Powerful Refinements with BDD

Trainers: Geoffrey van der Tas & Mehmet Sahingöz

Date: 16-10-2018

Who is us?

Geoffrey
van der Tas

Age: 29

Agile Test Lead
2 Years at Ordina

Experience: 6,5 Years in Testing
4 Years Agile/Scrum
Hobbies: Running, Fitness,
beers with friends.
Weakness: My Cat

Mehmet
Sahingöz

Age: 31

Agile Test Automation
Consultant
4 Years at Ordina

Experience: 4 Years in Agile Testing
Hobbies: Gaming, Dancing,
Family and Friends.
Weakness: My daughter

Training Values

Introduction – Get in Line!

Years experience do you have in IT?

How much with Agile/SCRUM?

How often do you build software that ends up not being used?

How often do you build software that's needs rework after deployment?

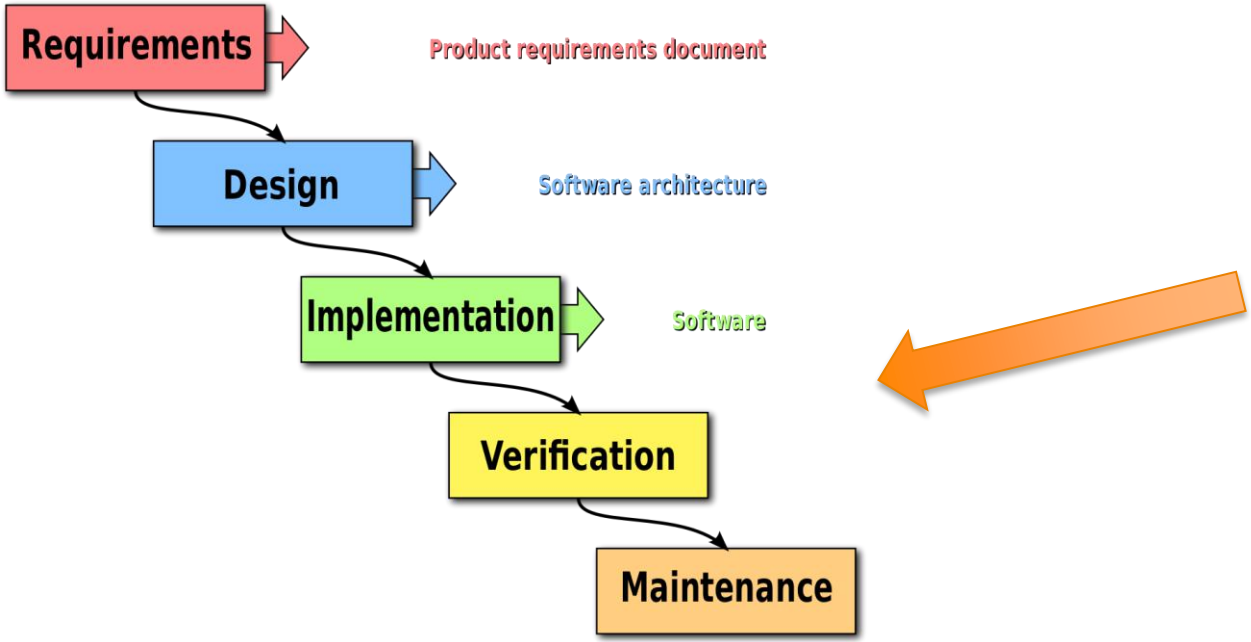
How much do you know about BDD?

How much do you know about Gherkin?

And finally, how enthusiastic are you about today?

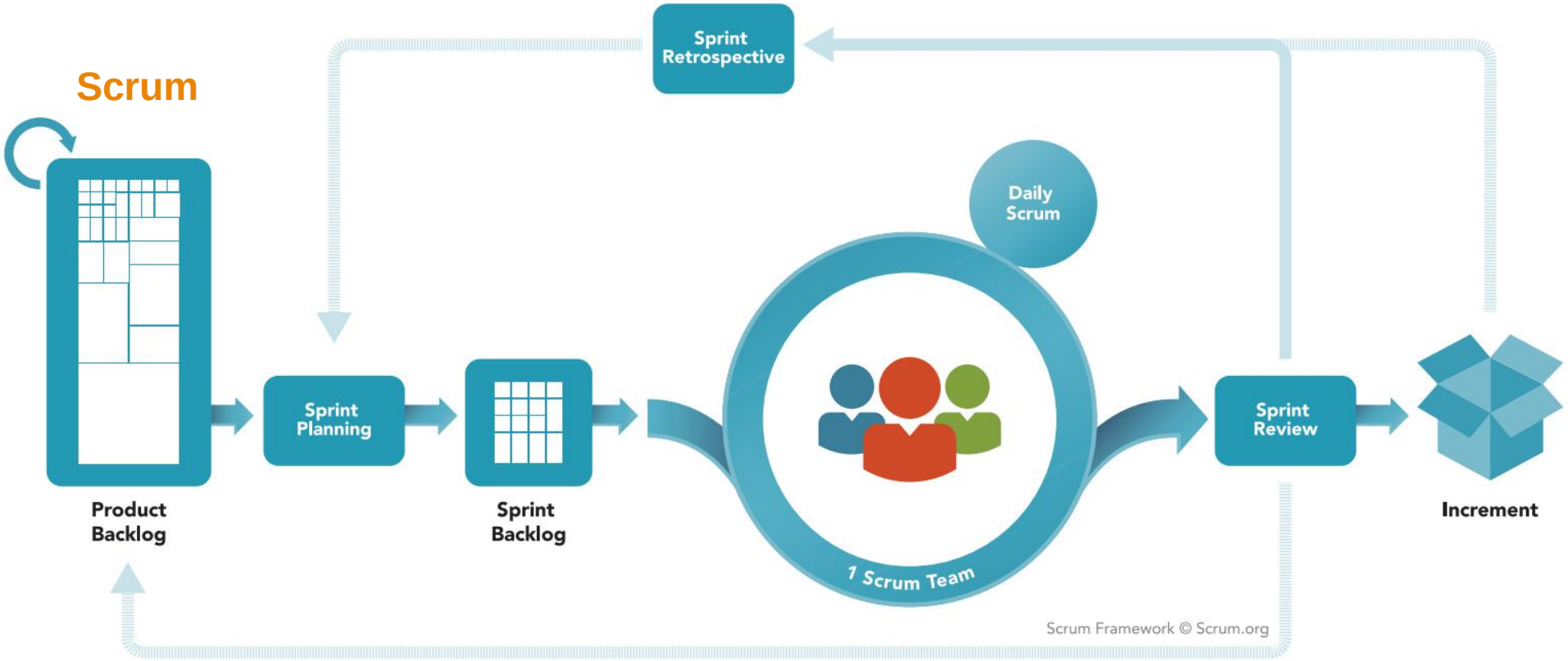
- **Agile mindset & Scrum Basics**
- Refinements – Who to invite?
- Refinement technique: Specification by Example
- Refinement technique: Example Mapping
- Refinement technique: Feature Mapping
- Creating Useable Gherkin
- Best Development Practices

Waterval

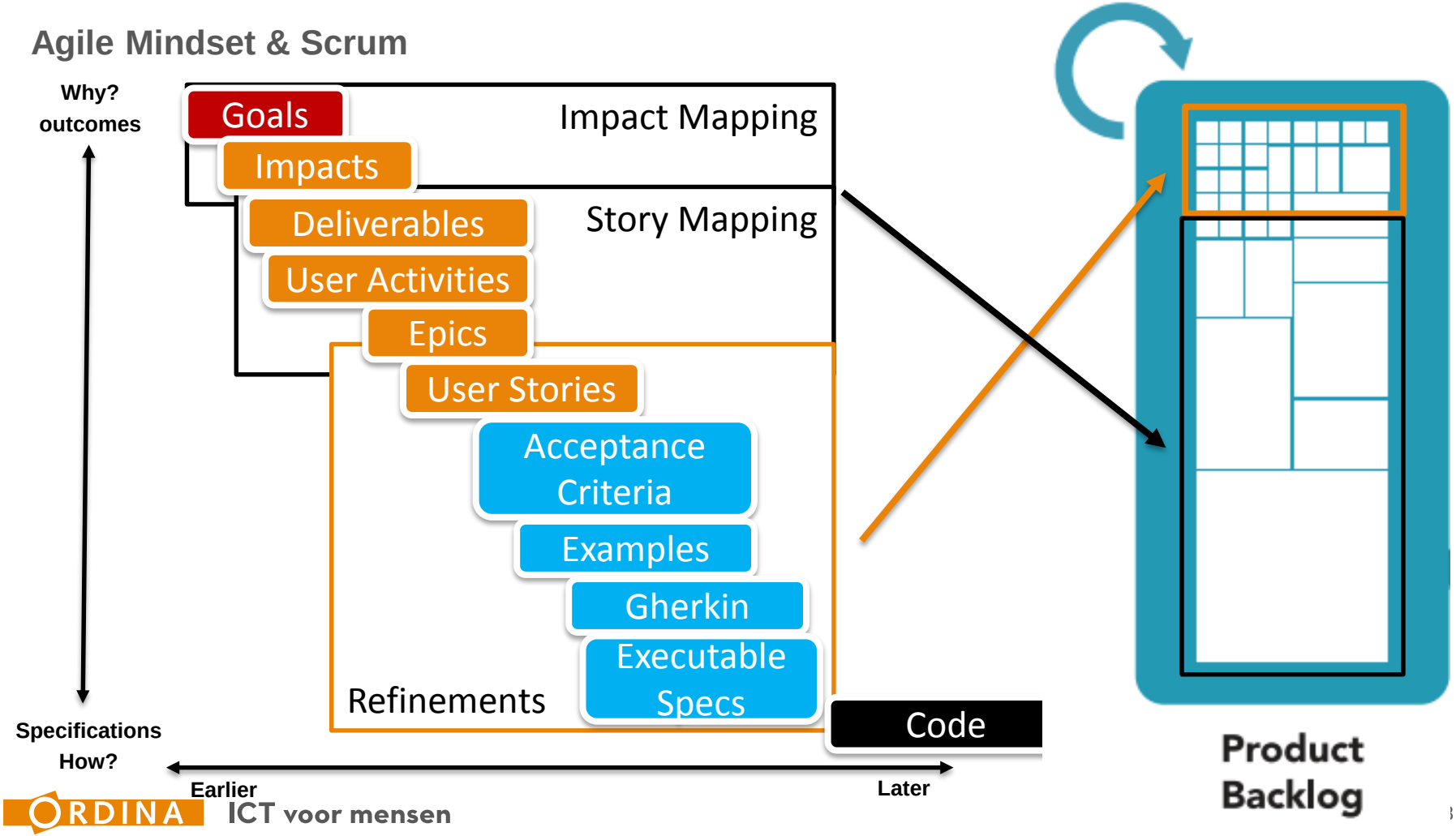

Requirements
Product requirements document
Design
Software architecture
Implementation
Software
Verification
Maintenance

