41951- ANÁLISE DE SISTEMAS

Metodologias ágeis e 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.

Jacobson's Use Cases 2.0

Use cases e os métodos ágeis \rightarrow Use Cases 2.0

A granularidade dos casos de uso pode ser excessiva

para a gestão do dia-a-dia da equipa de desenvolvimento

Proposta Use Cases 2.0

- "Fatias" de funcionalidade
- Ponto de partida: use cases
 - ...com a flexibilidade das user stories/use case slices





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 usecase 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.

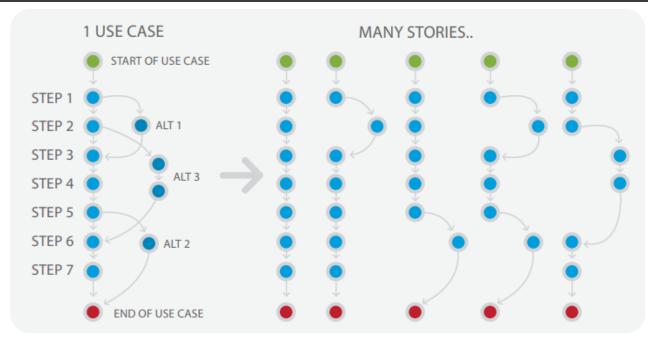
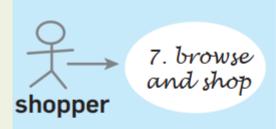


FIGURE 8:
THE RELATIONSHIP BETWEEN THE FLOWS AND THE STORIES

Figure 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

7.2 select and buy 100 products

flows: BF test: 100 products, default payment, valid details 7.3 support systems unavailable

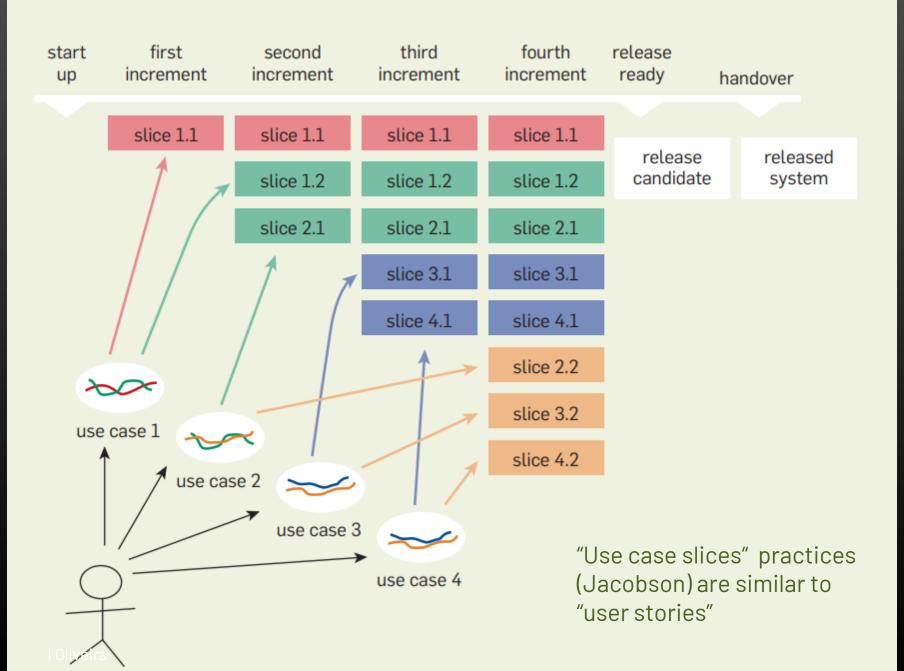
flows: BF, A9, A10, A1, A12 test: select product, provide information, disconnect each system in between 13

