



Product Management

Agile Method

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Agenda



- Agile framework
 - Sprint phases
 - Agile team structure
 - Product Release plan
 - Estimation
 - Sprint planning
 - Progress tracking
 - Challenges in Agile
 - Case study
-
- Ref: “Agile for Dummies” by Mark Clayton
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Introduction



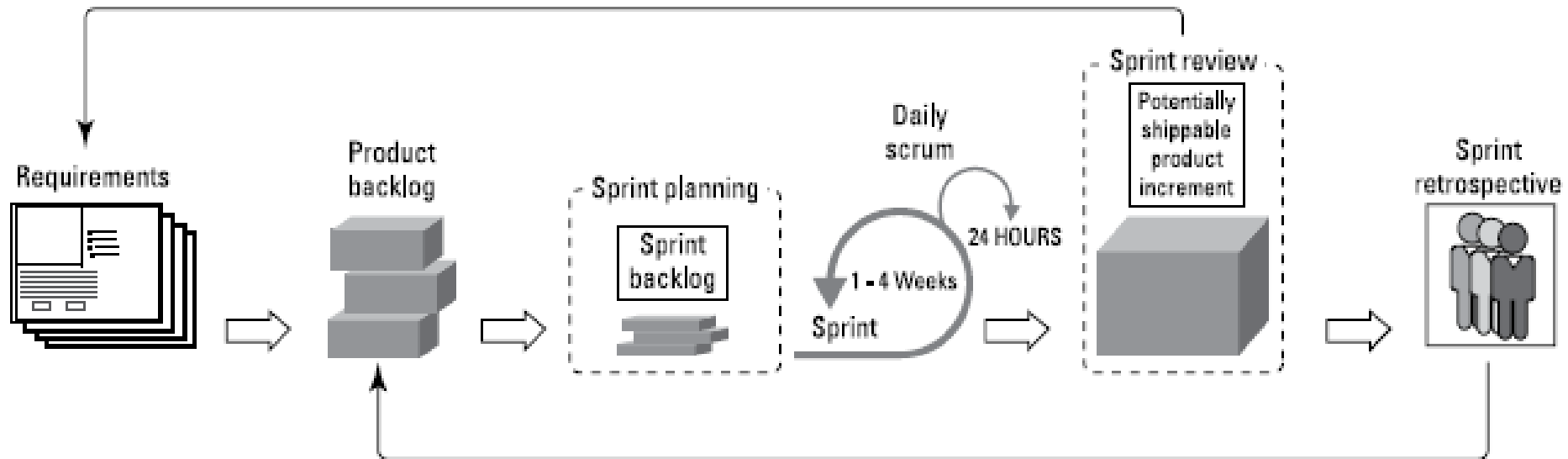
- Traditional software development methods such as Waterfall model have a major drawback – late detection of defects
- Agile breaks the development into short-duration iterations, enabling early detection of errors
- Benefits
 - Improved quality due to quicker feedback
 - Focus on business value by implementing features of greater value first
 - Transparency of progress

Agile manifesto (Agile values)



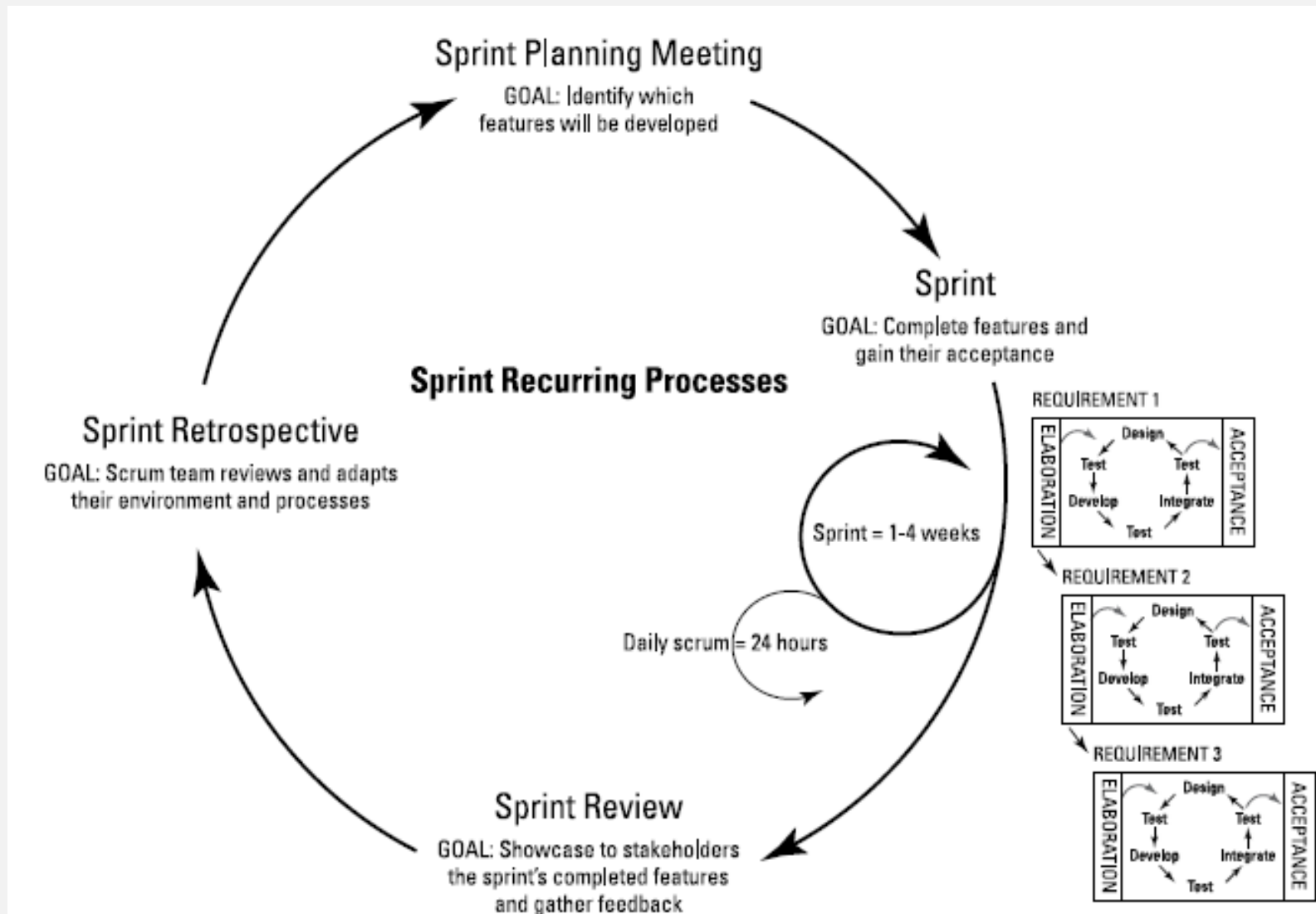
- Individuals & interactions over process & tools
 - Working software over comprehensive documentation
 - Customer collaboration over contract negotiation
 - Responding to change over following a plan
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Agile framework