Agile Mindset & Scrum

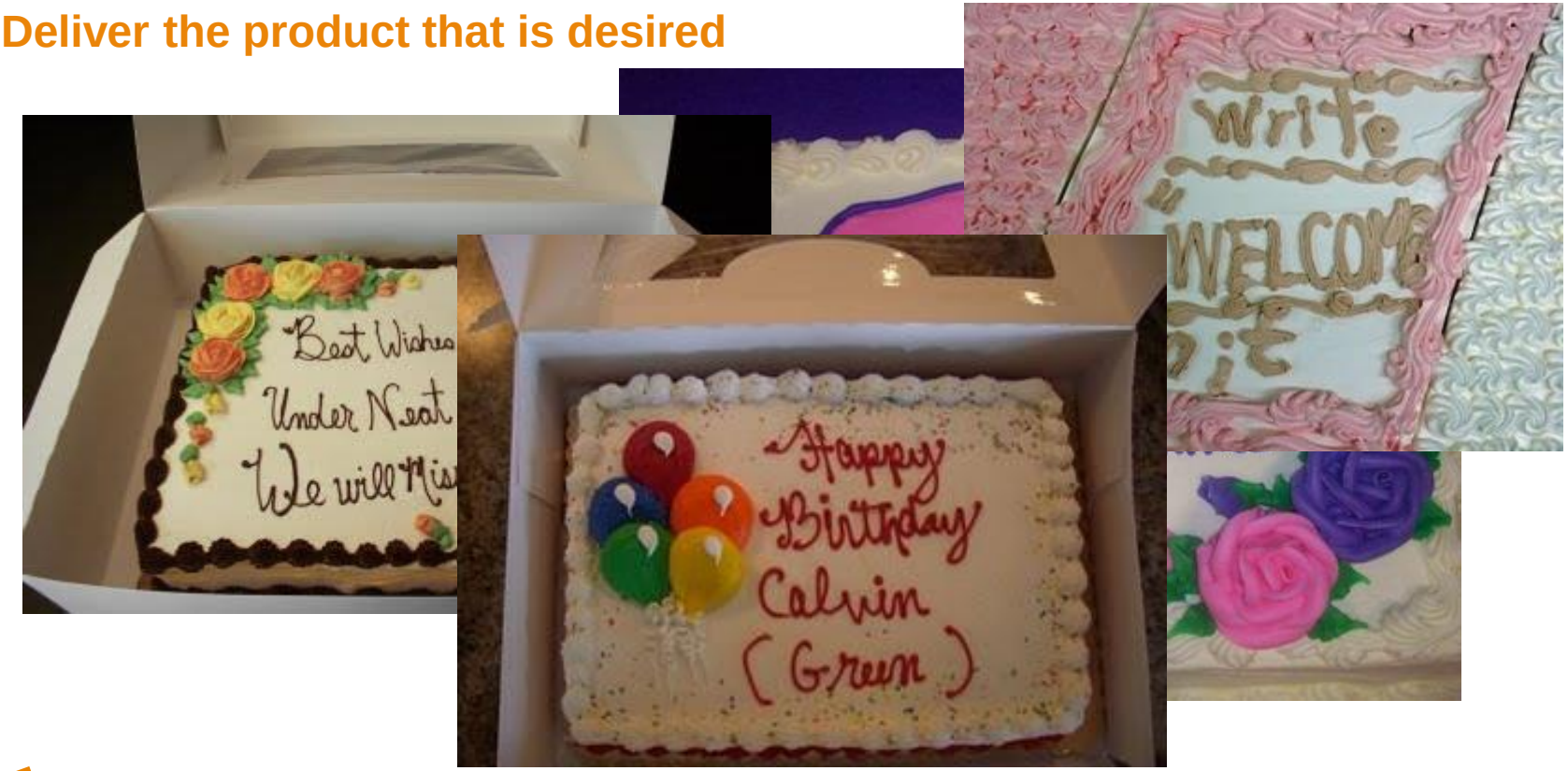
Scrum



Agile Mindset & Scrum



Deliver the product that is desired



Refinement basics

- According to the Scrum guide:
  - Product Backlog refinement is the act of adding detail
  - During Product Backlog refinement, items are reviewed and revised
  - The Scrum Team decides how and when refinement is done
  - Refinement usually consumes no more than 10% of the capacity of the Development Team

https://www.scrumguides.org/index.html

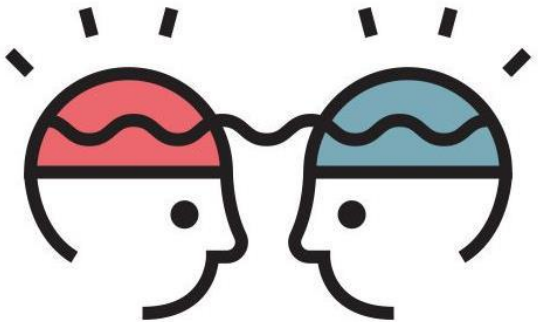
Refinements

Common understanding

- Shared vision, idea’s and alignment on what was discussed;

- To accomplish this:

Use **Examples** and describe **Behavior**



- Agile mindset & Scrum Basics
- **Refinements – Who to invite?**
- Refinement technique: Specification by Example
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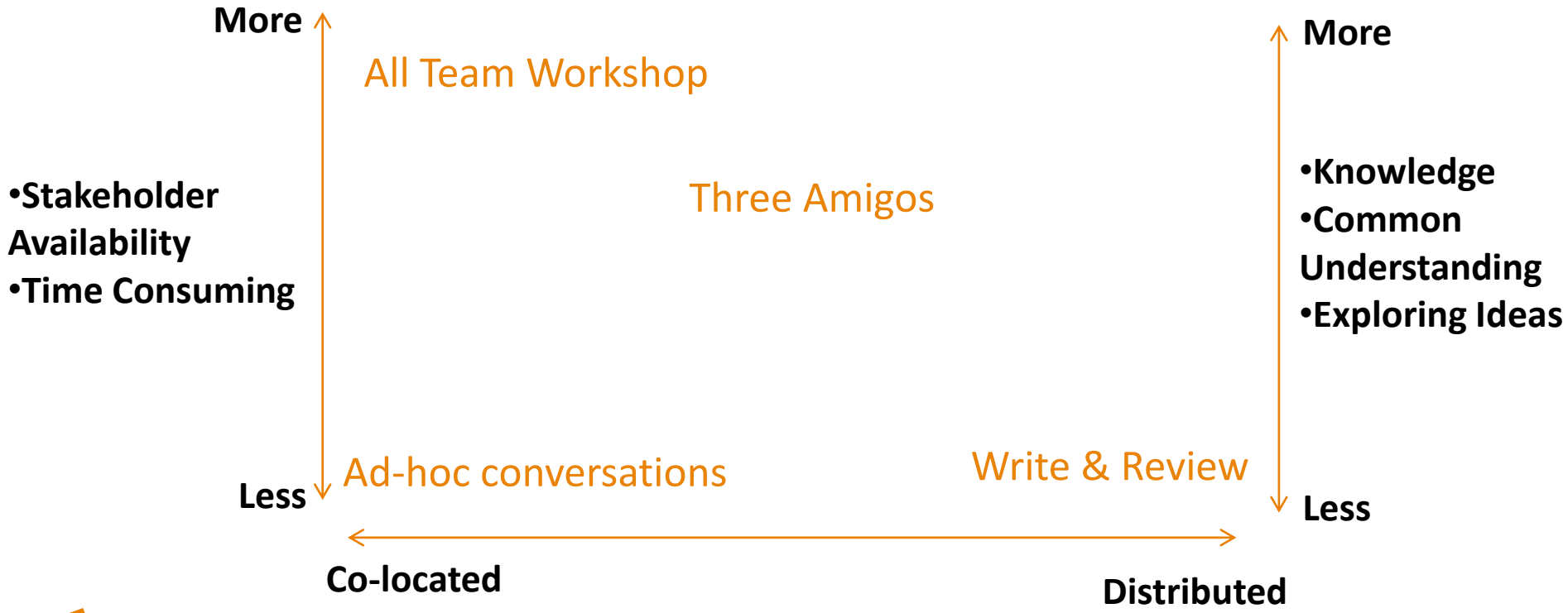
- Creating Useable Gherkin
- Best Development Practices