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

5

5

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



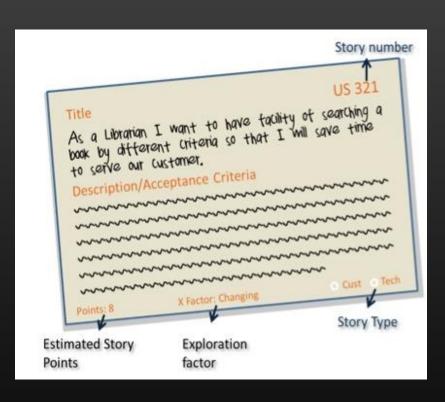
User Stories in Agile

User stories in agile methods

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)

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 != use case



→ See <u>examples</u>

Exemplo

Histórias adequada:

- O gestor de RH publica nova oferta de emprego.
- Um Candidato pode limitar quem pode ver o seu currículo

Histórias desadequadas:

- O software será implementado em Python.
- O programa irá ligar-se à base de dados através de uma "connection pool" (reutilização de ligações já abertas)

Anotação informal do que é descoberto nas "conversas" Users can view information about each job that is matched by a search.

Marco says show description, salary, and location.

Story Card 1.2 A story card with a note.

"Fatiar" os cenários de uso para tornar o trabalho mais concreto, gerível e segmentado

A equipa de projeto e o cliente/promotor começam a discutir requisitos sobre as motivações de uso:

"Um Candidato (a um emprego) pode publicar um currículo (no site)".

Objetivo de alto nível ←→ caso de utilização.

Essa "história" será expandida à medida que os detalhes forem descobertos através de conversas / colaboração. →

→ ver: <u>exemplo relacionado</u>

Um possível desenvolvimento em histórias (user stories):

- Um Candidato pode adicionar um novo currículo ao site.
- Um Candidato pode editar um currículo que já está no site.
- Um Candidato pode remover o currículo do local.
- Um Candidato pode mudar o estado do CV para inativo/ativo.
- Um Candidato pode marcar um currículo como escondido para certos empregadores.
- Um Candidato pode ver as vezes que o seu currículo foi consultado

A metáfora do "post-it"

- Granularidade adequada para distribuir o trabalho
- Rastreabilidade para os requisitos (cenários de uso)
- Alguns "post-it" por iteração



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Boas ou más histórias?

- a The user can run the system on Windows XP and Linux.
- b All graphing and charting will be done using a third-party library.
- c The user can undo up to fifty commands.
- d The software will be released by June 30.
- e The software will be written in Java.
- f The user can select her country from a drop-down list.
- g The system will use Log4J to log all error messages to a file.
- h The user will be prompted to save her work if she hasn't saved it for 15 minutes.
- i The user can select an "Export to XML" feature.
- j The user can export data to XML.

Pode-se usar um template para apresentar a história



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

As histórias devem conter um benefício percetível para o utilizador!

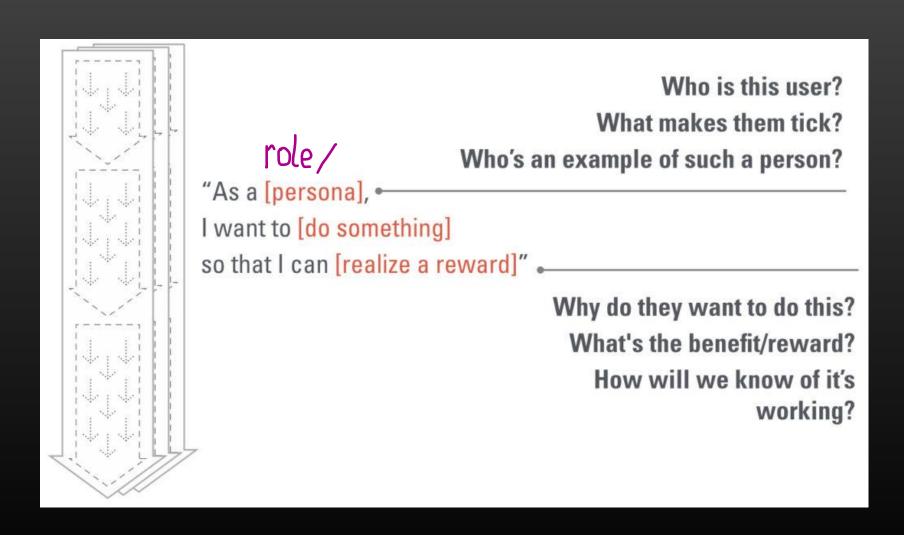
Automatic Builds

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.