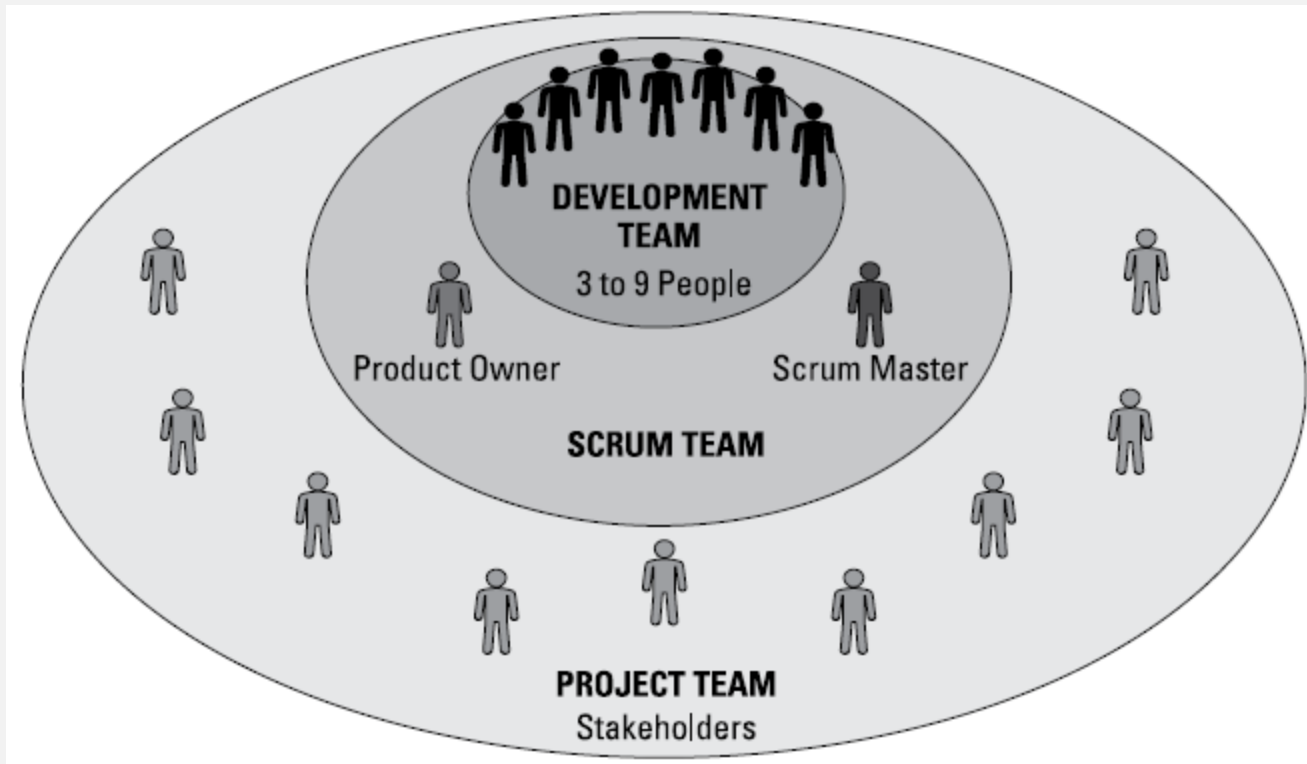


Source: "Agile for Dummies" by Mark Clayton

Sprint phases: Planning, Execution, Review & Retrospective



Agile team



Agile team: Roles and responsibilities



Product owner:

- Expert in customer business need
- Prioritizes requirements
- Does acceptance

Scrum master / Agile coach

- Expert in Agile process
- Communicate with stakeholders
- Clears roadblocks

Development team

- Multi-skilled – set up environment, automate builds, continuous integration, refactoring
-

Experience sharing...