Refinements – Who to invite

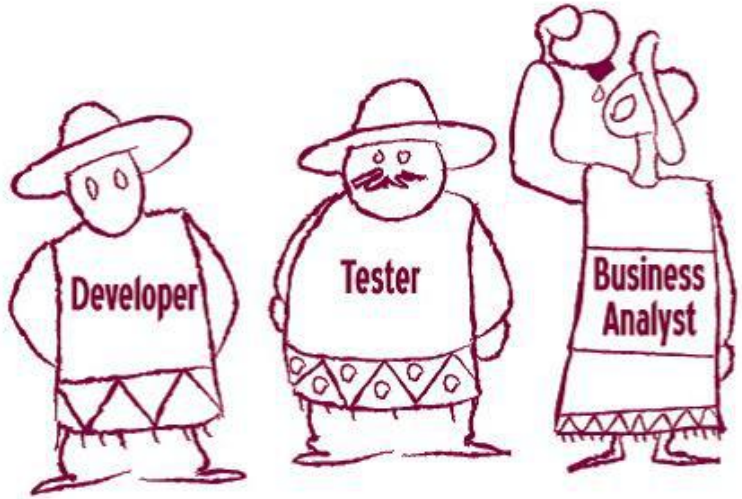
Specification by Example
By Gojko Adzic

Options



Refinements – Who to invite

Three Amigo's



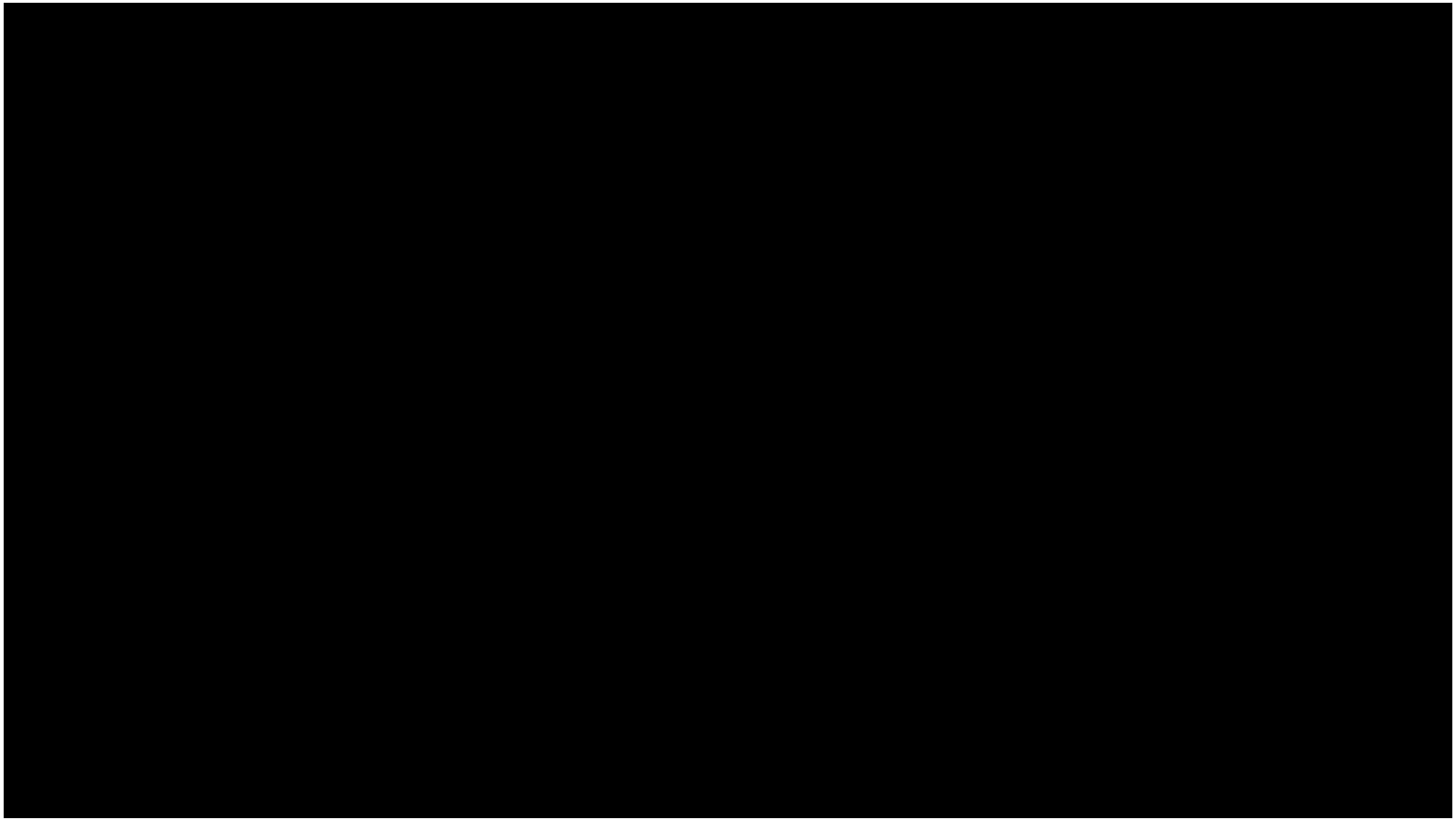
Refinements – Who to invite

Three Amigo's

Refinements – Who to invite

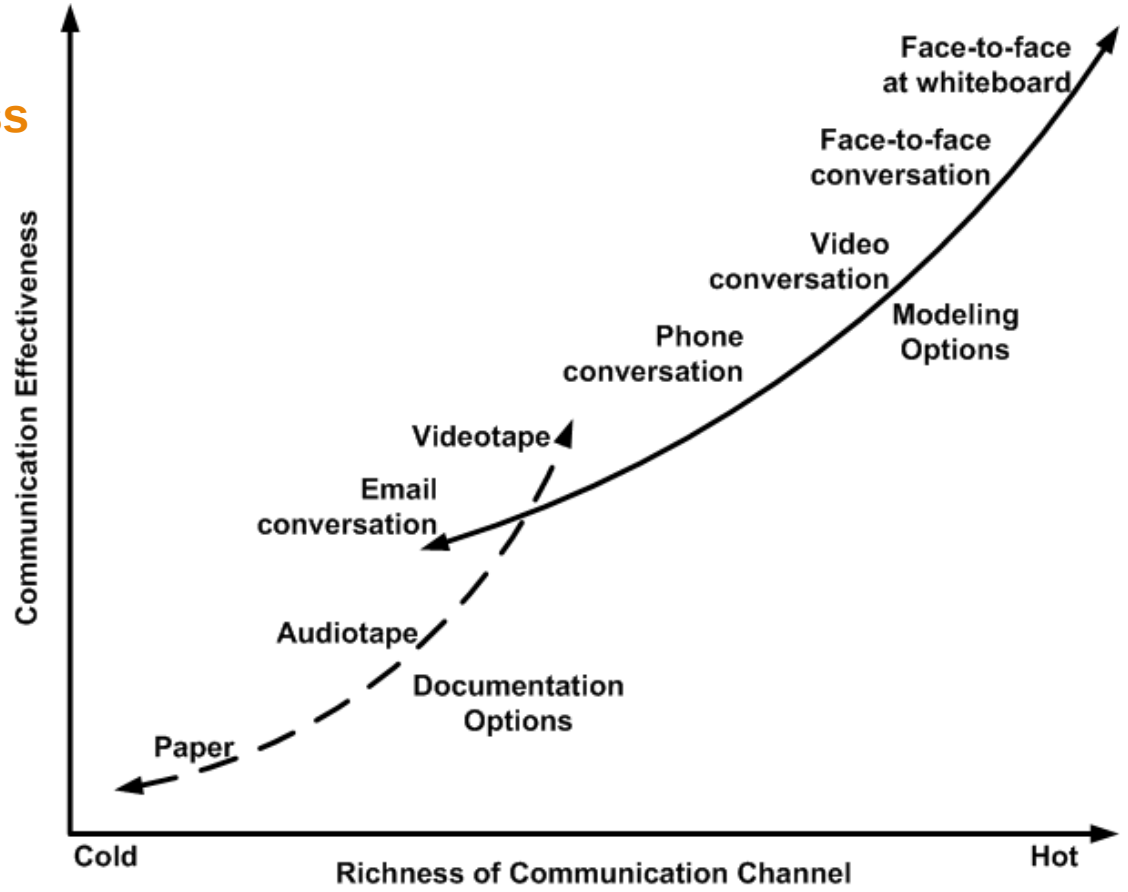
All Team workshop

Refinements – Who to invite



Refinements – Who to invite

Communication Richness



Your refinements, what are they going to look like?

Who will be there?

What items would you need?

Team-up, go to flipchart and start!

You have 15 minutes!

- Agile mindset & Scrum Basics
- Refinements – Who to invite?
- **Refinement technique: Specification by Example**
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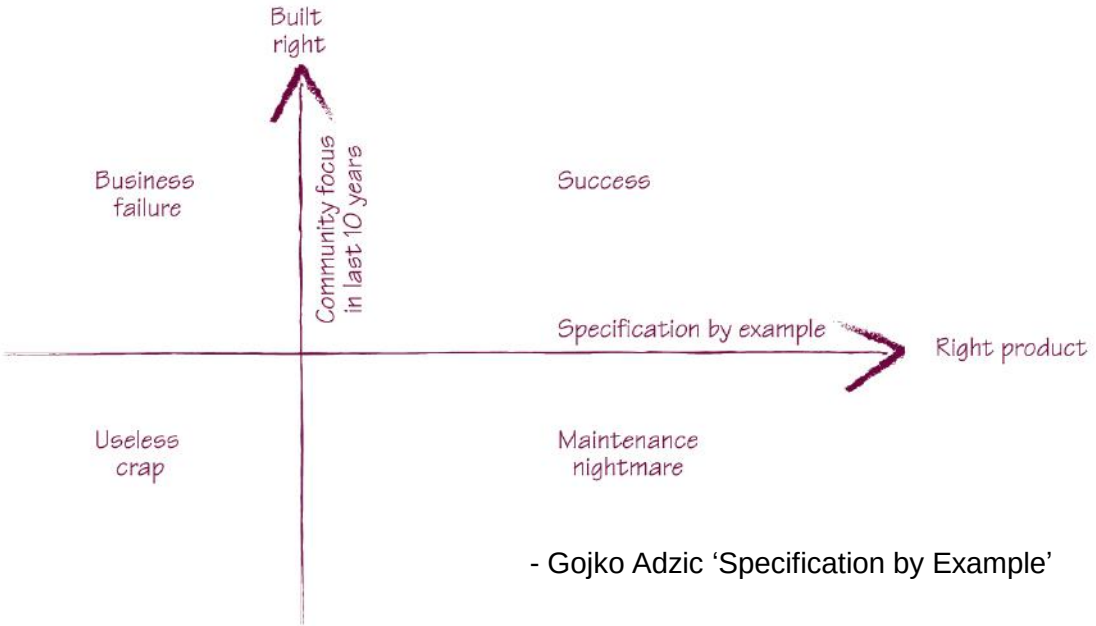
Specification by Example

