

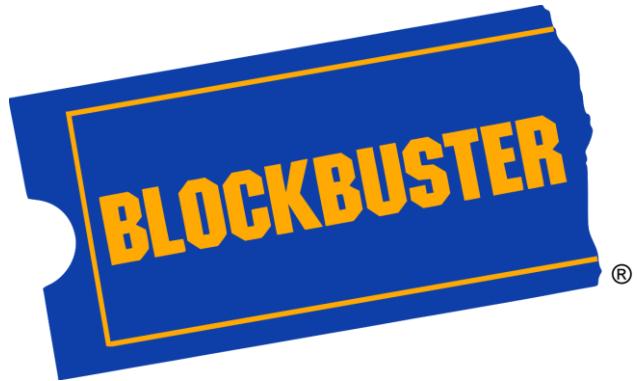


Week 3

GSOE9820 Engineering Project Management
Term 1 2025
Dylan Sanusi-Goh



UNSW
SYDNEY



- Established in 1985 as a home video rental shop, but eventually declined and closed in the late 2000s
- It was worth \$8.4 billion USD in 1994, and had over 80,000 employees in 2004
- At its peak, it had thousands of retail locations, millions of customers, and massive marketing budgets and efficient operations

Blockbuster's decline

Blockbuster's income was primarily made from late fees

- Netflix's business model allowed unlimited rentals

Blockbuster's customers had to physically visit their stores

- Netflix allowed DVD-by-mail rental, and eventually streaming based subscriptions

Changing market conditions - increased use and performance of the internet

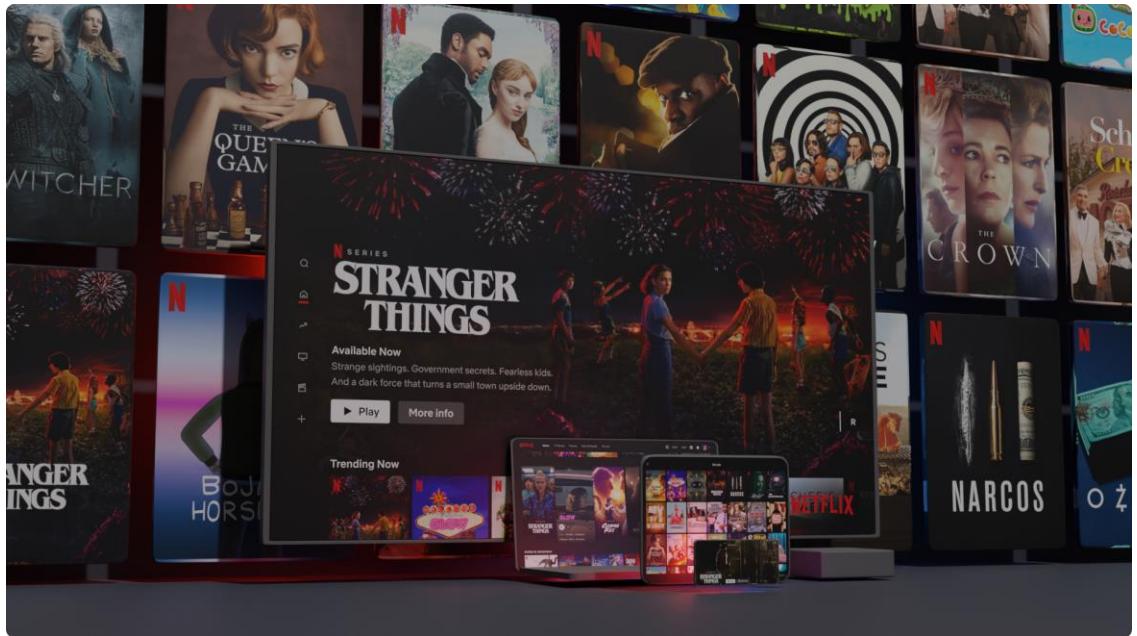
- Blockbuster "laughed [Netflix] out of their office", and leadership were conflicted and resisted moving into the online rental market until 2007

Fundamentally, Blockbuster's leadership fought against change and failed as a result

Netflix's growth



Paul Sakuma / AP



- Initially established in 1997 with its DVD-by-mail movie rental to compete against Blockbuster
- Transitioned to streaming services in 2007, and scaling up until now as data speeds and bandwidth costs improve

Netflix's agility

Hulu and Apple introduced new video-rental services in 2008

- Netflix transitioned from 17-hour per month to unlimited streaming, increasing user viewership

Netflix had a major three-day database corruption and could not ship DVDs to members in 2008

- Netflix transitioned their servers to a scalable cloud-based system, improving reliability for users

Competing streaming services and film studios were increasing their profits

- Netflix developed their own original programming, releasing popular shows which have led to Academy Awards and international acclaim

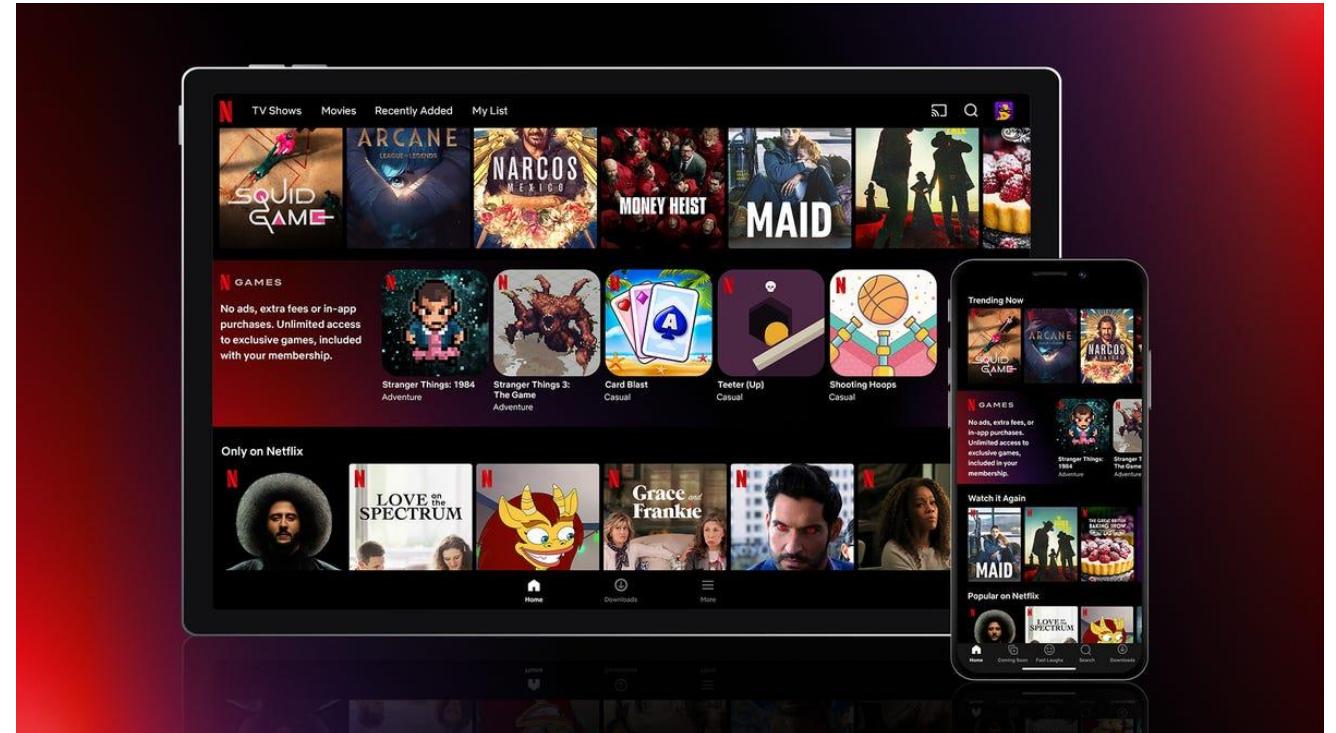
Users were getting bored between shows

- Netflix acquired and developed game development capabilities to increase potential revenue streams and increase user value from subscriptions

Fundamentally, Netflix's leadership embraced change and stayed agile, maintaining strong growth and profitability

What does Netflix do to stay ahead?

- Satisfy customers by delivering benefits frequently
- Harness change to deliver the best outcomes
- Ensure transparent communication and motivations between senior leadership and individual contributors
- Regularly reviews how to change and improve themselves



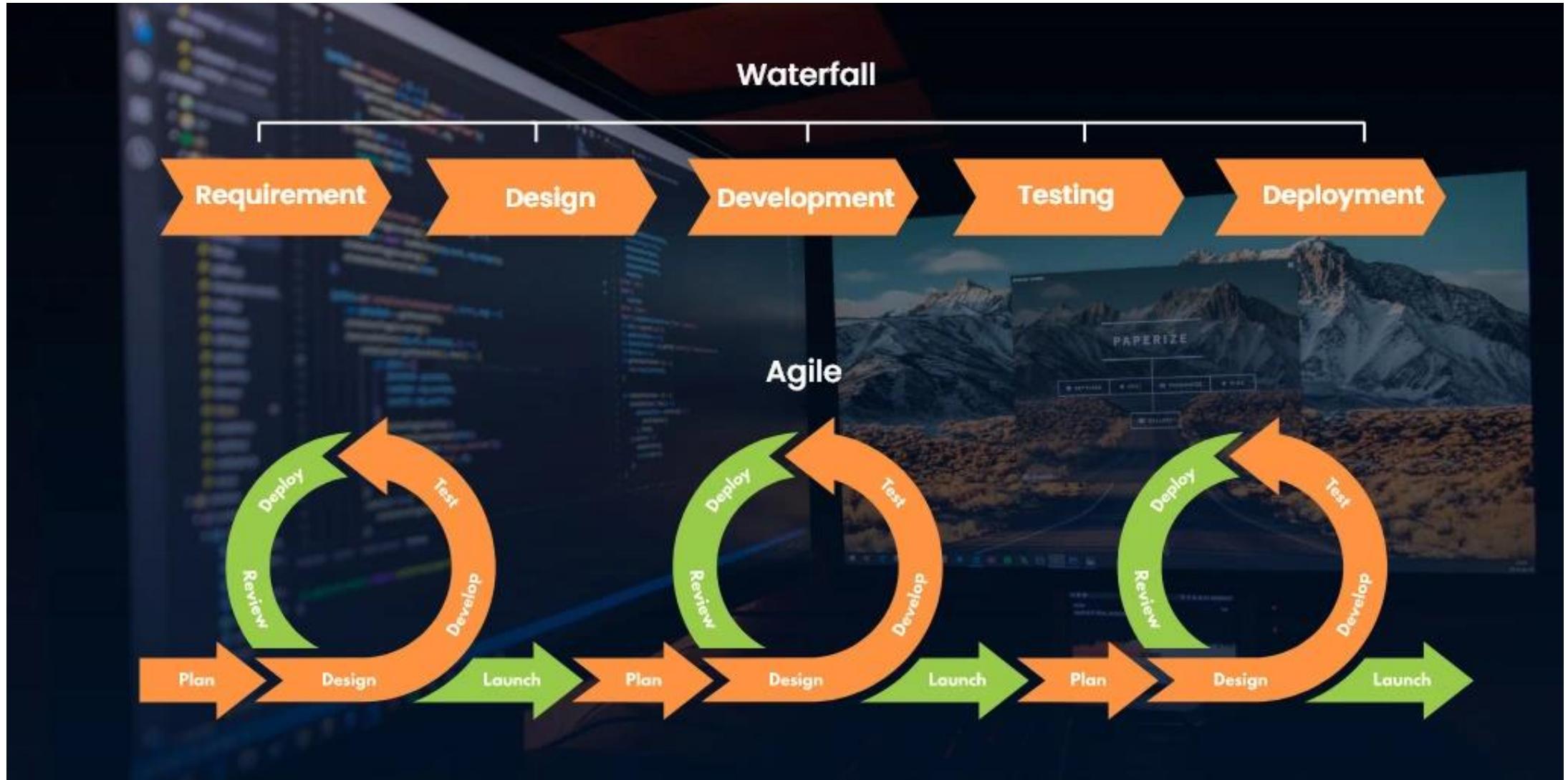
How can we ensure projects maintain similar values to stay agile in todays fast paced world?

*What we need is an entrepreneurial society in which **innovation** and **entrepreneurship** are normal, steady, and continuous.*

Peter Drucker

Innovation and Entrepreneurship (New York: Harper & Row, 1985), 313.

