47006- ANÁLISE E MODELAÇÃO DE SISTEMAS

Agile methods: the role of user stories

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Learning objectives for this lecture

Characterize the principles of backlog management in agile projects

Define and write stories for a given product.

Distinguish use story estimation and prioritization.

Write the acceptance criteria part of a user story.

Compare user stories and use cases with respect to commonalities and differences.

Describe the PivotalTracker story-based development workflow.

Scrum framework activities

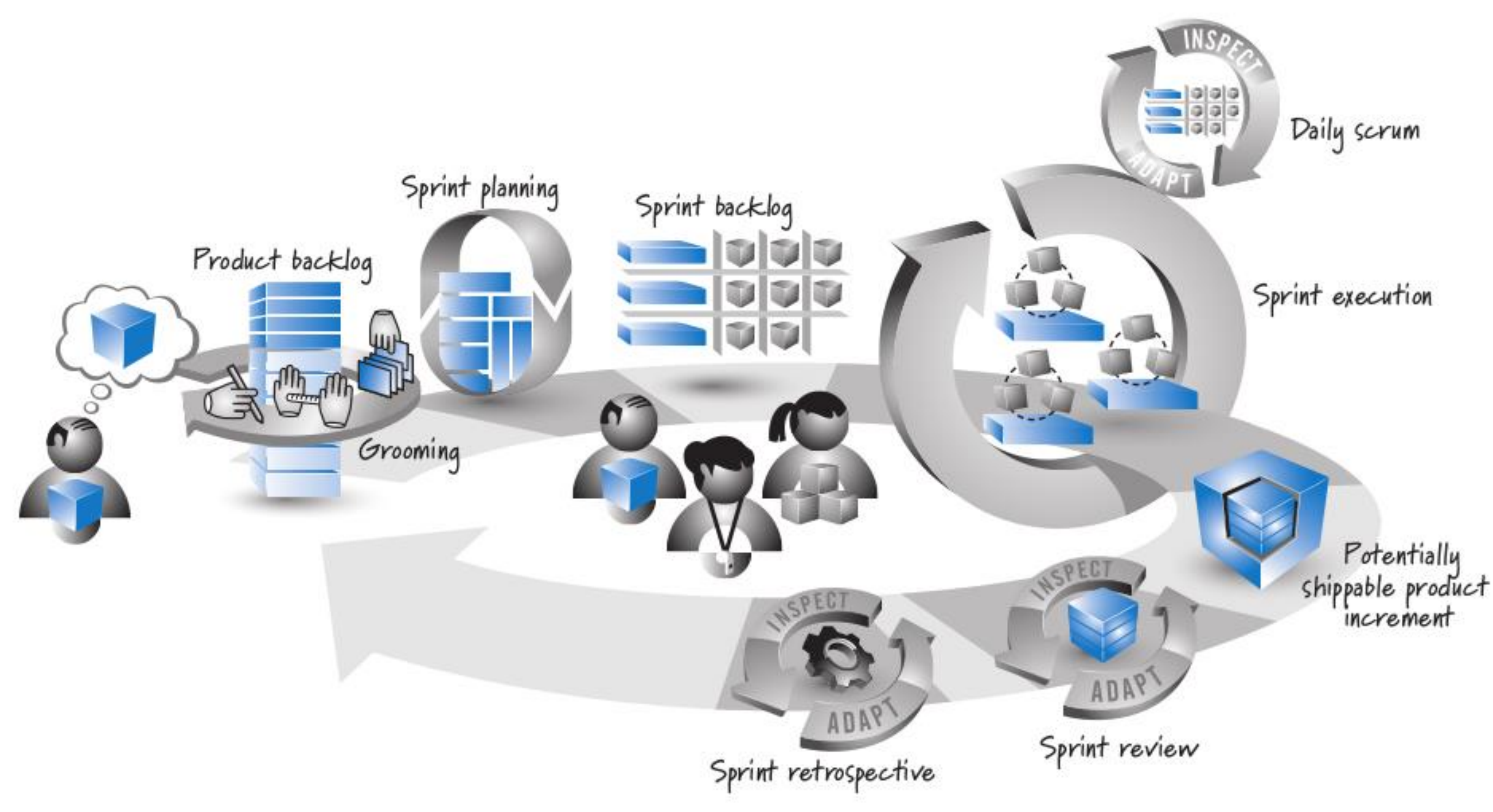
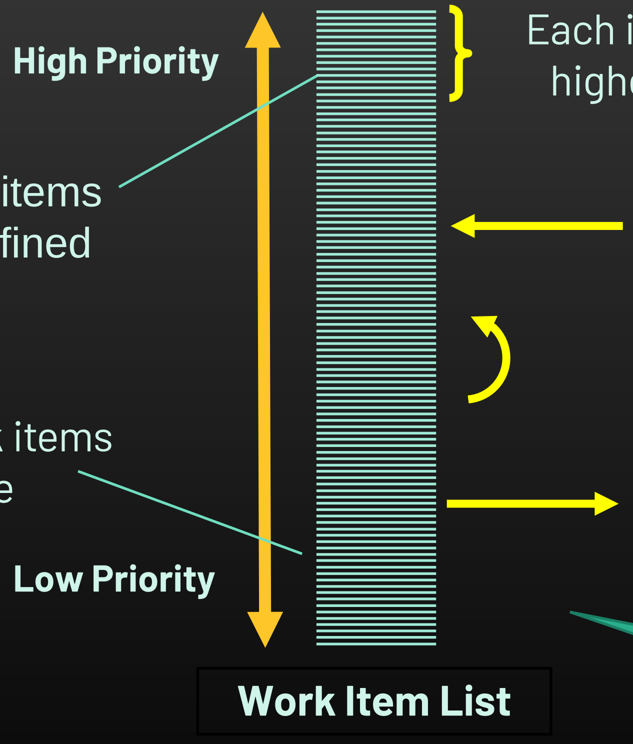


FIGURE 2.3 Scrum framework

Managing the work items list (*backlog*)



Each iteration implements the highest-priority work items

High-priority work items should be well-defined

New work items can be added at any time

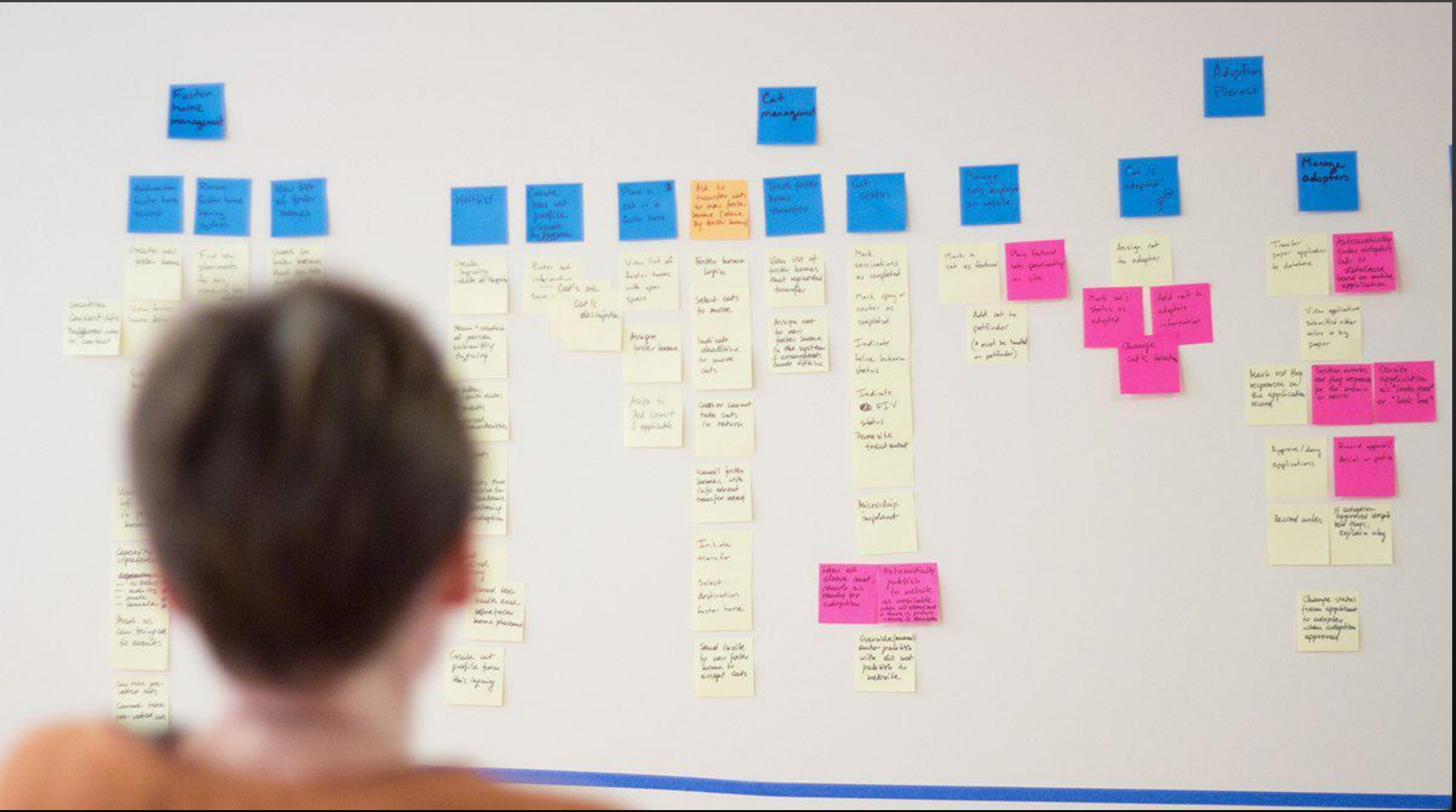
Work items can be reprioritized at any time

Low-priority work items can be vague

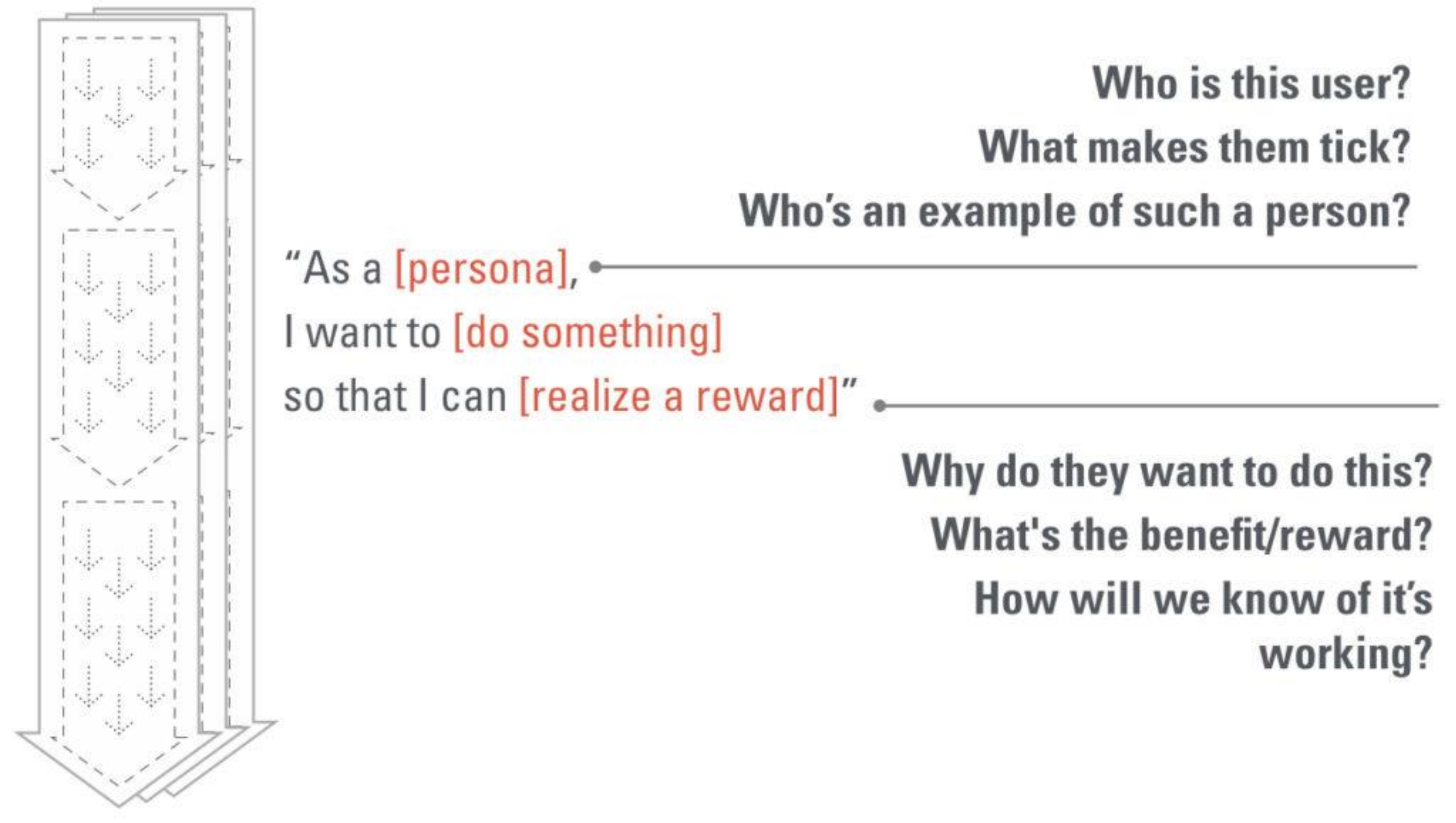
Work items can be removed at any time

What is the proper level of detail for the "work item"?

Sticky note metaphor



The story should clarify how to check if it is working



Who is this user?

What makes them tick?

Who's an example of such a person?

"As a [persona],

I want to [do something]

so that I can [realize a reward]"

Why do they want to do this?

What's the benefit/reward?

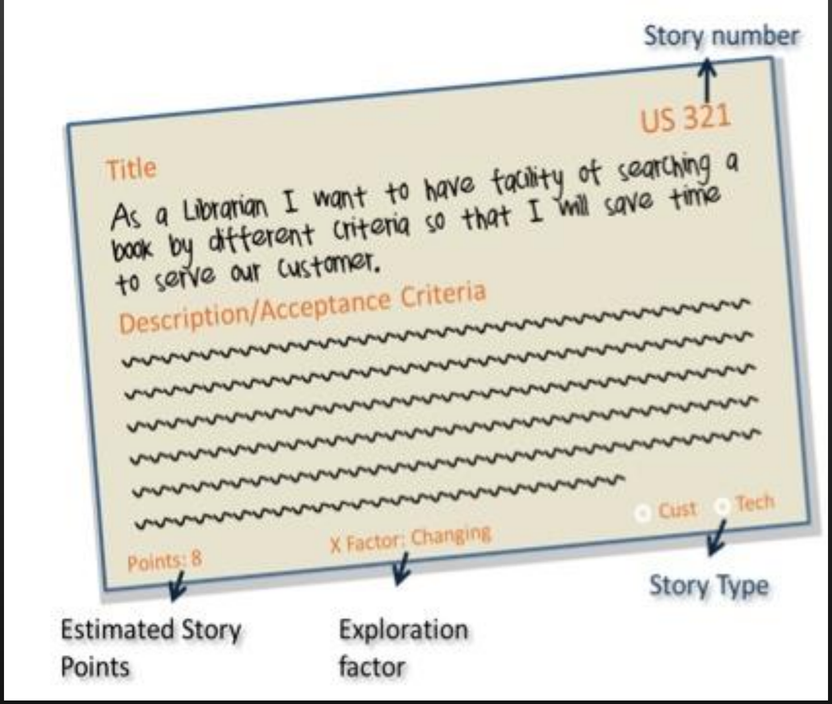
How will we know of it's working?

User stories in agile methods

The *backlog* is the prioritized list of user stories —requirements— for the product and their allocation to upcoming iterations (called sprints in the agile development method called Scrum.)

