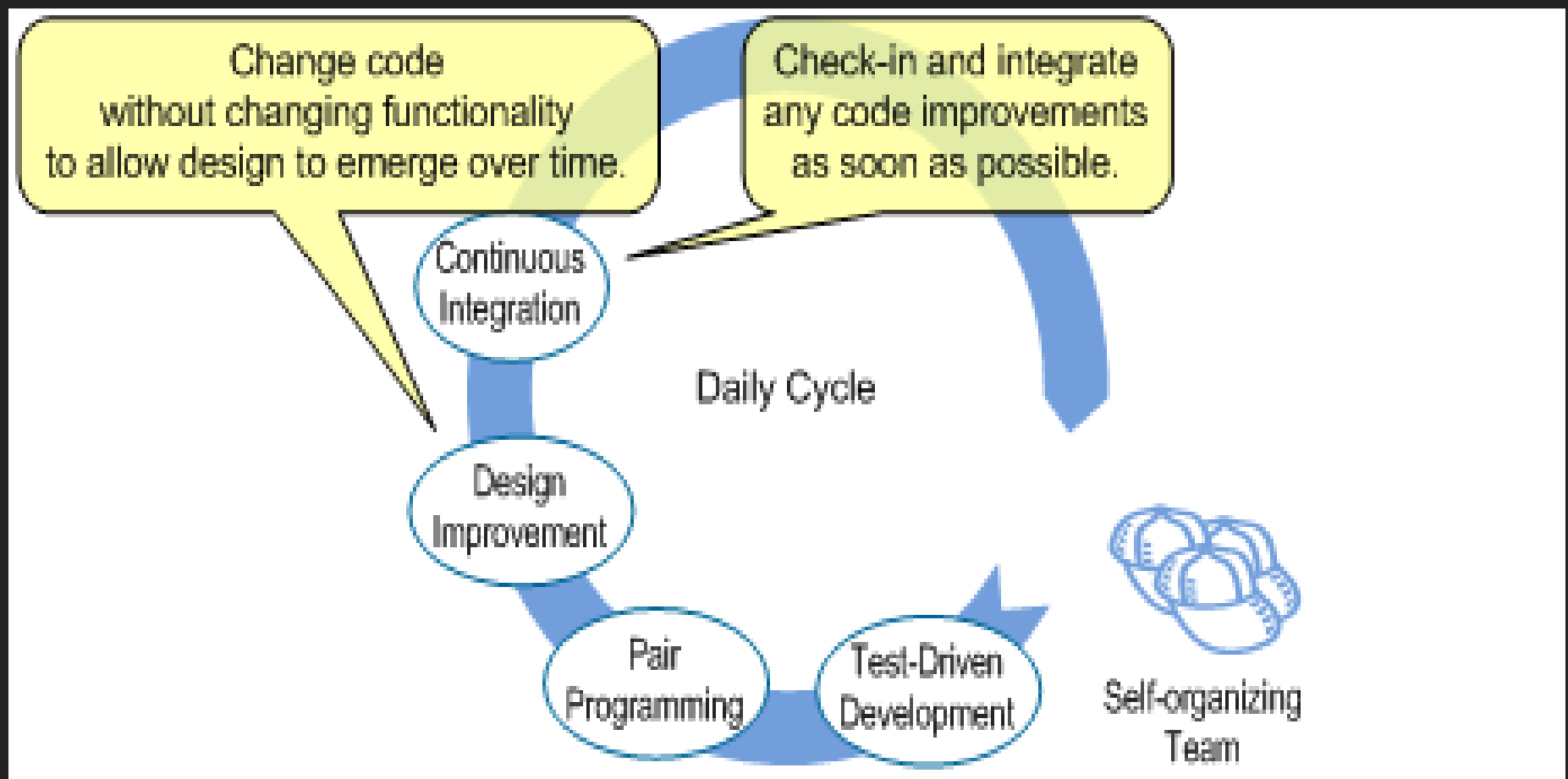
Zoom Out



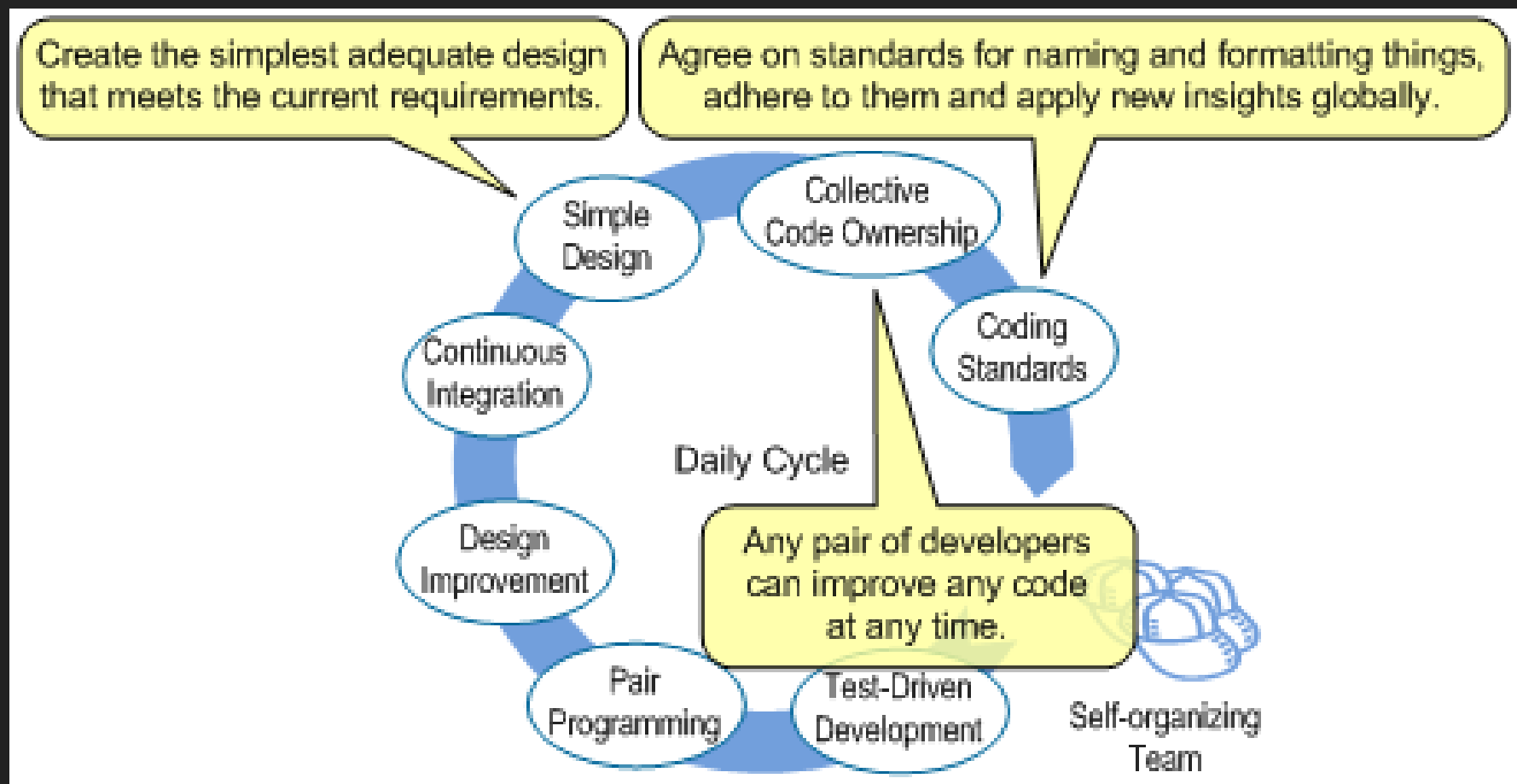
# CODING



# CONTINUITY

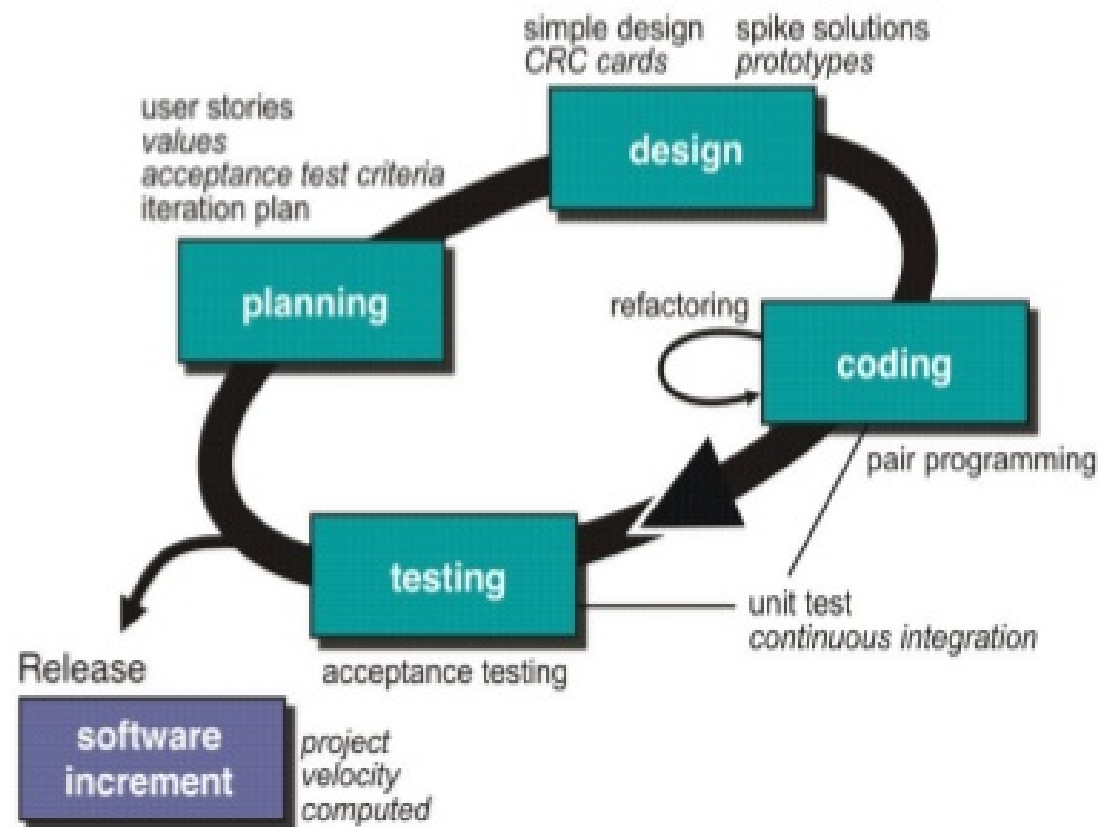


# KEEPING DEVELOPMENT SANE AND UNDERSTANDABLE



# XP IN A NUTSHELL

# Extreme Programming (XP)

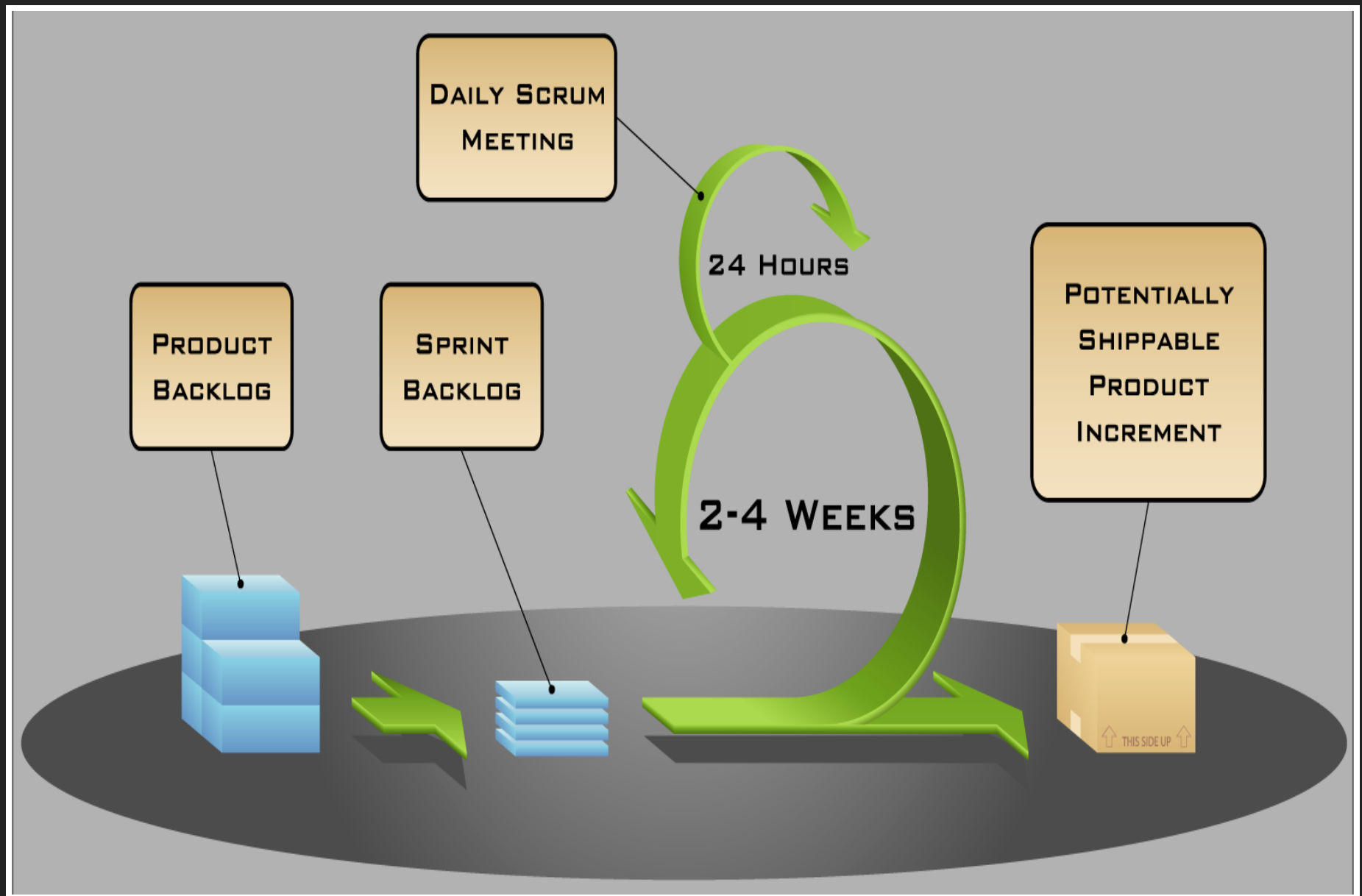