140liveira

Undesirable technical story

The story should clarify how to check if it is working



Estratégia para redigir a história

As histórias dos utilizadores são frequentemente escritas de acordo com a seguinte estrutura (mas há outros estilos):

Sendo <papel de utilizador>, quero <ação/funcionalidade pretendida> de modo a <satisfação obtida>

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

US001

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

E.g.:

Sendo um <u>cliente</u>, quero <u>receber um</u> <u>SMS quando o artigo chegar</u> de modo a que <u>eu possa ir buscá-lo</u>.

<role> representa a pessoa, o sistema, o subsistema ou qualquer outra entidade que interaja com o sistema a ser implementado para atingir um objetivo. É quem obtém valor da utilização do sistema.

<business objetive> representa uma expectativa de um utilizador sobre algo que pode realizar interagindo com o sistema.

<benefício> representa o valor resultante por da interação com o sistema. Pode ser omitido, se for óbvio (decorrente do ponto anterior).

→ ver <u>exemplos</u>

Bring the "experience map" to the project

Rail Europe Experience Map

Guiding Principles

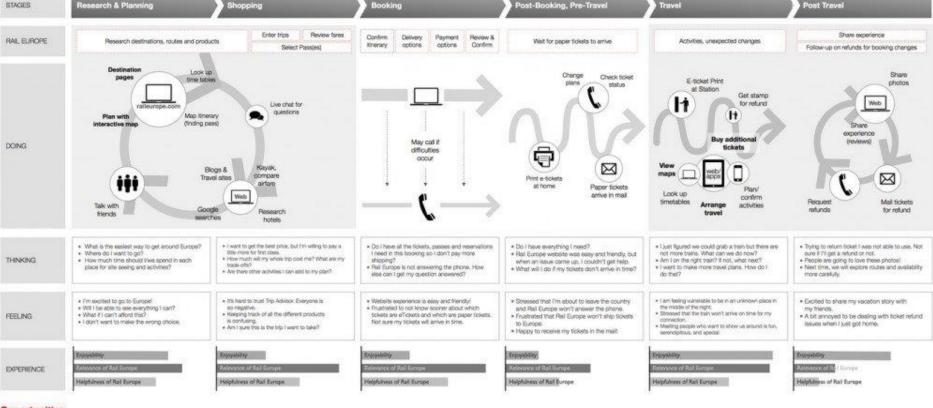
People choose rail travel because it is convenient, easy, and flexible.

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



Opportunities GLOBAL	-		PLANNING, SHOPPING, BOOKING III			POST-BOOK, TRAVEL, POST-TRAVE	
Communicate a clear value proposition.	Help people get the help they need. STAGIS: Global	Support people in creating their own solutions.	Enable people to plan over time.	Visualize the trip for planning and booking. STACE: Planning, Stacong	Arm customers with information for making decisions. STAGES Shopping Booking	Improve the paper ticket experience. STAGES POST-BOOKING, Tavel, POST-Tavel	Accommodate planning and booking in Europe too.
Make your customers into better, more savvy travelers.	Engage in social media with explicit purposes.		Connect planning, shopping and booking on the web. SUGES Parring Stopping Booking	Aggregate shipping with a reasonable timeline.		Proactively help people deal with change. STAGES Past Broking, Taveling	Communicate status clearly at all times. 579.053: Post-Booking, Post Travel