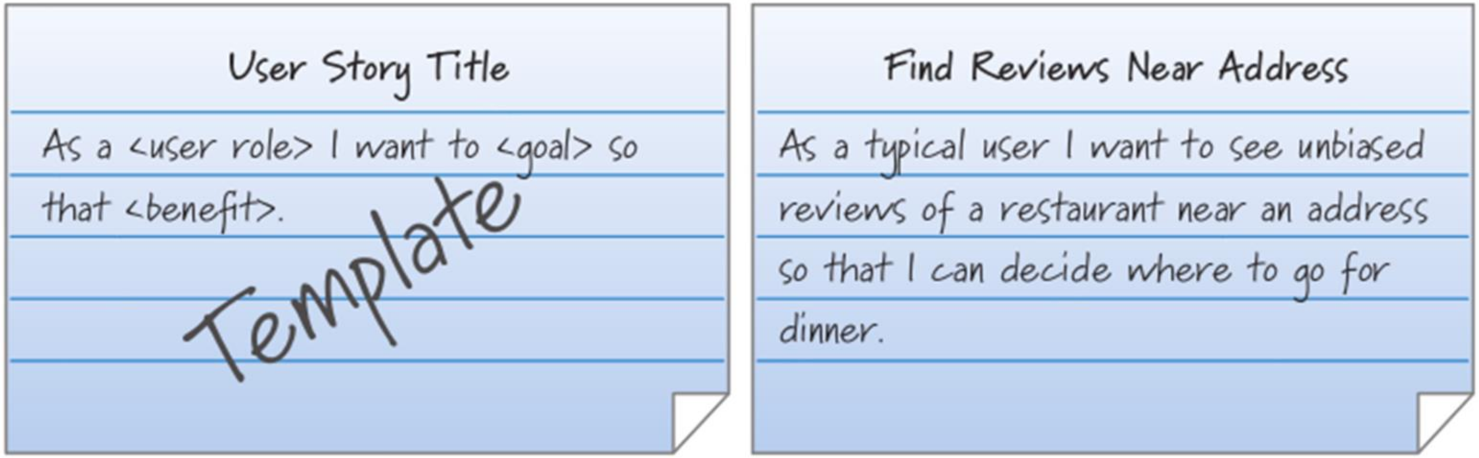
User story: a “short, simple description of a feature told from the perspective of the person who desires the new capability, usually a user or customer of the system” (Cohn 2010)

User story != use case


Story number
US 321
Title
As a Librarian I want to have facility of searching a book by different criteria so that I will save time to serve our customer.
Description/Acceptance Criteria
Cust
Tech
Points: 8
X Factor: Changing
Estimated Story Points
Exploration factor
Story Type

→ See examples

Backlog granularity: **user stories**



User Story Title

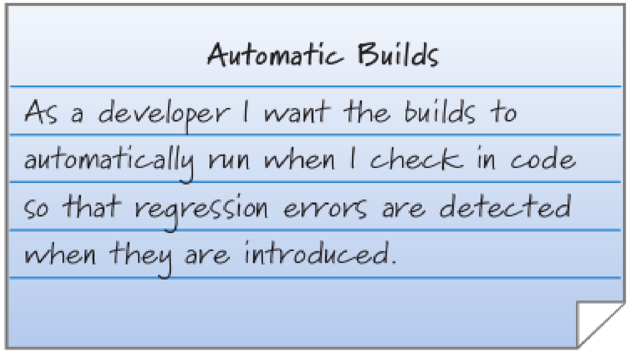
As a <user role> I want to <goal> so that <benefit>.

Template

Find Reviews Near Address

As a typical user I want to see unbiased reviews of a restaurant near an address so that I can decide where to go for dinner.

FIGURE 5.2 A user story template and card

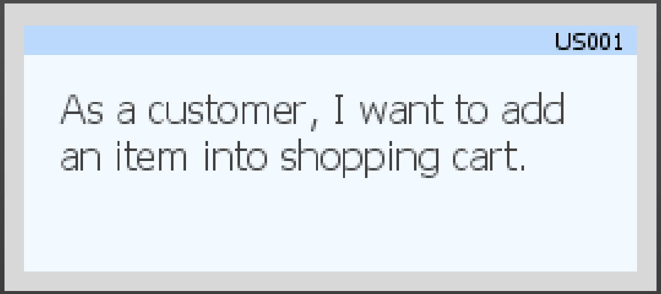


Automatic Builds

As a developer I want the builds to automatically run when I check in code so that regression errors are detected when they are introduced.

Undesirable technical story

The user story



US001

As a customer, I want to add an item into shopping cart.

A “short, simple description of a feature told from the perspective of the person who desires the new capability, usually a user or customer of the system” (Cohn 2010).

User stories often are written according to the following structure (other styles also are used):

As a <type of user>, I want <some goal> so that <some reason>.

→ Advantages of the “As a user, I want” user story template.

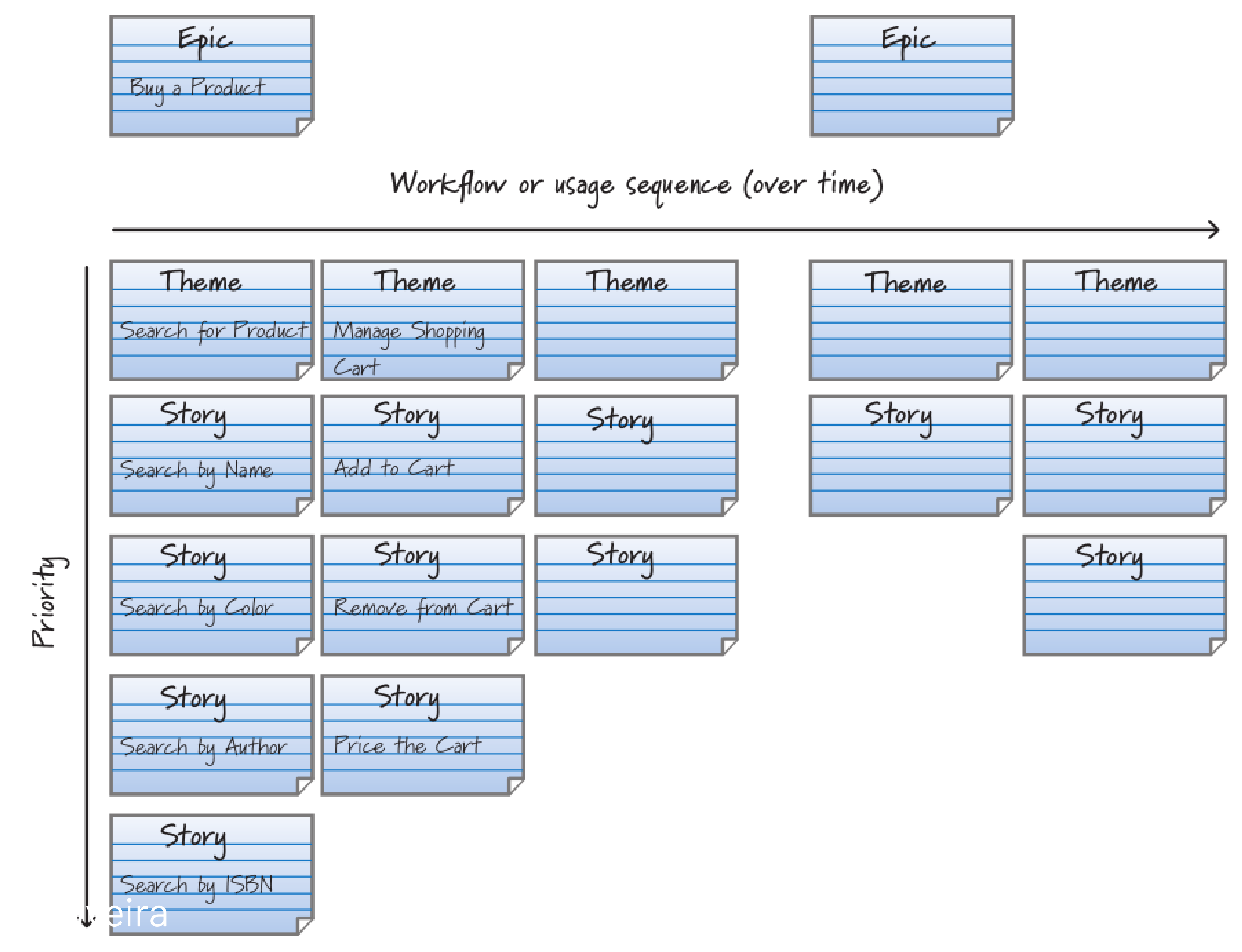
E.g. *As a customer, I want to receive an SMS when the item is arrived so that I can go pick it up.*

<role> represents the person, system, subsystem or any entity else who will interact with the system to be implemented to achieve a goal. He or she will gain values by interacting with the system.

<business objective> represents a user's expectation that can be accomplished through interacting with the system.

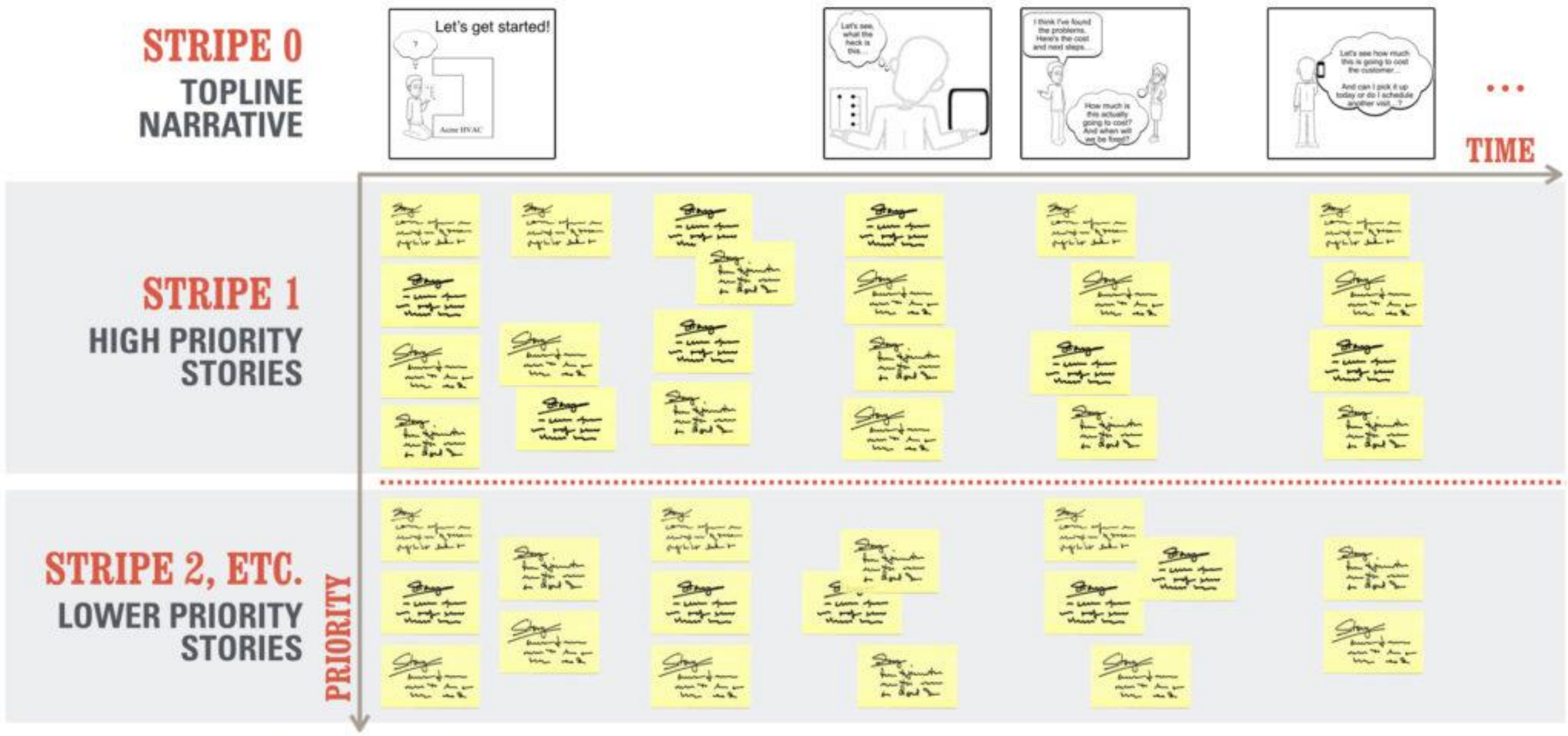
<business value> represents the value behind the interaction with the system. May be omitted, if obvious from the business objective.

Finding good stories



eira

Organizing the stories in priority stripes


STRIPE 0
TOPLINE NARRATIVE
Let's get started!
?
Acme HVAC
Let's see, what the heck is this...
I think I've found the problems. Here's the cost and next steps...
How much is this actually going to cost? And when will we be fixed?
Let's see how much this is going to cost the customer... And can I pick it up today or do I schedule another visit...?
...
TIME
STRIPE 1
HIGH PRIORITY STORIES
STRIPE 2, ETC.
LOWER PRIORITY STORIES
PRIORITY

source: adapted from Jeff Patton's 'User Story Mapping'

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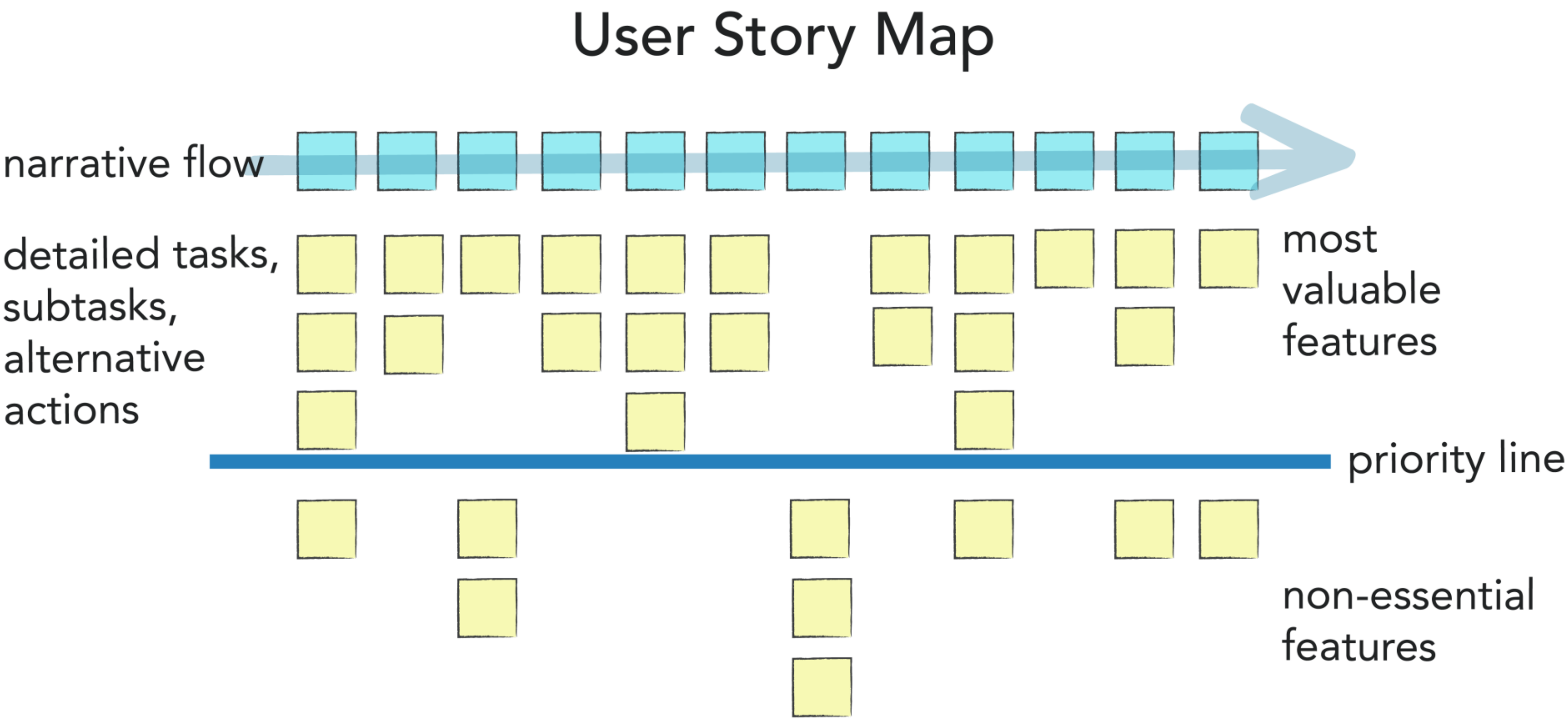
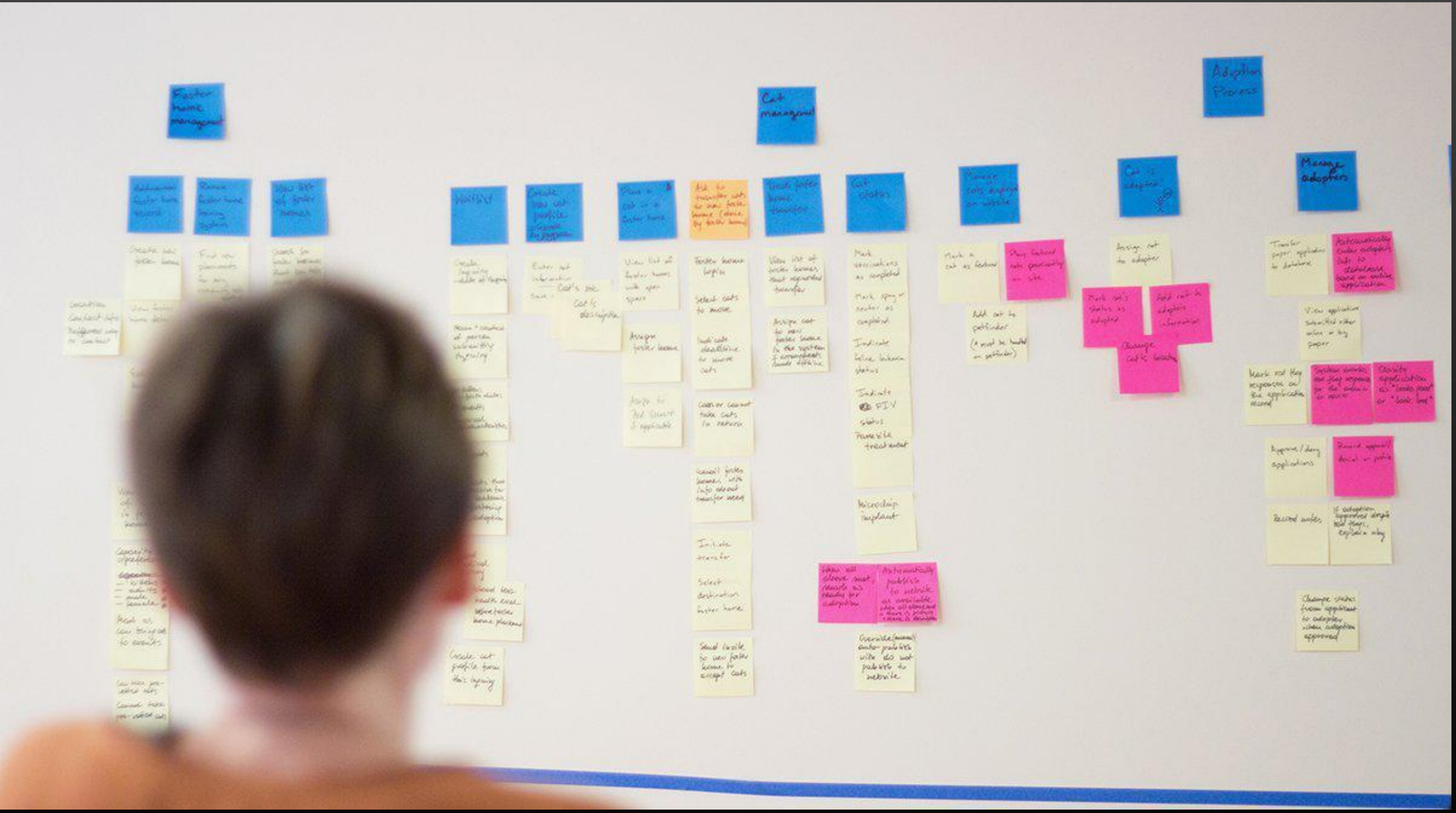
The user story map