Welcome to Agile Project Management



What is “Agile” Project Management:

One definition:

*“Agile Project Management is an **iterative** approach to delivering a project, which focuses on **continuous releases** that incorporate **customer feedback**.*



i.e. Repeating the design/build/test/deploy iteration multiple times

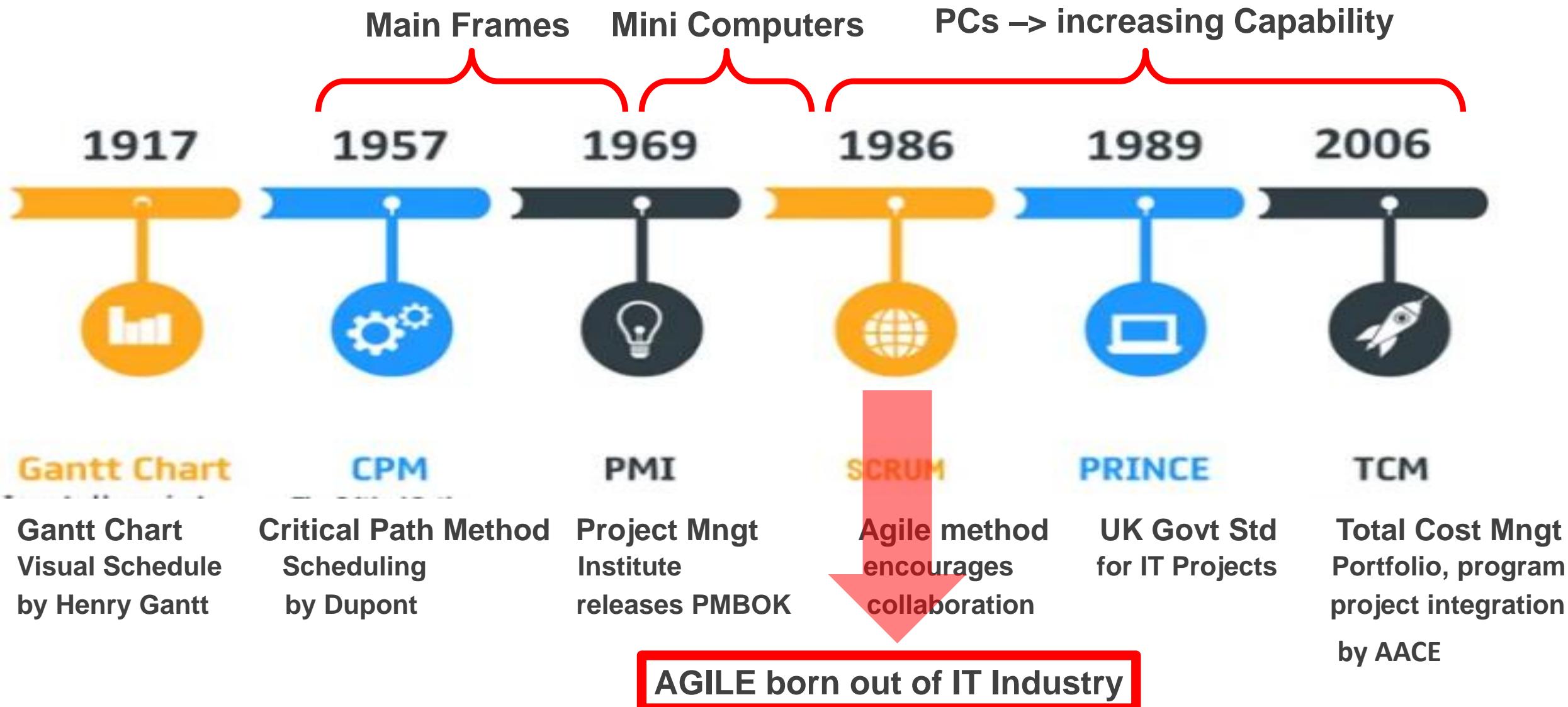
*The ability to **adjust** during each iteration promotes **velocity** and **adaptability**. This approach is different from a linear, “waterfall” project management approach, which follows a set path with limited deviation.”*



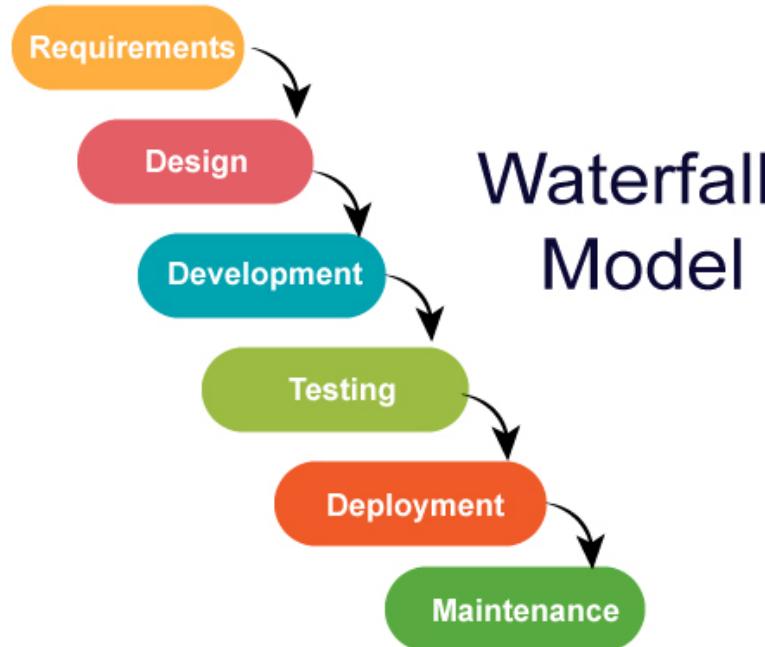
i.e. We can change the plan as we go, for whatever reason we need

Atlassian

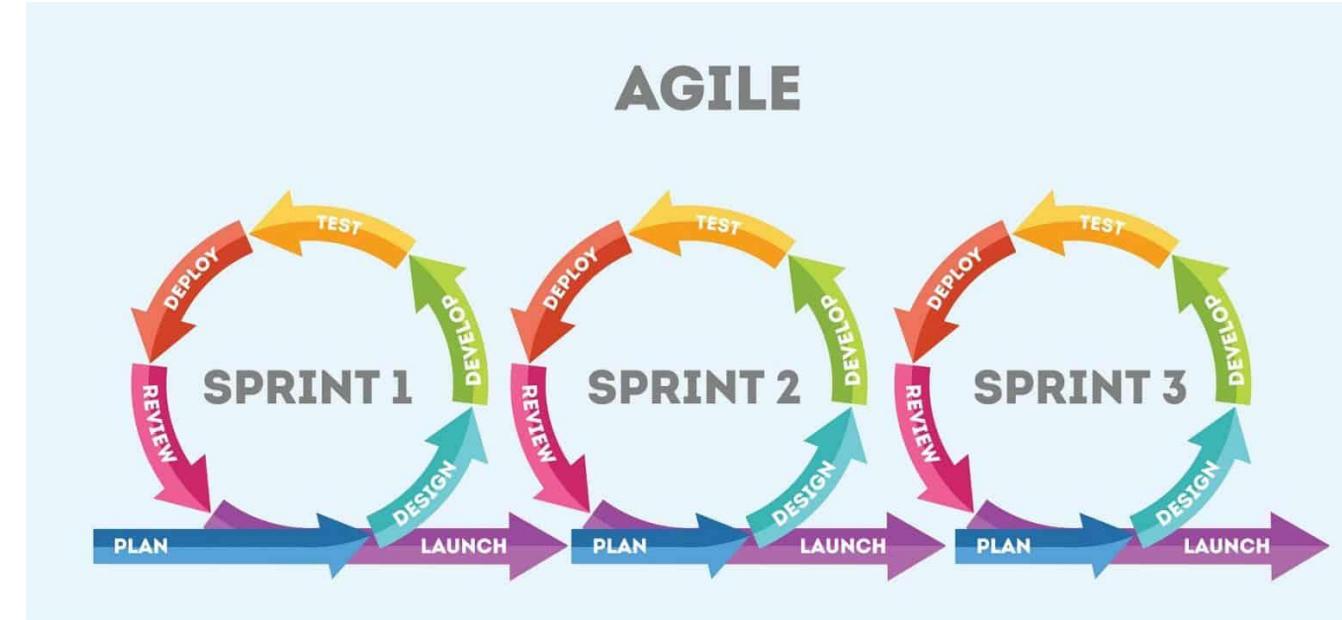
History of Project Management:



Waterfall vs Agile



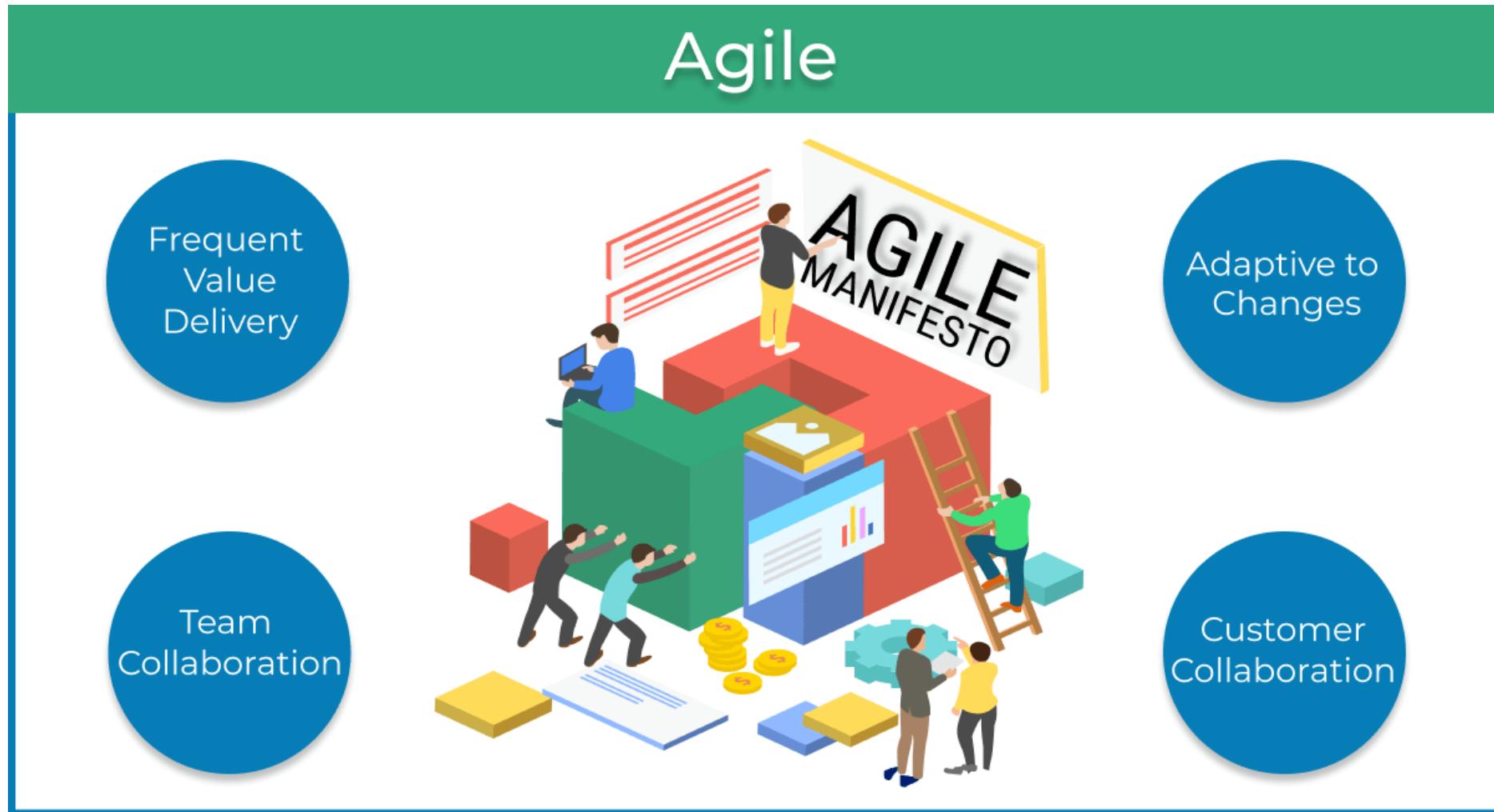
Sequential



Iterative

Why is Agile so commonly used in IT projects today?

Why use Agile



When is ‘Agile’ Project Management used:

Agile typically best suits projects where;

- The end deliverable is not be able to be full defined up front
- Where iterative improvement is sought during the project
- Where an interim deliverable is useful on the road to the final full product delivery
- Where ongoing customer feedback is part of the design/delivery process

Where is 'Agile' Project Management used:

Typical Applications:

- We've already mentioned Agile came out of IT Development. This is still where it is mainly used today.
- It is also used in managing R&D projects across many fields eg medical, pharmaceutical, engineering, scientific, industrial and consumer products
- It can also be used to manage Business process improvement projects

How does 'Agile' Project Management differ from traditional 'Waterfall' Project Management:

Traditional methods

Define target

Take aim

Launch and manage

Focus on target

Agile methods

Define vision

Start in broad direction

Learn and adapt

Evolve towards target

Hybrid approach



- One of the world's oldest banks, established in 1896
- More than 80,000 employees
- \$48.44 billion revenue (AUD) in 2023
- Multinational operations in consumer, corporate, and investment banking

- Operates in highly regulated industry
- Faces global instability due to Brexit



Old school banking experience

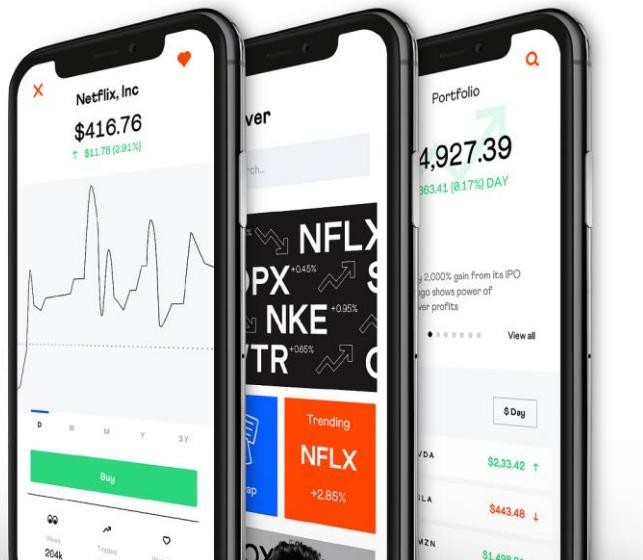
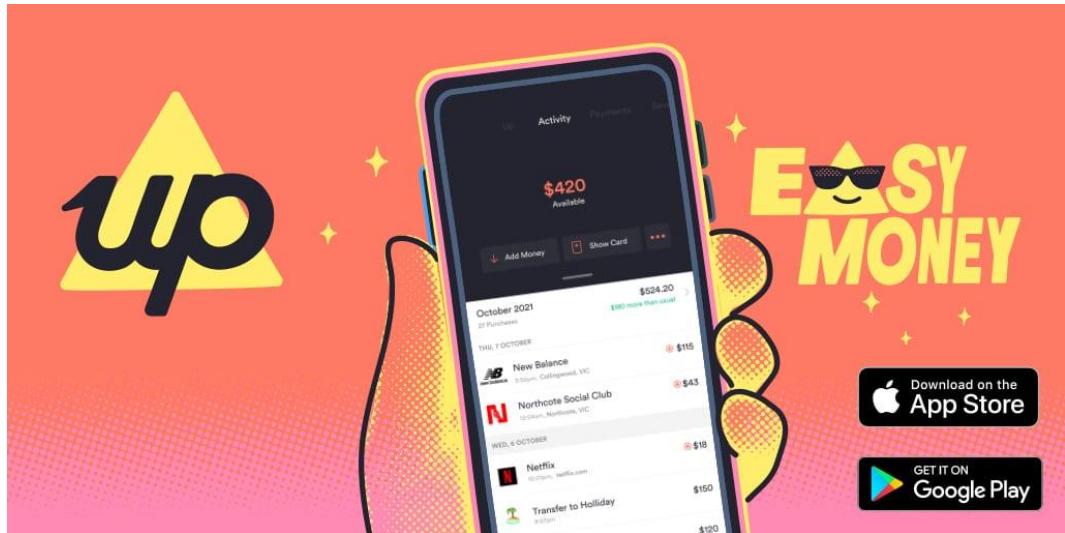
To interact with your bank, you might have had to:

1. Organise documents and records from multiple providers
2. Make an appointment to see a bank manager
3. Discuss your financing needs
4. Develop the relationship with your bank manager
5. Provide documents and records in person
6. Multiple teams make decisions and process documents across different systems
7. Wait for decision in the mail



Lots of bureaucracy!
Is this the experience twenty-first century customers expect now?