Information sources

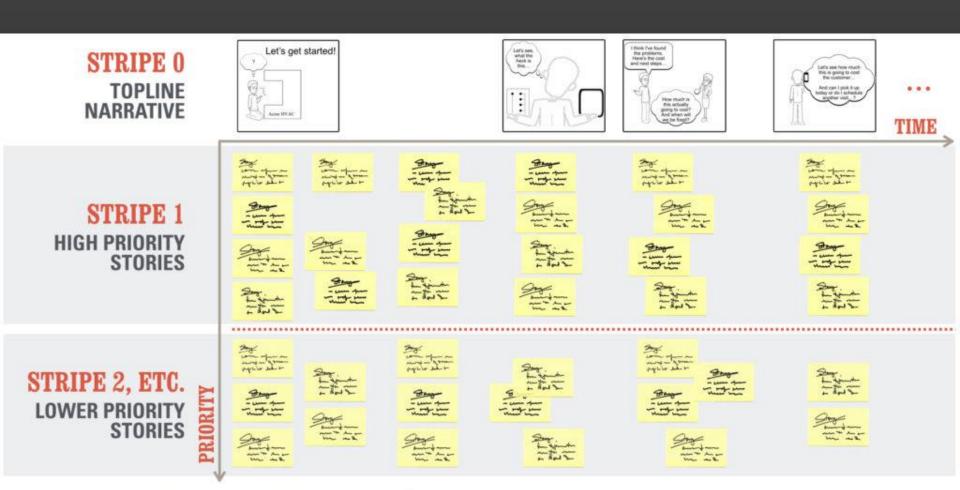
Stakeholder interviews Cognitive walkthroughs **Customer Experience Survey** Existing Rail Europe Documentation







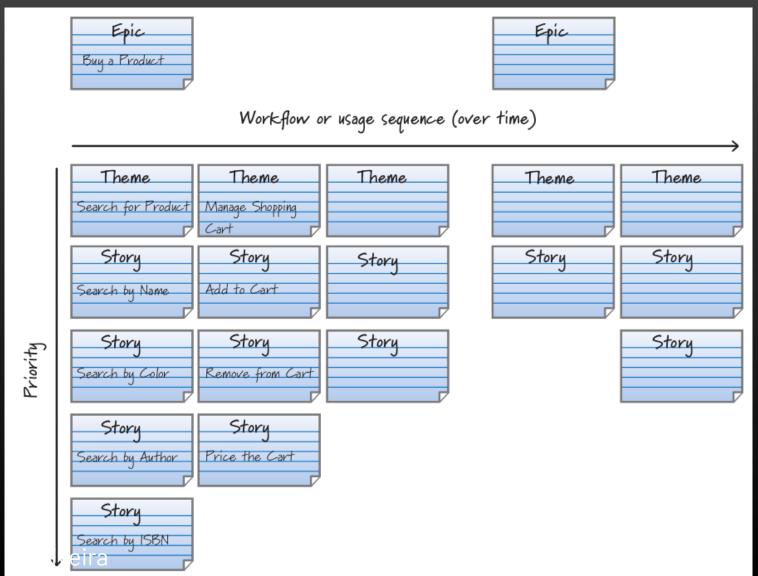
Organização das histórias em níveis de prioridade (linhas de corte para as iterações)



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

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À procura das histórias



Epic (épico): "grande" objetivo do utilizador

Quando uma história é muito "grande" (apresentada em alto nível), às vezes é referida como um épico.

Os Épicos podem ser divididos em várias histórias de tamanho menor.

Por exemplo, o épico "Um utilizador pode usar o site para procurar um emprego" poderia ser dividido em várias histórias:

- Um utilizador pode procurar empregos por atributos como localização, intervalo salarial, designação da oferta, nome da empresa, e a data em que o trabalho foi postado.
- Um utilizador pode visualizar informações detalhadas sobre cada oportunidade que seja encontrada numa pesquisa.
- Um utilizador pode ver informações detalhadas sobre uma empresa que publicou um trabalho.