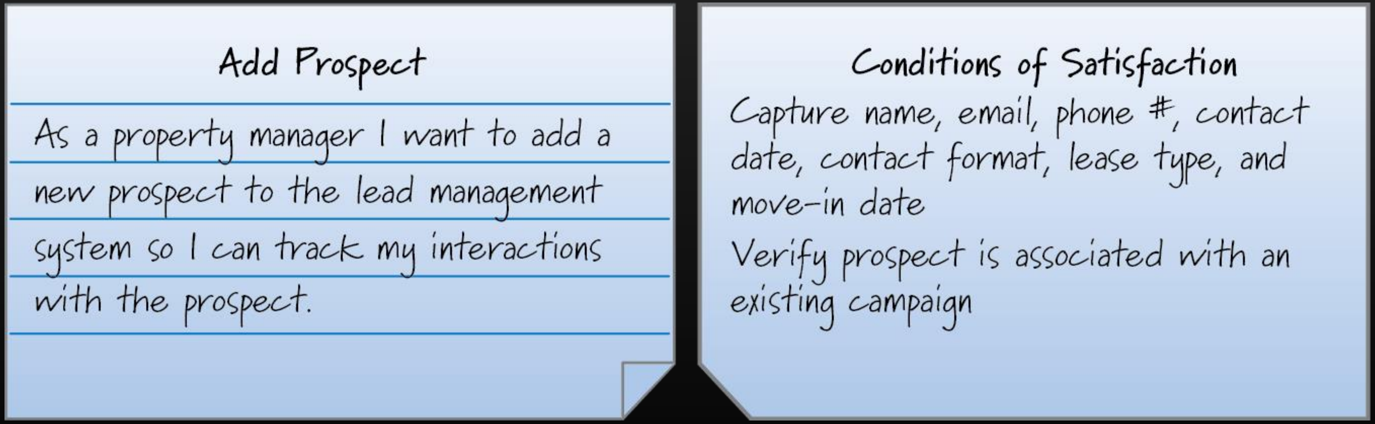
https://www.caktusgroup.com/blog/2017/07/31/user-story-mapping-high-level-release-plan/

Physical boards or in software tools...



Acceptance criteria

Rather than specifying functional requirements, agile teams typically elaborate a refined user story into a set of acceptance tests that collectively describe the story's "conditions of satisfaction."



Add Prospect

As a property manager I want to add a new prospect to the lead management system so I can track my interactions with the prospect.

Conditions of Satisfaction

Capture name, email, phone #, contact date, contact format, lease type, and move-in date

Verify prospect is associated with an existing campaign

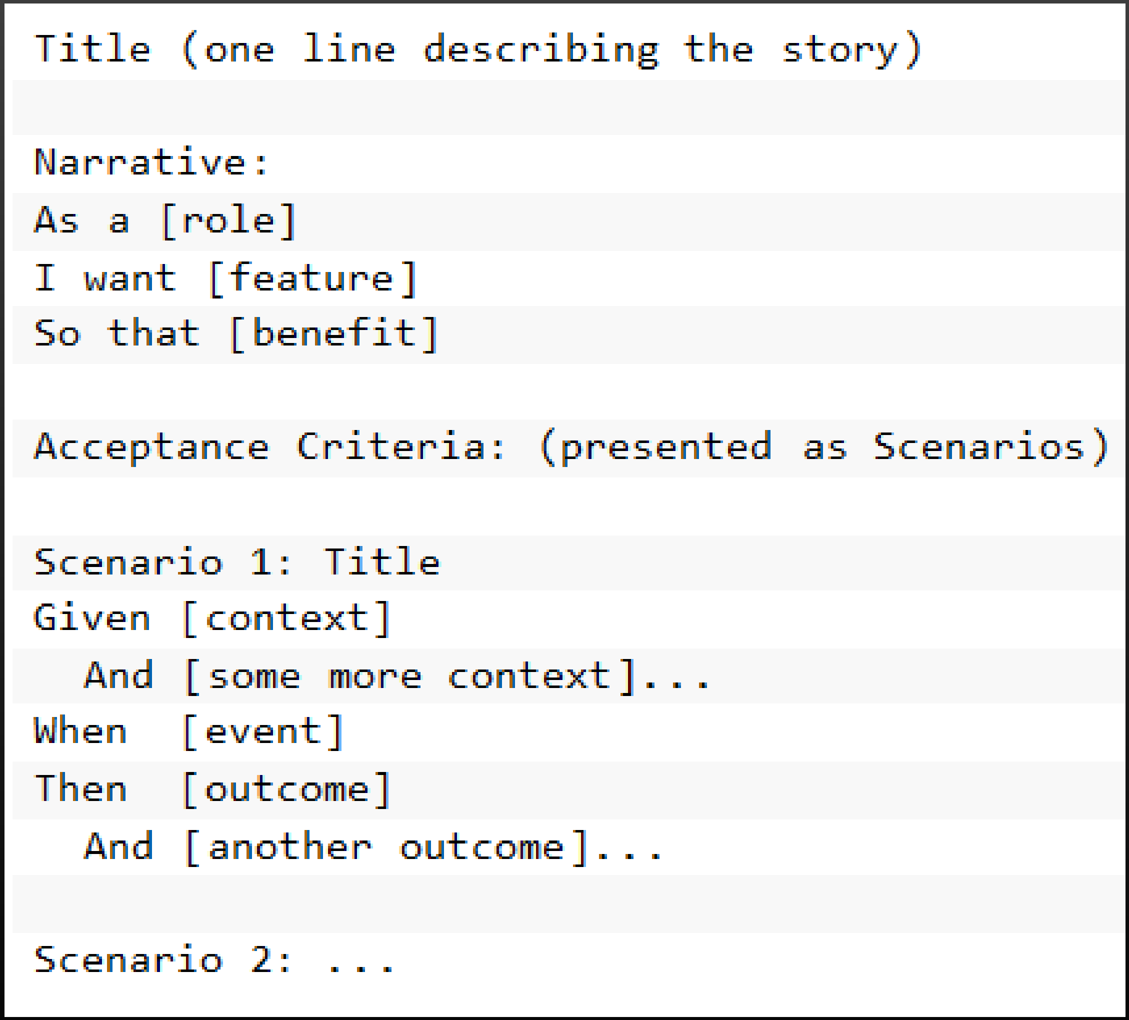
→ See examples

A structured language for writing the acceptance criteria

GIVEN [necessary context] WHEN [action] THEN [reaction].

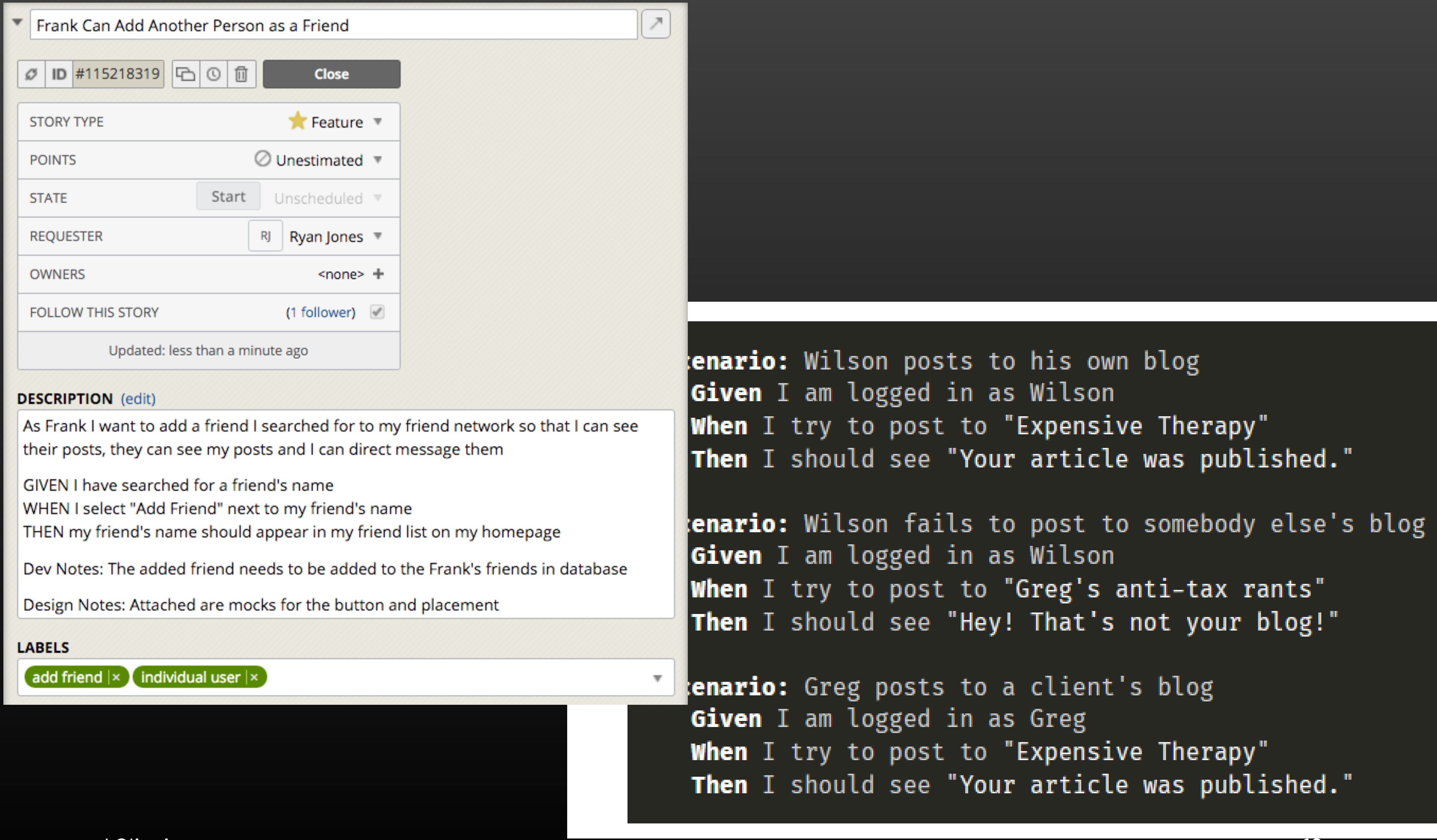
→ Gerkin DSL.

→ Used to create AC that are meant to be automatize (feed the tests)



```
Title (one line describing the story)

Narrative:
As a [role]
I want [feature]
So that [benefit]

Acceptance Criteria: (presented as Scenarios)

Scenario 1: Title
Given [context]
  And [some more context]...
When  [event]
Then  [outcome]
  And [another outcome]...

Scenario 2: ...
```

User story as a colaboration context



Frank Can Add Another Person as a Friend

STORY TYPE	★ Feature
POINTS	Unestimated
STATE	Start Unscheduled
REQUESTER	RJ Ryan Jones
OWNERS	<none> +
FOLLOW THIS STORY	(1 follower) ☑

Updated: less than a minute ago

DESCRIPTION (edit)

As Frank I want to add a friend I searched for to my friend network so that I can see their posts, they can see my posts and I can direct message them

GIVEN I have searched for a friend's name
WHEN I select "Add Friend" next to my friend's name
THEN my friend's name should appear in my friend list on my homepage

Dev Notes: The added friend needs to be added to the Frank's friends in database

Design Notes: Attached are mocks for the button and placement

LABELS

add friend × individual user ×

```
enario: Wilson posts to his own blog
 Given I am logged in as Wilson
 When I try to post to "Expensive Therapy"
 Then I should see "Your article was published."

enario: Wilson fails to post to somebody else's blog
 Given I am logged in as Wilson
 When I try to post to "Greg's anti-tax rants"
 Then I should see "Hey! That's not your blog!"

enario: Greg posts to a client's blog
 Given I am logged in as Greg
 When I try to post to "Expensive Therapy"
 Then I should see "Your article was published."
```

PivotalTracker

Stories define your project

Every project starts with a story, no matter what you're building. Tracker helps your team better develop and keep track of them while they progress from start to delivered.

Start with a good story

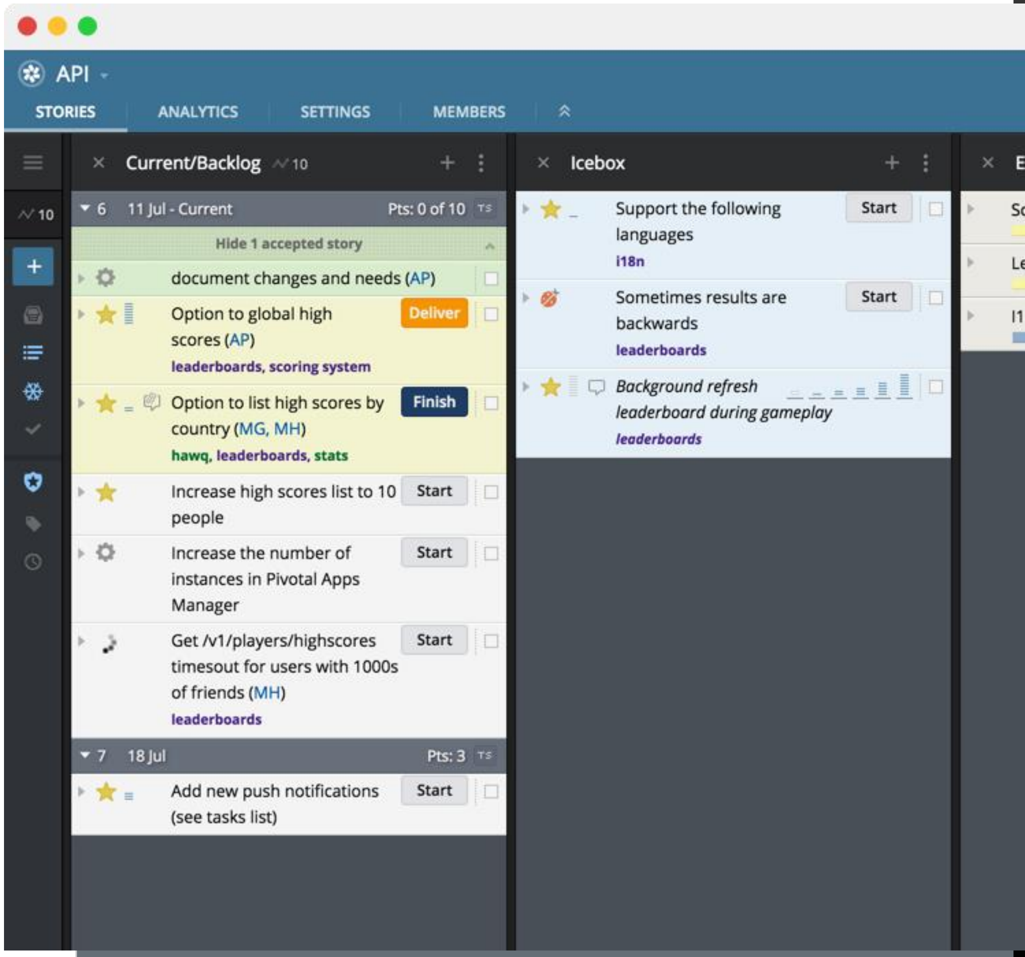
A story is a small, actionable bit of work that's either a placeholder for a future conversation or a reflection of one that already happened. Outlining what a user needs helps you focus on the what, not the how.

Define the story

Select among features, bugs, and chores to strike a healthy balance between building new features, staying ahead of technical debt, and keeping the bugs from piling up.