Building the product right and *building the right product* are two different things. We need to do both in order to succeed

- Gojko Adzic ‘Specification by Example’



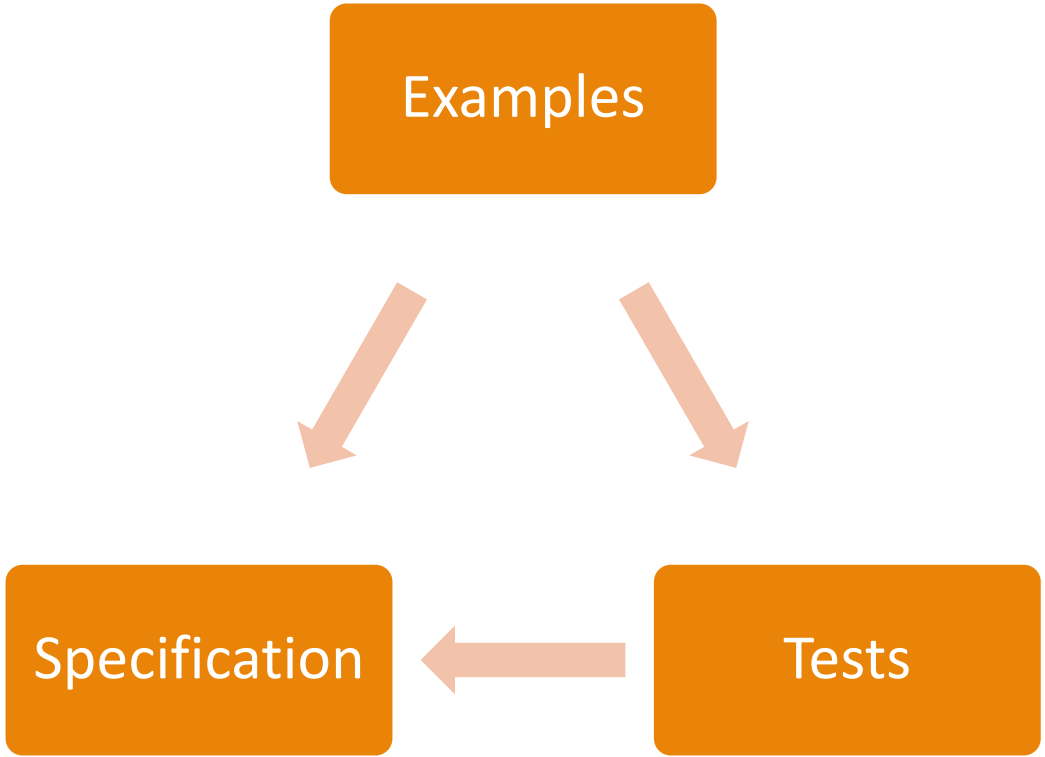
- Gojko Adzic ‘Specification by Example’

Build the tests

1. Read the Specifications;
2. Write Tests in teams of 2/3 people;
3. You have 5 minutes

Refinement Technique: Specification by Example

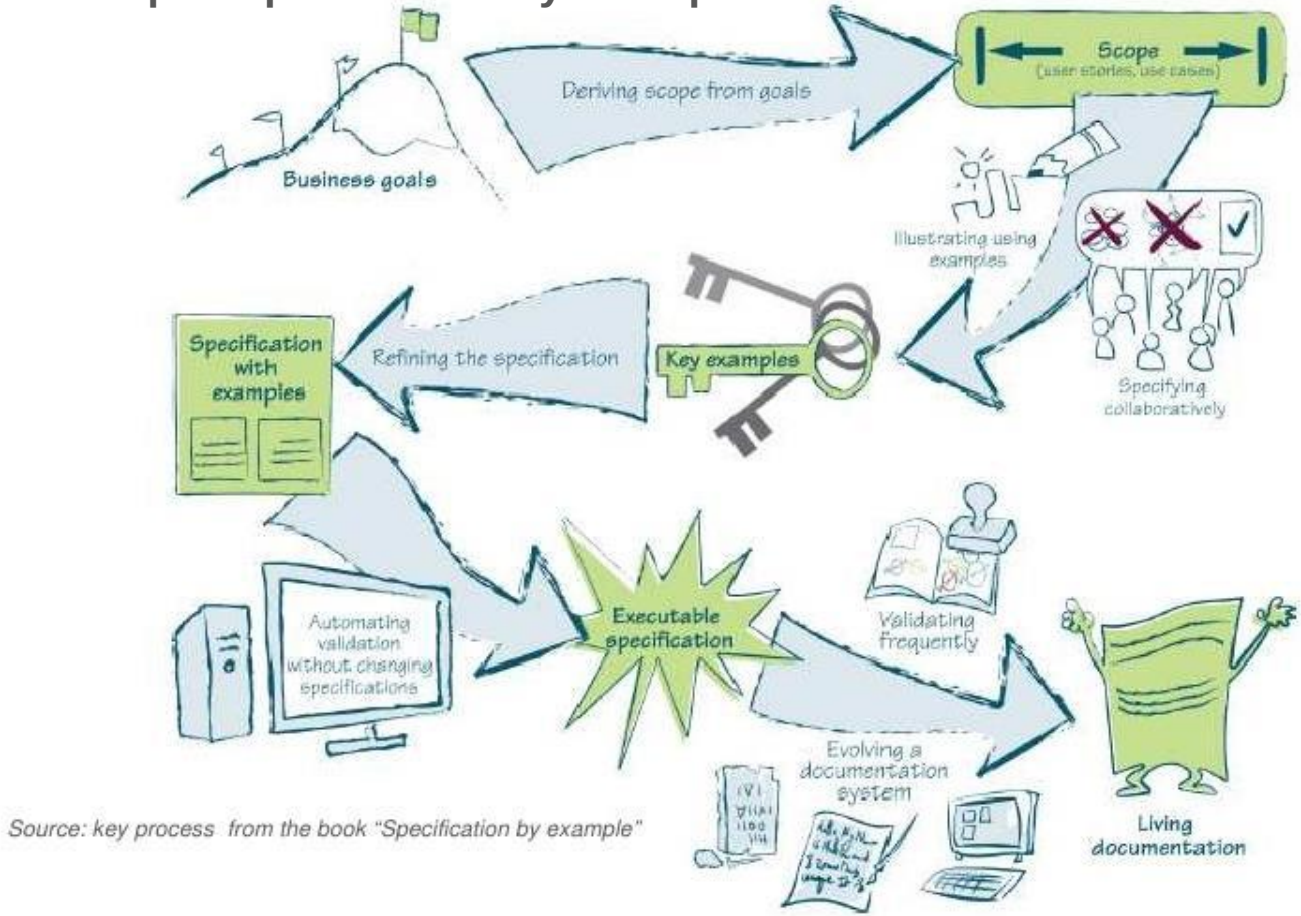
Refinement Technique: Specification by Example



Now Specification by Example

1. Determine knowledge within the group
2. Divide teams based on knowledge (3 / 5 people)
3. Start with creating examples
4. Share knowledge between teams
5. Align on a model & create new teams
6. Share knowledge
7. Ask acknowledgement for Shared Understanding

Refinement Technique: Specification by Example



Source: key process from the book "Specification by example"

Refinement Technique: Specification by Example

Key Example

- Boundary value
- Behavior change
- Testable
- Understandable by all

- Agile mindset & Scrum Basics
- Refinements – Who to invite?
- Refinement technique: Specification by Example
- **Refinement technique: Example Mapping**
- Refinement technique: Feature Mapping
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- Best Development Practices

Why: Example Mapping

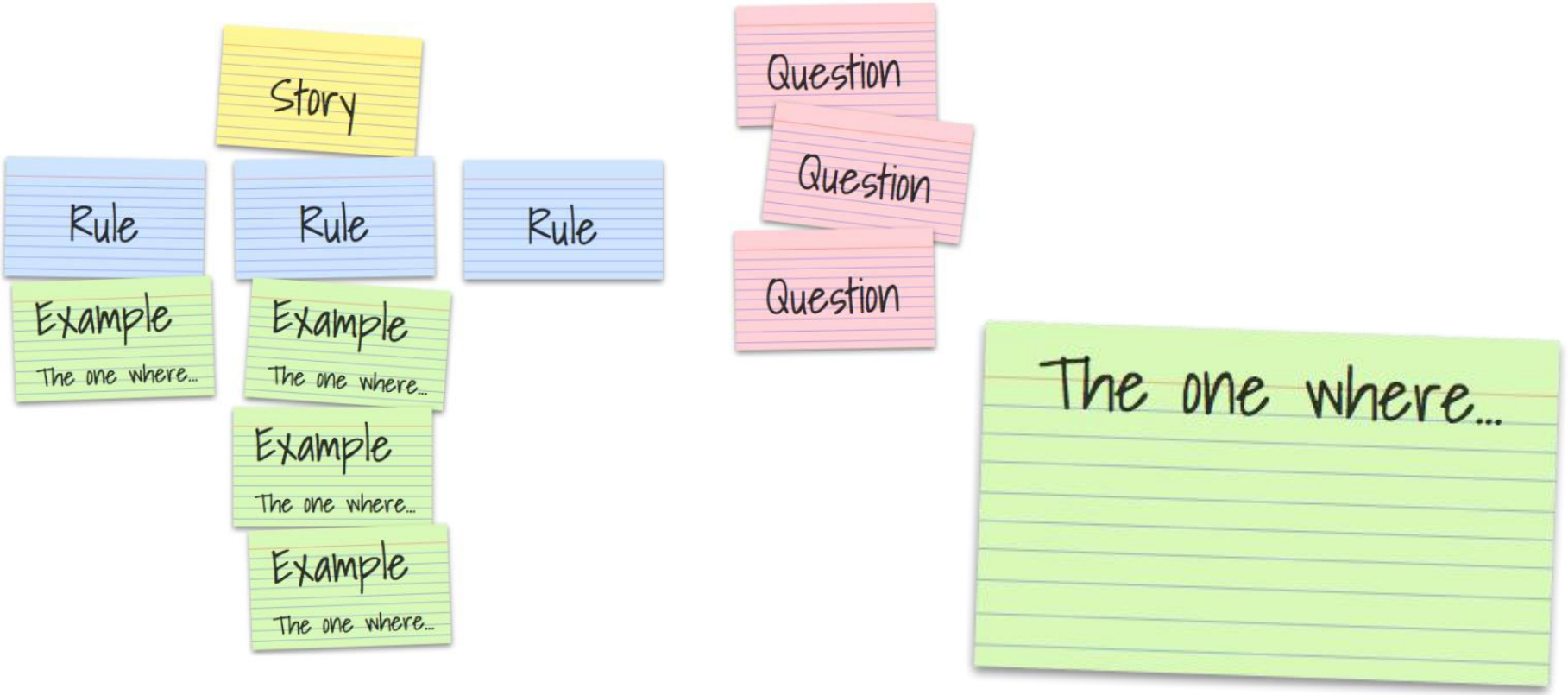
- Good refinement technique
- Collaborative
- Gives a lot of insight
- Shared understanding easy to reach
- Clear documentation of results;

Add on towards Specification By Example

- Provides a structure from the start, so no extra alignments

But, less creative!