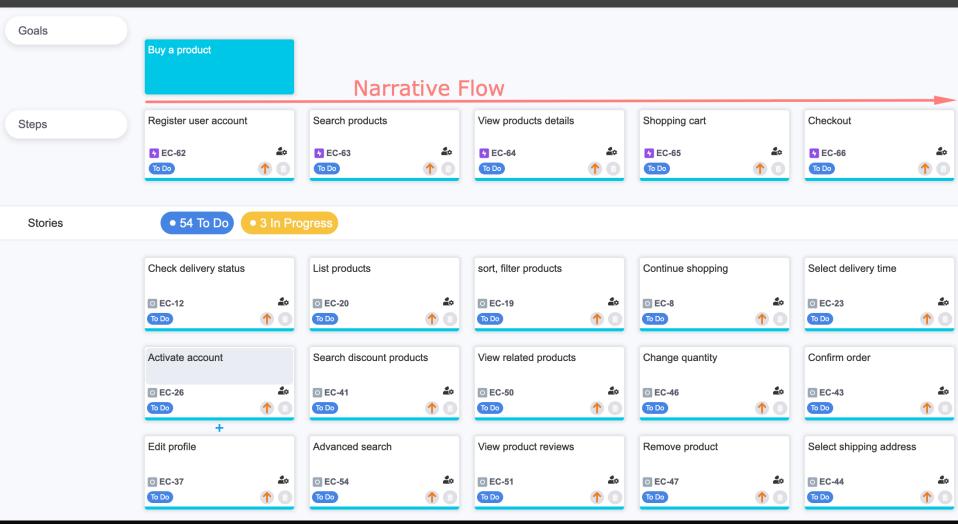
An example epic, "March 2050 Space Tourism Launch" includes stories for routine work items as well as stories aimed to improve key aspects of the shuttle launch, from customers buying space travel tickets to the launch of the rocket itself. As such, multiple teams will contribute to this epic by working on a wide range of stories.

The software team supporting the purchasing of tickets for the March 2050 launch might structure their epic as so:

Epic: March 2050 Launch				
Story: Update date	Story: Reduce load time	Story: Promote Saturn		
range to include	for requested flight	Summer Sale on confirm		
March 2050 Launch	listings to < 0.45	page for First Class		
dates.	seconds	bookings.		

Concurrently, the propulsion teams might contribute to the same epic with these stories:

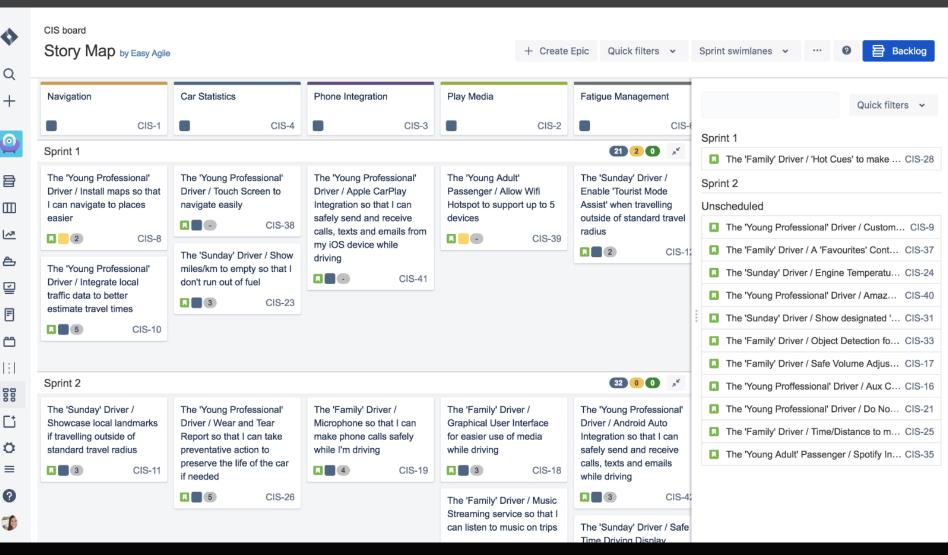
Epic: March 2050 Launch				
Story: Keep fuel tanks PSI > 250 PPM on launch	Story: Reduce overall fuel consumption by 1%.	Story: Hire new propulsion engineer to replace Gary. #garygate2050		



https://www.devsamurai.com/en/agile-user-story-mapping-for-jira/

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User stories



4 abordagens distintas, mas todas orientadas por cenários de utilização

Requirements elicitation by exploring user-centered scenarios

A. Use cases

UML support. Main "origin": I. Jacobson.