Competitors



New financial organisations allow you to do everything faster and more conveniently!

How can Barclays keep pace?

Is it enough for Barclays to plan a waterfall project to deliver a new banking mobile app?

e,g. We will allocate \$X and Y time for a project team to deliver this app, and then that's it!

Barclays launches mobile banking app

09 July 2012

0

0

0



Source: Barclays Bank

Barclays is introducing a free mobile banking app allowing its customers to have simple access and a way of managing their accounts whilst on the move.

The Barclays Mobile Banking app is free to download and use. Barclays personal and small business customers will be able to view their balances and last 30 transactions, make transfers between accounts, pay bills* and find branches or Barclays ATMs. In addition, Barclaycard UK personal customers who also hold their bank account with Barclays will be able to view their credit card balance and recent transactions and make a repayment off their last statement balance.

No! Barclays needs to maintain an Agile team to maintain and develop their mobile banking app!

BBC

Home News Sport Business Innovation Culture Travel Earth Video Live

Barclays bank payments restored after app went down in outage

27 March 2024

By Jemma Dempsey, Business reporter

Share <

Barclays has said its payment systems and banking app are fully operational after earlier glitches which began on Tuesday evening.

The bank apologised for issues with payments into and out of the accounts of some of its UK customers.

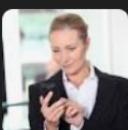
In an update at 03:25 GMT, it said customers could make and receive payments once more.

EP Electronic Payments International

Barclays Spending feature has been added to help customers budget

Barclays Spending feature is the latest service to be added to the mobile app. The feature includes categories for spending.

22 Jan 2019



Weaknesses in bank mobile app security are exposing customers to fraud - Which?

03 May 2023

Twitter 2 LinkedIn 4 Facebook 0

Weak banking security measures are leaving customers dangerously vulnerable to fraud on stolen phones, Which? warns.

The consumer champion cites the case of a company director from Somerset who had £73,000 drained from his account after his mobile was lifted from his jacket pocket.

The thief was able to bypass security measures on his **Barclays** mobile banking app - potentially by 'shoulder-surfing' to see the code he used to unlock his phone - and then trying similar combinations to access the app.

- Delivering new features for customers
- Improving existing features for customers
- Ensuring ongoing security and reliability
- Improving performance for users

Barclays used Agile Project Management to make leaps

Between 2015 – 2017, Barclays restructured their ways of working to enhance agility across commercial, investment banking, audits, accounts, and compliance.

They had previously tasked over 100 developers to improve the online onboarding process and had not yet succeeded.

➤ After assembling an Agile team of six developers, they rapidly iterated and presented a brand-new onboarding tool within six months, saving costs and increasing productivity.

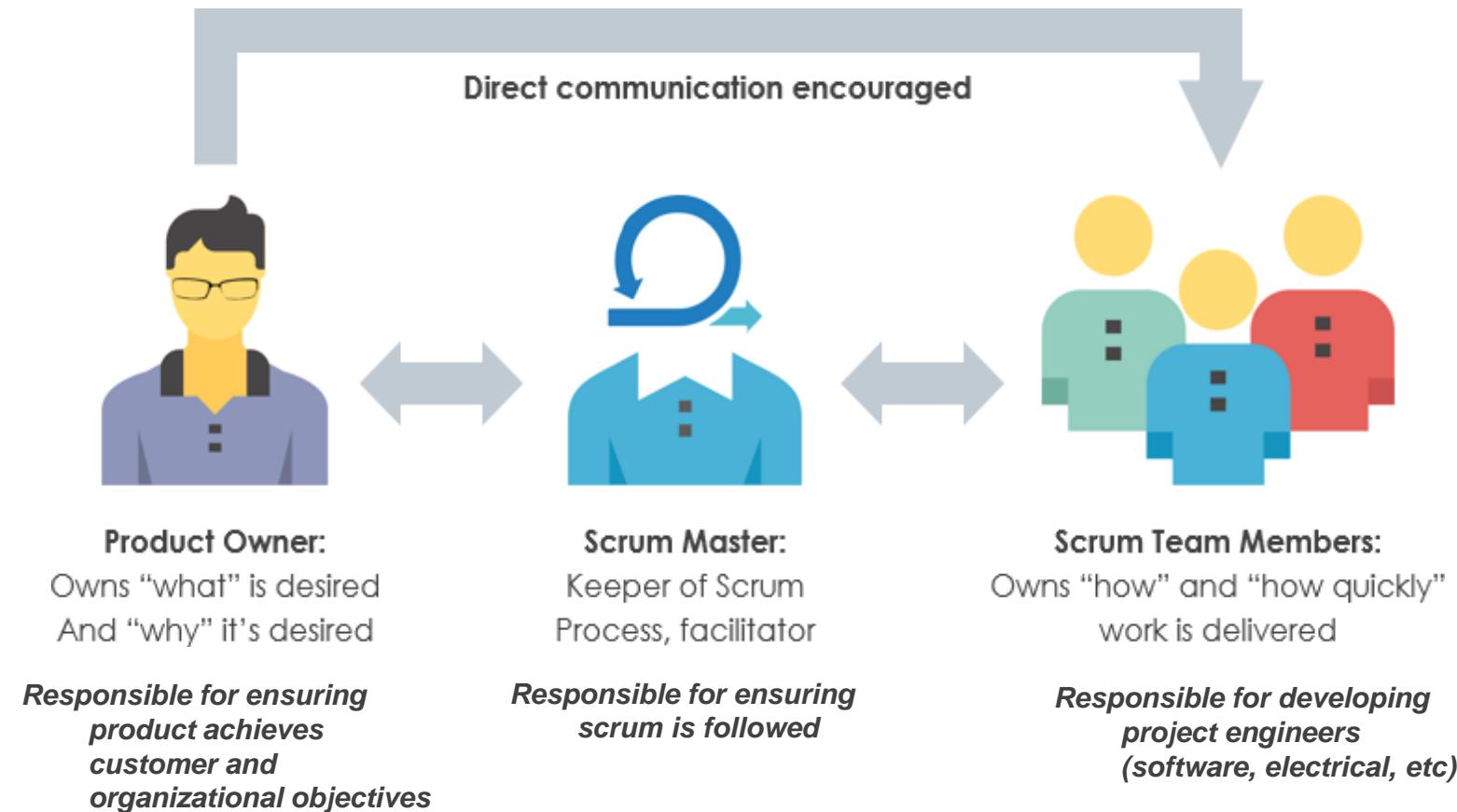
A loan application would take around 12 days on average.

➤ An Agile Loans team was assembled to review the processes and develop a new online loan application tool, which reduced this time to 20 minutes, saving paperwork headaches and in-person visits.

This demonstrates the importance of having a culture where teams can focus on customer benefits and changing processes and products, and iterating for continuous improvement.

How does it work in practice?

How Teams Work within Agile



What is the difference between these roles and a waterfall project manager?

Why use Agile?: Limitations of Agile for Project Teams

DRAWBACKS OF AGILE

Disadvantages of Agile Model

01

In some software deliverables, especially the large ones, it is difficult to assess the effort required at the beginning of the software development life cycle.

02

Only senior programmers are capable of making the kind of decisions required during the development process.

03

The project can easily get taken off track if the customer representative is not clear about its outcome.

04

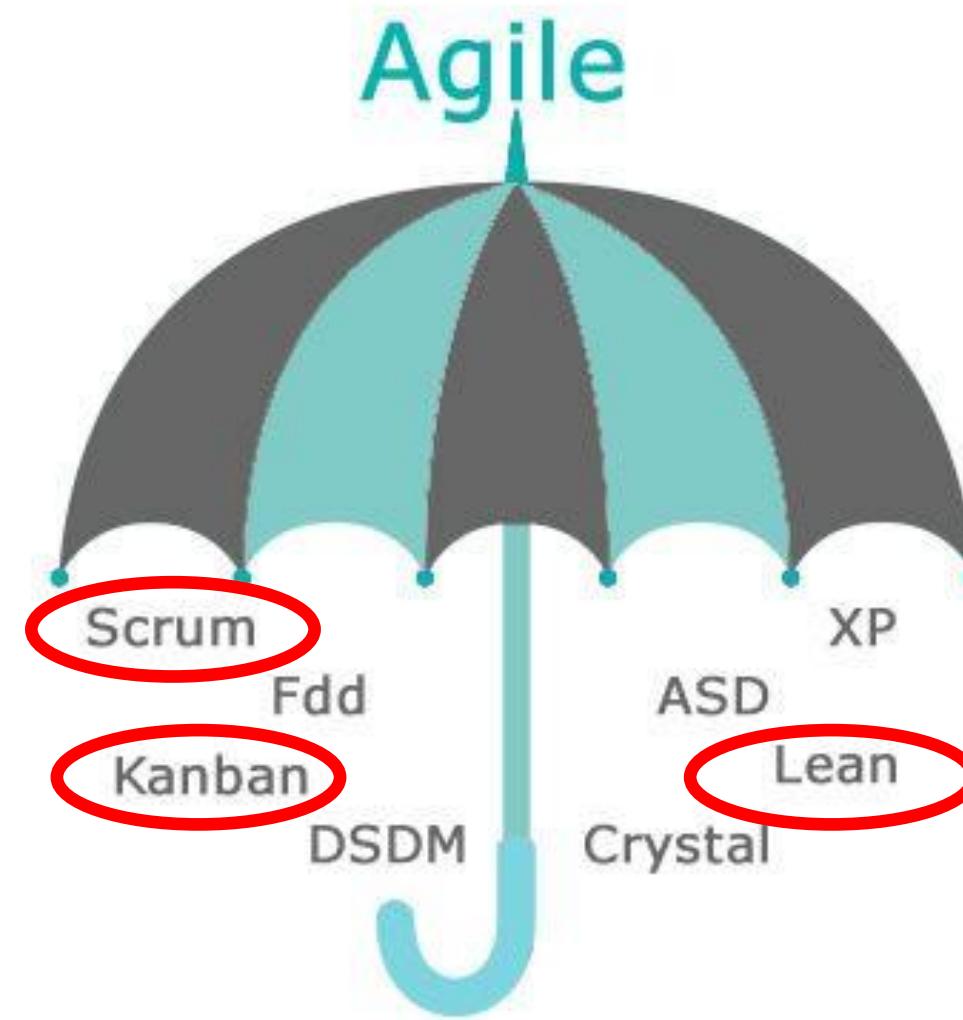
It can be difficult to keep the interest of customers who are involved in the process.

05

There is a lack of emphasis on necessary design and documentation.

Many Methodologies come under the ‘Agile’ Umbrella

We'll look at some of the more commonly used methodologies in greater depth in the rest of this lecture



The Agile Manifesto – 4 Values

The Agile Manifesto

Individuals and interactions over **Processes and Tools**

Working Product over **Comprehensive Documentation**

Customer Collaboration over **Contract Negotiation**

Responding to change over **Following a plan**

That is, while there is value in the items on the right, we value the items on the left more.

www.agilemanifesto.org

The Agile Manifesto – 12 Principles



Methodologies in “Agile” – Some Definitions:

Iteration

A period of time when an Agile Team needs to develop one part of product (usually 1-4 weeks)

Kanban

A highly visual Agile framework. Rather than working on fixed & planned iterations like Scrum, Kanban works on prioritised tasks as they arrive, aiming at a constant flow of work.

Scrum

A process that allows teams to create a hypothesis, test it, review it and make adjustments

Sprint

A Scrum team iterative work phase during an Agile development process (typically 1-4 weeks)

Methodologies in “Agile” – Some Definitions:

Epic

A big idea or feature that can be broken down to smaller user stories

Story

A brief description of a specific product feature or function

Product Owner/Mngr

Owner of the solution that is being created

Waste

An expense expended that does not transform inputs that a customer will pay for.

Methodologies in “Agile” – Some Definitions:

Retrospective

Meeting where Scrum team analyse their performance at end of a Sprint

Backlog

A list of product features, updates, fixes, requested by User, to be worked on.

Burndown Chart

A Chart that allows Agile PM to track remaining work and remaining time to completion

‘Done’

An agreed set of items that must be completed for a product or user story to be considered complete

Methodologies in “Agile” – Some Definitions:

Minimum Viable Product (MVP)

An early or partial version of a Product with enough features to be usable by for Users.