Did you have any other roles?

Product Roadmap



Steps:

1. Identify stakeholders.
 2. Establish product requirements and add them to the roadmap.
 3. Prioritize requirements based on values, risks, and dependencies.
 4. Estimate the development effort at a high level
 5. Determine high-level time frames for releasing groups of functionality to the customer
-

Requirements, User stories, Release plan



Home loan application

Features →	Apply	Evaluate	Approve	Pay EMI	Close loan
Release 1	Apply for loan - Single applicant	Check credit history	Verify repayment capacity	Pay EMI - Normal	Close after paying all EMIs
		Determine ability to pay			
		Calculate max loan			
Release 2	Apply for loan - Husband & wife jointly			Pay EMI - after skipping one	
Release 3	Apply for loan - Multiple people				Close by paying remaining amount (Foreclosure)

User stories

Product features, Priority, Estimation, Release plan



ID	Story	Estimation	Priority	
7	As an unauthorized User I want to create a new account	3	1	
1	As an unauthorized User I want to login	1	2	
10	As an authorized User I want to logout	1	3	
9	Create script to purge database	1	4	
2	As an authorized User I want to see the list of items so that I can select one	2	5	Release
4	As an authorized User I want to add a new item so that it appears in the list	5	6	
3	As an authorized User I want to delete the selected item	2	7	Release
5	As an authorized User I want to edit the selected item	5	8	Release
6	As an authorized User I want to set a reminder for a selected item so that I am reminded when item is due	8	9	Release
8	As an administrator I want to see the list of accounts on login	2	10	
Total		30		
Velocity: 3 Points / Sprint		Sprint length 2 weeks		

Source: https://www.scrum-institute.org/Release_Planning.php

Estimation techniques



- Estimation Poker
 - Affinity based estimating
-

Estimation poker



Poker cards

Numbers represent relative effort of user stories

Steps:

1. Provide a deck of estimation poker cards.
2. The team agrees on one user story that would be a 5.
3. The product owner reads a high-priority user story
4. Each player selects a card representing the effort involved
5. If the players have different story points: discuss assumptions, re-evaluate. If members differ, breakdown the story

Estimation Poker

- A typical deck has cards has [Fibonacci sequence](#) 1, 2, 3, 5, 8, 13
 - The reason for using the Fibonacci sequence instead of simply doubling each subsequent value is because estimating a task as exactly double the effort as another task is misleadingly precise
 - Very high numbers are not used in the deck, since it is difficult to accurately estimate a large effort
 - If the effort can not be estimated, the user story is broken down
-

Example of Poker estimation



ID	Story	Estimation	Priority
7	As an unauthorized User I want to create a new account	3	1
1	As an unauthorized User I want to login	1	2
10	As an authorized User I want to logout	1	3
9	Create script to purge database	1	4
2	As an authorized User I want to see the list of items so that I can select one	2	5
4	As an authorized User I want to add a new item so that it appears in the list	5	6
3	As an authorized User I want to delete the selected item	2	7
5	As an authorized User I want to edit the selected item	5	8
6	As an authorized User I want to set a reminder for a selected item so that I am reminded when item is due	8	9
8	As an administrator I want to see the list of accounts on login	2	10
Total		30	
Velocity: 3 Points / Sprint		Sprint length 2 weeks	

Source: https://www.scrum-institute.org/Release_Planning.php

Exercise



Hotel Room Reservation Mobile app

Business travellers on the move, find it hard to make hotel reservation since they need to open their laptop and make reservations. It would be really convenient if a user friendly mobile app is made available by the hotel.

The UI of this mobile app should be extremely easy to use. It should support functions to Check availability of room, know the price of rooms, make a booking, etc. After their stay, the app should allow the user to provide their feedback.

Exercise



User stories

- Room booking
- Feedback
- Messages from hotel
- Look at booking history
- Check loyalty points
- Cancel booking
- Request for information
- Register
- Login
- Logout

Exercise



Prioritize user stories

- Room booking
 - Feedback
 - View messages from hotel
 - Look at booking history
 - Check loyalty points
 - Cancel booking
 - Request for information
 - Register
 - Login
 - Logout
-

Exercise



Prioritized user stories

- Register
 - Login
 - Logout
 - Room booking
 - Cancel booking
 - Look at booking history
 - View messages from hotel
 - Feedback
 - Check loyalty points
 - Request for information
-

Exercise



Create a release plan (Group user stories into releases)

Release 1

- Register
- Login
- Logout
- Room booking
- Cancel booking

Release 2

- Look at booking history
- Messages from hotel

Release 3

- Feedback
- Check loyalty points
- Request for information

Exercise



Estimate the following user stories:

1. Register
 2. Login
 3. Logout
 4. Room booking
 5. Cancel booking
-

Estimation



Feature	User story	Story point (Relative estimate)
Register	Enter user id and password: System registers the user	2
Login	Enter user id and password: System displays main page	2
Logout	System displays Login page	1
Room booking	Specify 'from' date & 'to' date: System displays rooms available and their price	3
	Pick a room category to book: System asks user to enter credit card #	1
	Enter credit card # and CVV: System makes the reservation and returns confirmation #	8
Cancel booking	System displays active bookings	2
	Select one of the bookings: System cancels the booking and credits money to your credit card account	8

Experience sharing...