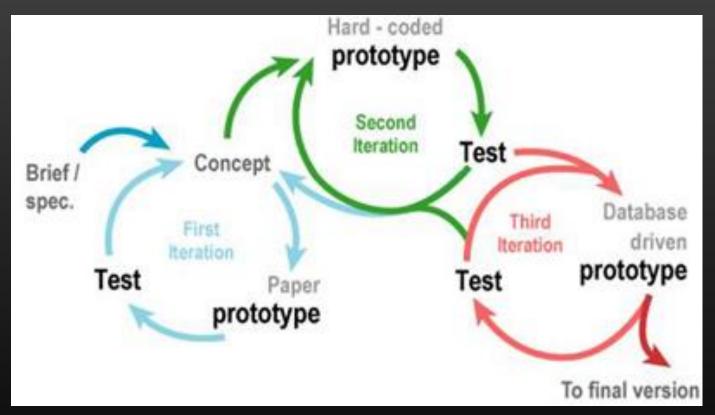
B. User stories

Agile-centric. Main "origin": M. Cohn.

- C. User-centered design (UCD)
- D. Customer Journey Map (Experience maps)

Foco em A) e B) para ASis.

UCD: prototyping & acceptance



https://www.museumsandtheweb.com/mw 2007/papers/brown/brown.html

CUSTOMER JOURNEY MAP Shopping for a New Car



EMOTIONAL ERIC

Eric is an emotional car buyer. He purchases based on aesthetics and status. **Scenario:** Eric recently moved to the area. He is shopping for a car that is fun to drive and dependable enough for use for everyday commuting.

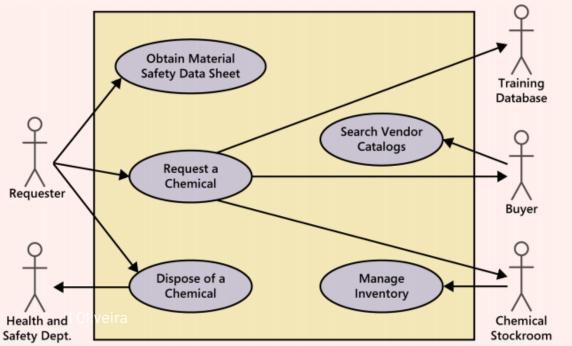
EXPECTATIONS

- · Ability to compare cars and their breakdowns
- · Good photography with closeups, inside and out
- · Video overview of car with demonstrations

CONSIDER 1 week	EXPLORE 2 months	COMPARE 1 month	TEST 2 weeks	NEGOTIATE 1 week
1. Sees TV commerical for a website, YourCarNext.net, which helps people shop for vehicles; visits the website 2. Sees ad on Facebook	3. Explores site and looks at all vehicles in his budget 4. Creates account; saves favorite cars in wishlist 5. Downloads mobile app while at his office	6. Reads Consumer Reports and reviews; keeps a spreadsheet to compare cars 7. Consults with trusted indviduals 8. Constantly checks site for new options that meet his criteria	9. Selects a set of cars he plans to test-drive 10. Looks up location of each dealership on Google Maps 11. Visits dealership; fills out lead card, discusses process with sales person, drives car, discusses more; repeats process for each car	 13. Decides on a car 14. Gets financing terms, total price, monthly payment from salesperson 15. Researches more, specifically about price 16. Makes a competing offer and buys his new car
"This website looks much different from the commercial."	"I'm disappointed by the quality of some listings very few photos." "I'm pe do sit	"I wish all car dealer shown on a single rean plan my route." "It's difficult to down options through comp resources. I had a spreadsheet	12. Discovers he can take notes about each car he drives in the app "I love that I can take notes about these cain the app. So helpfumap, so I "Why does it to test drive knew it was procedural of the can take notes about these cain the app. So helpfumap, so I "Why does it to test drive knew it was procedural of the can take notes about these cain the app. So helpfumap, so I "Why does it to test drive knew it was procedural of the can take notes about these can take notes about the notes about t	"I'm so happy with my new car!" "I wonder if I can get a better deal?" take sooo long a car? I wish I going to be