Throughput

The number of items that enter the ‘done’ step per unit of time (eg X items per week)

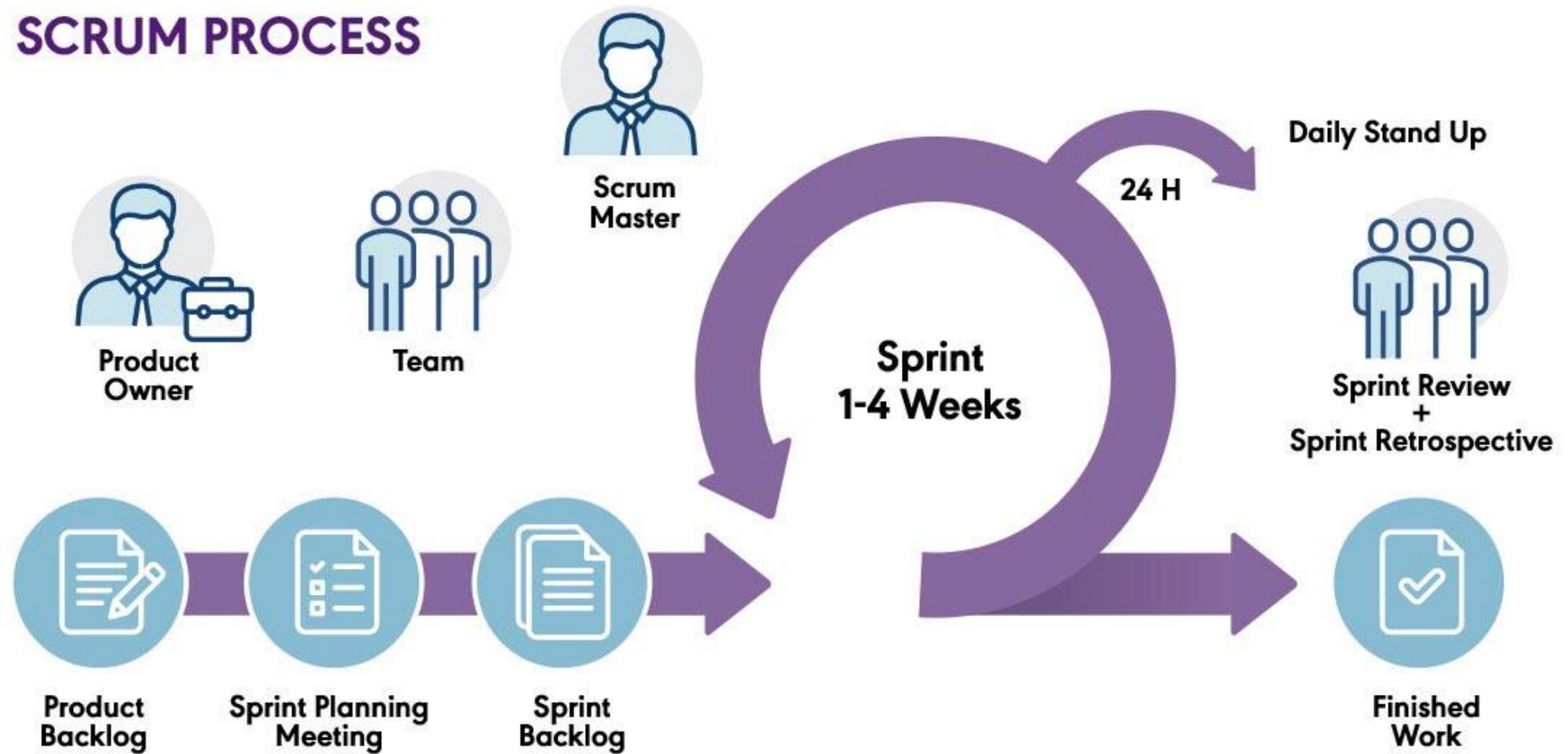
Velocity

Measurement of amount of work a team can handle during an iteration (ie avg no of tasks/user stories completed per sprint)

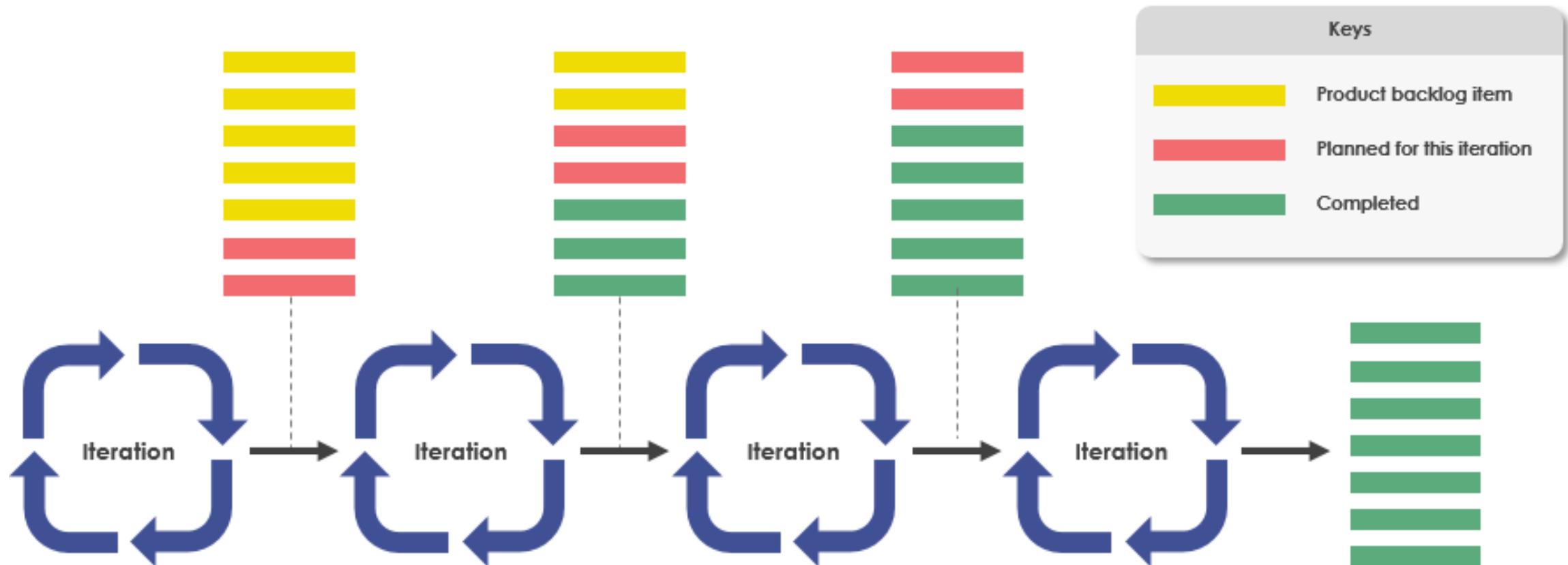
Grooming

Scrum team organises / prioritises backlog during Scrum meeting ready or next Sprint

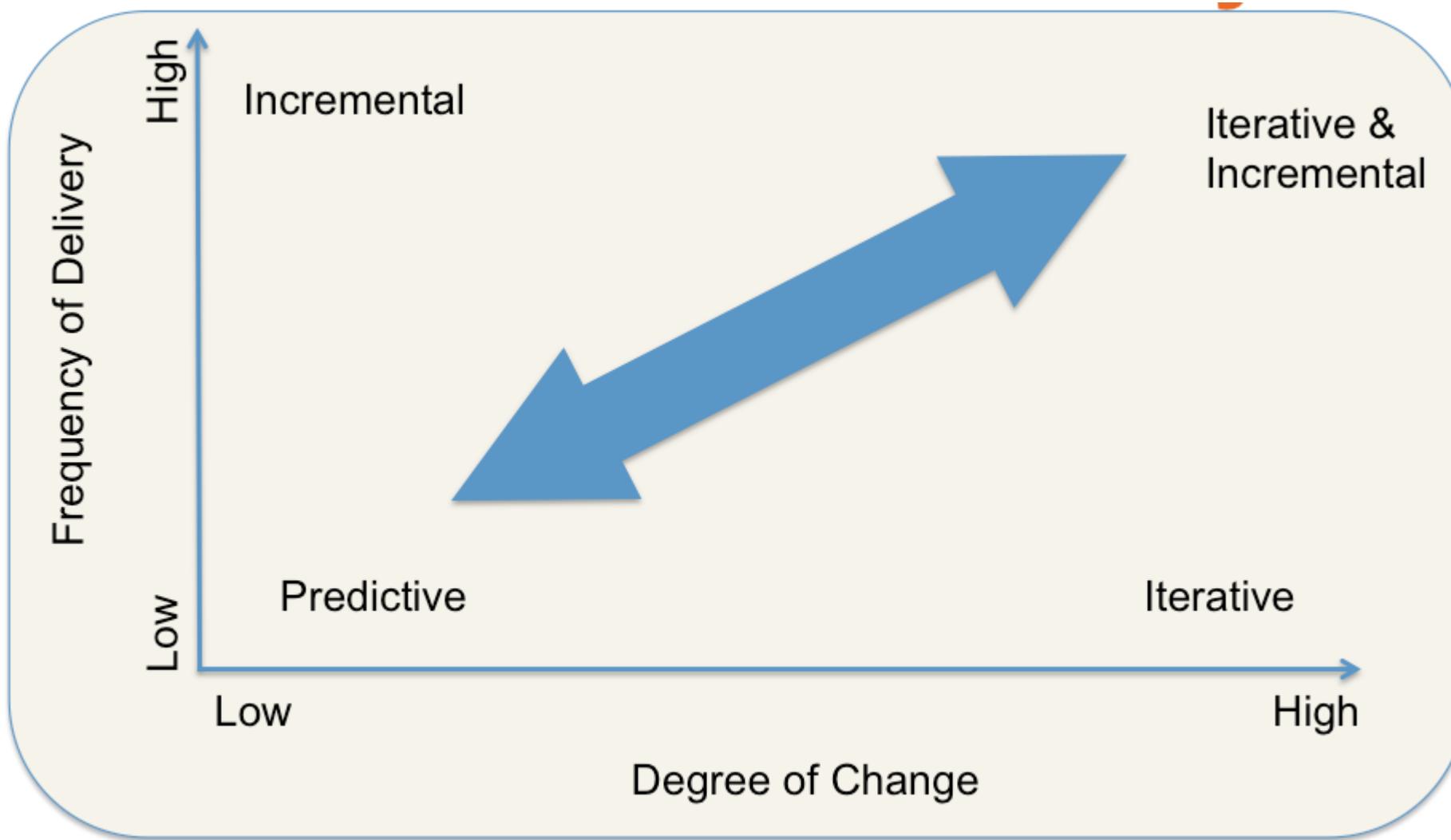
Scrum – an Agile framework



Scrum Methodology



Scrum – Incremental or Iterative Development?



Scrum – Incremental or Iterative Development?

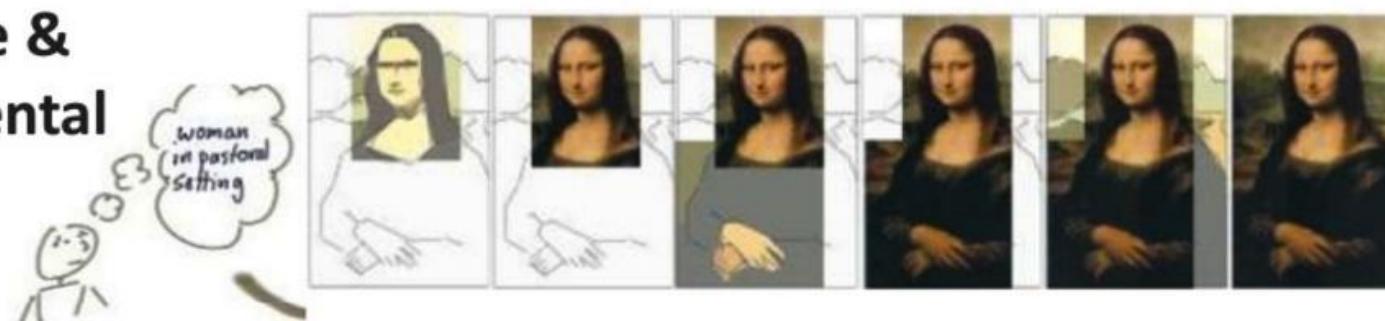
Iterative



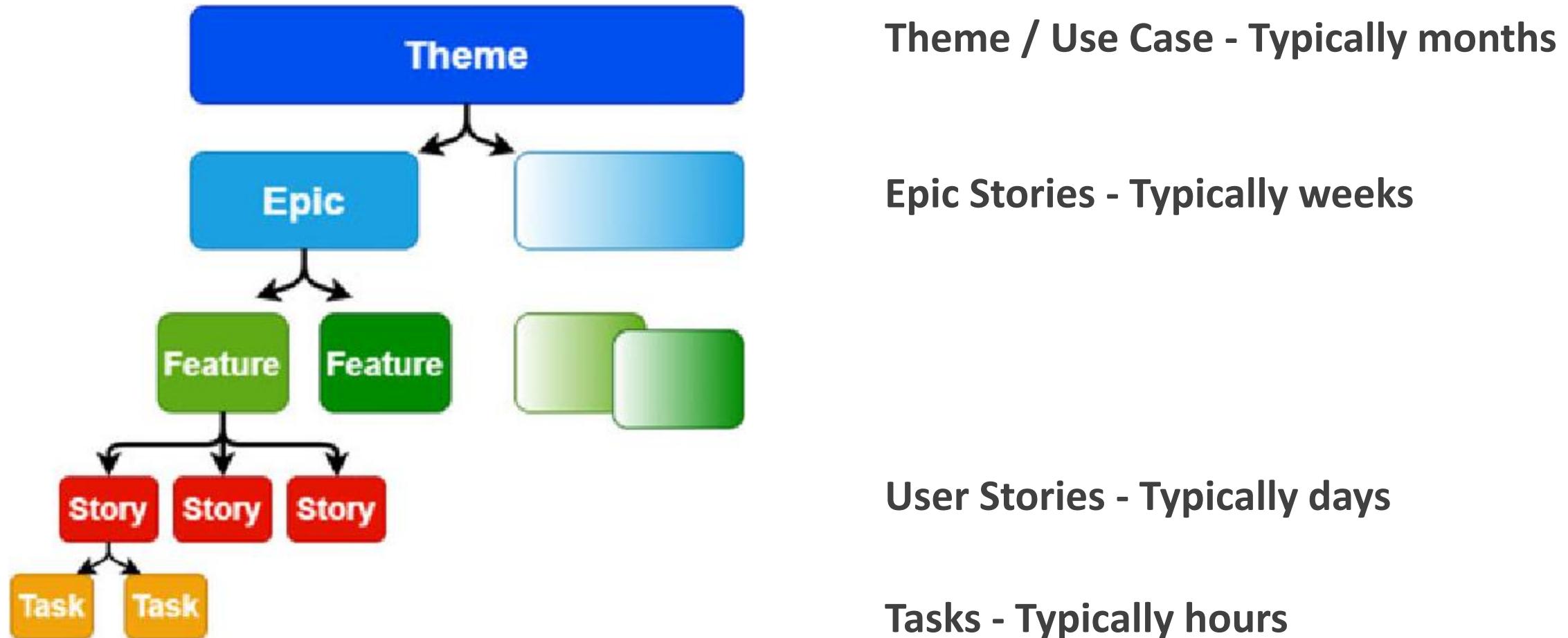
Incremental



Iterative & Incremental



Breakdown of Product Backlog Items – “The WBS” in Agile



How do you use a backlog with sprints?