Refinement technique: Example Mapping

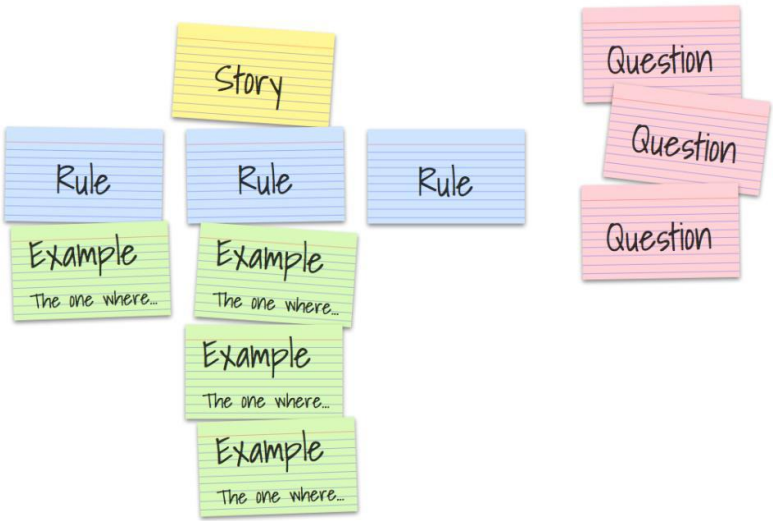


Refinement technique: Example Mapping

Case

Acceptance criteria

- The transaction is denied when the wrong fuel card pin is entered
- The transaction is denied when the fueltype fueled at the gas pump is not the same as the car uses
- The transaction is denied when there has been fueled in a different country that is the home country



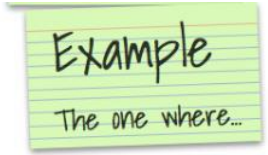
Story

To prevent abuse of the fuel card, as the fuel card company I want that only valid transactions get approved.

Refinement technique: Example Mapping

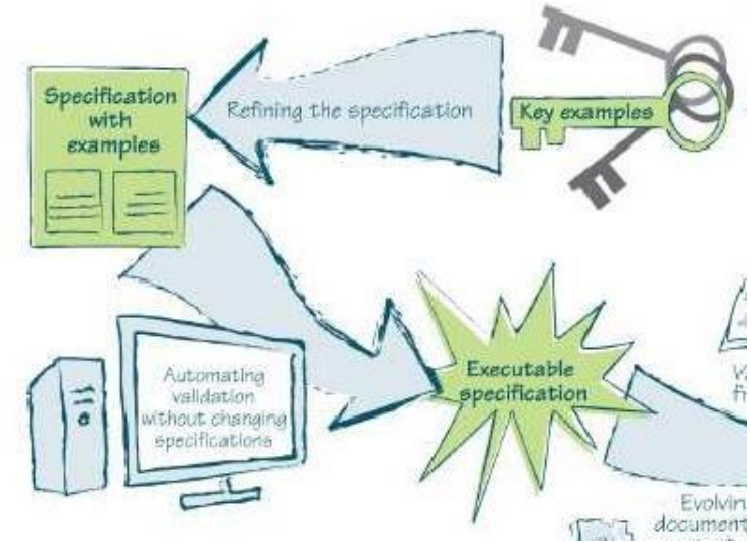
Further on

Specifications



Specifications

Testcases



- Agile mindset & Scrum Basics
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- **Refinement technique: Feature Mapping**
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- Best Development Practices

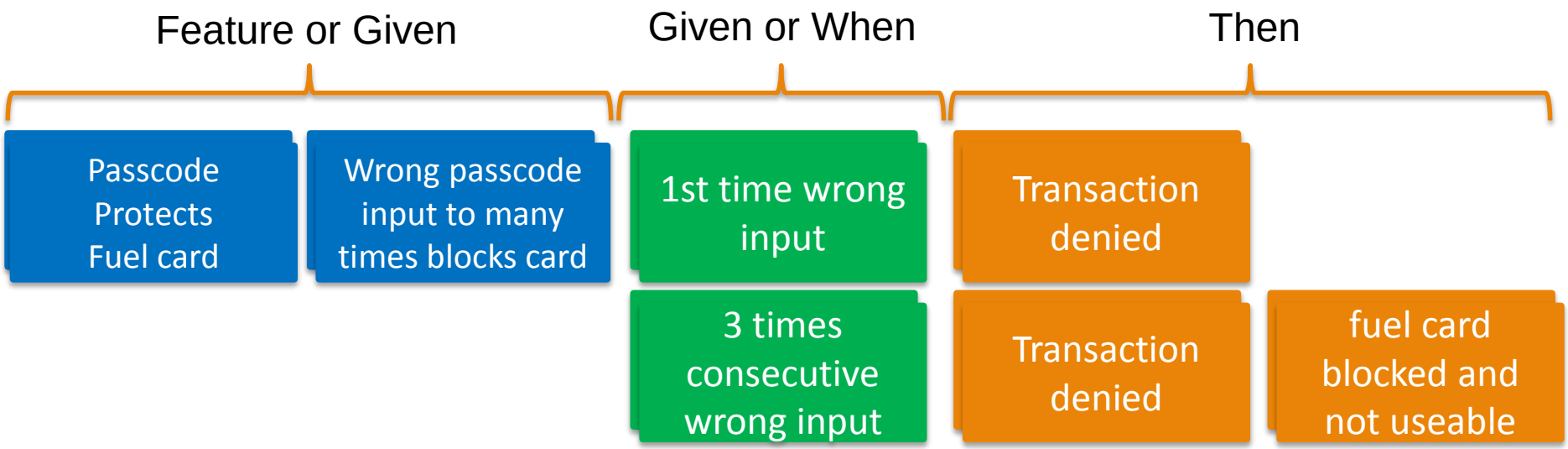
Why: Feature Mapping

- Good refinement technique
- Collaborative
- Gives a lot of insight
- Shared understanding easy to reach
- Clear documentation of results;

Add on towards Example Mapping

- Makes you think more towards Examples with Actions & Results

Feature Mapping



Create a Feature Map

You have 5 minutes to create a Feature Map with your team.

Story

To prevent abuse of the fuel card, as the fuel card company I want that only valid transactions get approved.

Guideline | Rule | Example | Consequence

- Agile mindset & Scrum Basics
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- Best Development Practices

From Examples to Executable Specs

DaH ghu…
qaSDI…
vaj …

Gegeven…
Als…
Dan…

Дадено …
Когато …
То …

Atsižvelgiant …
Kai …
Tada …

假如…
當…
那麼…

Gangway!…
Blimey!…
Let go and haul…

فرض…
متى … …
اذاً …

Gegewe…
Wanneer…
Dan…

Դիցուք …
Եթե …
Ապա …

Creating Useable Gherkin

User story

To prevent misuse of the fuel card, as the fuel card company I want that only valid transactions get approved.

Acceptance Criteria

Scenario: Input wrong fuel card passcode

Given the passcode for the fuel card is 1234

When Anton inputs the code 9999

Then the transaction is denied

Creating Useable Gherkin

The wrong way:

Gvn the field ‘passcode’ contains the value 1234
Whn Anton enters the wrong passcode
Plus Anton pushes the button with the label ‘OK’
Plus the system submits the passcode for validation to ChkPCMod01
Thn ChkPCMod03 returnes the message ‘you entered the wrong passcode’
Plus a record is added to the ‘wrong passcode attempts’ folder
Plus the transaction is not submitted to PmtTrtMod02

Creating Useable Gherkin

User story

To prevent misuse of the fuel card, as the fuel card company I want that only valid transactions get approved.