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 Requester specifies the desired chemical. System lists containers of the desired chemical that are in the chemical stockroom, if any. System gives Requester the option to View Container History for any container. Requester selects a specific container or asks to place a vendor order (see 4.1). Requester enters other information to complete the request. 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.



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.

3. Requester selects a vendor, container size, grade, and number of containers.

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

Agile in VisualParadigm



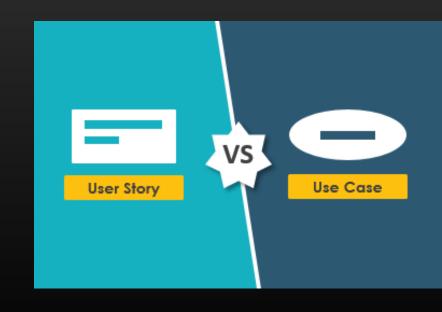
Relembrar: casos de utilização e resultados associados

Um caso de utilização descreve uma sequência de interações entre um sistema e um ator externo da qual o ator obtém resultado de valor (para as suas motivações).

Os nomes dos casos de uso são sempre escritos a forma de um verbo seguido por um objeto.

O caso de utilização é complementado com uma descrição detalhada (seguindo um padrão/narrativa estruturada)

Um caso de utilização inclui um fluxo principal e variantes.



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 Requester specifies the desired chemical. System lists containers of the desired chemical that are in the chemical stockroom, if any. System gives Requester the option to View Container History for any container. Requester selects a specific container or asks to place a vendor order (see 4.1). Requester enters other information to complete the request. 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		

As histórias podem ser apresentadas num nível de abstração próximo do caso de utilização

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.

Mais frequentemente, a história é um desdobramento do caso de utilização

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.

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 usecase 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.

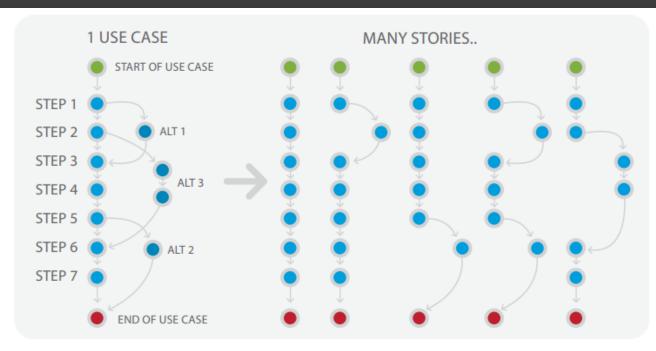
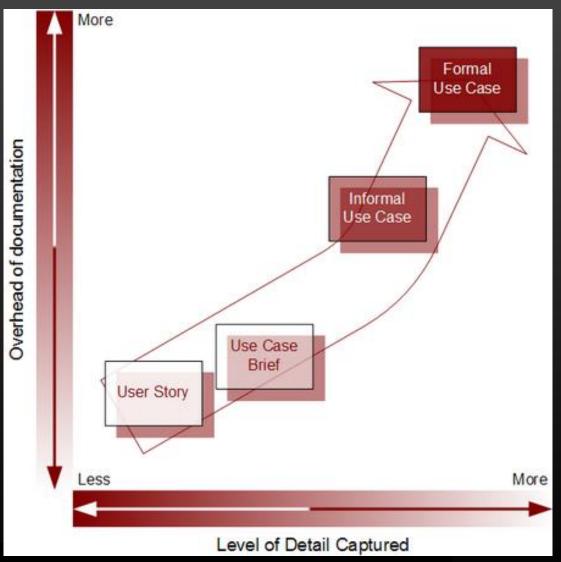