Estimate, then prioritize

Writing the story is just the beginning—now you get to rap about it. Estimate as a team to uncover the story's complexity. Choose among several point scales, then drag-and-drop to prioritize by iteration.



document changes and needs (AP)

Option to global high scores (AP)
leaderboards, scoring system

Option to list high scores by country (MG, MH)
hawq, leaderboards, stats

Increase high scores list to 10 people

Increase the number of instances in Pivotal Apps Manager

Get /v1/players/highscores timesout for users with 1000s of friends (MH)
leaderboards

Add new push notifications (see tasks list)

Support the following languages
i18n

Sometimes results are backwards
leaderboards

Background refresh leaderboard during gameplay
leaderboards

PivotalTracker style

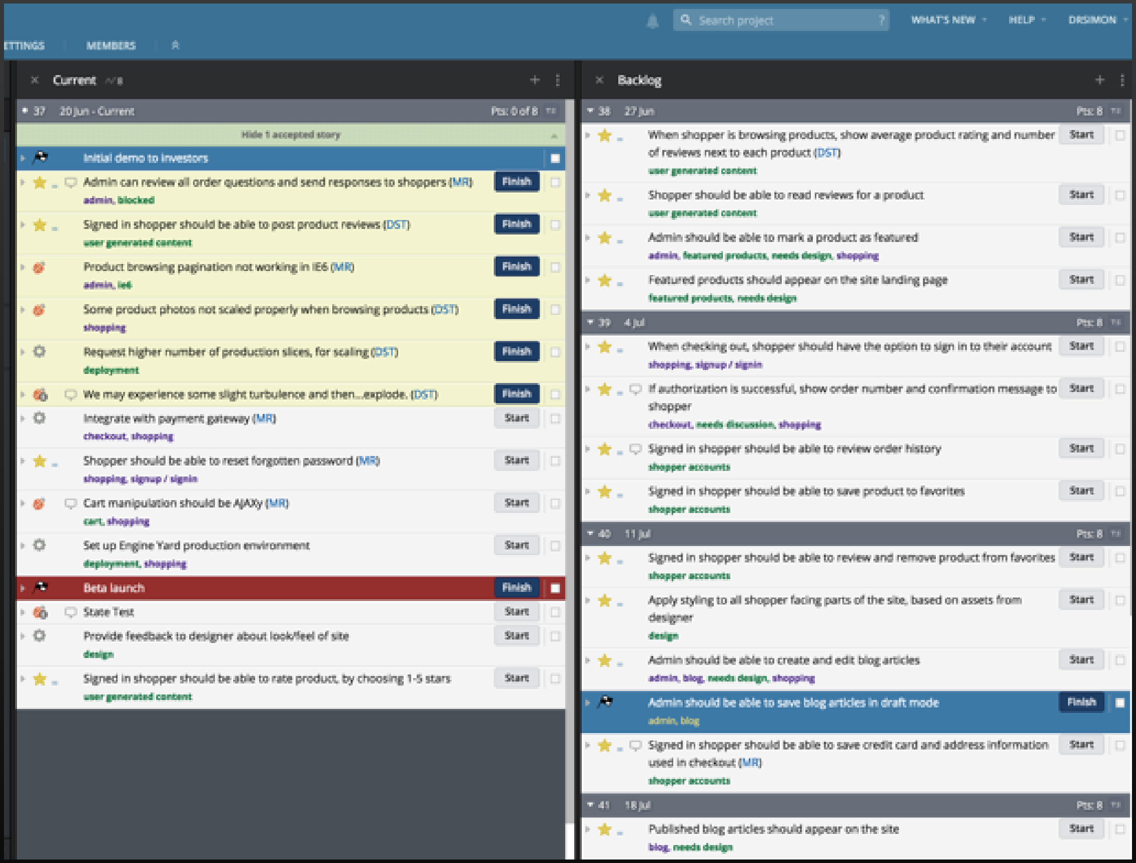
Tracker lists stories in a project's Current and Backlog panels in priority order.

Dragging a story to the top of your Backlog makes it the top priority

Tracker is a "pull" scheduling system — it pulls in stories to fill the team's WIP limit, based on velocity.

Tracker automatically moves stories from the top of your project's Backlog into the current iteration according to the current velocity. (depending on the individual story estimates).

Tracker projects use a linear point scale (i.e., 0, 1, 2, 3). You can change



Current

37 20 Jun - Current Pts: 0 of 8

Hide 1 accepted story

Initial demo to investors

Admin can review all order questions and send responses to shoppers (MR)
admin, blocked

Signed in shopper should be able to post product reviews (DST)
user generated content

Product browsing pagination not working in IE6 (MR)
admin, ie6

Some product photos not scaled properly when browsing products (DST)
shopping

Request higher number of production slices, for scaling (DST)
deployment

We may experience some slight turbulence and then...explode. (DST)

Integrate with payment gateway (MR)
checkout, shopping

Shopper should be able to reset forgotten password (MR)
shopping, signup / signin

Cart manipulation should be AJAXy (MR)
cart, shopping

Set up Engine Yard production environment
deployment, shopping

Beta launch

State Test

Provide feedback to designer about look/feel of site
design

Signed in shopper should be able to rate product, by choosing 1-5 stars
user generated content

Backlog

38 27 Jun Pts: 8

When shopper is browsing products, show average product rating and number of reviews next to each product (DST)
user generated content

Shopper should be able to read reviews for a product
user generated content

Admin should be able to mark a product as featured
admin, featured products, needs design, shopping

Featured products should appear on the site landing page
featured products, needs design

39 4 Jul Pts: 8

When checking out, shopper should have the option to sign in to their account
shopping, signup / signin

If authorization is successful, show order number and confirmation message to shopper
checkout, needs discussion, shopping

Signed in shopper should be able to review order history
shopper accounts

Signed in shopper should be able to save product to favorites
shopper accounts

40 11 Jul Pts: 8

Signed in shopper should be able to review and remove product from favorites
shopper accounts

Apply styling to all shopper facing parts of the site, based on assets from designer
design

Admin should be able to create and edit blog articles
admin, blog, needs design, shopping

Admin should be able to save blog articles in draft mode
admin, blog

Signed in shopper should be able to save credit card and address information used in checkout (MR)
shopper accounts

41 18 Jul Pts: 8

Published blog articles should appear on the site
blog, needs design

Story Points

Funcionalidades (encomenda de comida online):

- F1: Inicio de sessão do utilizador (login)
- F2: Registo de novo utilizador na plataforma
- F3: Listar promoções em destaque do dia.
- F4: Colocar a encomenda (inclui pagamento)

Escala:

1pt: muito fácil. Direto de se implementar e âmbito reduzido.

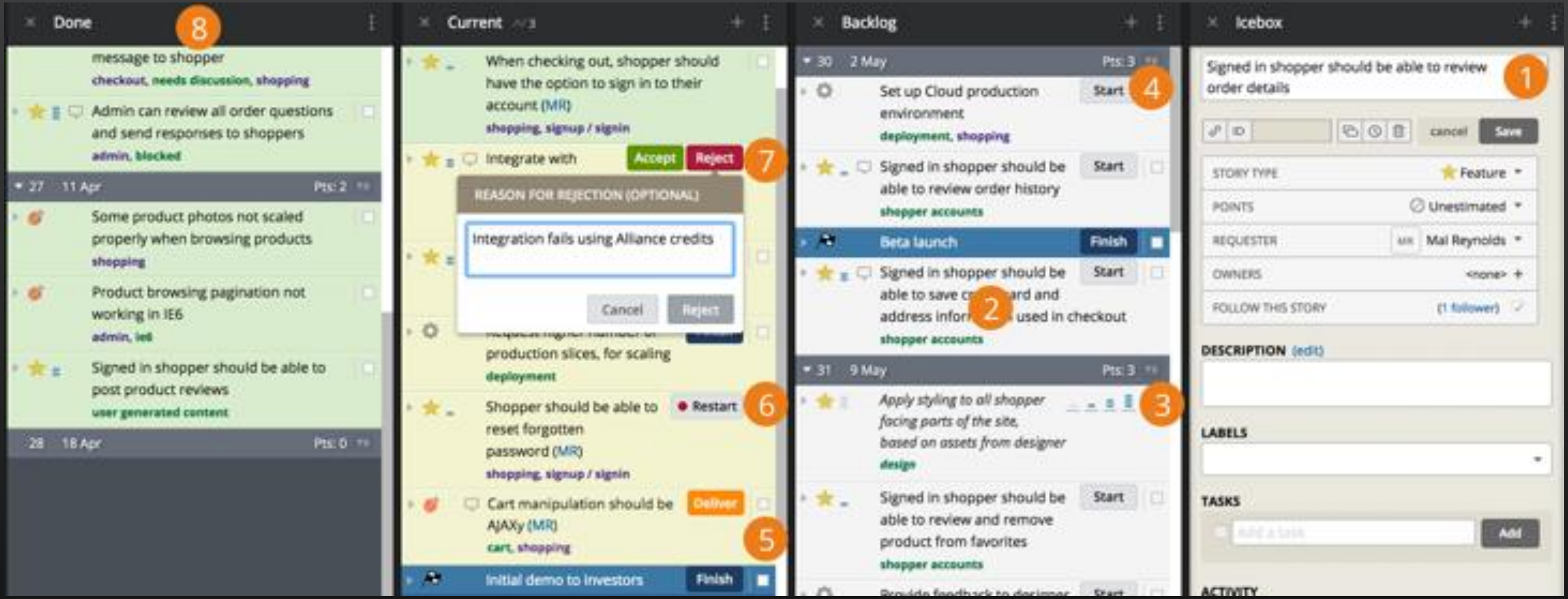
2pts: acessível; não oferece grande dificuldade.

4pts: complexo; tem várias interdependências (de outros módulos/serviços) ou um fluxo elaborado

8pts: muito complexo; requer integrações, tecnologias ou conhecimentos que não são completamente dominados

→ http://bit.ly/2IUrnMn

PivotalTracker pannels



Done

message to shopper
checkout, needs discussion, shopping

Admin can review all order questions and send responses to shoppers
admin, blocked

27 11 Apr Pts: 2

Some product photos not scaled properly when browsing products
shopping

Product browsing pagination not working in IE6
admin, ie6

Signed in shopper should be able to post product reviews
user generated content

28 18 Apr Pts: 0

Current

When checking out, shopper should have the option to sign in to their account (MR)
shopping, signup / signin

Integrate with Accept Reject

REASON FOR REJECTION (OPTIONAL)

Integration fails using Alliance credits

Cancel Reject

production slices, for scaling
deployment

Shopper should be able to reset forgotten password (MR) ● Restart
shopping, signup / signin

Cart manipulation should be AJAXy (MR) Deliver
cart, shopping

Initial demo to investors Finish

Backlog

30 2 May Pts: 3

Set up Cloud production environment Start
deployment, shopping

Signed in shopper should be able to review order history Start
shopper accounts

Beta launch Finish

Signed in shopper should be able to save credit card and address information used in checkout Start
shopper accounts

31 9 May Pts: 3

Apply styling to all shopper facing parts of the site, based on assets from designer
design

Signed in shopper should be able to review and remove product from favorites Start
shopper accounts

Provide feedback to designer Start

Icebox

Signed in shopper should be able to review order details

ID cancel Save

STORY TYPE Feature
POINTS Unestimated
REQUESTER MR Mal Reynolds
OWNERS <none> +
FOLLOW THIS STORY (1 follower)

DESCRIPTION (edit)

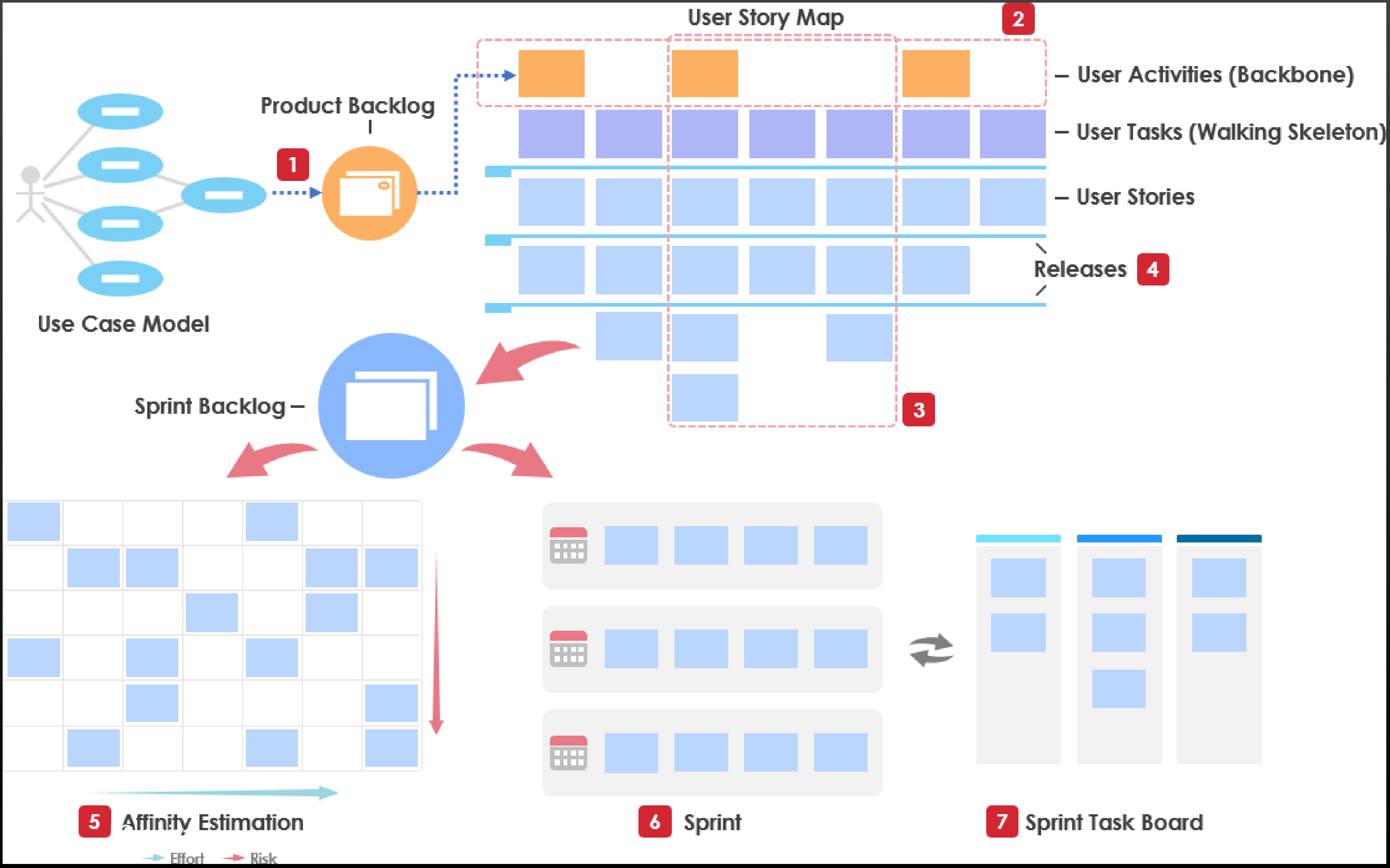
LABELS

TASKS

Add a task Add

ACTIVITY

Agile in VisualParadigm



Requirements elicitation by exploring user-centered scenarios

A) Use cases

B) User stories

C) User-centered design (UCD)

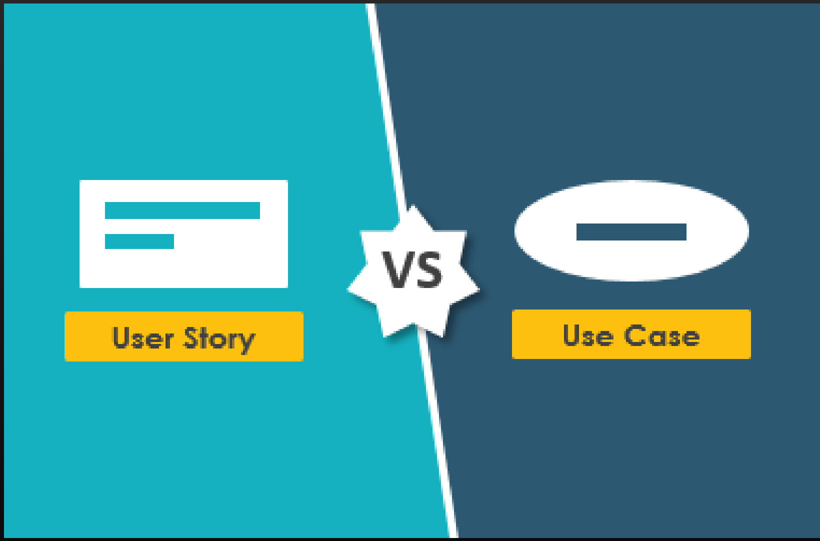
D) Customer Journey Map (Experience maps)