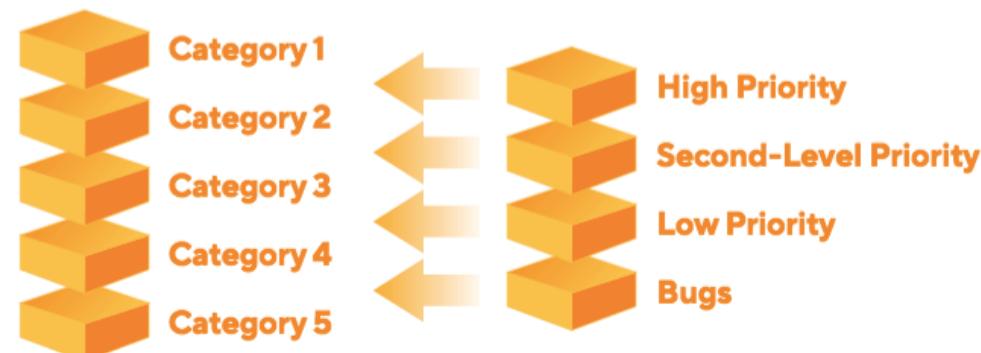
Recall – you complete multiple sprints over the project lifecycle.

Your list of work “to do” is all in the backlog.

Work is pulled off the backlog into sprints before the start of each sprint.

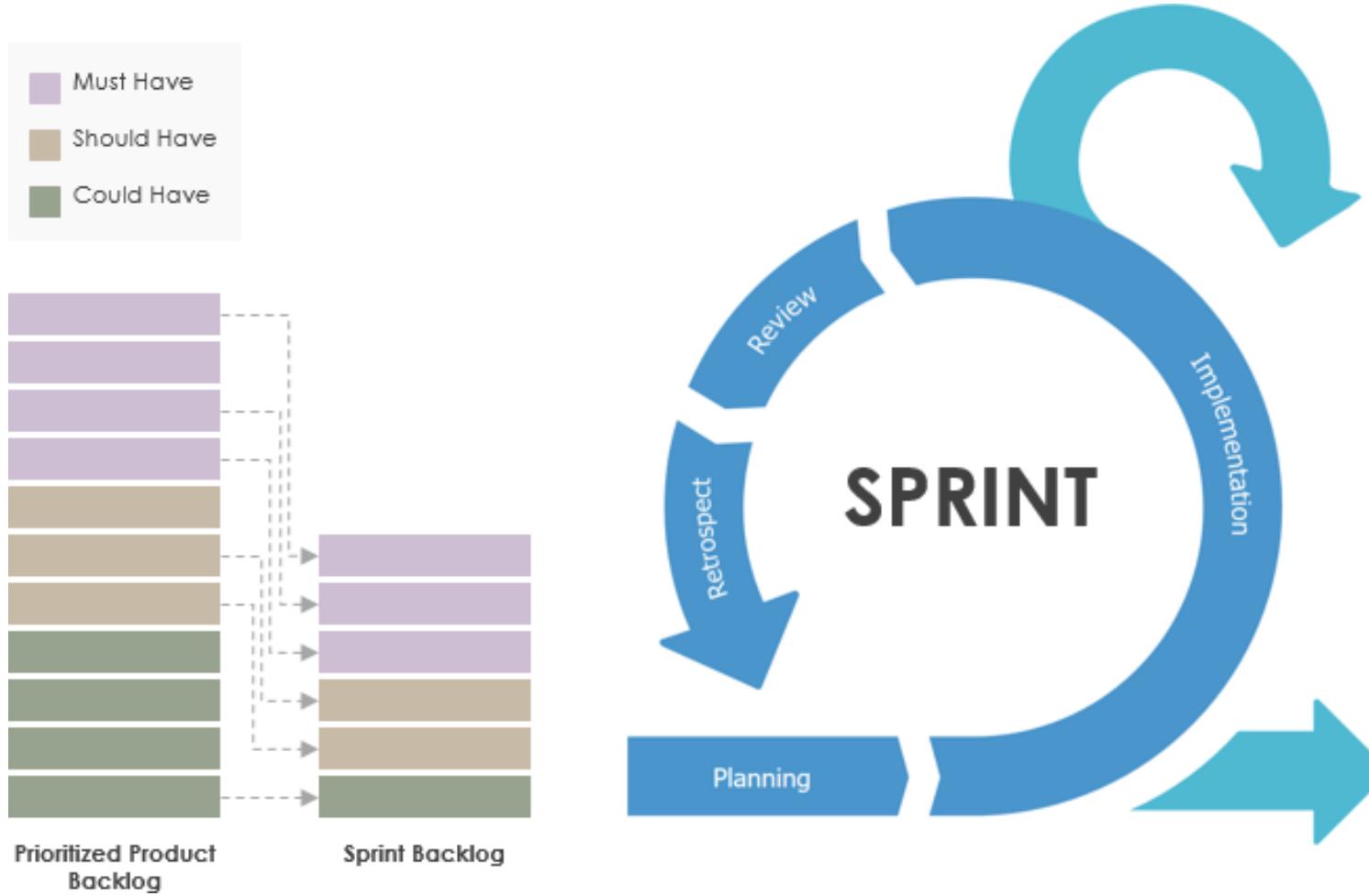
The work in the backlog might change at any time throughout the lifecycle, e.g. you discover a problem in a design and need to redo the calculations.

- Step 1 – Organise Backlog Items by Category
- Step 2 - Pull Backlog Items into Sprint by Priority

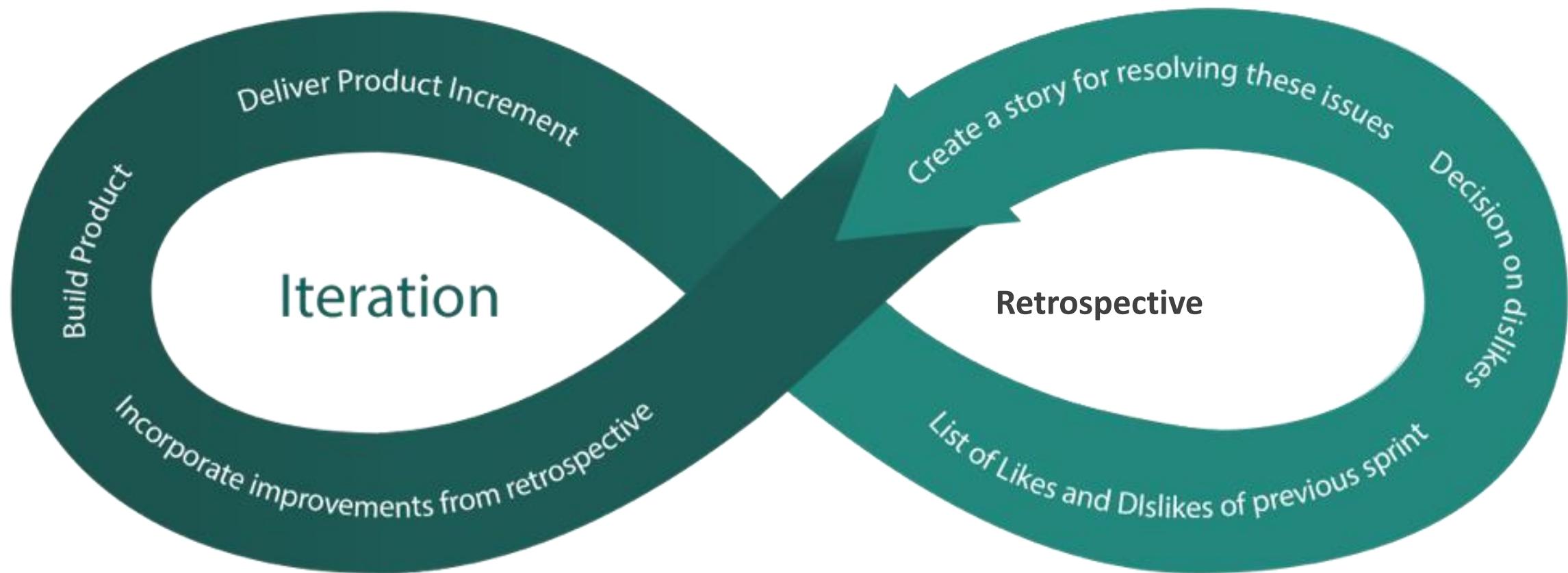


How do you use a backlog with sprints?

- Step 3 – Execute Prioritised Items at next Sprint



Agile Retrospective



Why have Retrospectives?

A Typical Sprint Retrospective Model

What worked well?

What could be improved?

What will we commit to
doing in the next Sprint?

*Scrum Team members
make actionable
commitments*

A tool for continuous improvement

Benefits of Retrospectives –

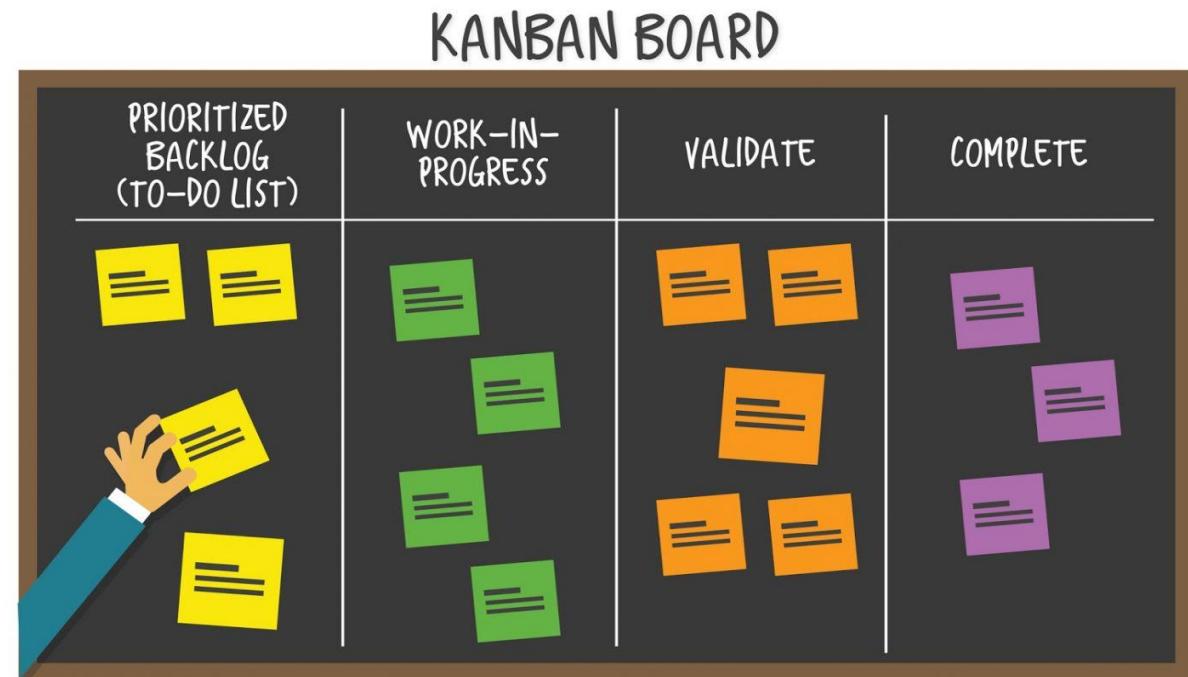
**A retrospective is an opportunity
for the scrum team to:**

Continuously
improve

Inspect and
adapt

Grow as a
team and as
individuals

Standups – Daily Scrum meetings during Sprints



What did I do yesterday?

What will I do today?

Is there any impediment?

To summarise with an example project:

Project lifecycle of one year

4 x quarterly sprints of 3 months each

Standup is held daily

Start of each sprint:

- Epic stories are pulled from backlog for each sprint

End of each sprint:

- Backlog is reprioritised
- Retrospective is held at the end of each sprint
- Finished work may be delivered to customer

Some Typical Agile Software Tools

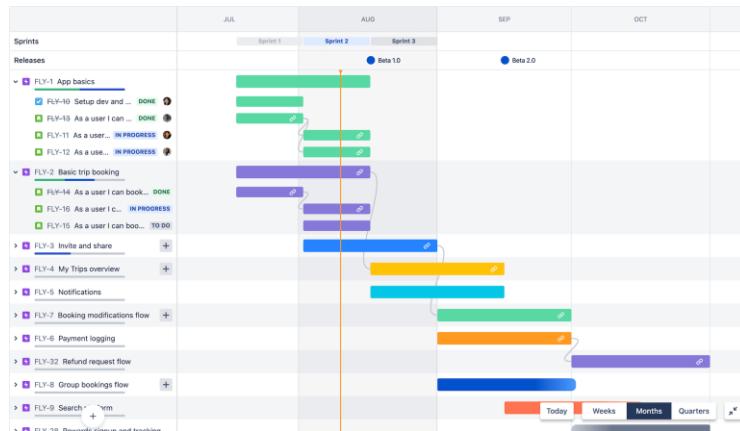


Trello

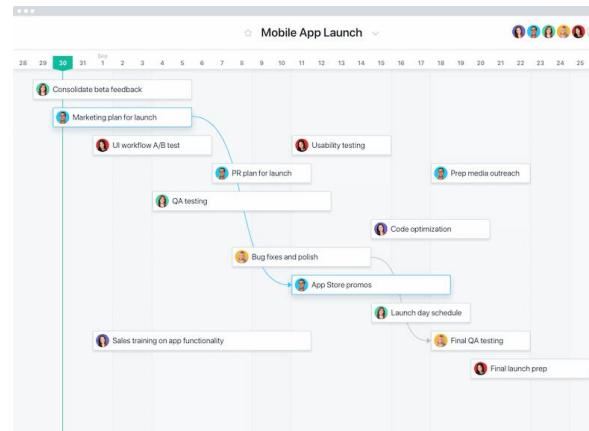
Q3 project overview				
	Owner	Status	Timeline	Due date
Finalize kickoff materials		Done	Timeline bar	Sep 15
Refine objectives		Working on it	Timeline bar	Sep 19
Identify key resources		Stuck	Timeline bar	Sep 22
Test plan		Done	Timeline bar	Sep 26

	Owner	Status	Timeline	Due date	Priority
Update contractor agreement		Done	Timeline bar	Oct 10	★★★★★
Conduct a risk assessment		Working on it	Timeline bar	Oct 13	★★★★★
Monitor budget		Stuck	Timeline bar	Oct 19	★★★★★
Develop communication plan		Done	Timeline bar	Oct 22	★★★★★