Did you use this method?

If not, what method did you use?

T-Shirt sizing: Small, Medium, Large, Extra large is another way of categorizing the stories. Each size has an effort associated with it.

Affinity estimation



- Used when user stories are many, say 500+
- When you have a large number of user stories, many of them are probably similar and would require a similar amount of effort
- You quickly categorize your user stories and then apply estimates to these categories of stories

Sprint planning



- Set a goal for the Sprint
 - Select User stories to be developed in the Sprint
 - Identify the tasks for each user story – design, develop, code analysis, security hole check, test
 - Estimate effort for each task
 - Assign a person responsible for each task
-

Sprint planning



Sprint goal: Demonstrate the ability of a mobile banking customer to log in and view account balances and pending and prior transactions.

ID	Task	Story Points	Responsible	M 4 (Start w/ sprint planning)	Tu 5	W 6	
125	View account balance	8	Developer name	8	8	8	
	Write automated unit test and develop API		Suraj	6	6	6	
	Implement UI		Nancy	3	3	3	
	Write automated functional test		Kavita	3	3	3	
	Write automated integration test		Paul	4	4	4	
	Write automated regression test		Liam	2	2	2	
	Conduct peer review			1	1	1	
	Update wiki			1	1	1	
	Promote to QA environment			1	1	1	
0059	View pending transactions	5	Developer name	5	5	5	
	Write automated unit test			5	5	5	
	Implement UI			2	2	2	
	Write automated functional test			4	4	4	
	Write automated integration test			5	5	5	

Sprint 1 plan for Hotel room reservation mobile app



ID	Task	Story point	Responsible	Effort (Hrs)	Mon	Tue	Wed	Thur	Fri
1	Register	2	Akshay	40					
	Design UI			4	4				
	Get UI feedback			2	2				
	Implement front end			8	2	6			
	Design back end			8		2	6		
	Implement back end			8			2	6	
	Peer review			4				2	2
	Make changes			4					4
	Test			2					2
2	Login	2	Veena	40					
	Design UI			4	4				
	Get UI feedback			2	2				
	Implement front end			8	2	6			
	Design back end			8		2	6		
	Implement back end			8			2	6	
	Peer review			4				2	2
	Make changes			4					4
	Test			2					2
3	Log out	1	Tom	20					
	Design UI			2	2				
	Get UI feedback			1	1				
	Implement front end			4	4				
	Design back end			4		4			
	Implement back end			4		4			
	Peer review			2			2		
	Make changes			2			2		
	Test			1			1		
4	Training		Tom						
	Train new employees			20				8	8
Total for Sprint					23	24	21	24	24