# SCRUM

Hiroataka Takeuchi and Ikujiro Nonaka introduced the word 'scrum' in reference to a tightly-knit cross-functional team, where the team "tries to go the distance as a unit, passing the ball back and forth"

# THE SCRUM WORKFLOW



## 12 CONCEPTS OF SCRUM

- *3 roles*: Product Owner, Scrum Master, Self-Organizing Team
- *4 work products*: Product Backlog, Sprint Backlog, Defn of Done, Usable Increment
- *5 events*: Sprint planning meeting, Work Breakdown meeting, Sprint cycle, Sprint review meeting, Retrospective

# PRODUCT OWNER - PRODUCT BACKLOG

- The product owner writes customer-centric items
- The product owner creates and adds items to the Product Backlog
- The product owner prioritizes items on the Product Backlog

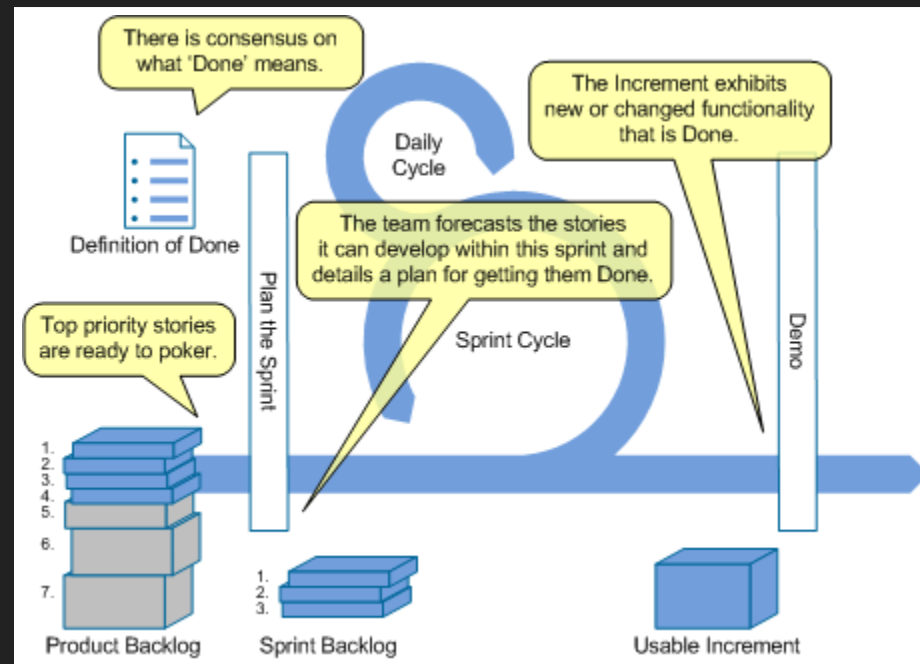
# SPRINT BACKLOG

- A sprint is the basic unit of development. Time-boxed in advance.
- A sprint planning meeting creates the Sprint Backlog and Definition of Done
- A sprint review meeting updates the Sprint Backlog