Monday



Jira



Asana

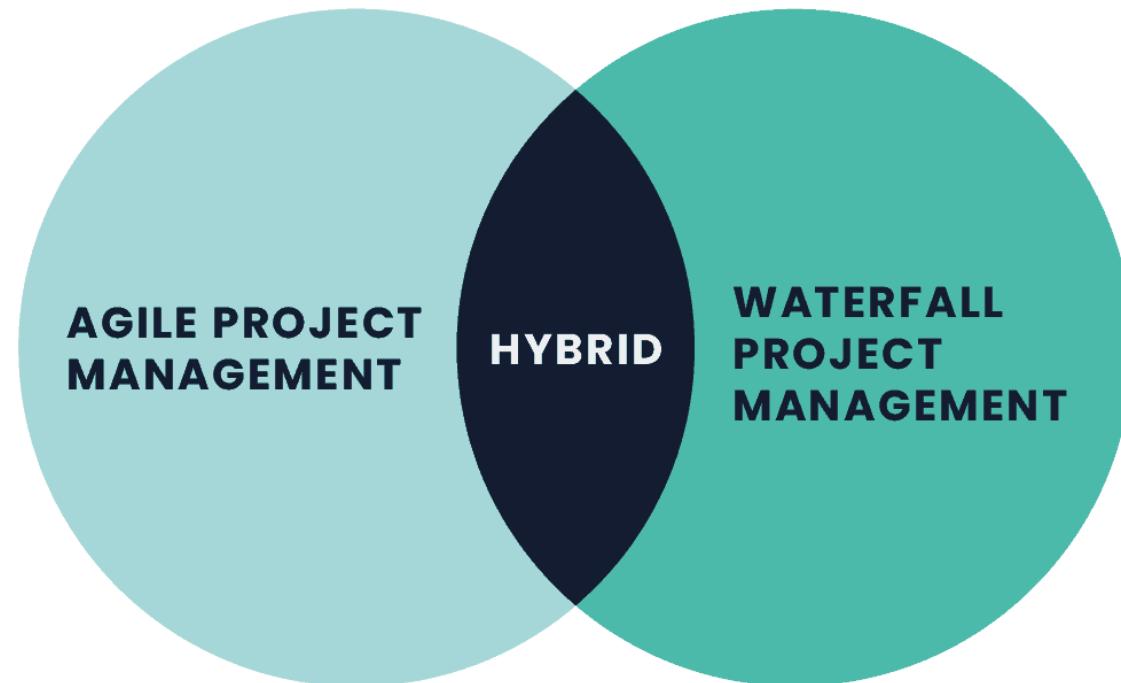
These are some well known software tools that can be used to manage Agile projects.

There are many others on the market.

Hybrid Agile / Waterfall Project Management

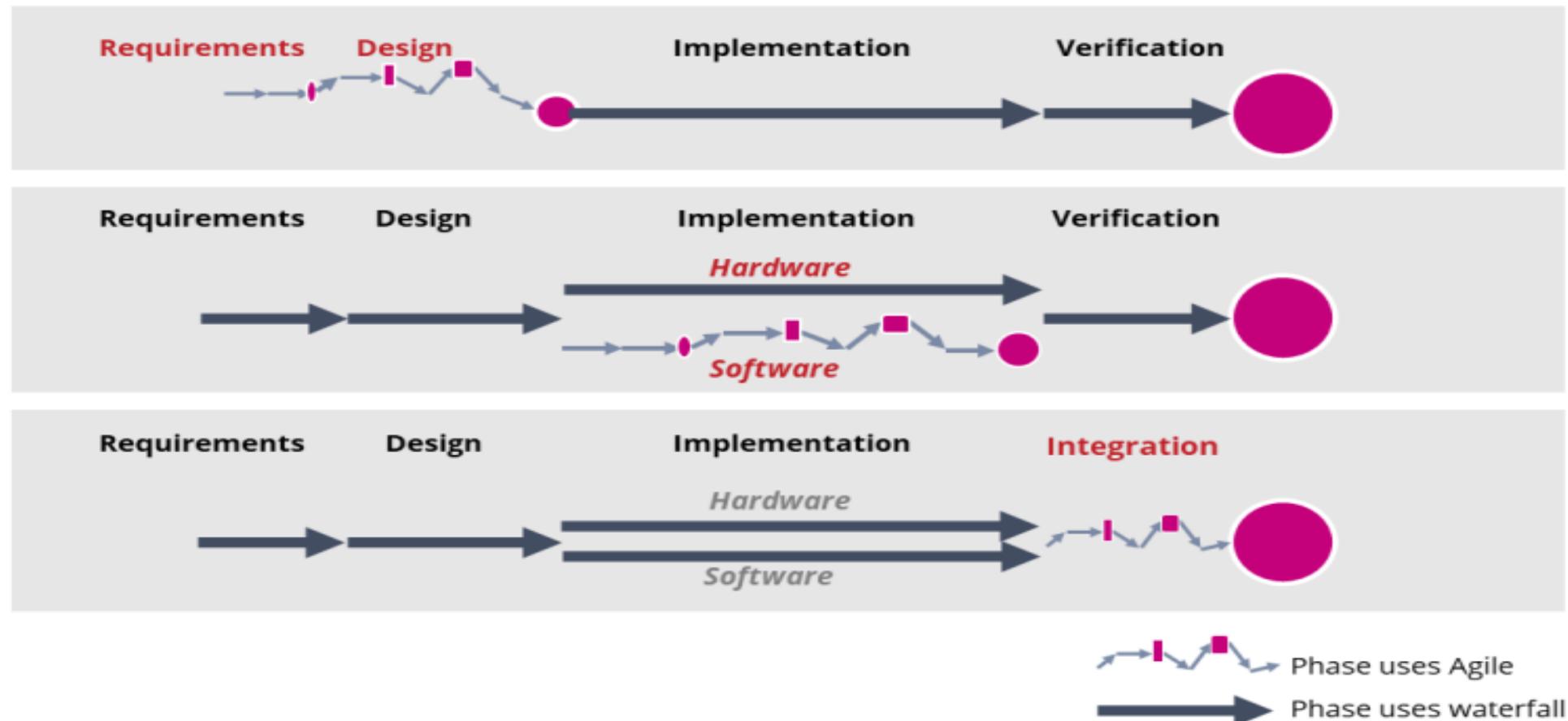
Can some concepts from Agile be used in Traditional Waterfall Project Management?

- Short answer is **YES** (and probably should be used more often)

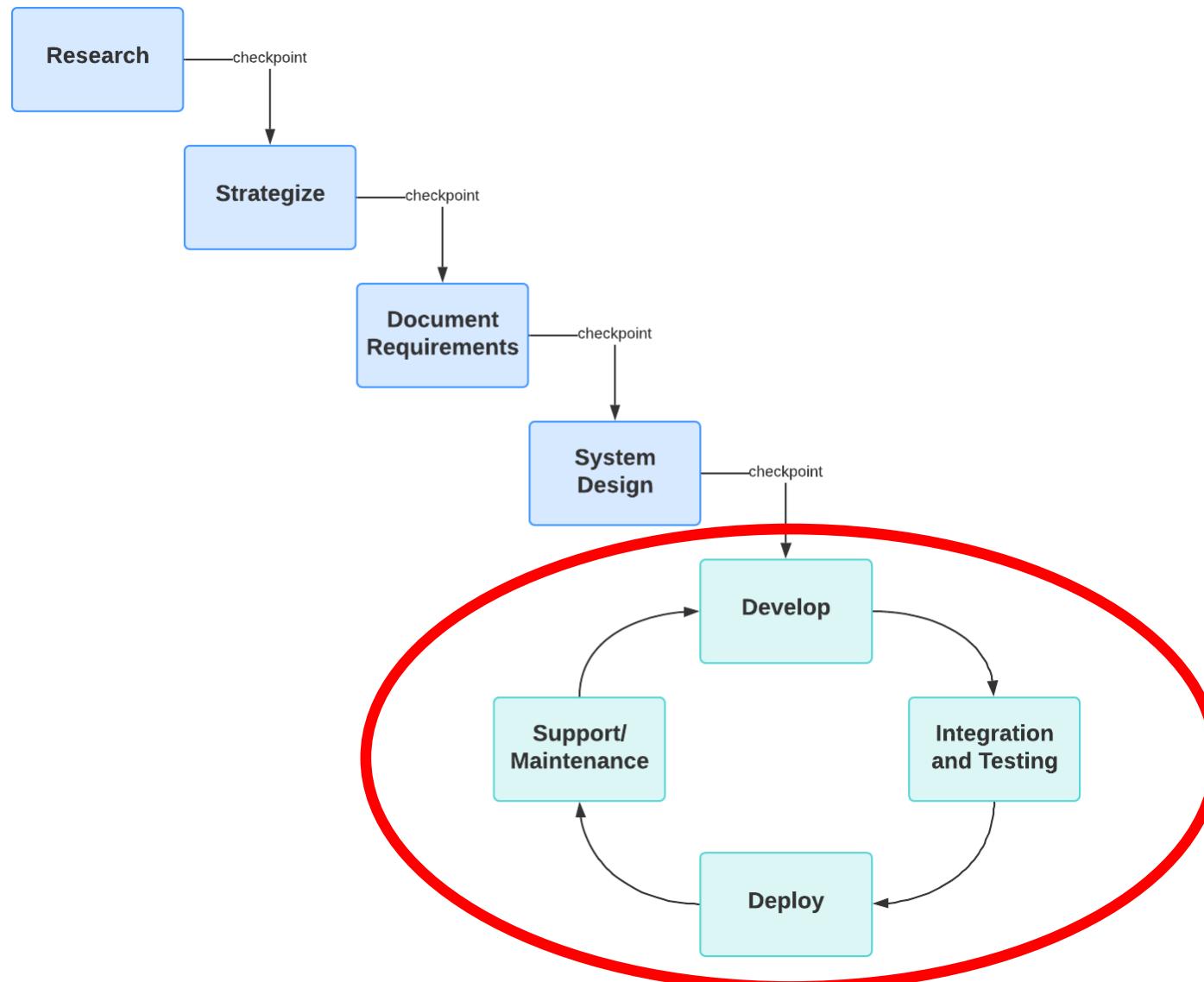


Hybrid Agile / Waterfall Project Management

Agile incorporated at whatever phase development outcome is uncertain



Hybrid Agile / Waterfall Project Management - Example



**Imagine you work for the Volkswagen Project Management Office (PMO).
Your project managers ask you:**

"What project management style should Volkswagen use across the company?"



Manufacturing, including quality assurance, safety processes, etc.



New electric vehicle technology research and development

According to the Project Management Institute's 2018 Pulse of the Profession report, Success in Disruptive Times:

“Success starts with the right approach to support project delivery. Organisations will continue to use more than one project management approach and combine different techniques to cope with their own distinct challenges.”



Requires repeatable, strict, and detailed processes – waterfall?



Requires iterative, incremental, and flexible research without necessarily strict time and money constraints – agile?

Where Hybrid Methodologies could/should(?) be used

- Example – Bad Headlines on Large Defence Projects



MAEVE MCGREGOR . ANALYSIS C

Defence faces \$18bn in cost overruns, three times higher than what Labor feared

The annual report on defence spending paints a picture of continued waste, mismanagement and lack of transparency.

A collage of images including three small portraits of men in suits, a fighter jet flying through a cloud of smoke, and a red and black graphic element.

Where Hybrid could / should be used:

Large Defence Projects



Organisations, especially Governments, don't want to look like they are committing a lot of money to an uncertain result.

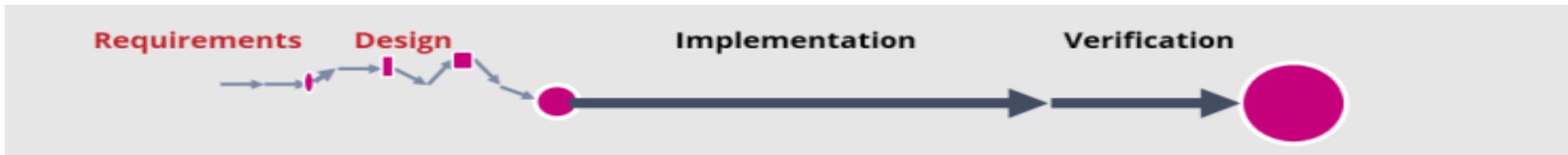
They often sign up to a fixed price / schedule without a defined scope.

Projects are then reported to be running “*well over budget and time*” due to “*bureaucratic incompetence*”.

Great headlines, but, in reality, **misleading and unfair**.

Where Hybrid could / should be used:

Large Defence Projects



Such novel, technologically complex projects should really start out as **Development Projects** in an Agile environment. The main **Waterfall Delivery Project** with fixed budget / schedule should not be committed to until the iterative Agile project(s) have produced a fully defined scope.

Agile Methodologies can even be used within a Traditional Waterfall Project

Even in fully Waterfall projects, some of the Agile Methodologies we've looked at can prove useful in assisting team building, collaboration, reporting, communications and tracking progress.

A good upcoming example – **your group assignment**

Essentially, you, as a group without a designated team leader, are required to individually build parts of a Waterfall Project Plan and then integrate them into one finished Project Plan by a set deadline.

KANBAN could prove very useful to help facilitate team building, increase collaboration, track progress and aid team communications

More on Agile Project Management

Rose D. “***Agile Foundations***” video in course, released Aug 21, LinkedIn Learning [accessed through UNSW](#)

Biafore B.. “***Agile Project Management with Microsoft Project***” video in course, released Nov 21, LinkedIn Learning [accessed through UNSW](#)

Croft C. & Rose D. “***Comparing Agile vs Waterfall Project Management***” video in course, released Nov 21, LinkedIn Learning [accessed through UNSW](#)

O’Connell K.. “***What is Scrum***” video in course, released April 20, LinkedIn Learning [accessed through UNSW](#)

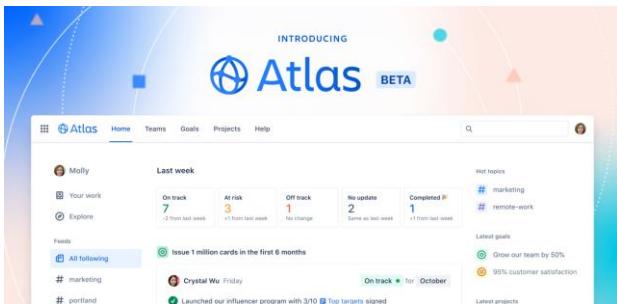
Humble J. . “***Lean Technology Strategy: Running Agile at Scale***” video in course, released Jun 18, LinkedIn Learning [accessed through UNSW](#)

An exploration of project management styles in the real world

Which lifecycle?