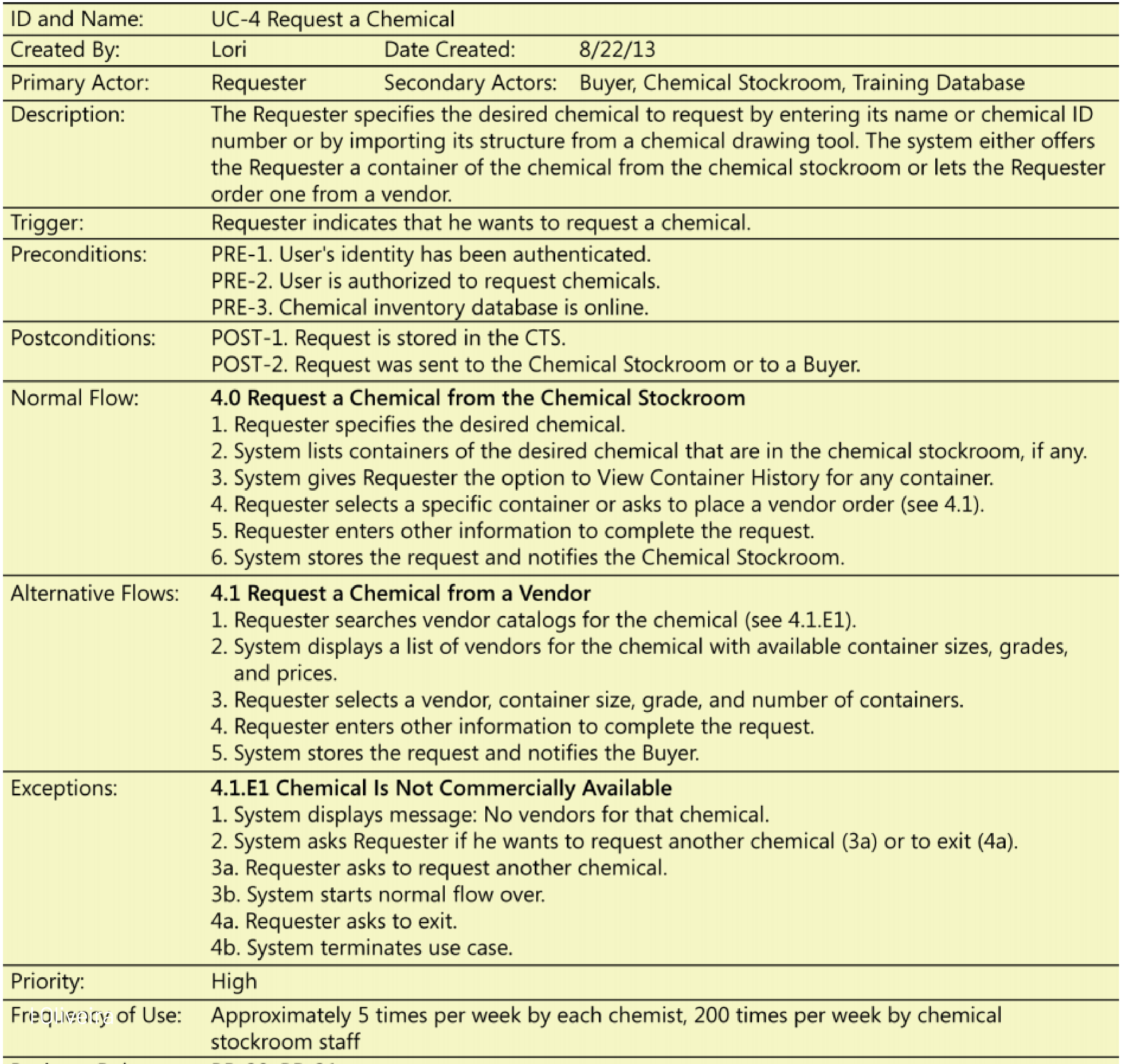
Recall: use cases and related assets

A *use case* describes a sequence of interactions between a system and an external actor that results in the actor being able to achieve some outcome of value.

The names of use cases are always written in
the form of a verb followed by an object.

The use case is supplemented with a detailed description (following a template)





ID and Name:	UC-4 Request a Chemical		
Created By:	Lori	Date Created:	8/22/13
Primary Actor:	Requester	Secondary Actors:	Buyer, Chemical Stockroom, Training Database
Description:	The Requester specifies the desired chemical to request by entering its name or chemical ID number or by importing its structure from a chemical drawing tool. The system either offers the Requester a container of the chemical from the chemical stockroom or lets the Requester order one from a vendor.		
Trigger:	Requester indicates that he wants to request a chemical.		
Preconditions:	PRE-1. User's identity has been authenticated. PRE-2. User is authorized to request chemicals. PRE-3. Chemical inventory database is online.		
Postconditions:	POST-1. Request is stored in the CTS. POST-2. Request was sent to the Chemical Stockroom or to a Buyer.		
Normal Flow:	**4.0 Request a Chemical from the Chemical Stockroom** 1. Requester specifies the desired chemical. 2. System lists containers of the desired chemical that are in the chemical stockroom, if any. 3. System gives Requester the option to View Container History for any container. 4. Requester selects a specific container or asks to place a vendor order (see 4.1). 5. Requester enters other information to complete the request. 6. System stores the request and notifies the Chemical Stockroom.		
Alternative Flows:	**4.1 Request a Chemical from a Vendor** 1. Requester searches vendor catalogs for the chemical (see 4.1.E1). 2. System displays a list of vendors for the chemical with available container sizes, grades, and prices. 3. Requester selects a vendor, container size, grade, and number of containers. 4. Requester enters other information to complete the request. 5. System stores the request and notifies the Buyer.		
Exceptions:	**4.1.E1 Chemical Is Not Commercially Available** 1. System displays message: No vendors for that chemical. 2. System asks Requester if he wants to request another chemical (3a) or to exit (4a). 3a. Requester asks to request another chemical. 3b. System starts normal flow over. 4a. Requester asks to exit. 4b. System terminates use case.		
Priority:	High		
Frequency of Use:	Approximately 5 times per week by each chemist, 200 times per week by chemical stockroom staff		

Use cases and similar user stories

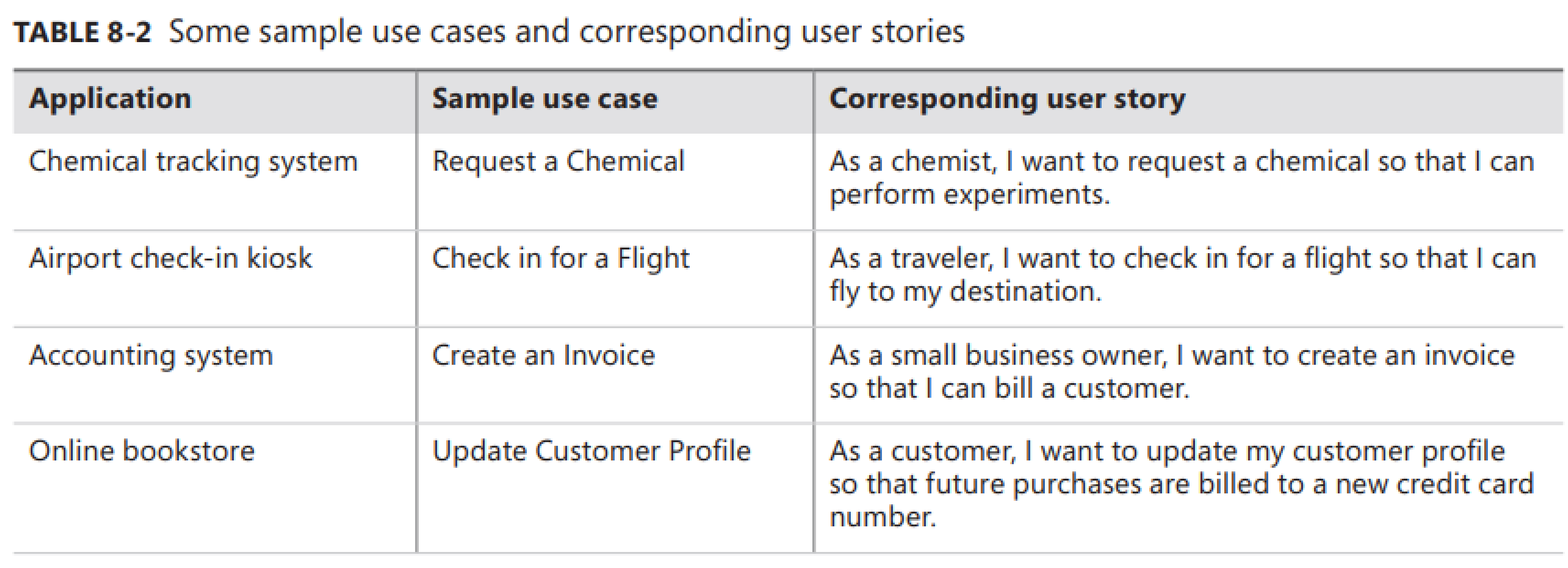
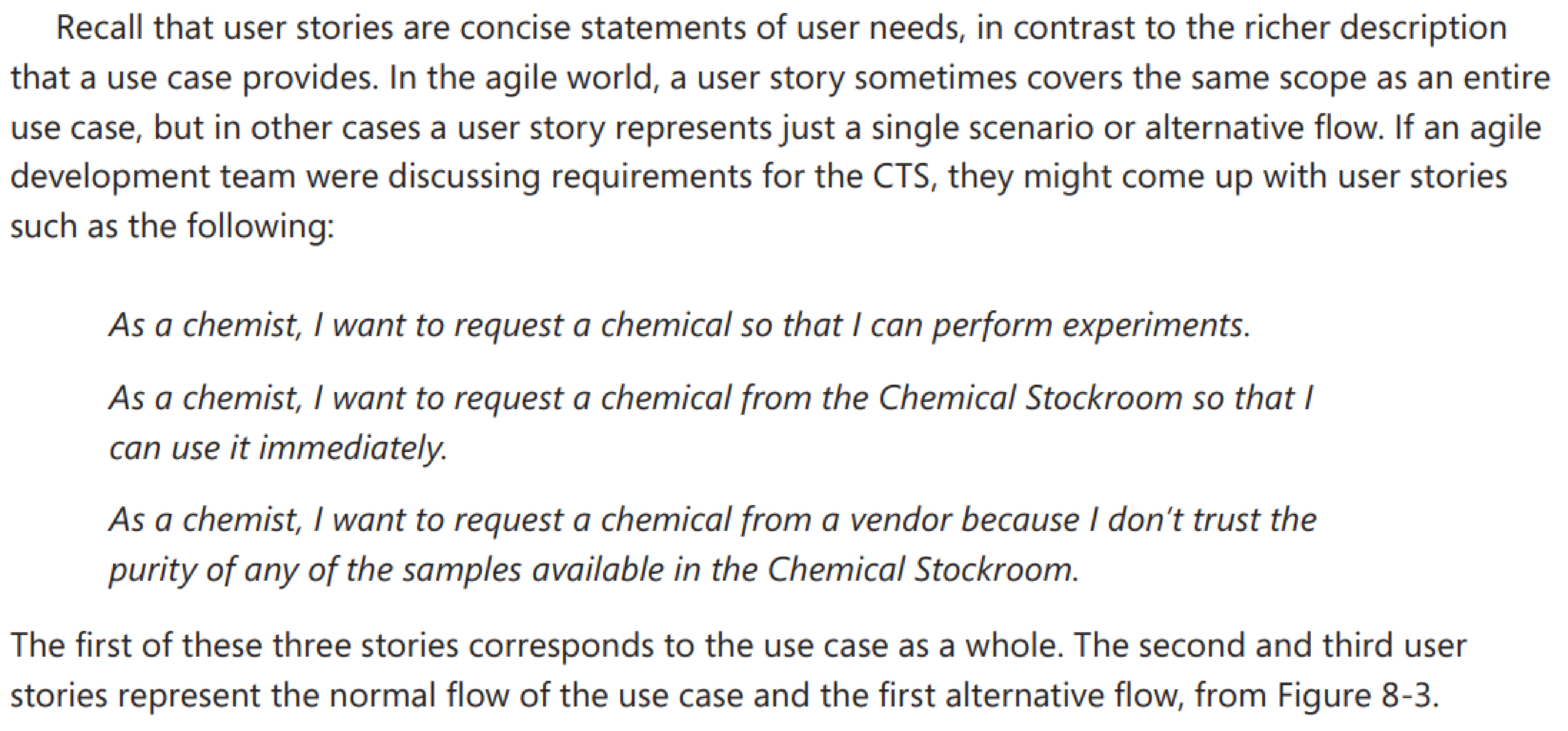


TABLE 8-2 Some sample use cases and corresponding user stories

Application	Sample use case	Corresponding user story
Chemical tracking system	Request a Chemical	As a chemist, I want to request a chemical so that I can perform experiments.
Airport check-in kiosk	Check in for a Flight	As a traveler, I want to check in for a flight so that I can fly to my destination.
Accounting system	Create an Invoice	As a small business owner, I want to create an invoice so that I can bill a customer.
Online bookstore	Update Customer Profile	As a customer, I want to update my customer profile so that future purchases are billed to a new credit card number.

More often: user story ⊂ use case



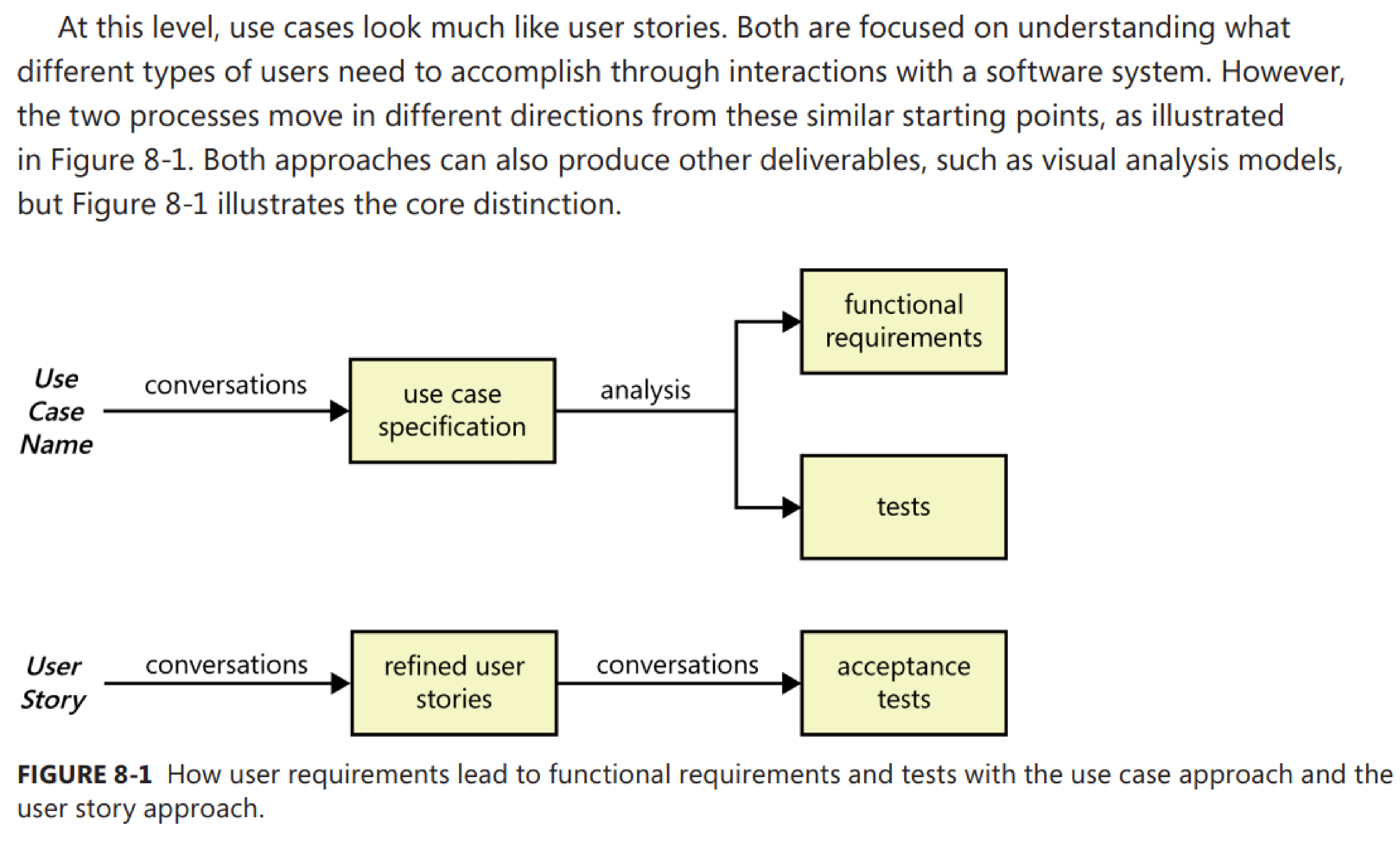
Recall that user stories are concise statements of user needs, in contrast to the richer description that a use case provides. In the agile world, a user story sometimes covers the same scope as an entire use case, but in other cases a user story represents just a single scenario or alternative flow. If an agile development team were discussing requirements for the CTS, they might come up with user stories such as the following:

As a chemist, I want to request a chemical so that I can perform experiments.

As a chemist, I want to request a chemical from the Chemical Stockroom so that I can use it immediately.