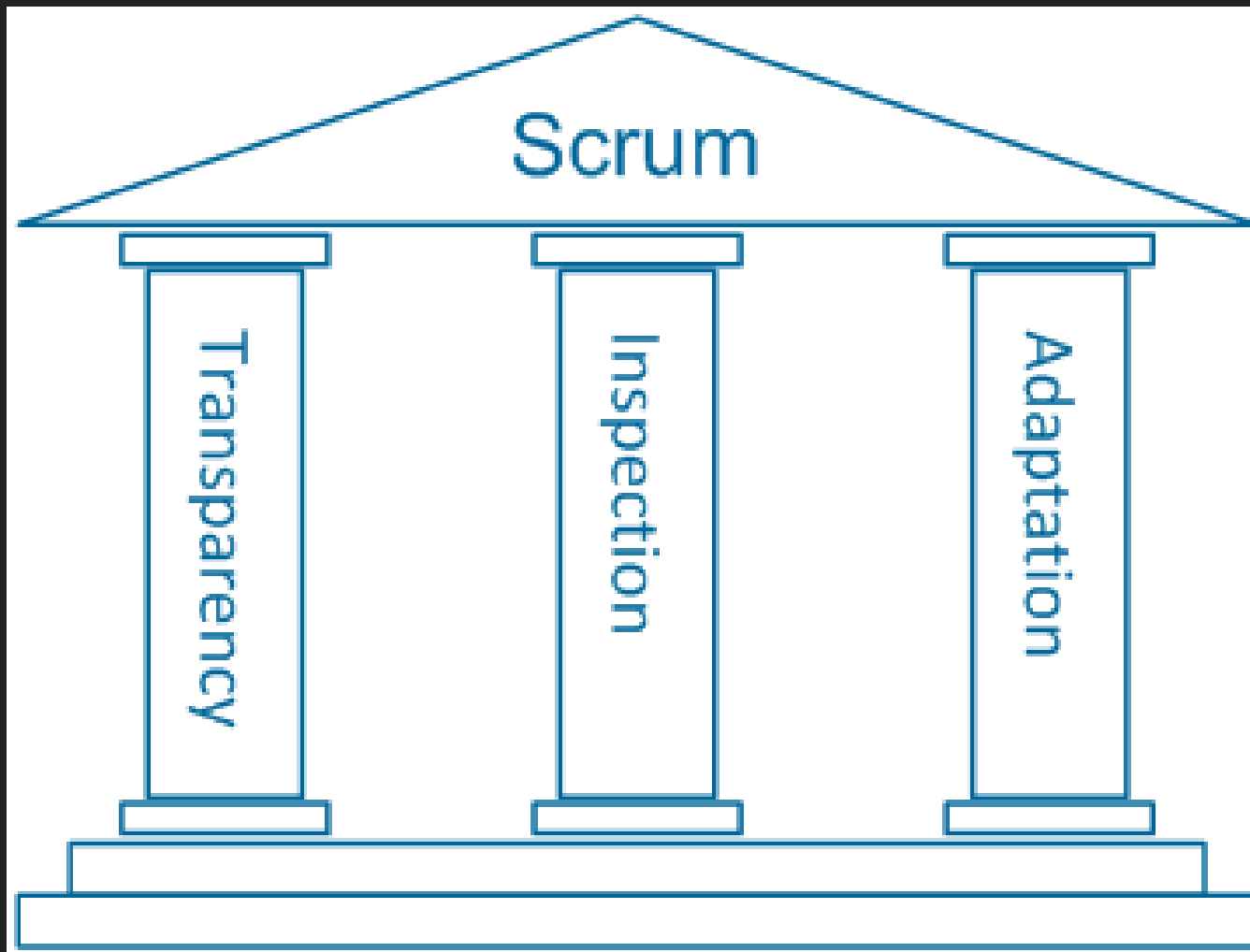
# SPRINT PLANNING MEETING

- Select items from Product Backlog to be delivered in current sprint cycle
- Work-Breakdown meeting to detail items in Sprint Backlog
- Identify risks on ROAM board