Acceptance Criteria

***Scenario**: Only products that are necessary for the car are allowed*

Given The car drives on diesel

If Anton <products> pays

Then the transaction <outcome> is

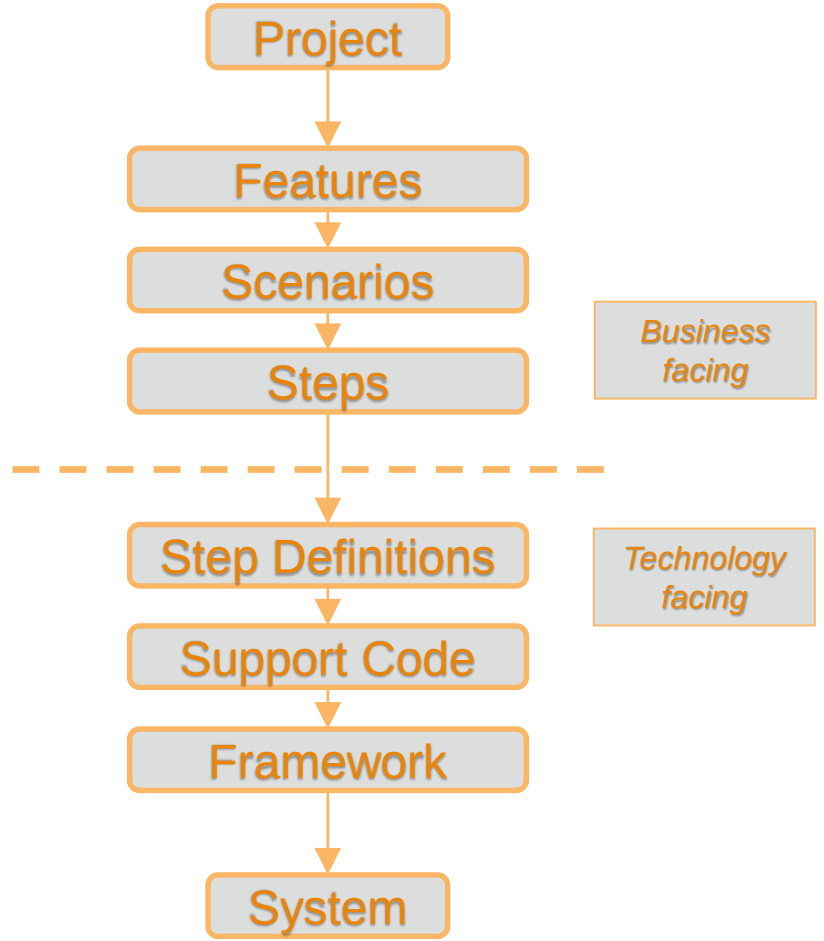
products	**outcome**
diesel	approved
Motor oil	approved
Windscreen wiper	approved
Coffee	not approved
Carwash	not approved
diesel and Coffee	not approved

Creating Useable Gherkin

Feature file
Given When Then steps

Glue code
Connect steps to the implementation of behavior

Implementation
Code that executes the behavior



Feature file

Given – when – then steps

```
Functionaliteit: Judge transaction

  @transactions @products
Scenario Outline: Only products that are necessary for the car are allowed
    Given the car uses diesel
    When Anton pays for the <products>
    Then the transaction <outcome> approved

    Voorbeelden:
      | products                  | outcome    |
      | diesel                    | is         |
      | engine oil                | is         |
      | window spray fluid        | is         |
      | coffee                    | is not     |
      | car wash                  | is not     |
      | diesel and coffee         | is not     |
```

Glue code

The “Glue” between Gherkin and the implementation code

```
@When("Anton\"([^\"]*)\" pays ")
public void payment(String products) {
    transaction.addProducts(products);
}



@Then("the transaction \"([^\"]*)\" approved")
public void judgeTransaction(String outcome) {
    if (StringUtils.equals(product, "diesel")) {
        assertEquals(transaction.isAllowedProduct(
            product), outcome);
    }
}
```

Glue code

```
    Given the car uses diesel
    When Anton pays for the <products>
    Then the transaction <outcome> approved

Examples:
      | products                | outcome    |
      | diesel                  | is         |
      | engine oil              | is         |
      | window spray fluid      | is         |
      | coffee                  | is not     |
      | car wash                | is not     |
      | diesel and coffee       | is not     |
```

Feature file

Implementation

This is the code that actually performs the logic and checks the behavior.

```
public void addProducts (String products) {
    try {
        WebElement payButton = getElement(payButtonLocator);
        payButton.click();
    catch {(ElementNotVisibleException e) {
        log.warn("Pay button not visible", e);
    }
}
```

Implementation

```
@When("Anton\"([^\"]*)\" pays ")
public void payment(String products) {
    transaction.addProducts(products);
}
```

Glue code

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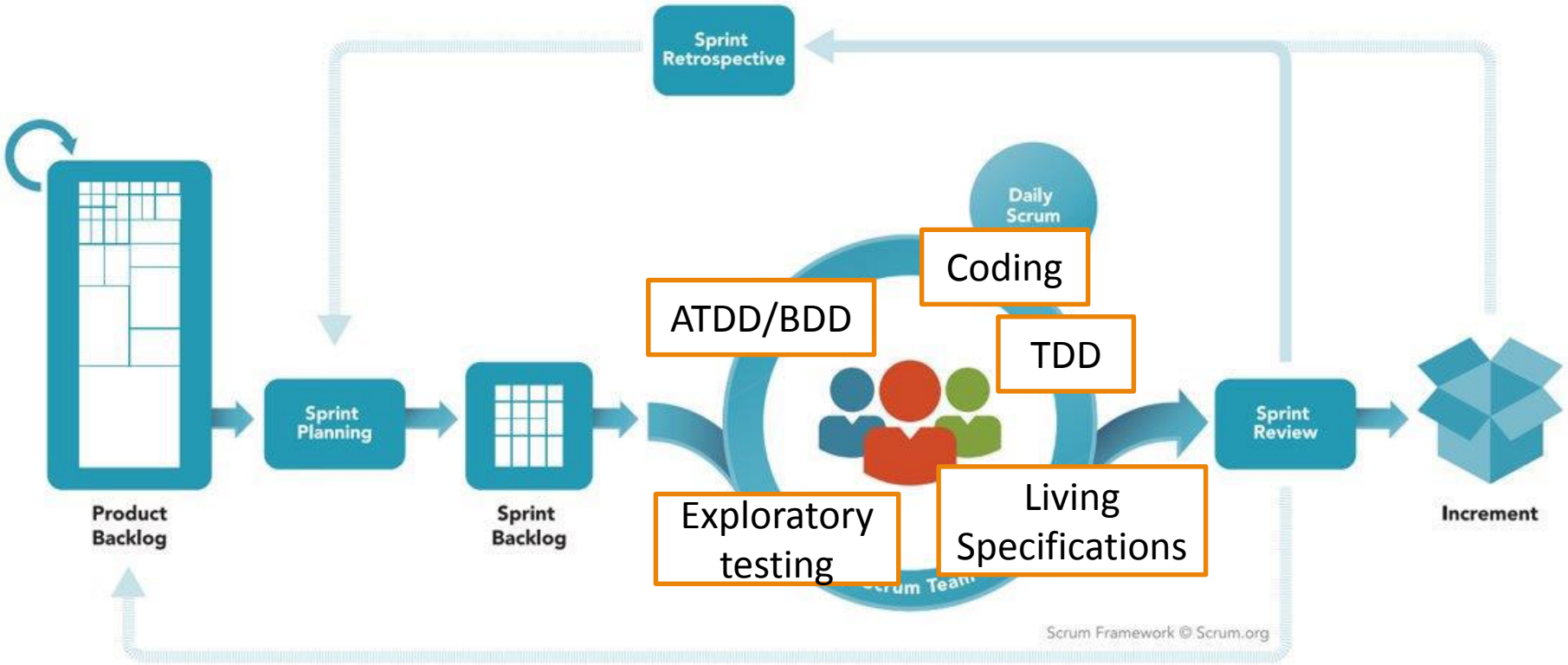
Best Development Practices

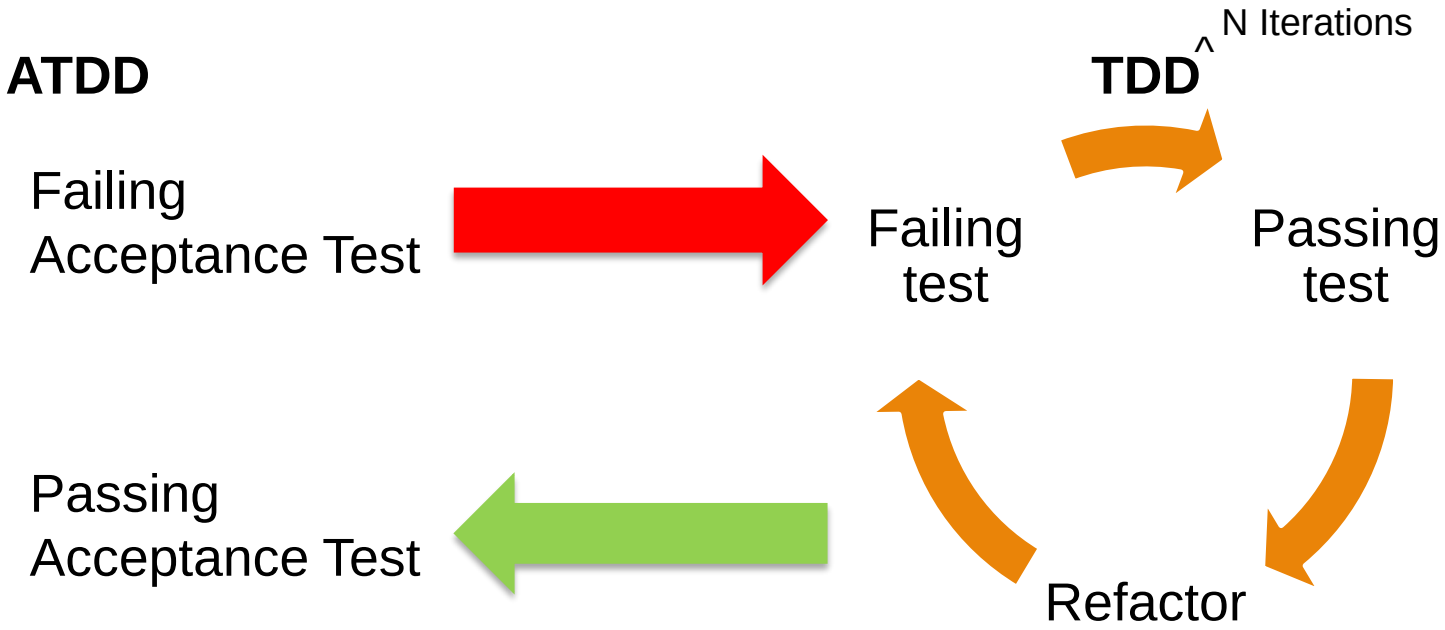


Best Development Practices

Coding


```php
public function get_submissions_recordset($userid='all', $examples=false) {
    global $DB;

    $sql = "SELECT s.*, u.lastname AS authorlastname, u.firstname AS authorfirstname
              FROM {workshop_submissions} s
         INNER JOIN {user} u ON (s.userid = u.id)
             WHERE s.workshopid = :workshopid";
    $params = array("workshopid" => $this->id);

    if ($examples === true) {
        $sql .= " AND example = 1";
    } else {
        $sql .= " AND example = 0";
    }

    if ('all' === $userid) {
        // no additional conditions
    } elseif (is_array($userid)) {
        list($usql, $uparams) = $DB->get_in_or_equal($userid, SQL_PARAMS_NAMED);
        $sql .= " AND userid $usql";
        $params = array_merge($params, $uparams);
    } else {
        $sql .= " AND userid = :userid";
        $params['userid'] = $userid;
    }

    return $DB->get_recordset_sql($sql, $params);
}
```