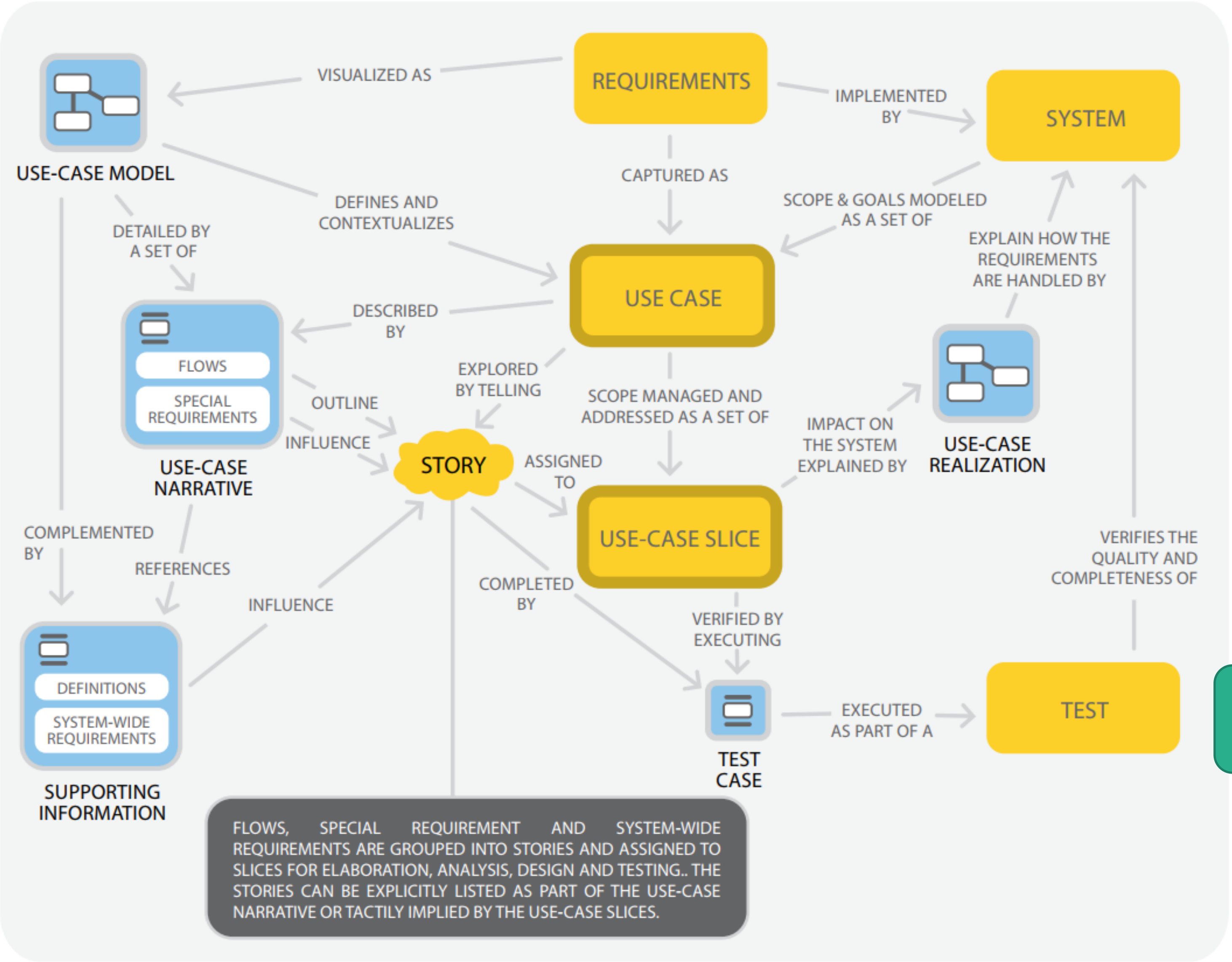
As a chemist, I want to request a chemical from a vendor because I don't trust the purity of any of the samples available in the Chemical Stockroom.

The first of these three stories corresponds to the use case as a whole. The second and third user stories represent the normal flow of the use case and the first alternative flow, from Figure 8-3.



At this level, use cases look much like user stories. Both are focused on understanding what different types of users need to accomplish through interactions with a software system. However, the two processes move in different directions from these similar starting points, as illustrated in Figure 8-1. Both approaches can also produce other deliverables, such as visual analysis models, but Figure 8-1 illustrates the core distinction.

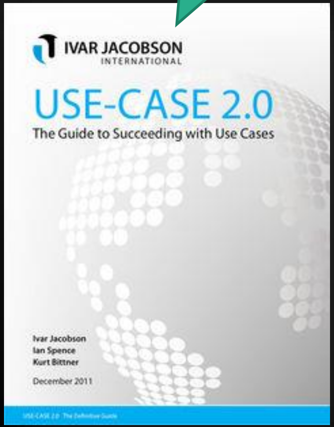
FIGURE 8-1 How user requirements lead to functional requirements and tests with the use case approach and the user story approach.



FLOWS, SPECIAL REQUIREMENT AND SYSTEM-WIDE REQUIREMENTS ARE GROUPED INTO STORIES AND ASSIGNED TO SLICES FOR ELABORATION, ANALYSIS, DESIGN AND TESTING.. THE STORIES CAN BE EXPLICITLY LISTED AS PART OF THE USE-CASE NARRATIVE OR TACTILY IMPLIED BY THE USE-CASE SLICES.

FIGURE 9: **THE USE-CASE 2.0 WORK PRODUCTS**

Copy in Moodle (TP-08 Resources)



IVAR JACOBSON INTERNATIONAL

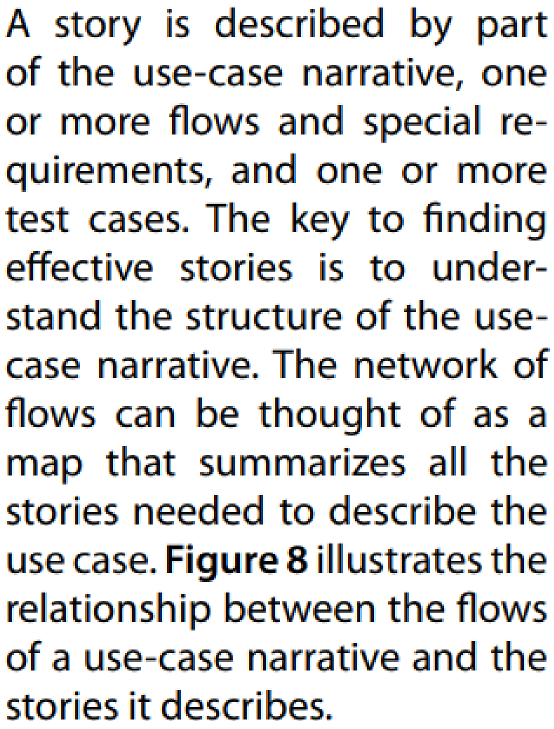
USE-CASE 2.0

The Guide to Succeeding with Use Cases

Ivar Jacobson
Ian Spence
Kurt Bittner

December 2011

Jacobson: flows in a use case match stories



A story is described by part of the use-case narrative, one or more flows and special requirements, and one or more test cases. The key to finding effective stories is to understand the structure of the use-case narrative. The network of flows can be thought of as a map that summarizes all the stories needed to describe the use case. **Figure 8** illustrates the relationship between the flows of a use-case narrative and the stories it describes.

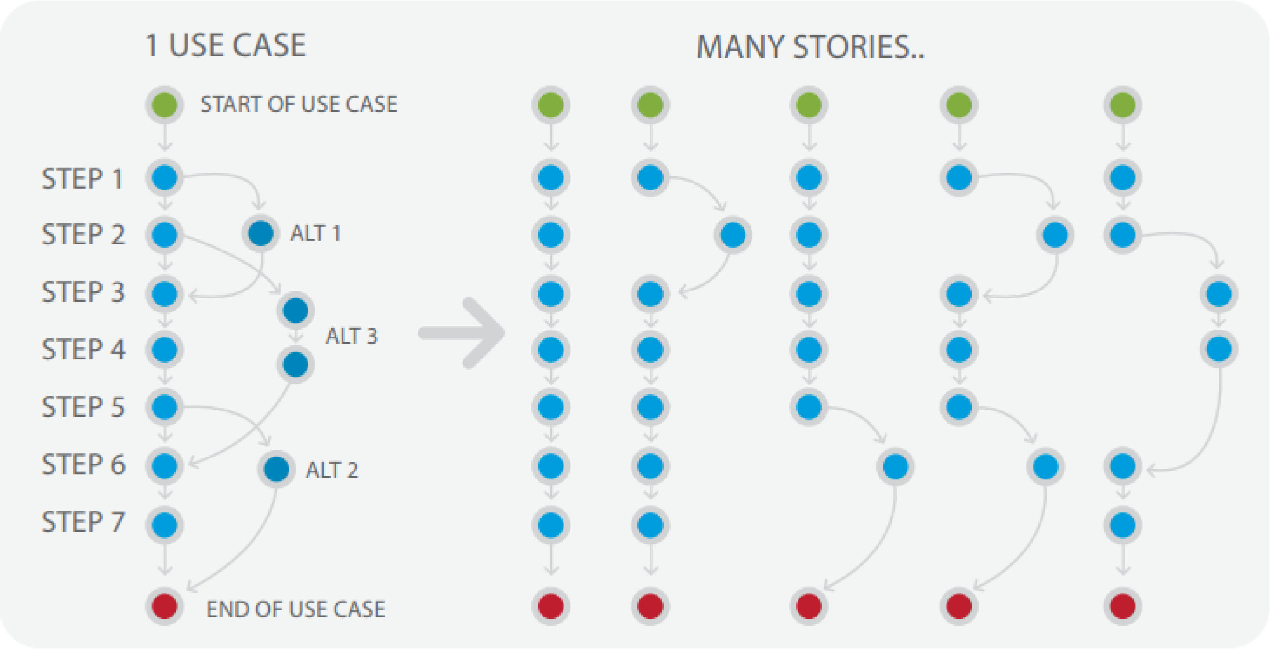
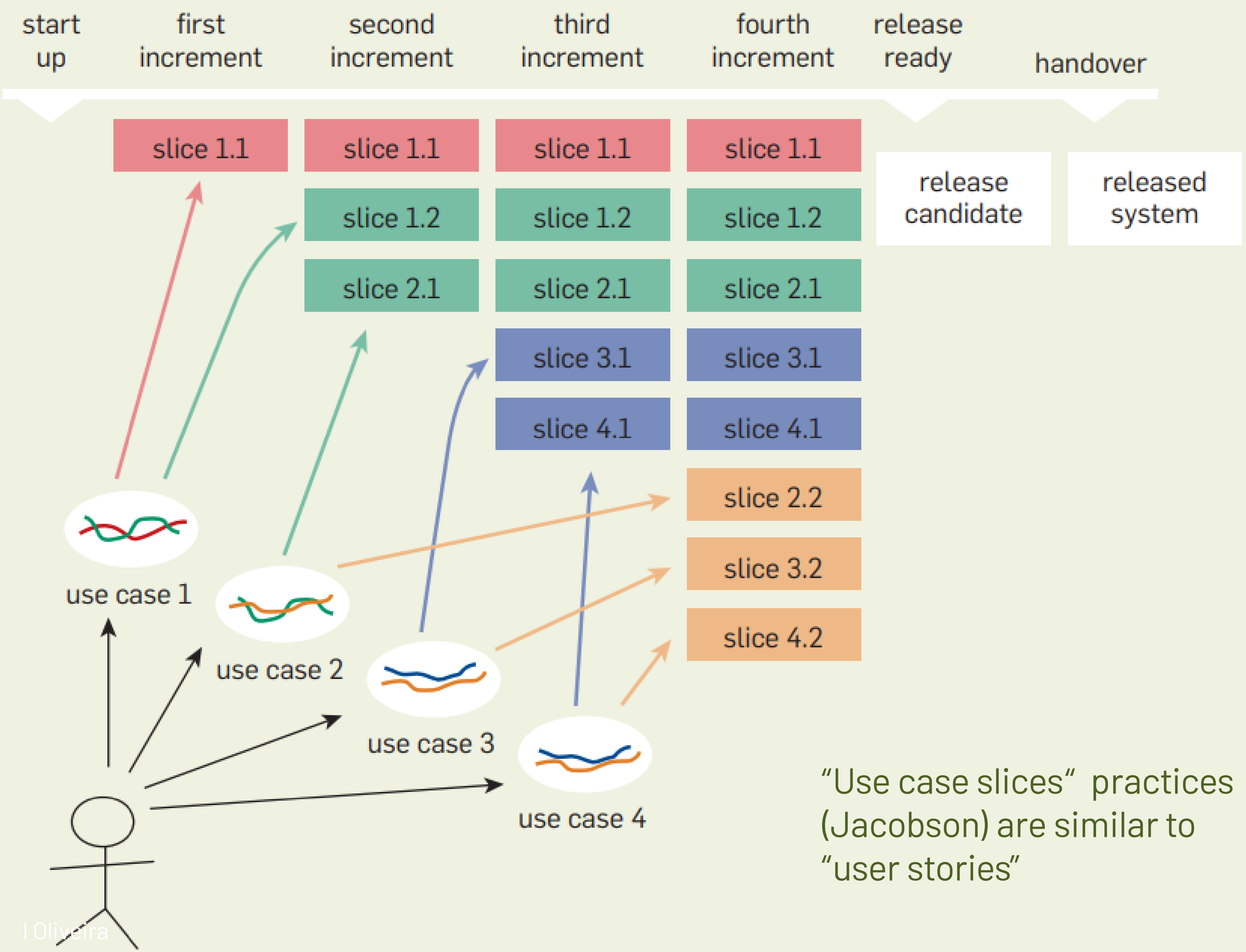


FIGURE 8:
THE RELATIONSHIP BETWEEN THE FLOWS AND THE STORIES

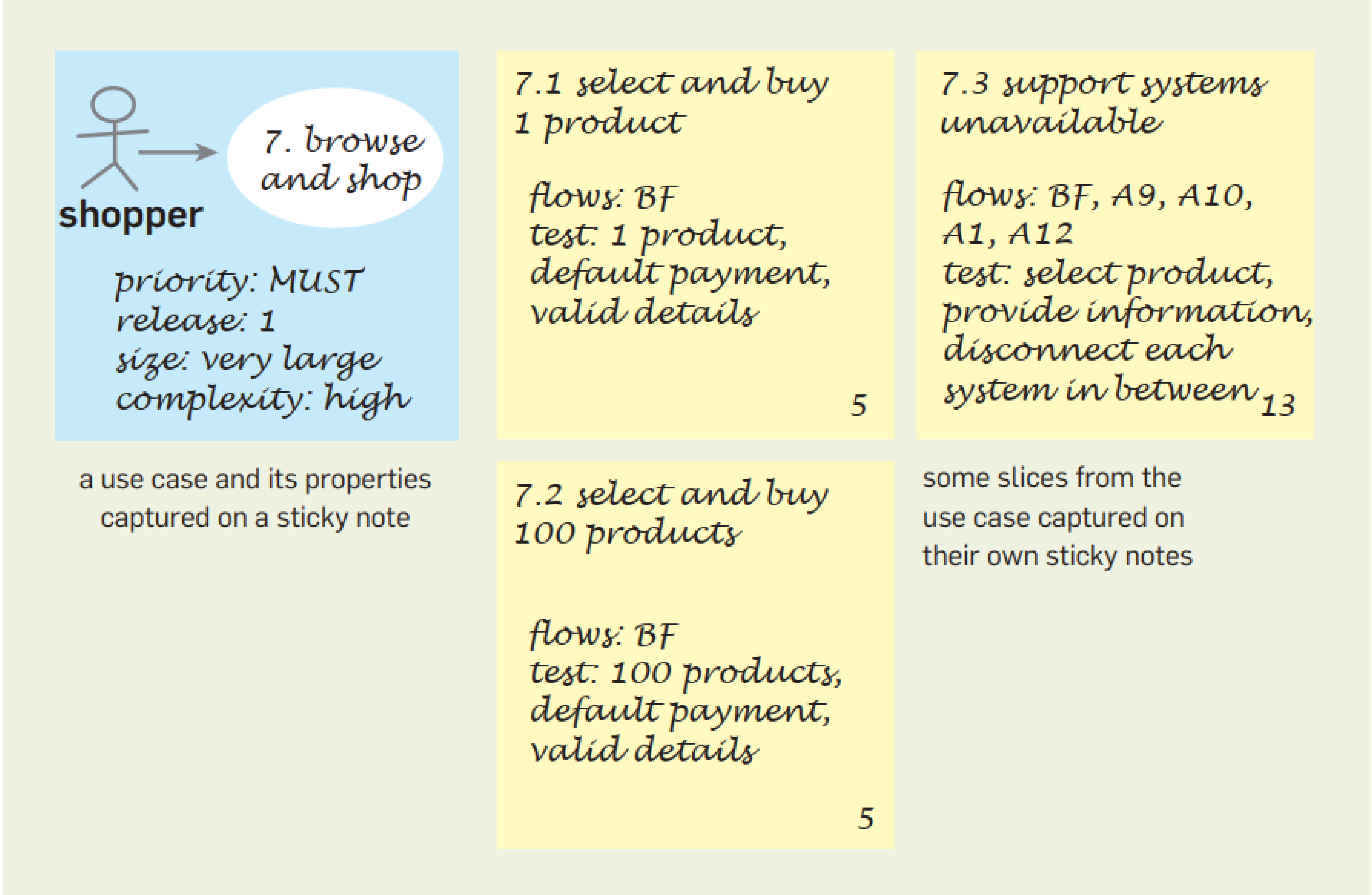
Figure 4. Use cases, use-case slices, increments, and releases.