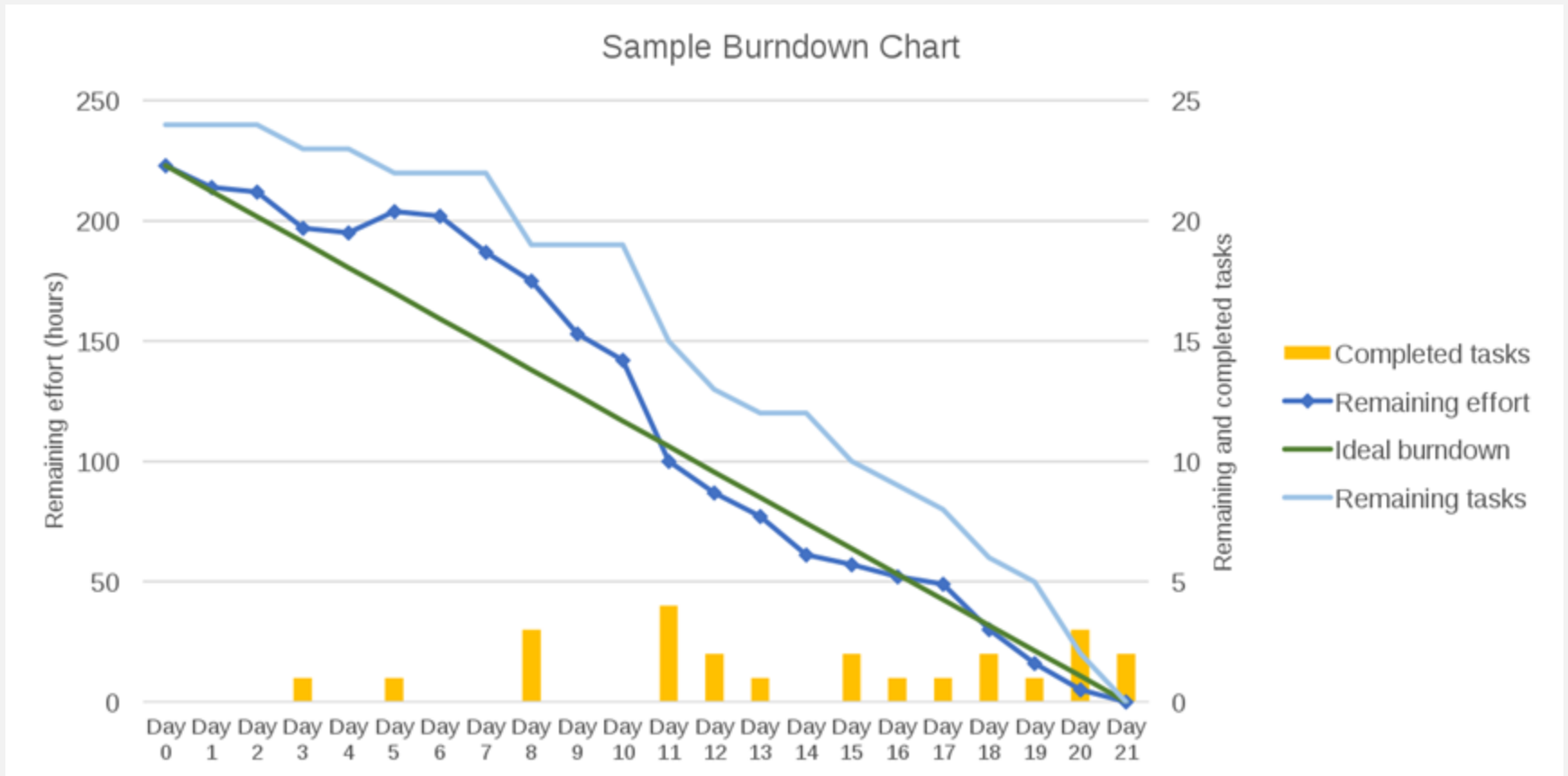
Sprint execution



Daily scrum meeting

- What was completed yesterday
 - What challenges were faced
 - What is the plan for the day
-
- Once a week, a big picture view of the product, its goals, etc.
-

Burndown chart



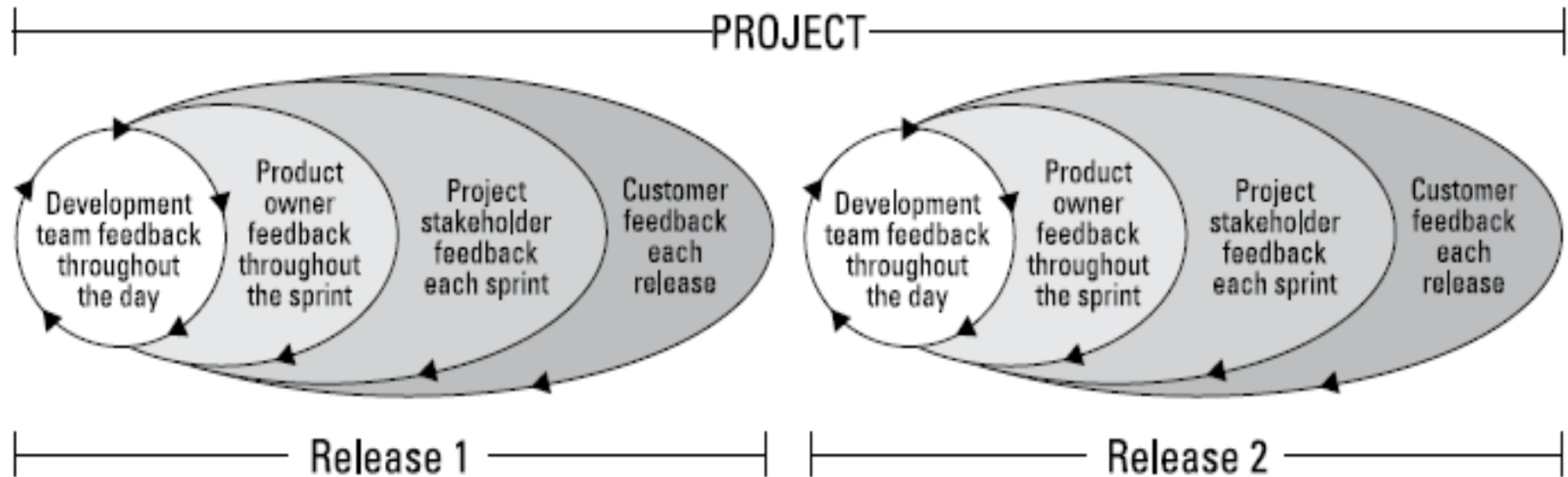
JIRA provides this insight

Experience sharing...



How did you track progress in your project?