- Builds software for teams
- Receive consistent customer feedback
- Implement regular software improvements
- May plan engineering work in short-medium term increments (quarterly planning, <18 months)



- Builds infrastructure for commuters
- Majority of customer feedback during planning
- Execute to a well-defined plan
- May plan engineering work in medium-long term increments (yearly planning, <10 years)



Is Atlassian more likely than Transport for NSW to be an Agile or Waterfall organization?

Which lifecycle?



More likely to use Agile methodologies

- Software products generally have faster feedback loops from customers
- Software development is relatively faster
- Whole project sequences are not strictly defined or followed from start
- Does not wait until complete end of product to release, and continues to improve after first release



More likely to use Waterfall methodologies

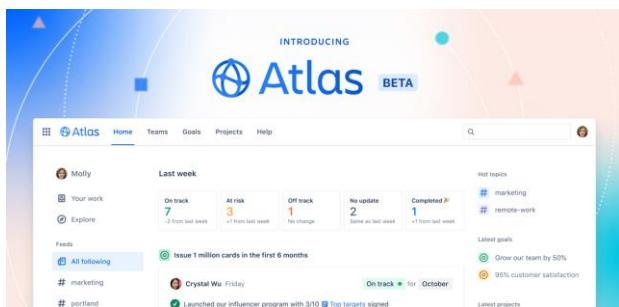
- Infrastructure have longer and costly feedback loops from customers
- Construction is relatively slower
- Projects are planned, approved, and executed
- Releases at the end of project, or large stages

Which development approach?



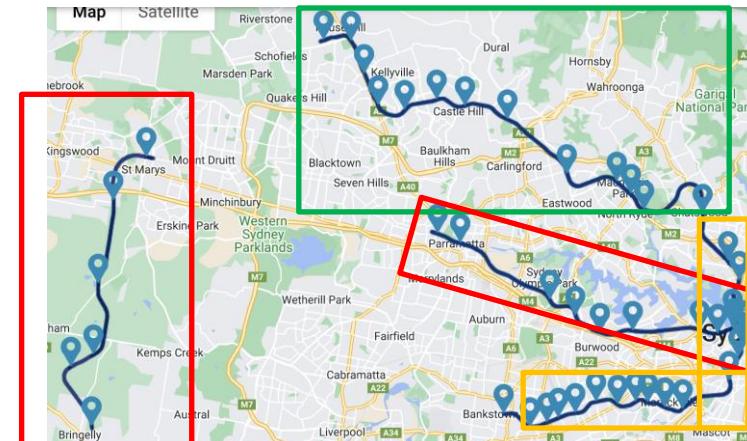
Developing the new “Atlas” software

- Recently released in Beta
- Tested internally before public release
- Receive consistent customer feedback
- Frequently release improvements and features



Building the Sydney Metro railway

- Stations are opened in four stages
- Receive customer feedback at start of each stage



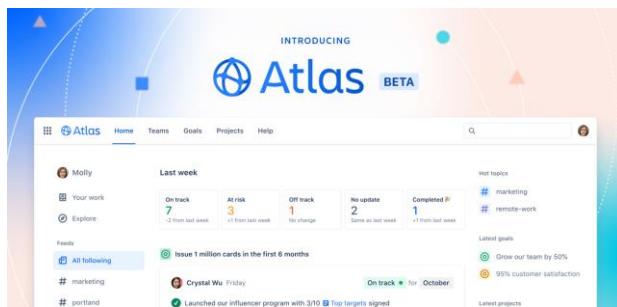
Is Atlas more likely than Sydney Metro to be an Iterative or Incremental project?

Which development approach?



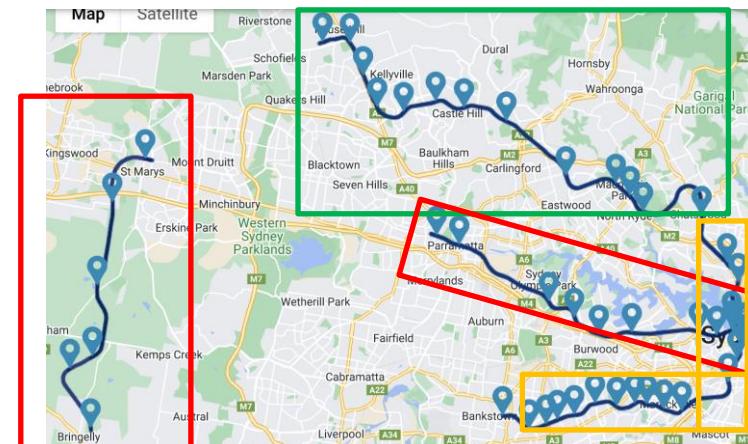
Iterative

- Gradually release features both internally and externally
- Features may be added, removed, or changed
- Influenced by consistent customer feedback
- Work is delivered throughout the project



Incremental

- Stages (multiple stations) are built, tested, and released at once in distinct increments
- Receive customer feedback at start of each stage
- Work is delivered at end of project



Management (Senior Engineers, Engineering Managers) activities

Some activities include

Quarterly/sprint planning

Maintaining Kanban board

System design

People management

Leadership reporting

1. Quarterly/sprint planning

Managers must be strategic and may consider:

- Headcount
 - How many headcount do I need per quarter to cover our projects
 - How many per role (Senior Engineers, Junior Engineers, Product Managers, etc)
- Projects per quarter
 - X% Maintaining existing projects, responding to incidents
 - Y% Building new projects, design and development of new code
- Management strategy
 - Periods of economic downturn
 - Priority for building new products or improving existing products

	FY24 Q1	FY24 Q2	FY24 Q3	FY24 Q4
Building Product A	3 people	2	4	2
Maintaining Product A	1	1	2	2
Building Product B	2	2	3	3
Etc...				

2. Maintaining Kanban board

Once your team knows what projects they are working on...

Projects / Beyond Gravity

Board

4 columns

Piece of scope

i.e.
Ticket
Feature
User story

TO DO 12	IN PROGRESS 4	IN REVIEW 4	DONE 4
Implement feedback collector NUC-205	Update T&C copy with v1.9 from the writers guild in all products that have cross country compliance NUC-213	Multi-dest search UI web NUC-338	Quick booking for accomodations - web NUC-336
Bump version for new API for billing NUC-206	Tech spike on new stripe integration with paypal NUC-215		Adapt web app no new payments provider NUC-346
Add NPS feedback to wallboard NUC-208	Refactor stripe verification key validator to a single call to avoid timing out on slow connections NUC-216		Fluid booking on tablets NUC-343
	Change phone number field type to 'phone' NUC-217		Shoping cart purchasing error - quick fix required. NUC-354

2. Maintaining Kanban board – creating tickets

Title of feature

Fluid booking on tablets

Type (Bug, Feature)



NUC-343

Ticket Number

✓ 5 == Assignee

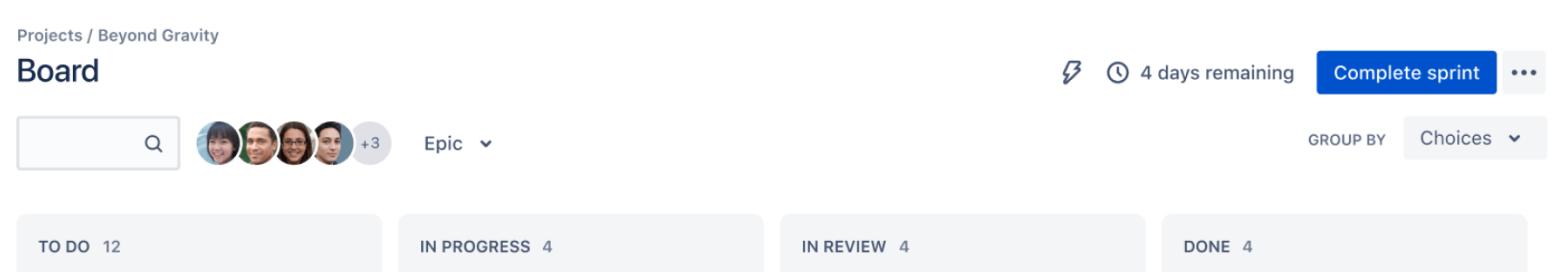
Status Effort Priority

2. Maintaining Kanban board – creating tickets

Ticket feature	Example ticket info
Title of feature	Fluid booking on tablets
Description of feature and work <ul style="list-style-type: none">- Describe the problem- Outline a possible solution	Our frontend has been optimized for desktop, but not tablets. With a smaller screen size, we need to create a collapsible sidebar with icons instead of the full text descriptions.
Acceptance criteria <ul style="list-style-type: none">- Final implementation details are left to assignee- Other team members may recommend info here	<ol style="list-style-type: none">1. Tablet users have option to collapse text descriptions via sidebar2. etc
Notes	Refer to Slack message dated 14 th June 2023 10:58am for low fidelity prototypes

Kanban exercise – creating tickets

Create one ticket of scope for each column, reflecting something in your life to start your own Kanban board.



Example:

Title: Final Exam

Description: The Final Exam is a X question multiple choice quiz held at Y on Z. They involve questions about PMBOK and Agile methodologies.

Acceptance Criteria:

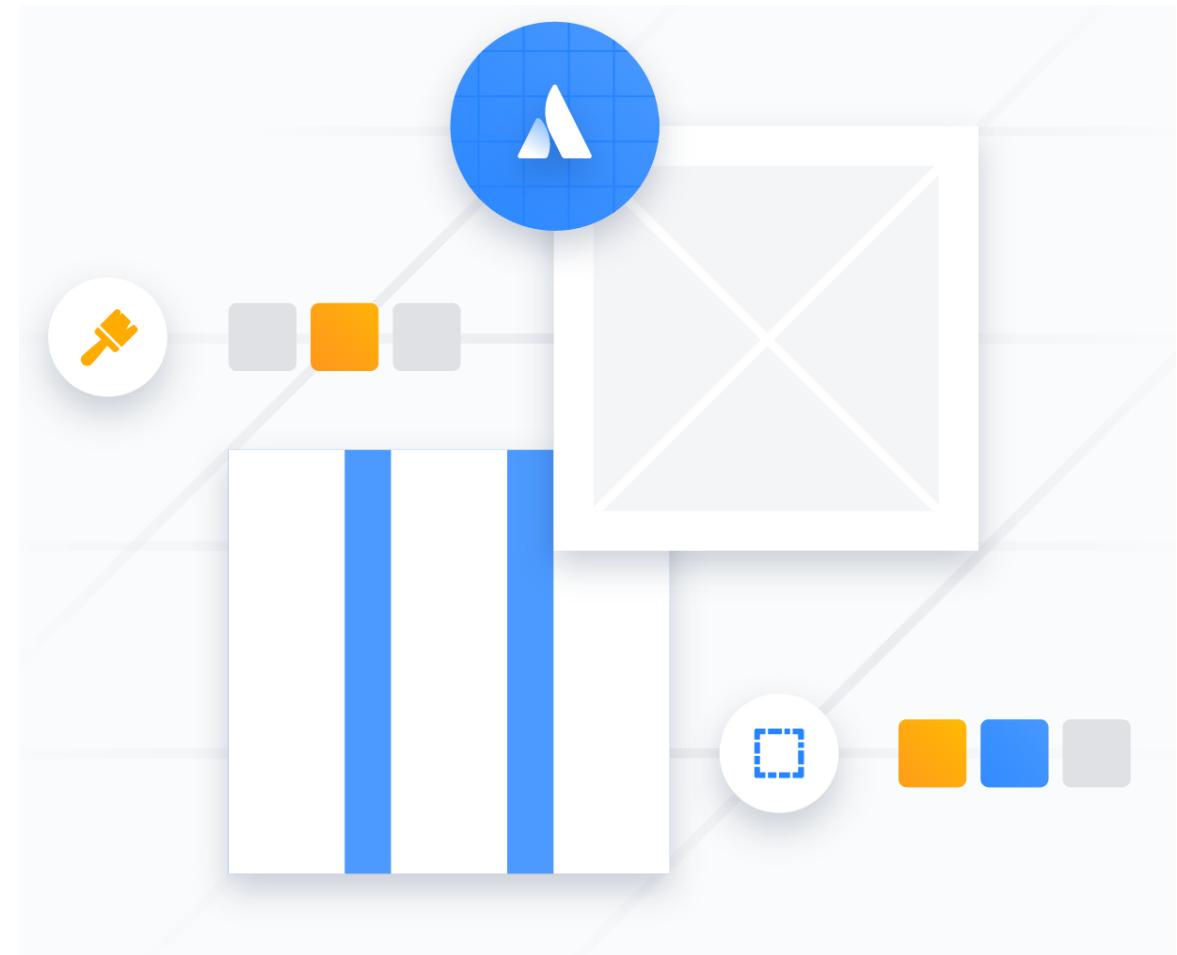
1. Student must be online during X time.
2. Student must attempt as many questions as they can.
3. Student should study for the exam.
4. Student must submit within X minutes.

Effort: 4/5, Priority: H, Status: To-do

3. System design

Senior engineers and managers need to design the system, and then tickets can be created and added to the Kanban board.