# SCRUM WORK PRODUCTS



# PILLARS OF SCRUM





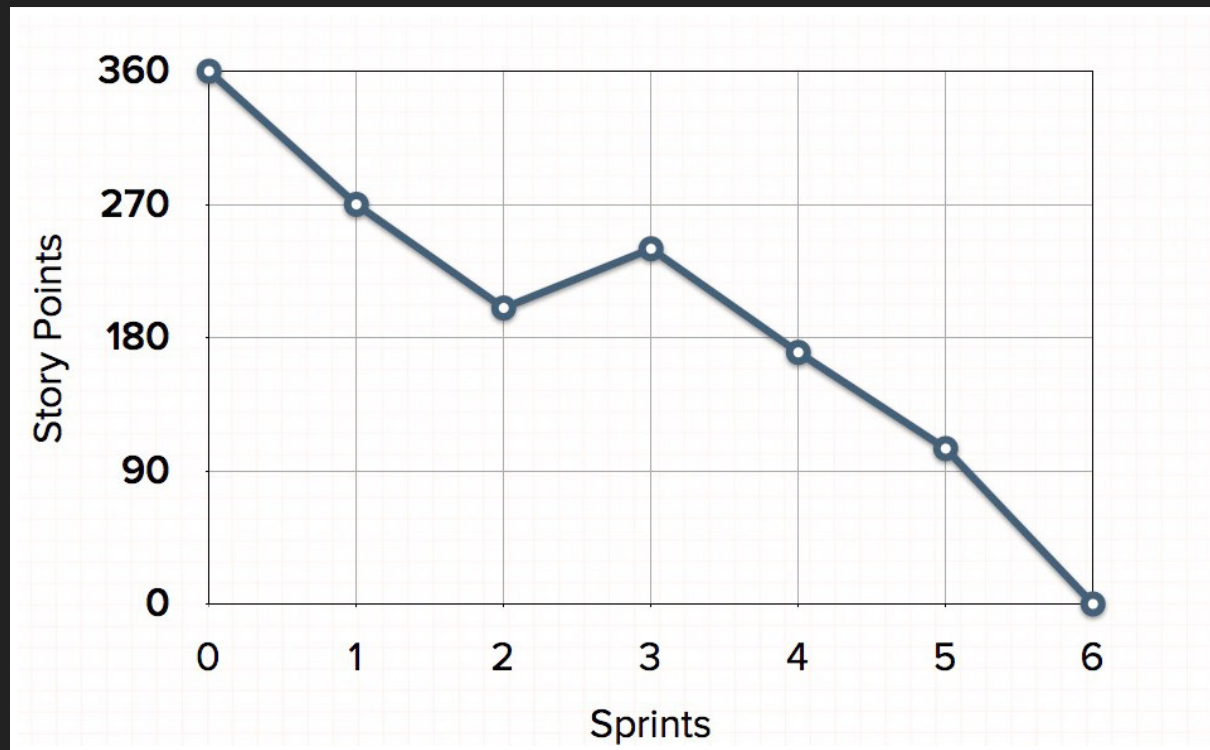
# THE DAILY SCRUM

- Happens everyday; limited to 15 minutes
- Three questions to answer:
  - What did I do yesterday to meet the Sprint goal?
  - What will I do today to meet the Sprint goal?
  - Do I see any impediment/risk that prevents me from meeting the Sprint goal?

# ROAM BOARD

- *Resolved*: Risk has been avoided or eliminated
- *Owned*: Team-member(s) volunteer to be responsible for risk
- *Accepted*: Risk is accepted but nothing will be done in this sprint cycle
- *Mitigated*: Risk has been mitigated, reducing either likelihood / impact

# RELEASE BURNDOWN CHART



# SPRINT RETROSPECTIVE

- Immediately after the sprint cycle
- Three main questions for discussion:
  - What went well during the current sprint cycle?
  - What went wrong during the current sprint cycle?
  - What could we do differently to improve?
- Apply, rinse, repeat

## NOW THAT YOU KNOW ALL ABOUT SCRUM ...

- Choose your team's scrum-master (team-leader)
- Sprint-cycle deliverables will be committed to the scrum-master's repository
- Final deliverables of the project too

## SPRINT-CYCLE DELIVERABLES

- Updated release burndown chart
- Updated Product Backlog
- Update Sprint Backlog

## PRODUCT-OWNER MEETINGS

- Each scrum-master will meet with product-owner for sprint review meetings
- Sprint review meetings will be held at designated time
- Sprint cycle deliverables must be committed to repository for sprint review

**FOR MORE INFORMATION**

<https://www.scss.tcd.ie/Vivek.Nallur/teaching/>



**THAT'S ALL, FOLKS!**

---

Questions? Comments?