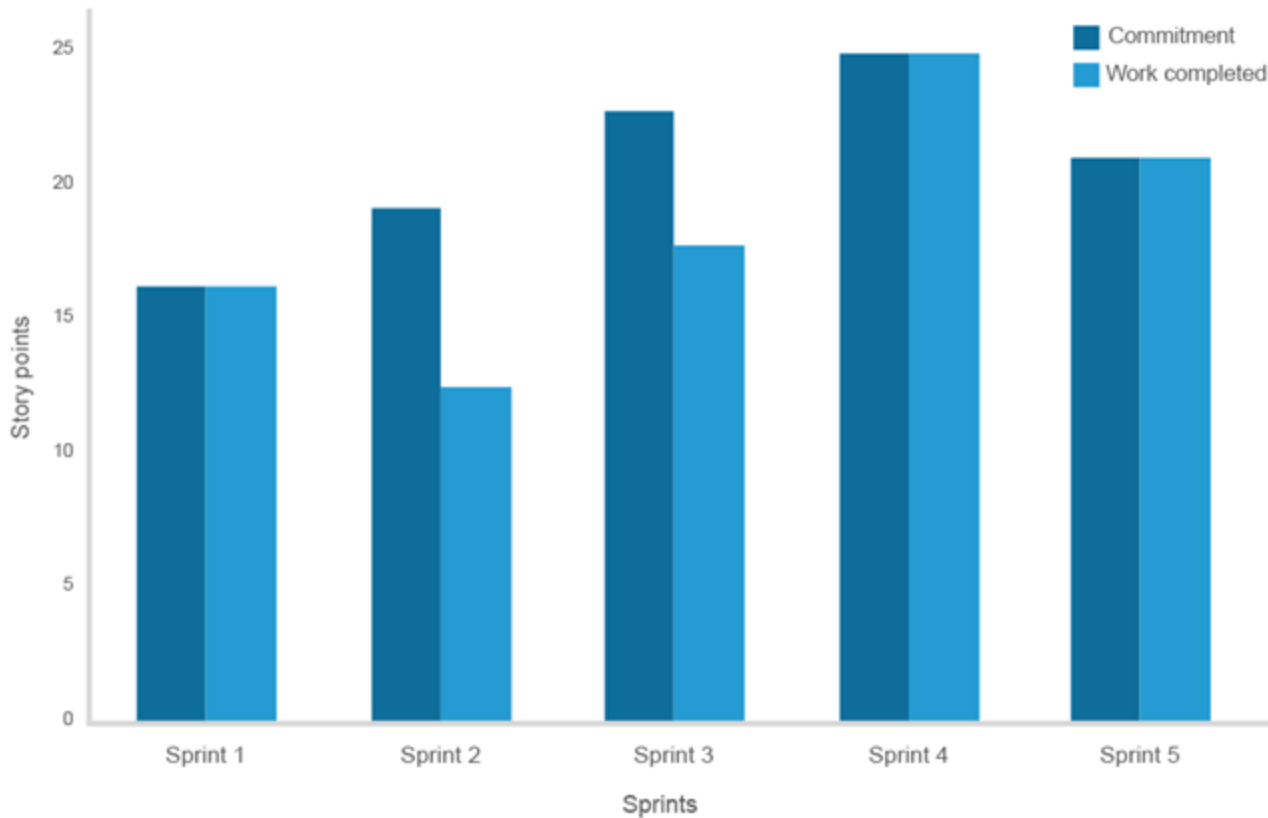
Feedback cycles



Velocity



Velocity chart



of story points completed per Sprint

Source: <https://www.altexsoft.com/blog/business/25-scrum-process-best-practices-that-set-your-agile-workflow-for-efficiency/>

Challenges



- Lack of skilled product owners from business side
- It is difficult to quote fixed price and time due to changing requirements, dependency on client in each sprint
- Architectural changes and rework due to new requirements

Case study: Pharma company

Inventory management



Table 4 – Project XYZ Product Backlog.

Product Backlog – XYZ Project					
ID	User Case	Relevance	Estim.	How to Demonstrate	Remarks
1	Know the expiration date of the medicine batches in stock	200	5	Create specific screen for in stock materials, by batch expiration date.	Use, if possible, view by the inquire screen of current inventory, through customizing.
2	Correct inconsistencies in the expiration dates of the medicine batches in stock	180	3	Create manual update mechanism, with function segregation, to update inconsistent dates. Additionally, the possibility to block manual batch entry, at the end of the production line.	Review access profiles and add new functionality, only for Quality Manager.
3	Do not allow expiration date changes for medicine transferred among warehouses	160	2	Keep, during material transfer, expiration date of the original batch.	Review stock transfer transactions, and check associated profiles.
4	Validate the expiration date of medicine batches in stock	140	5	Complementary to ID #2. There must be a process of “auditing” of in stock materials, with a record of changes in the validity of the materials dates.	New program to be created, with restricted and controlled access execution.
5	Enable full inquire of	120	5	Develop new query	Verify users who will

Results



5 sprints, 100 days (about 4 months). However, results used after the first month

Table 5 – Project's main results.