“Use case slices“ practices (Jacobson) are similar to “user stories”

I Oliveira

Figure 5. Capturing the properties of a use case and its slices using sticky notes.



priority: MUST
release: 1
size: very large
complexity: high

a use case and its properties captured on a sticky note

7.1 select and buy 1 product

flows: BF
test: 1 product, default payment, valid details

5

7.2 select and buy 100 products

flows: BF
test: 100 products, default payment, valid details

5

7.3 support systems unavailable

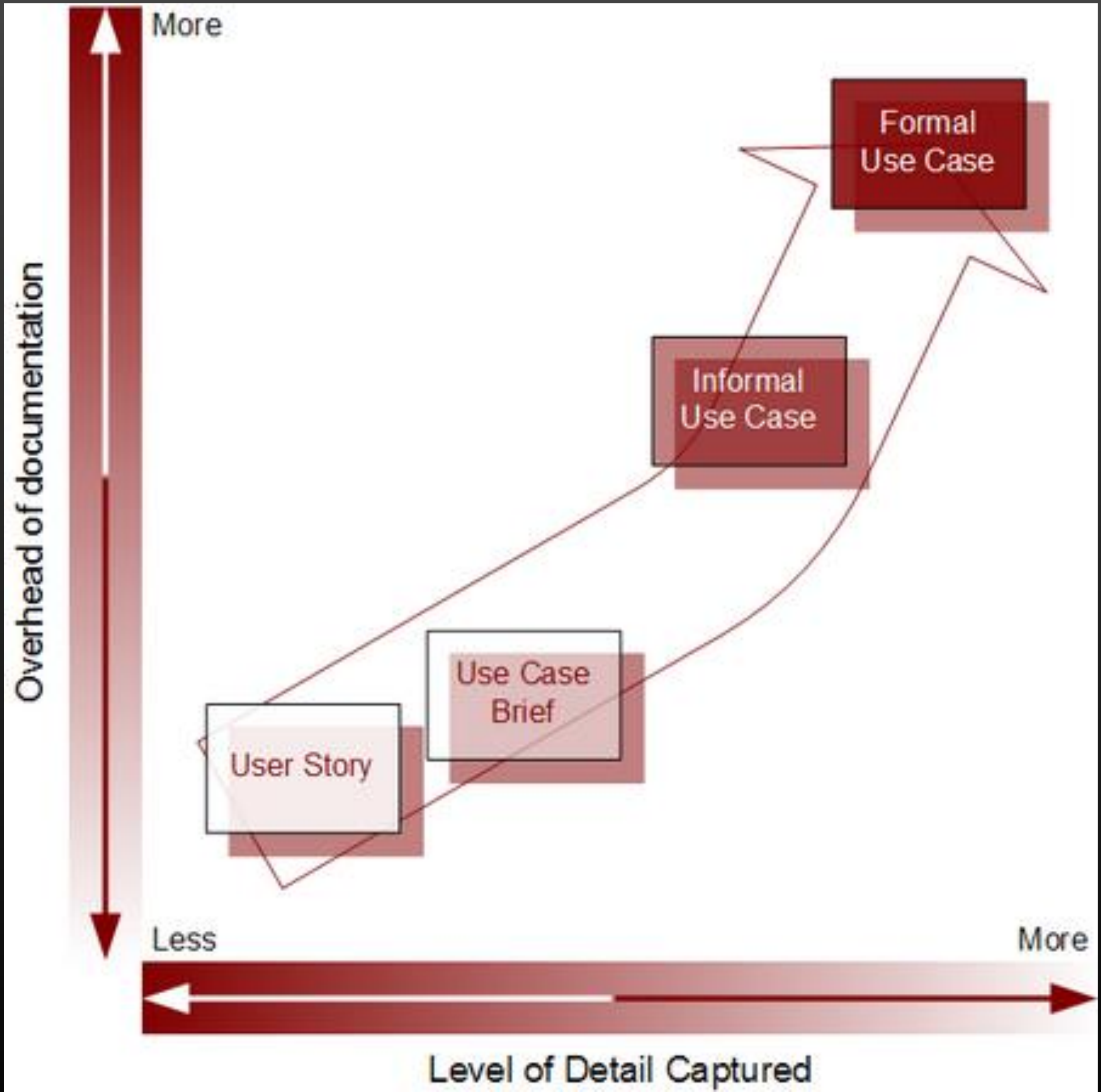
flows: BF, A9, A10, A1, A12
test: select product, provide information, disconnect each system in between

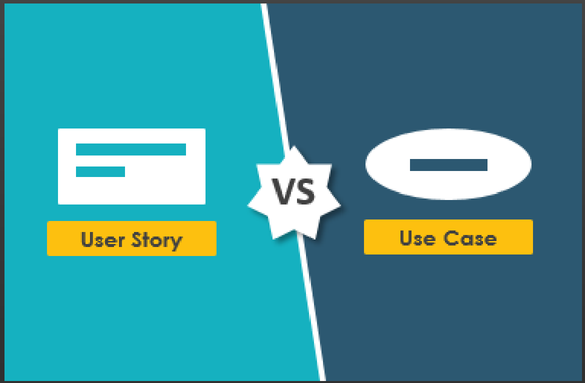
13

some slices from the use case captured on their own sticky notes

User stories and use cases: what is the difference?

Common	Use-Cases	User-story
• Both take a usage-centric approach • Both are placeholders for a conversation • Both result in test cases that represent the acceptance criteria • Both can be estimated	• Big picture to help people understand the extent of the system and its value • Dive further into describing how the user imagines interacting with the system to accomplish his objective. • Provide project participants with a structure and context that a collection of user stories lacks • You can examine each element of a use case (flows, preconditions, postconditions, and so on) to look for pertinent functional and nonfunctional requirements and to derive tests. This helps you avoid overlooking any requirements • Active scope management	• Concise statement of a user's needs • Easy access to domain experts available (refine the story as needed) • More suited to act as a backlog item for daily activities (Scrum, Kanban, specification by example) • Explicit acceptance criteria


More
Overhead of documentation
Formal Use Case
Informal Use Case
Use Case Brief
User Story
Less
More
Level of Detail Captured


User Story
VS
Use Case

Requirements elicitation by exploring user-centered scenarios

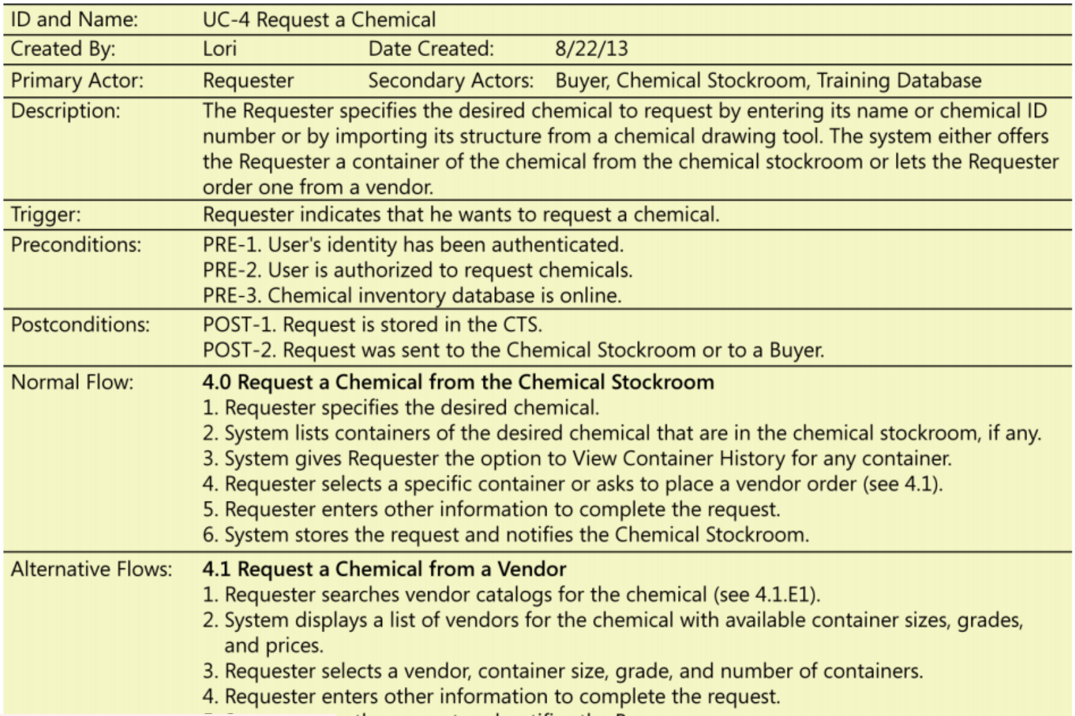
A) Use cases

B) User stories

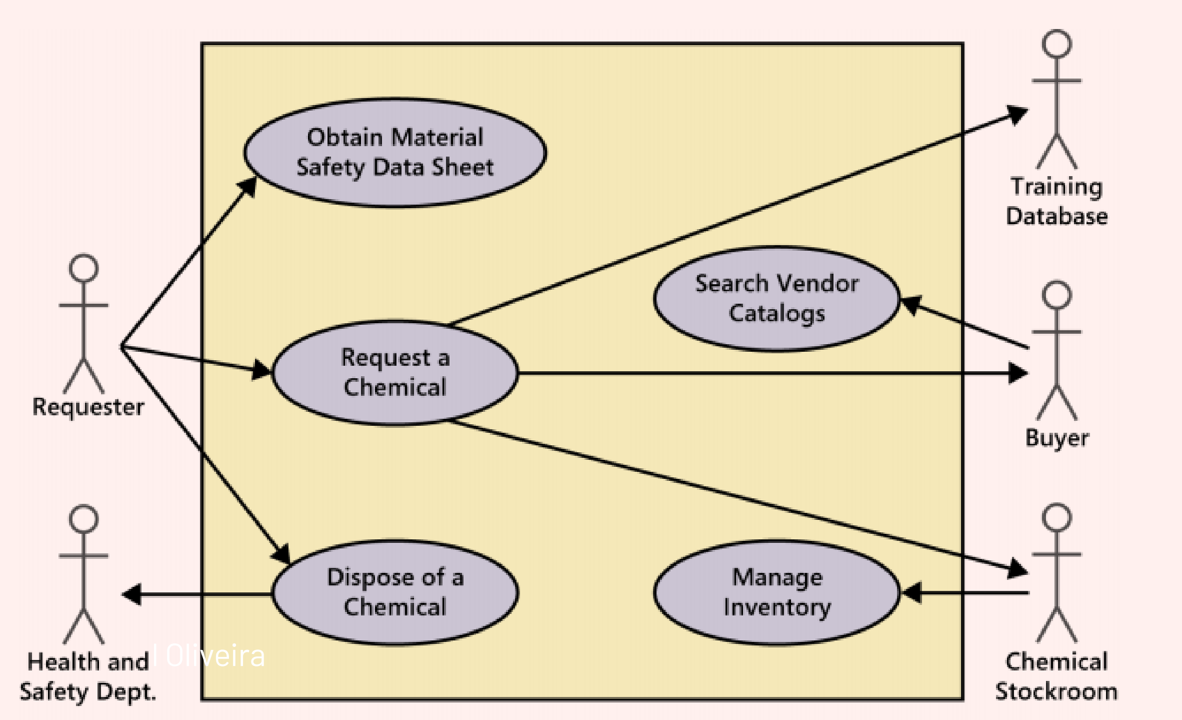
C) User-centered design (UCD)

D) Customer Journey Map (Experience maps)

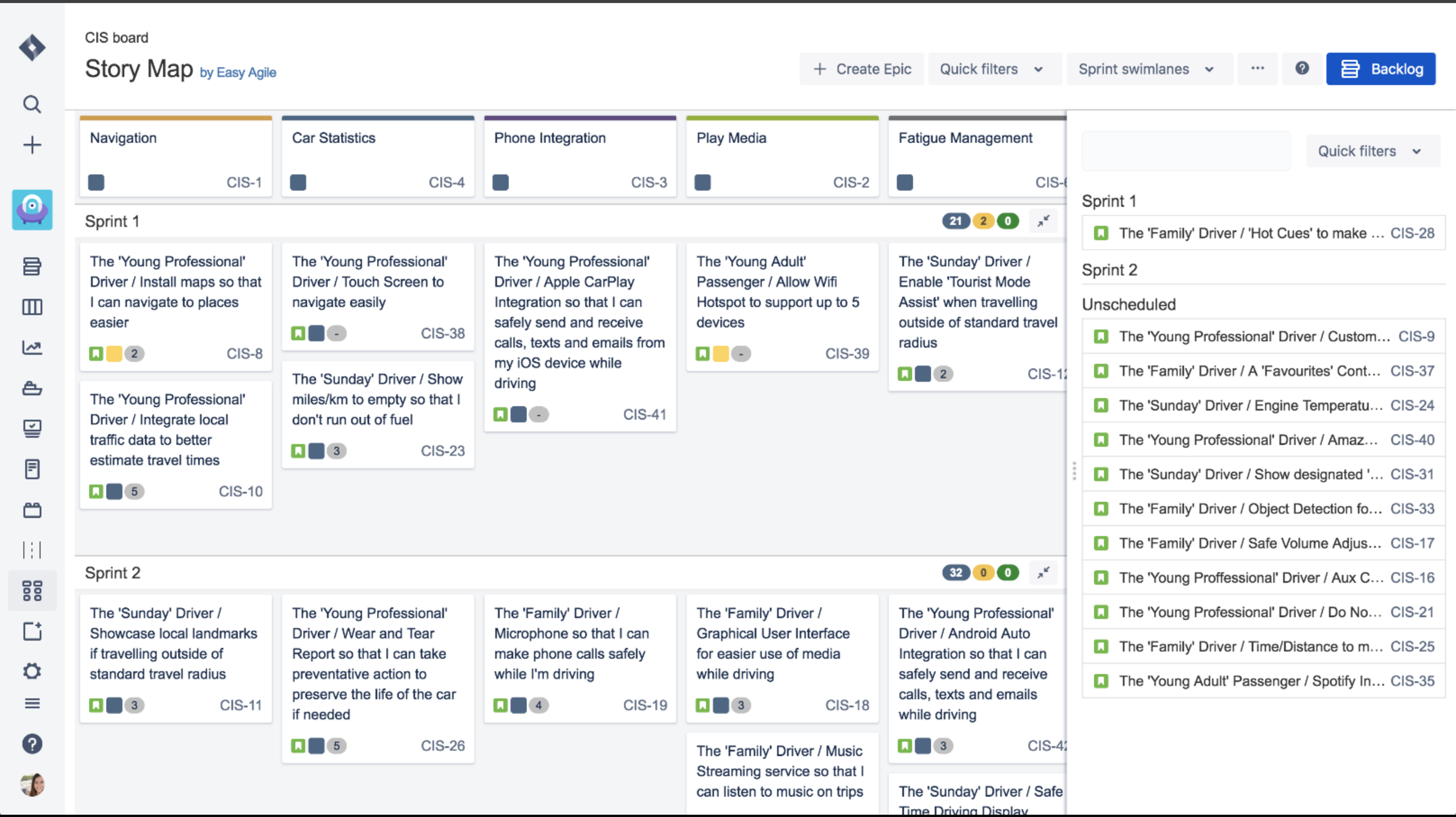
Use cases way



ID and Name:	UC-4 Request a Chemical		
Created By:	Lori	Date Created:	8/22/13
Primary Actor:	Requester	Secondary Actors:	Buyer, Chemical Stockroom, Training Database
Description:	The Requester specifies the desired chemical to request by entering its name or chemical ID number or by importing its structure from a chemical drawing tool. The system either offers the Requester a container of the chemical from the chemical stockroom or lets the Requester order one from a vendor.		
Trigger:	Requester indicates that he wants to request a chemical.		
Preconditions:	PRE-1. User's identity has been authenticated. PRE-2. User is authorized to request chemicals. PRE-3. Chemical inventory database is online.		
Postconditions:	POST-1. Request is stored in the CTS. POST-2. Request was sent to the Chemical Stockroom or to a Buyer.		
Normal Flow:	**4.0 Request a Chemical from the Chemical Stockroom** 1. Requester specifies the desired chemical. 2. System lists containers of the desired chemical that are in the chemical stockroom, if any. 3. System gives Requester the option to View Container History for any container. 4. Requester selects a specific container or asks to place a vendor order (see 4.1). 5. Requester enters other information to complete the request. 6. System stores the request and notifies the Chemical Stockroom.		
Alternative Flows:	**4.1 Request a Chemical from a Vendor** 1. Requester searches vendor catalogs for the chemical (see 4.1.E1). 2. System displays a list of vendors for the chemical with available container sizes, grades, and prices. 3. Requester selects a vendor, container size, grade, and number of containers. 4. Requester enters other information to complete the request. s the request and notifies the Buyer.		
	al Is Not Commercially Available ays message: No vendors for that chemical. Requester if he wants to request another chemical (3a) or to exit (4a). asks to request another chemical. rts normal flow over. asks to exit. minates use case.		
	5 times per week by each chemist, 200 times per week by chemical f		