Test Driven Approach



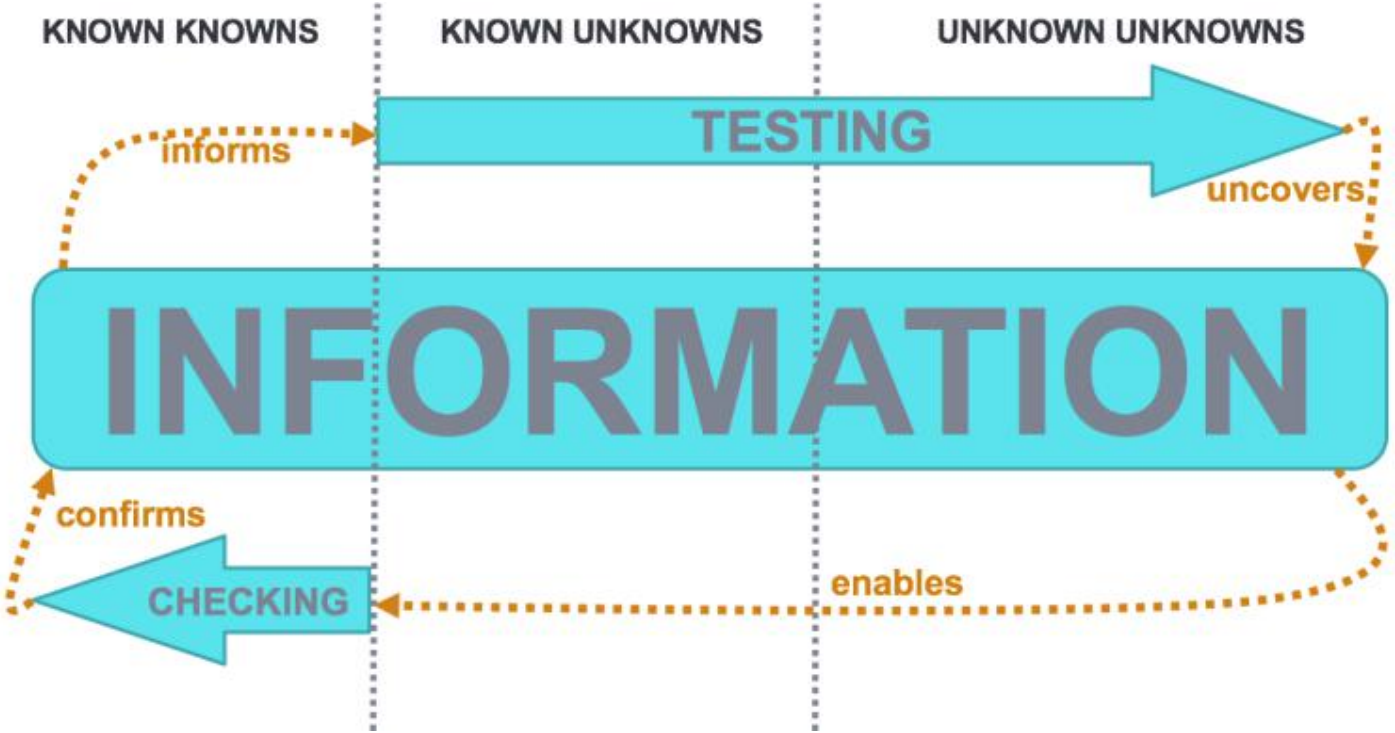
Tests towards regression tests

- Sprint 12
  - Scenario 1
  - Scenario 12
    - Test 1
  - Scenario 122
    - Test 1
    - Test 2

- Regression test
  - Scenario 1
    - Test 1
    - Test 2
  - Scenario 122
    - Test 1
    - Test 2

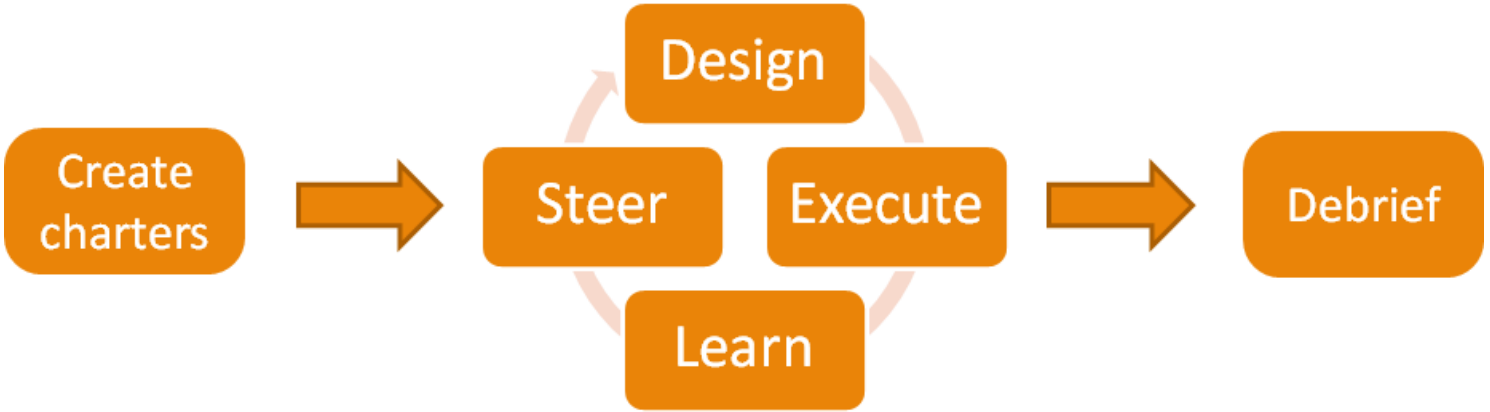
But we prefer **living documentation**, but the same structure would apply

Exploratory Testing



Exploratory Testing

"Exploratory Testing is a style of testing in which you explore the software while simultaneously designing and executing tests, using feedback from the last test to inform the next." – **Elisabeth Hendrickson**

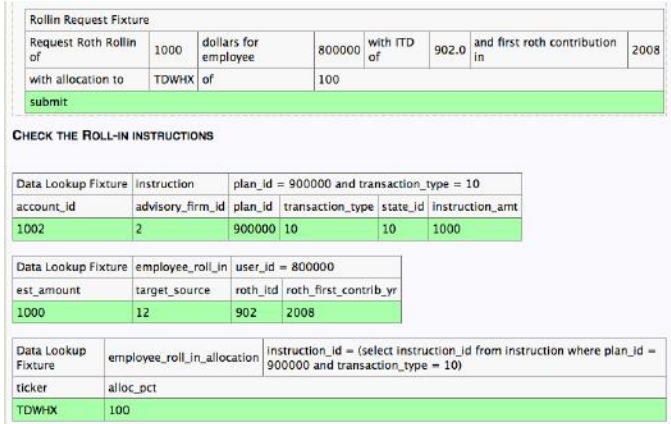


Living documentation

“Living documentation is a dynamic method of system documentation that provides information that is current, accurate and easy to understand. Feature files that are written in a natural language format may serve as the core of living documentation.”