Consideration	Explanation	Participant's Quote
Project Team	In the team's point of view, the fact that the results are being frequently delivered was motivating, providing greater satisfaction in seeing what was done and deployed. In addition, another important factor was the constant and real-time communication, which made a pleasant work environment (even in the early stages of the project).	According to the developer, "seeing what was done delivered generates greater satisfaction. In addition, constant communication and in real-time makes the working environment more pleasant."
Results (Deliverables)	With the project, the project team reported that changes in the scope were quickly addressed. For example, in agile management, customer reviews were made at the end of each Sprint, and any customer requirement non-compliance could be immediately addressed, not waiting until the end of the project, as it often happens in traditional approach.	In the Scrum Master view, "any change in the project scope is quickly addressed, and I consider this as a strength of the agile."
Customer	From the customers' point of view, they already receive something to use at the end of the first month. In addition, the Scrum approach helps to	As a customer mentioned, "within a month, you already have something and can start

Experience sharing...

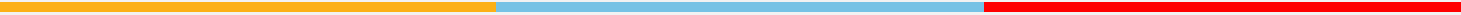


What benefit did you get from Agile method?

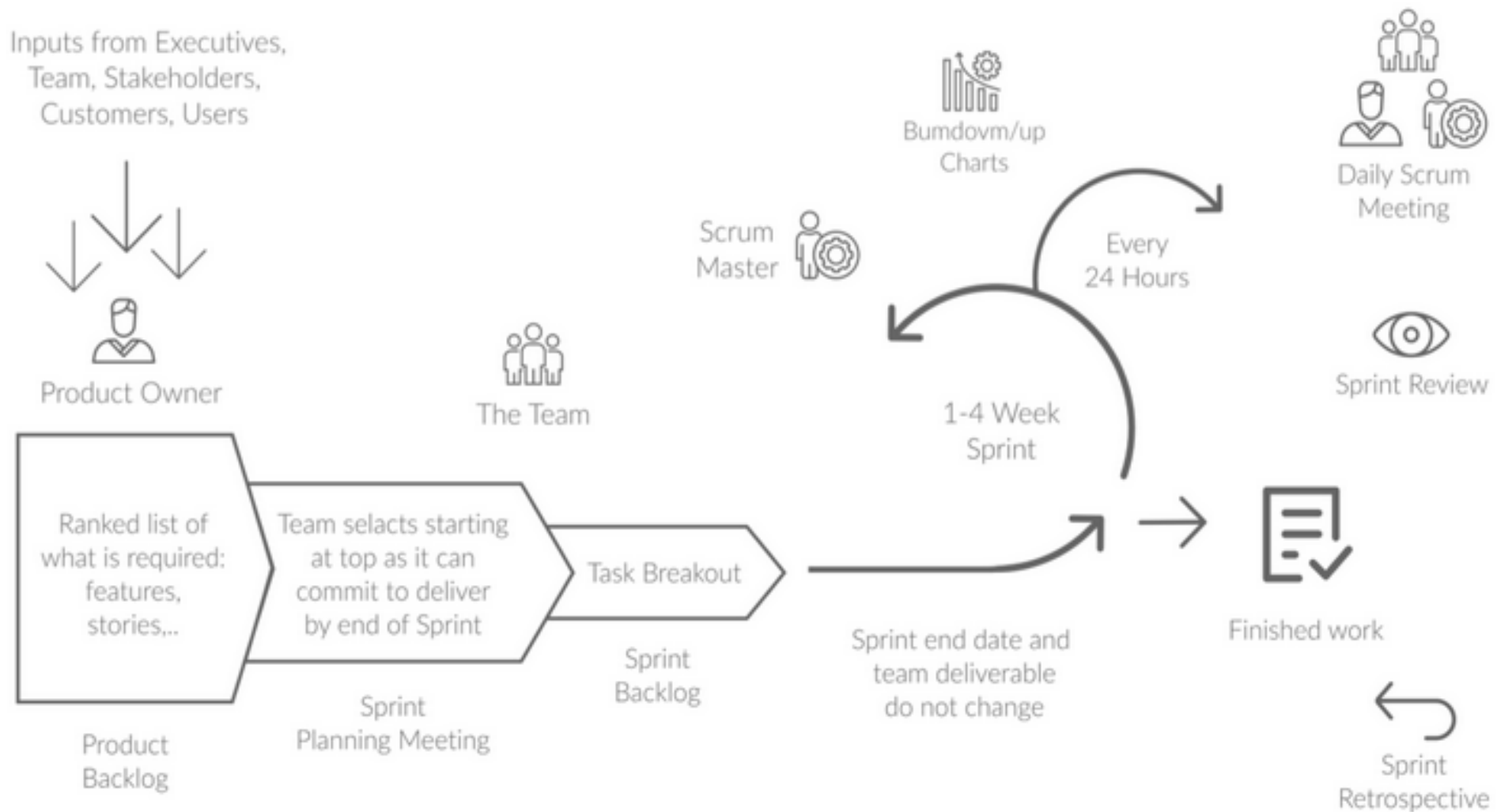
What challenges did you face?

How did the customer / end user feel?