User stories



CIS board

Story Map by Easy Agile

Navigation CIS-1

Car Statistics CIS-4

Phone Integration CIS-3

Play Media CIS-2

Fatigue Management CIS-

Sprint 1 21 2 0

- The 'Young Professional' Driver / Install maps so that I can navigate to places easier — 2 — CIS-8
- The 'Young Professional' Driver / Integrate local traffic data to better estimate travel times — 5 — CIS-10
- The 'Young Professional' Driver / Touch Screen to navigate easily — - — CIS-38
- The 'Sunday' Driver / Show miles/km to empty so that I don't run out of fuel — 3 — CIS-23
- The 'Young Professional' Driver / Apple CarPlay Integration so that I can safely send and receive calls, texts and emails from my iOS device while driving — - — CIS-41
- The 'Young Adult' Passenger / Allow Wifi Hotspot to support up to 5 devices — - — CIS-39
- The 'Sunday' Driver / Enable 'Tourist Mode Assist' when travelling outside of standard travel radius — 2 — CIS-1

Sprint 2 32 0 0

- The 'Sunday' Driver / Showcase local landmarks if travelling outside of standard travel radius — 3 — CIS-11
- The 'Young Professional' Driver / Wear and Tear Report so that I can take preventative action to preserve the life of the car if needed — 5 — CIS-26
- The 'Family' Driver / Microphone so that I can make phone calls safely while I'm driving — 4 — CIS-19
- The 'Family' Driver / Graphical User Interface for easier use of media while driving — 3 — CIS-18
- The 'Family' Driver / Music Streaming service so that I can listen to music on trips
- The 'Young Professional' Driver / Android Auto Integration so that I can safely send and receive calls, texts and emails while driving — 3 — CIS-4
- The 'Sunday' Driver / Safe Time Driving Display

Sprint 1

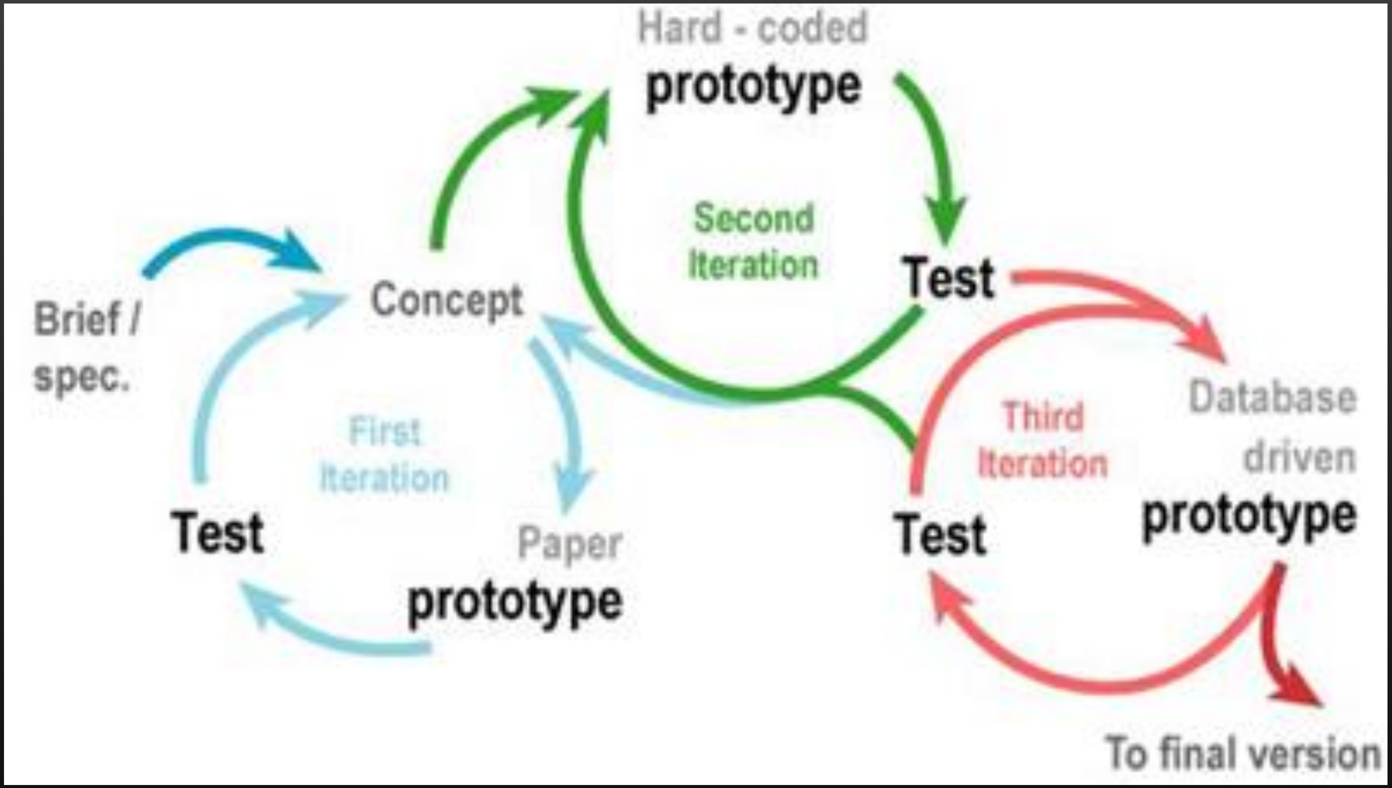
- The 'Family' Driver / 'Hot Cues' to make … CIS-28

Sprint 2

Unscheduled

- The 'Young Professional' Driver / Custom… CIS-9
- The 'Family' Driver / A 'Favourites' Cont… CIS-37
- The 'Sunday' Driver / Engine Temperatu… CIS-24
- The 'Young Professional' Driver / Amaz… CIS-40
- The 'Sunday' Driver / Show designated '… CIS-31
- The 'Family' Driver / Object Detection fo… CIS-33
- The 'Family' Driver / Safe Volume Adjus… CIS-17
- The 'Young Proffessional' Driver / Aux C… CIS-16
- The 'Young Professional' Driver / Do No… CIS-21
- The 'Family' Driver / Time/Distance to m… CIS-25
- The 'Young Adult' Passenger / Spotify In… CIS-35

UCD: prototyping & acceptance



https://www.museumsandtheweb.com/mw2007/papers/brown/brown.html

Rail Europe Experience Map

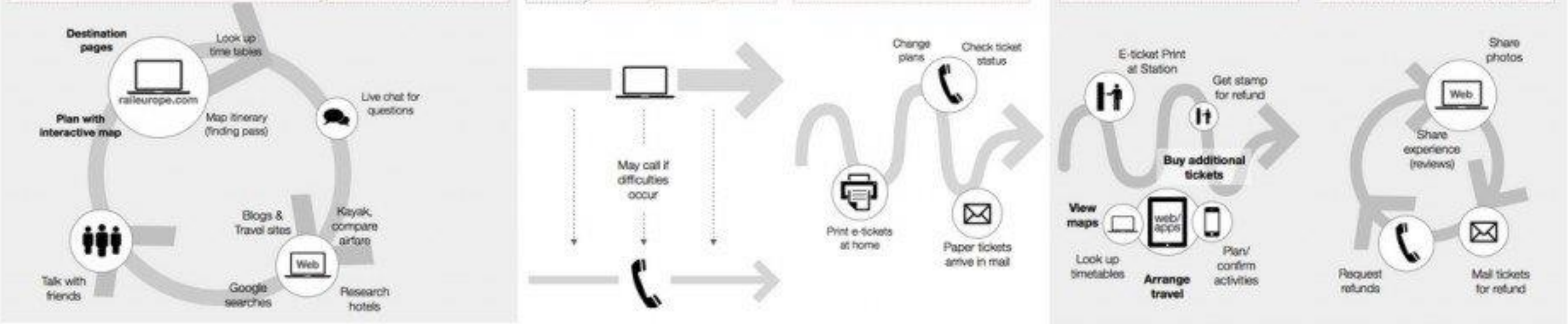
Guiding Principles

- People choose rail travel because it is convenient, easy, and flexible.
- Rail booking is only one part of people's larger travel process.
- People build their travel plans over time.
- People value service that is respectful, effective and personable.

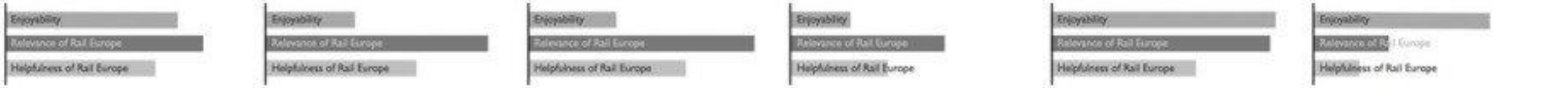
Customer Journey

STAGES	RAIL EUROPE	THINKING	FEELING
Research & Planning	Research destinations, routes and products	• What is the easiest way to get around Europe? • Where do I want to go? • How much time should I/we spend in each place for site seeing and activities?	• I'm excited to go to Europe! • Will I be able to see everything I can? • What if I can't afford this? • I don't want to make the wrong choice.
Shopping	Enter trips Review fares Select Pass(es)	• I want to get the best price, but I'm willing to pay a little more for first class. • How much will my whole trip cost me? What are my trade-offs? • Are there other activities I can add to my plan?	• It's hard to trust Trip Advisor. Everyone is so negative. • Keeping track of all the different products is confusing. • Am I sure this is the trip I want to take?
Booking	Confirm itinerary Delivery options Payment options Review & Confirm	• Do I have all the tickets, passes and reservations I need in this booking so I don't pay more shipping? • Rail Europe is not answering the phone. How else can I get my question answered?	• Website experience is easy and friendly! • Frustrated to not know sooner about which tickets are eTickets and which are paper tickets. Not sure my tickets will arrive in time.
Post-Booking, Pre-Travel	Wait for paper tickets to arrive	• Do I have everything I need? • Rail Europe website was easy and friendly, but when an issue came up, I couldn't get help. • What will I do if my tickets don't arrive in time?	• Stressed that I'm about to leave the country and Rail Europe won't answer the phone. • Frustrated that Rail Europe won't ship tickets to Europe. • Happy to receive my tickets in the mail!
Travel	Activities, unexpected changes	• I just figured we could grab a train but there are not more trains. What can we do now? • Am I on the right train? If not, what next? • I want to make more travel plans. How do I do that?	• I am feeling vulnerable to be in an unknown place in the middle of the night. • Stressed that the train won't arrive on time for my connection. • Meeting people who want to show us around is fun, serendipitous, and special.
Post Travel	Share experience Follow-up on refunds for booking changes	• Trying to return ticket I was not able to use. Not sure if I'll get a refund or not. • People are going to love these photos! • Next time, we will explore routes and availability more carefully.	• Excited to share my vacation story with my friends. • A bit annoyed to be dealing with ticket refund issues when I just got home.

DOING



EXPERIENCE



Opportunities

GLOBAL

- **Communicate a clear value proposition.** STAGE: Initial visit
- **Help people get the help they need.** STAGES: Global
- **Support people in creating their own solutions.** STAGES: Global
- **Make your customers into better, more savvy travelers.** STAGES: Global
- **Engage in social media with explicit purposes.** STAGES: Global

PLANNING, SHOPPING, BOOKING

- **Enable people to plan over time.** STAGES: Planning, Shopping
- **Visualize the trip for planning and booking.** STAGES: Planning, Shopping
- **Arm customers with information for making decisions.** STAGES: Shopping, Booking
- **Connect planning, shopping and booking on the web.** STAGES: Planning, Shopping, Booking
- **Aggregate shipping with a reasonable timeline.** STAGE: Booking

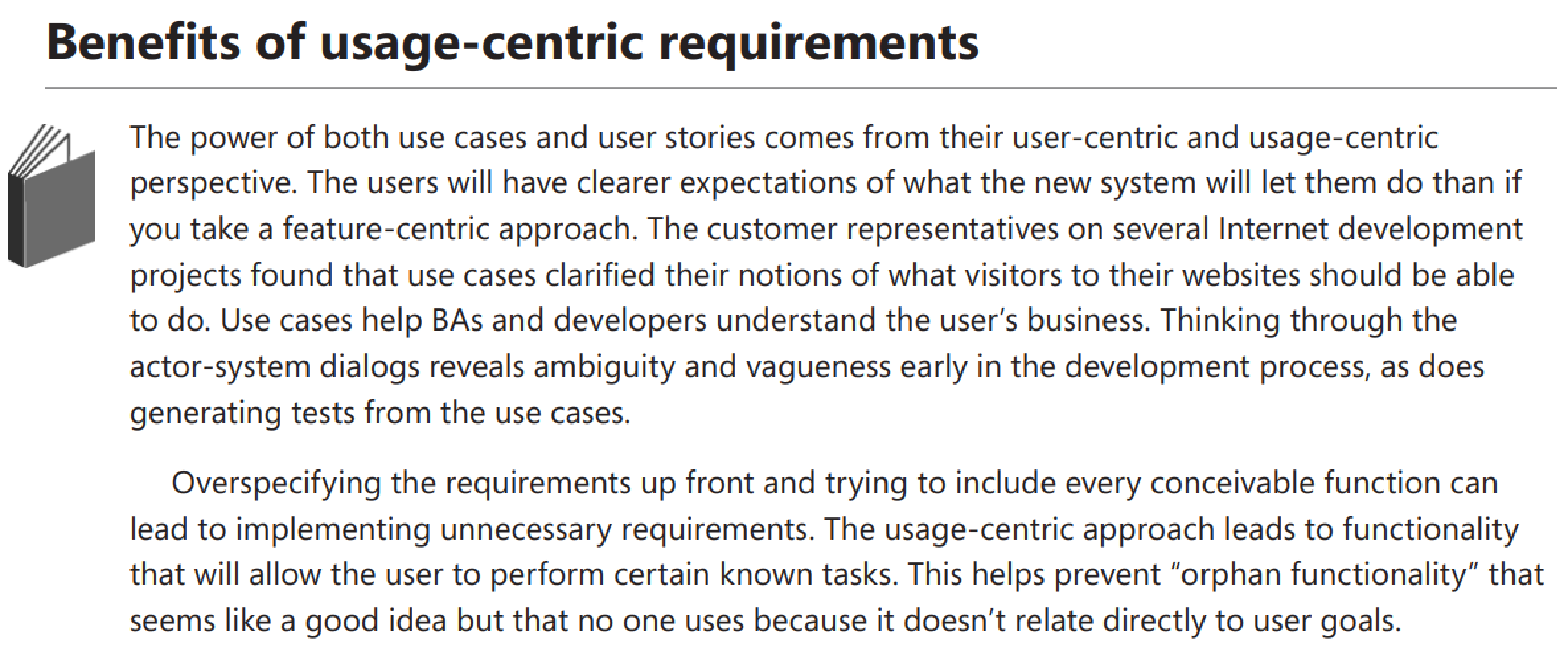
POST-BOOK, TRAVEL, POST-TRAVEL

- **Improve the paper ticket experience.** STAGES: Post-Booking, Travel, Post-Travel
- **Accommodate planning and booking in Europe too.** STAGE: Traveling
- **Proactively help people deal with change.** STAGES: Post-Booking, Traveling
- **Communicate status clearly at all times.** STAGES: Post-Booking, Post Travel

Information sources
Stakeholder interviews
Cognitive walkthroughs
Customer Experience Survey
Existing Rail Europe Documentation

Ongoing, non-linear
Linear process
Non-linear, but time based

adaptive path



Benefits of usage-centric requirements

The power of both use cases and user stories comes from their user-centric and usage-centric perspective. The users will have clearer expectations of what the new system will let them do than if you take a feature-centric approach. The customer representatives on several Internet development projects found that use cases clarified their notions of what visitors to their websites should be able to do. Use cases help BAs and developers understand the user's business. Thinking through the actor-system dialogs reveals ambiguity and vagueness early in the development process, as does generating tests from the use cases.

Overspecifying the requirements up front and trying to include every conceivable function can lead to implementing unnecessary requirements. The usage-centric approach leads to functionality that will allow the user to perform certain known tasks. This helps prevent "orphan functionality" that seems like a good idea but that no one uses because it doesn't relate directly to user goals.

Usage-centric approaches to requirements: benefits and limitations

Both use cases and user stories shift from the product-centric perspective of requirements elicitation to discussing what *users* need to accomplish, in contrast to asking users what they want the *system* to do.

The intent of this approach is to describe tasks that users will need to perform with the system, or user-system interactions that will result in a valuable outcome for some stakeholder.

Use cases and user stories work well for exploring the requirements for business applications, websites, kiosks, and systems that let a user control a piece of hardware.

However: they are inadequate for understanding the requirements of certain types of applications. Applications such as batch processes, computationally intensive systems, business analytics, and data warehousing might have just a few use cases. The complexity of these applications lies in the computations performed, the data found and compiled, or the reports generated, not in the user-system interactions.

Nor are use cases and user stories sufficient for specifying many embedded and other real-time systems.

Take away messages

- Agile projects (especially Scrum ones) use a product backlog, which is a prioritized list of the functionality to be developed.

- Product backlog items can be whatever the team desires, but user stories have emerged as the best and most popular form of product backlog items.

- Both use cases and user stories focus on conversations and system usage by people.

- Use cases provide more structure and a way to document details collected in analysis.

- User stories are refined as needed; focus on giving an example for a small feature.

References

Core readings	Suggested readings
- Jacobson, I., Spence, I., & Kerr, B. (2016). Use-case 2.0. *Communications of the ACM*, *59*(5), 61–69. - "User Story vs Use Case for Agile Software Development", Visual Paradigm	- Jacobson, I., Spence, I., & Bittner, K. (2011). *Use-Case 2.0 The Guide o Succeeding with Use Cases*. [e-Book] - User story (VisualParadigm handbook)