Pickles
Living Documentation

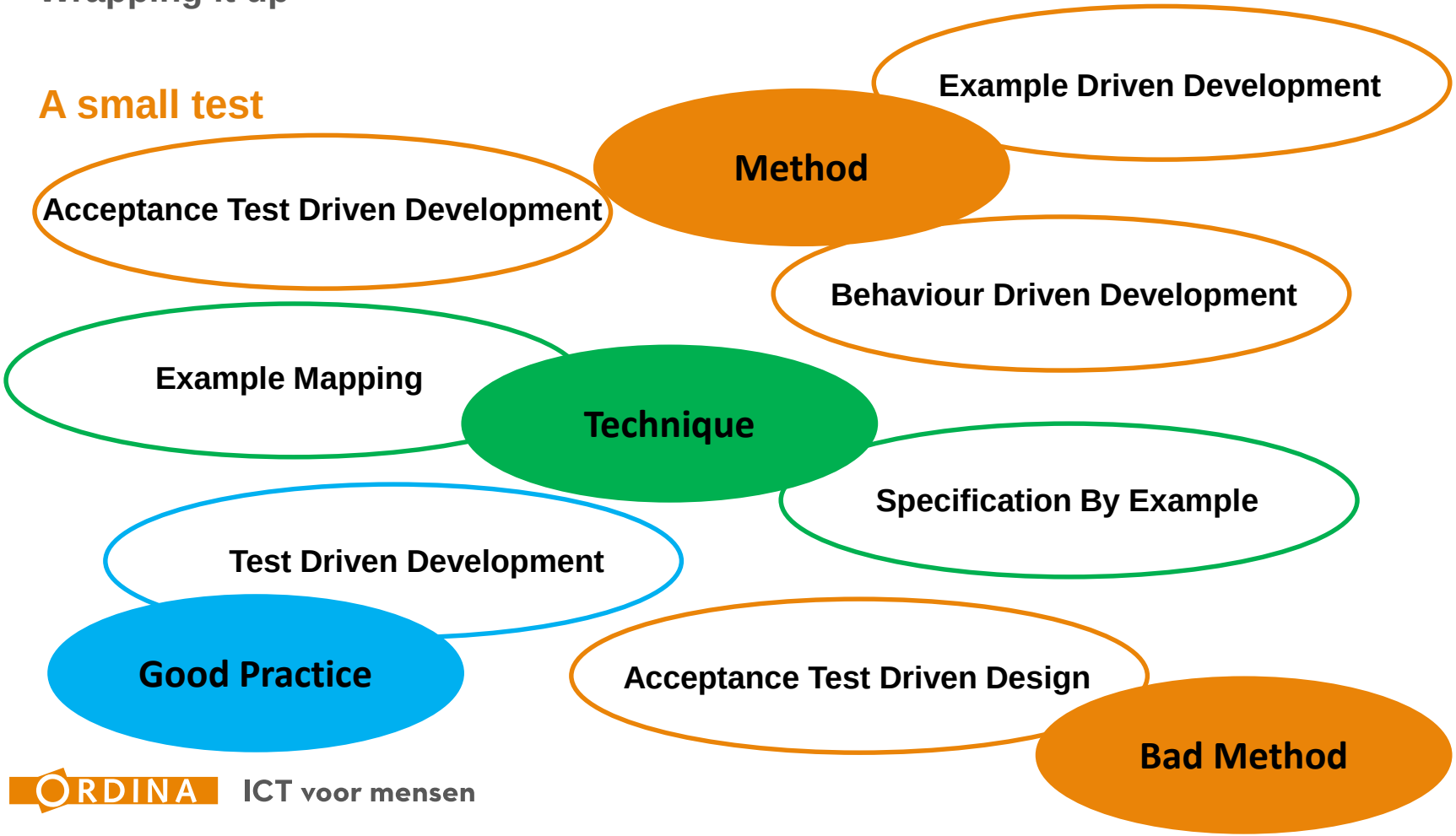
FitNesse

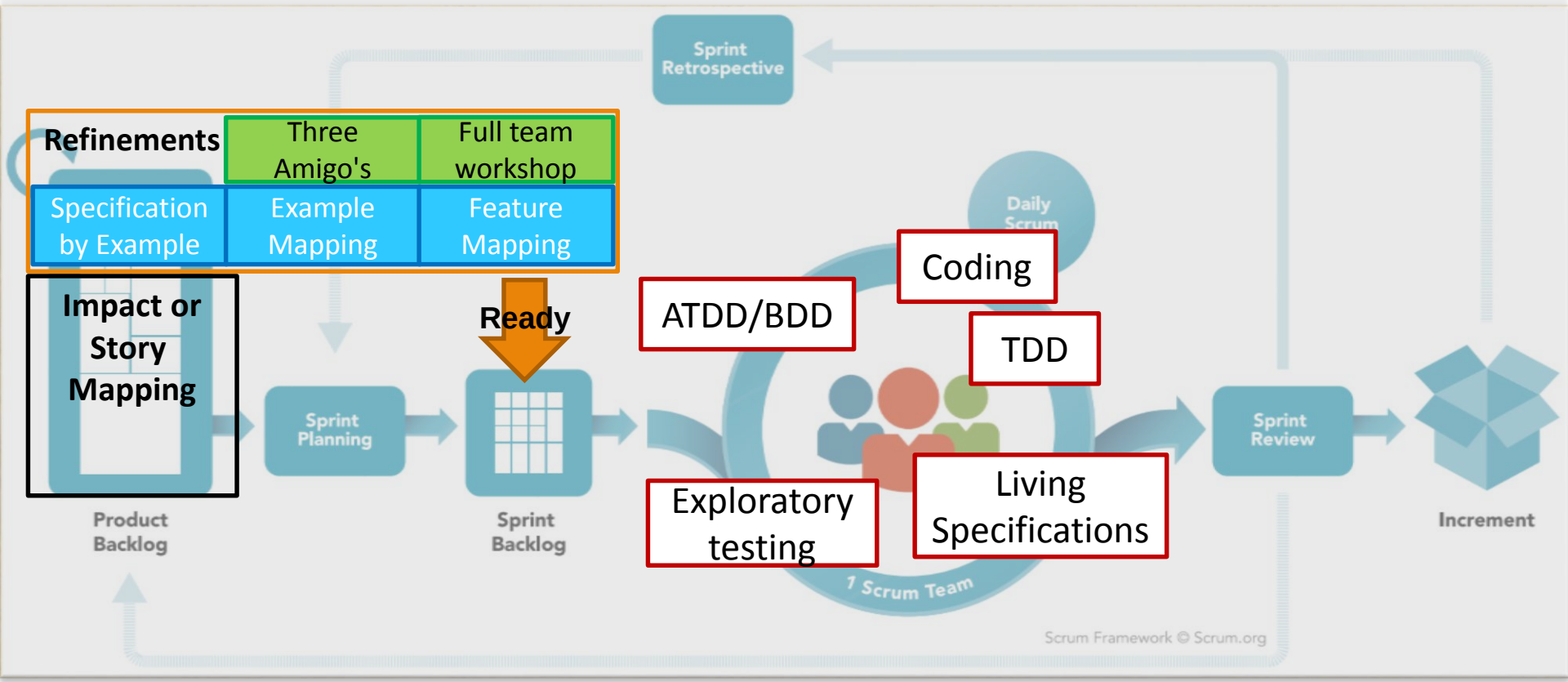



END GAME
TAYLOR SWIFT
COVER

Wrapping it up

A small test




Sprint Retrospective
Refinements
Three Amigo's
Full team workshop
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Coding
TDD
Daily Scrum
Sprint Planning
Sprint Review
Product Backlog
Sprint Backlog
Exploratory testing
Living Specifications
Increment
1 Scrum Team
Scrum Framework © Scrum.org

The start of something new.

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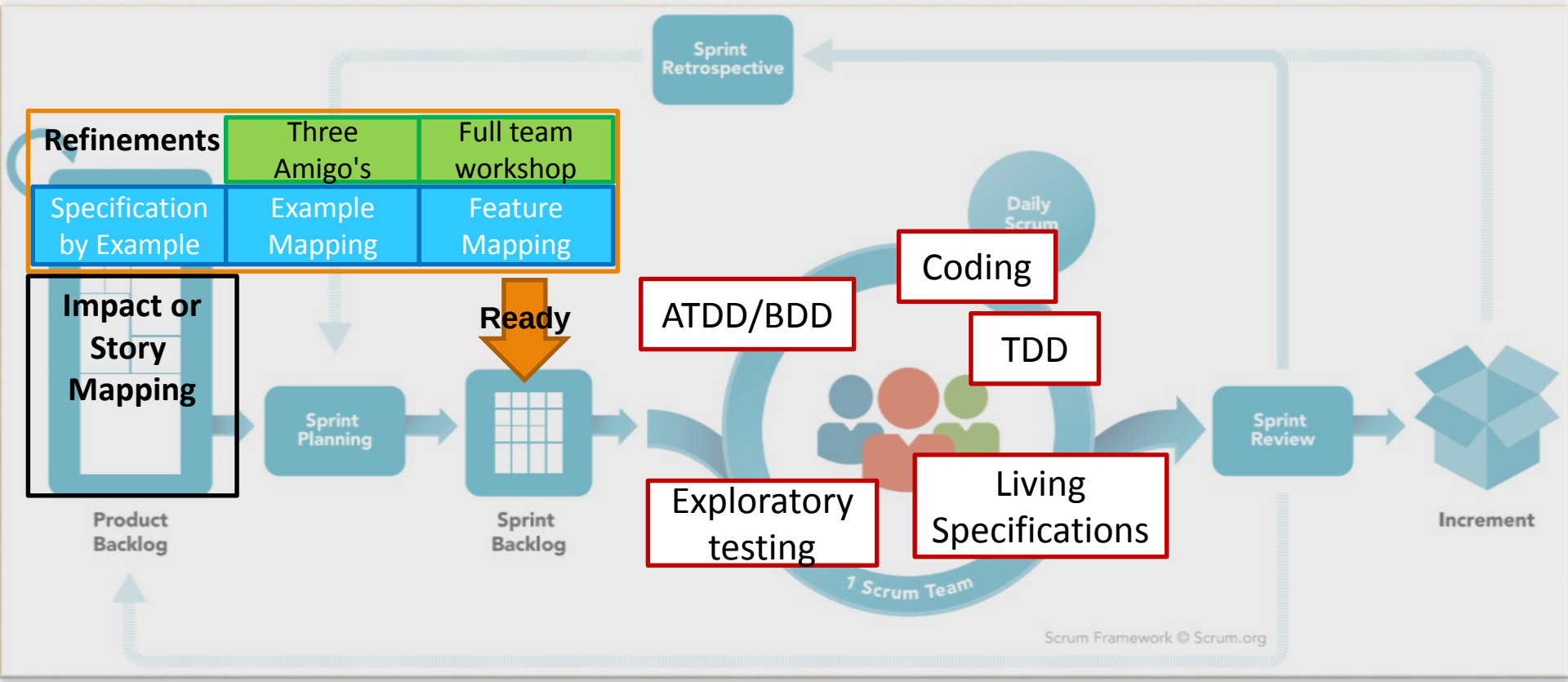
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Further reading

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LinkedIn: https://nl.linkedin.com/in/mehmetsahingoz/

- Scrum
  - https://youtu.be/502ILHjX9EE - Product Ownership in a nutschell
  - https://www.scrumguides.org/index.html - Scrumguide
- BDD:
- https://dannorth.net/introducing-bdd/
  - https://www.agilealliance.org/glossary/bdd/#q=~(filters~(postType~(~'page~'post~'aa_book~'aa_event_session~'aa_experience_report~'aa_glossary~'aa_research_paper~'aa_video)~tags~(~'bdd))~searchTerm~'~sort~false~sortDirection~'asc~page~1) - Agile Consortium about BDD
- Three Amigo's
- - https://www.agilealliance.org/glossary/three-amigos/
- Specification by Example:
  - https://gojko.net/books/specification-by-example/
  - https://gojko.net/posts.html
- Example & Feature Mapping:
  - https://cucumber.io/blog/2015/12/08/example-mapping-introduction
  - https://johnfergusonsmart.com/feature-mapping-a-simpler-path-from-stories-to-executable-acceptance-criteria/
- Best Practices:
  - https://www.agilealliance.org/glossary/tdd/

More information & slides via QR code