FIGURE 8:
THE RELATIONSHIP BETWEEN THE FLOWS AND THE STORIES

Em comum	Próprio dos casos de utilização	Próprio das histórias
 Ambos seguem uma abordagem centrada na utilização Ambos são contextos para descrever o diálogo utilizadores/sistema Ambos resultam em casos de teste que representam os critérios de aceitação Ambos podem ser estimados 	 Visão geral para ajudar a entender a extensão do sistema e o seu valor Descreve como o utilizador imagina a interação com o sistema para atingir os seus objetivos. Fornecer à equipa do projeto uma estrutura e contexto que falta à coleção das histórias Pode examinar cada elemento do caso de utilização (fluxos, précondições, pós-condições, e assim por diante) para procurar requisitos funcionais e não funcionais pertinentes e para definir testes (ajuda a evitar que se ignorem requisitos.) 	 Declaração concisa das necessidades de um utilizador Existe um acesso facilitado a especialistas do domínio (refinar a história conforme necessário) Mais adequado para funcionar como um item do backlog para o dia-a-dia (Scrum, Kanban) Critérios de aceitação explícitos

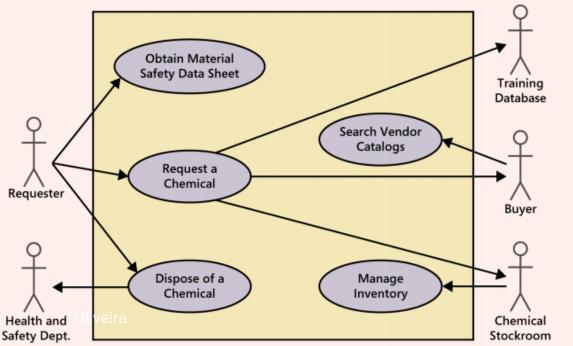
Posicionamento relative dos casos de utilização e histórias





Casos de utilização

TE directivatives	oe i nequesta.	criciincai		
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 indica	tes 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:		is stored in the CTS. was sent to the Che	mical 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:	1. Requester sear		or s for the chemical (see 4.1.E1).	



UC-4 Request a Chemical

ID and Name:

- 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.

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ays message: No vendors for that chemical.

Requester if he wants to request another chemical (3a) or to exit (4a).

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minates use case.

5 times per week by each chemist, 200 times per week by chemical

Histórias

Users can view information about each job that is matched by a search.

Marco says show description, salary, and location.

Story Card 1.2 A story card with a note.

Try it with an empty job description.

Try it with a really long job description.

Try it with a missing salary.

Try it with a six-digit salary.

Story Card 1.3 The back of a story card holds reminders about how to test the story.

Table 1.3 Splitting a story to create a better release plan.

Iteration	Stories	Story Points
Iteration 1	A, B, C	13
Iteration 2	D, E, F	12
Iteration 3	G, H, Y	13
Iteration 4	J, Z	4

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.

Benefits from Usage-Centric Approach

User's terminology is applied

Reveals requirements for users to get tasks done

Helps analysts understand application domain

Helps avoid building unnecessary functionality

Permits early drafting of functional tests

Helps set implementation priorities on functional requirements



& analyst ...

https://youtu.be/MwimXkY5G5o?t=1695

Algumas ideias a reter

- Os projetos ágeis (especialmente os da Scrum) utilizam um backlog do produto, que é uma lista prioritária da funcionalidade a desenvolver.
- Os itens do backlog do produto podem ser o que a equipa quiser, mas as histórias surgiram como a forma mais comum de representar os itens do backlog do produto (em software).
- Ambos os casos de utilização e as histórias focam-se em conversas e uso do sistema por pessoas.

- Os casos de utilização fornecem mais estrutura e uma forma de documentar os detalhes recolhidos em análise.
- As histórias dos utilizadores são refinadas conforme necessário. Os detalhes são acrescentados, em colaboração regular com os especialistas do domínio.
- A histórias recorrem a exemplos curtos para definir condições de aceitação.

References

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