Appendix



THE AGILE: SCRUM FRAMEWORK AT A GLANCE



Requirements, User stories, Release plan



Home loan application

Features →	Apply	Evaluate	Approve	Pay EMI	Close loan
Release 1	Apply for loan - Single applicant	Check credit history	Verify repayment capacity	Pay EMI - Normal	Close after paying all EMIs
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User stories



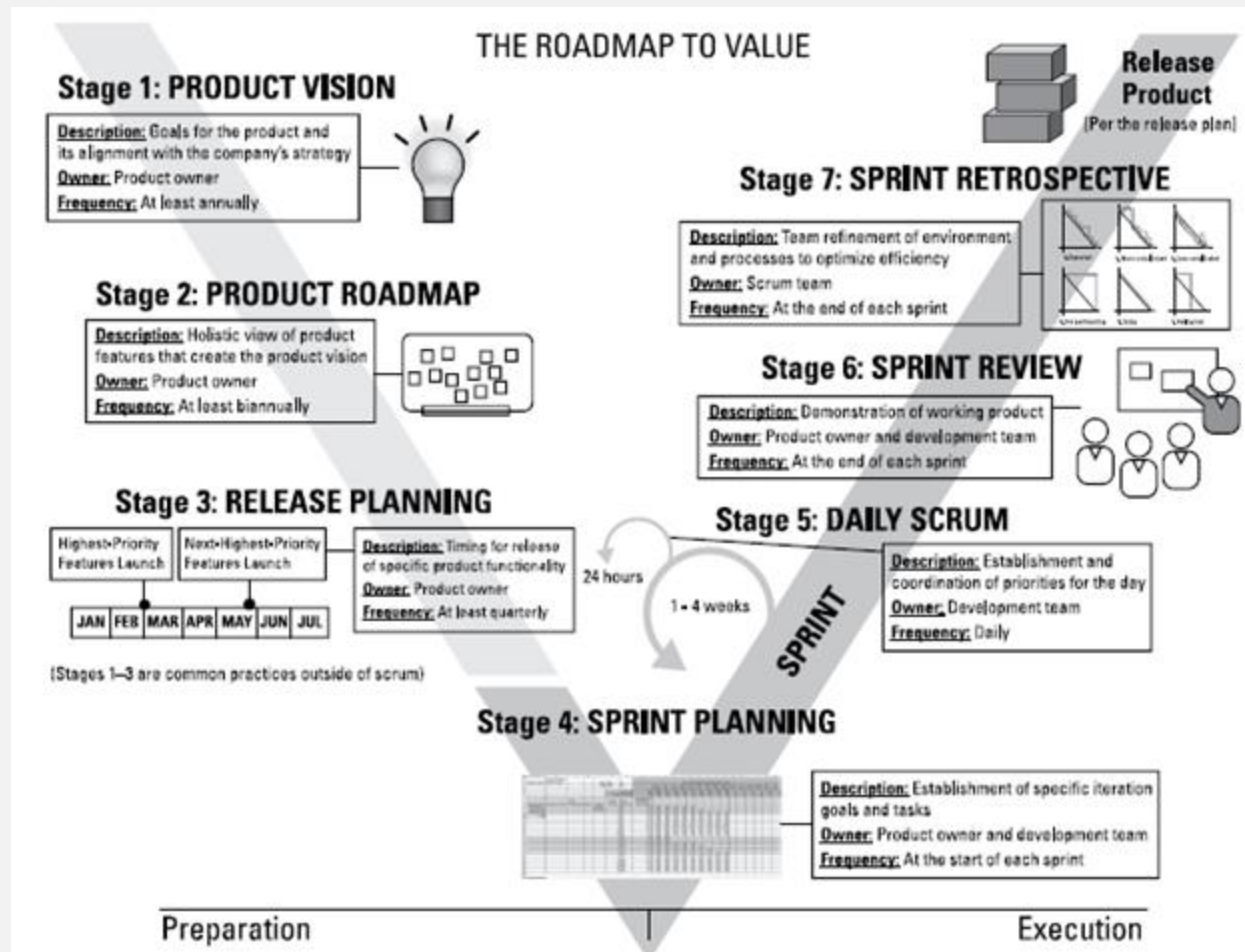
Source: <https://in.pinterest.com/pin/127086020711755414/?lp=true>

Roadmap to value

innovate

achieve

lead



Product vision



Vision Statement for Product

For _____ (target customer)
who _____ (needs)
the _____ (product name)
is a _____ (product category)
that _____ (product benefit, reason to buy)
Unlike _____ (competitors)
our product _____ (differentiation/value proposition)

Product vision: Example



For Progressive Bank customers
who want access to banking capability while on the go,
the MyProgressive
is a mobile application
that allows secure, on-demand banking, 24 hours a day.

Unlike online banking from your home or office computer,
our product allows users immediate access,
which supports our strategy to provide quick, convenient banking
services, anytime, anywhere.

Difference between Agile and Scaled Agile



- Agile projects are small 3-9 members
 - Scaled Agile projects have multiple Agile teams.
 - Coordinating different Agile teams requires additional techniques
-

Visual progress tracking (Kanban)



RELEASE GOAL:

SPRINT GOAL:

RELEASE DATE:

SPRINT REVIEW:

US = User Story
Task = Task

TO DO	IN PROGRESS	ACCEPT	DONE
			US Task Task Task Task Task Task Task Task Task Task Task Task
		US	Task Task Task Task Task Task Task Task Task Task Task Task
Task Task Task Task Task Task Task Task	US Task Task Task Task Task		
US Task Task Task Task Task Task Task Task			

Visual progress tracking (Kanban)

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Image source: medium.com/@sashabondareva