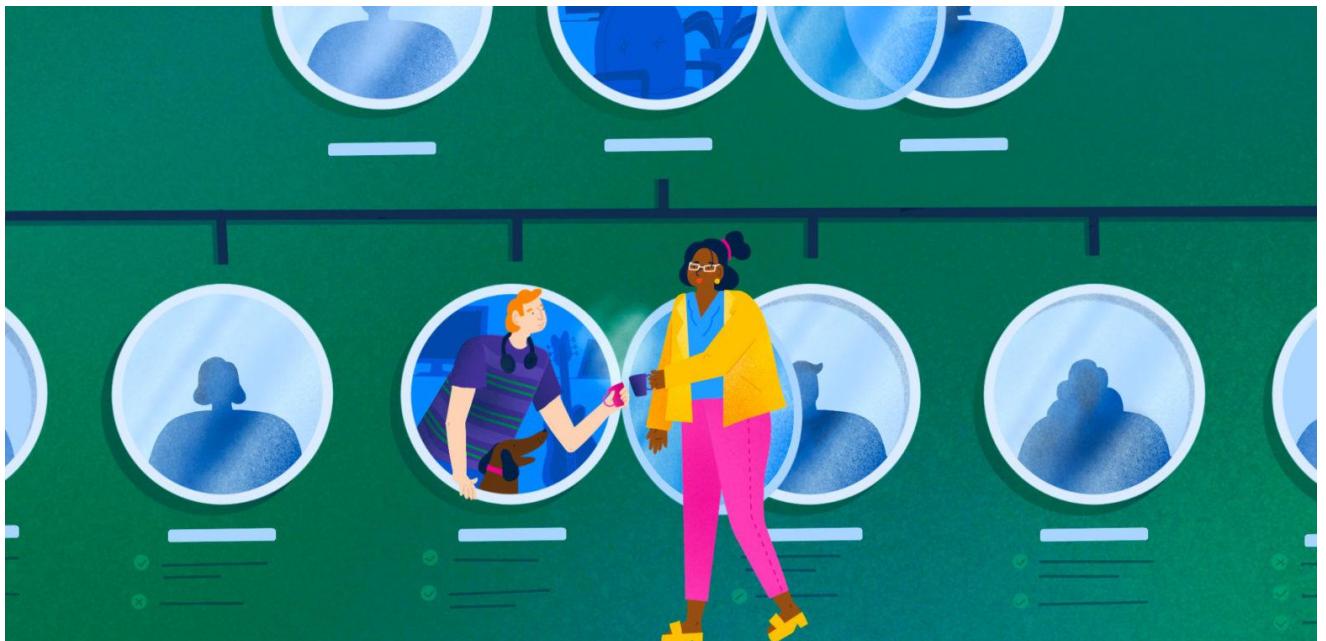
Where would you be expected to do system design for your Assignment Part 1?



4. People Management

This is a bit out of scope for project management. Other types of managers focus more on people management. They perform activities such as:

- Promoting career development
- Hiring new employees
- Optimizing talent
- etc

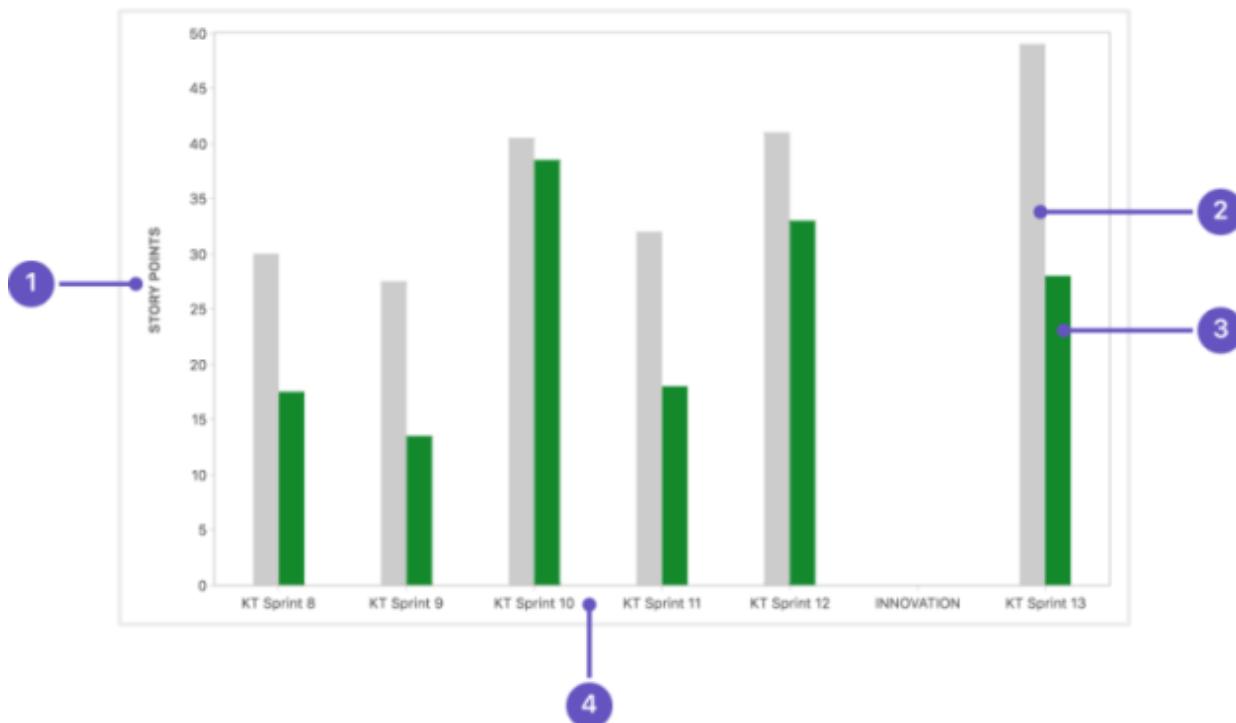


5. Leadership Reporting

How does an organisation's leadership understand how a project is going?

A Velocity Chart can be made to understand how much work was **delivered versus planned** in real time. This helps leadership to quickly understand whether teams and projects are progressing well.

Do you think this project team is behind, ahead, or on track?



1. Estimation statistic: e.g. time, features delivered, effort, etc.
2. Green – actual completed
3. Grey – goal to complete
4. Time period: e.g. sprint, month, etc

Day to day as an Engineer in an Agile team

If your leadership does the previous activities, you may be involved in the following day to day:

Time of day	Activity
Morning	Daily standup meeting
Morning	Weekly grooming meeting
Throughout day	Daily focus time
Afternoon	Ad-hoc "ways of working" calibration
Afternoon	Fortnightly retrospective meeting

Daily Standup

Agenda

Small talk

Review pending column

Review in review column

Review in progress column

Manager reminders

Any other business

Your teams are encouraged to adapt and follow this format or find a structure that works for your regular meetings.

Projects / Beyond Gravity

Board

4 days remaining Complete sprint ...

GROUP BY Choices ...

TO DO 12

- Implement feedback collector NUC-205 9 ↘ ↗
- Bump version for new API for billing NUC-206 3 =
- Add NPS feedback to wallboard NUC-208 1 ↘ ↗

IN PROGRESS 4

- Update T&C copy with v1.9 from the writers guild in all products that have cross country compliance NUC-213 1 ↗ ↗
- Tech spike on new stripe integration with paypal NUC-215 3 ↗ ↗
- Refactor stripe verification key validator to a single call to avoid timing out on slow connections NUC-216 3 ↗ ↗
- Change phone number field type to 'phone' NUC-217 1 ↗ ↗

IN REVIEW 4

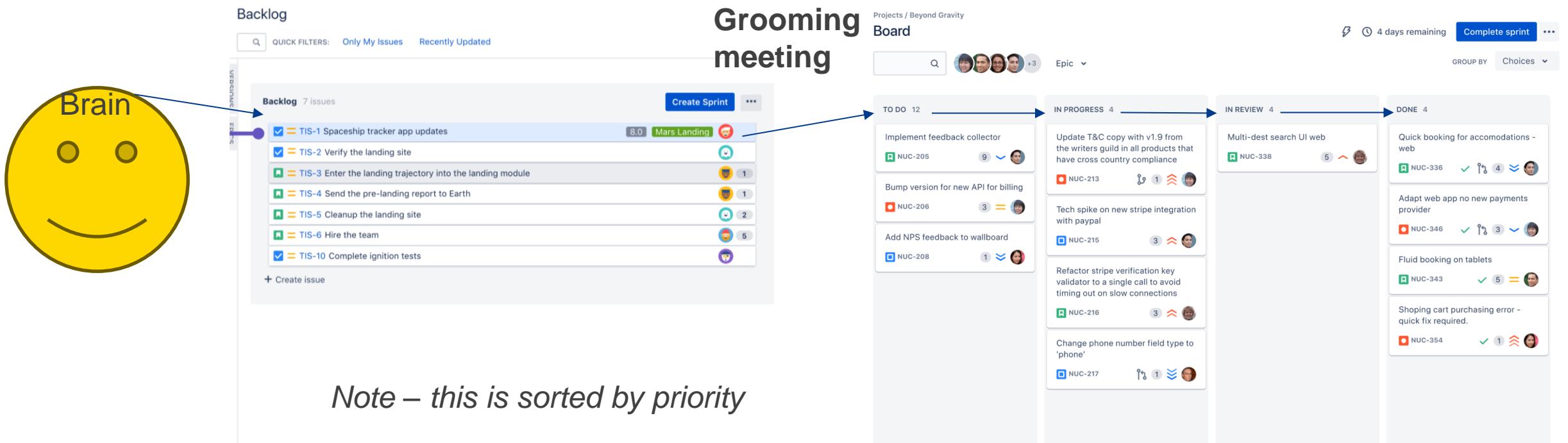
- Multi-dest search UI web NUC-338 5 ↗ ↗

DONE 4

- Quick booking for accomodations - web NUC-336 ✓ ↗ ↗ 4 ↗ ↗
- Adapt web app no new payments provider NUC-346 ✓ ↗ ↗ 3 ↗ ↗
- Fluid booking on tablets NUC-343 ✓ 5 =
- Shoping cart purchasing error - quick fix required. NUC-354 ✓ 1 ↗ ↗

Grooming

New tickets are added to the backlog. Grooming ensures there is sufficient detail before moving to “To do”, where anyone can start working on it.



Focus time

This is time for engineers to get tickets they are given and to start working on it.

Engineers might follow these steps:

- Understand current system behaviour
- Understand existing code/infrastructure
- Understand tools available
- Design possible solution
- Verify solution fidelity
- Write tests/success criteria
- Implement solution
- Review tests
- Team review
- Deploy/release work

When is a time when you might need a project manager to do something to unblock you?

Retrospective

A Retrospective is a meeting to reflect on the most recent sprint.

Agenda:

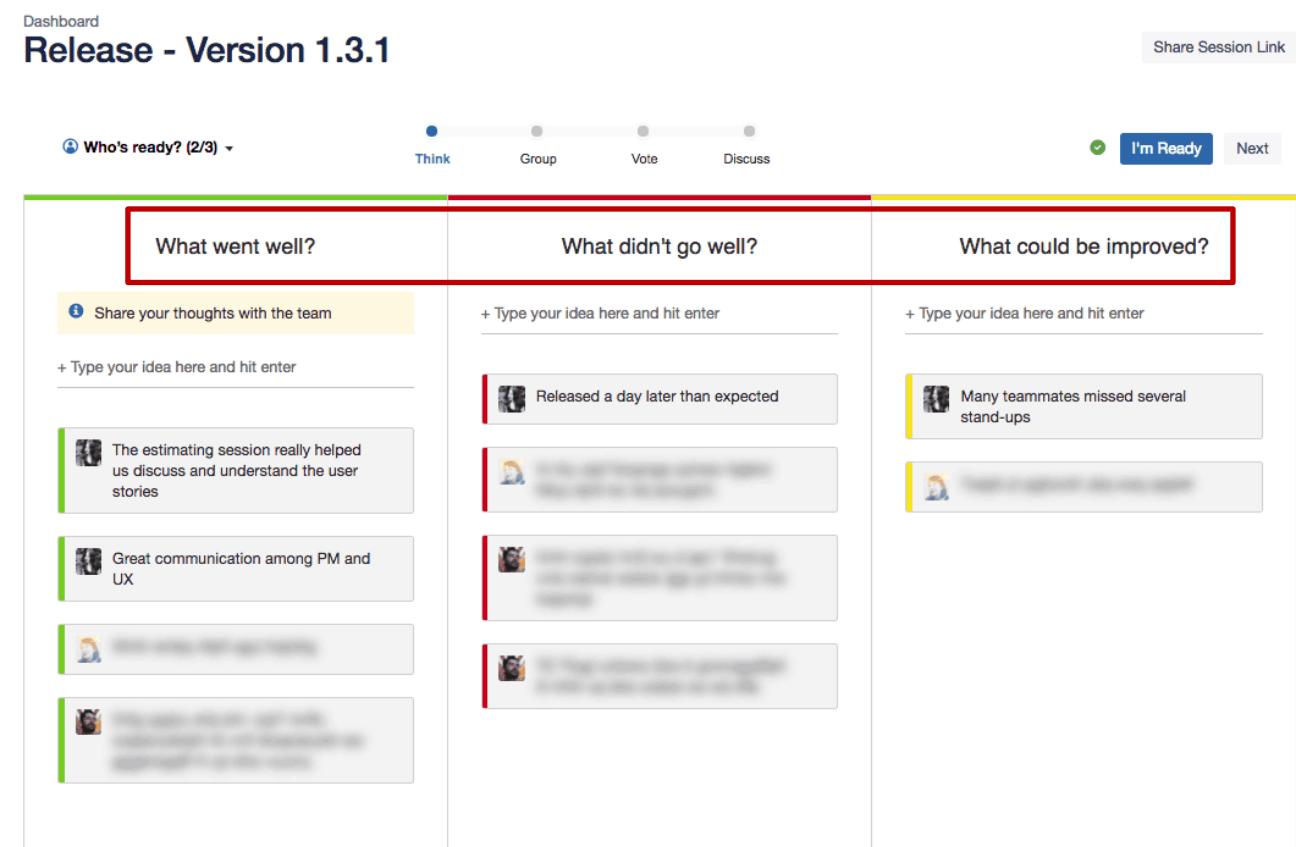
- Ice breaker
- Anonymously add responses
- Vote on most popular
- Discuss most popular with team
- Create actions if needed

More columns can be added for your team/project

Dashboard **Release - Version 1.3.1** Share Session Link

Who's ready? (2/3) Think Group Vote Discuss I'm Ready Next

What went well?	What didn't go well?	What could be improved?
<p>Share your thoughts with the team</p> <p>+ Type your idea here and hit enter</p> <p>The estimating session really helped us discuss and understand the user stories</p> <p>Great communication among PM and UX</p>	<p>+ Type your idea here and hit enter</p> <p>Released a day later than expected</p> <p>Many teammates missed several stand-ups</p>	<p>+ Type your idea here and hit enter</p>



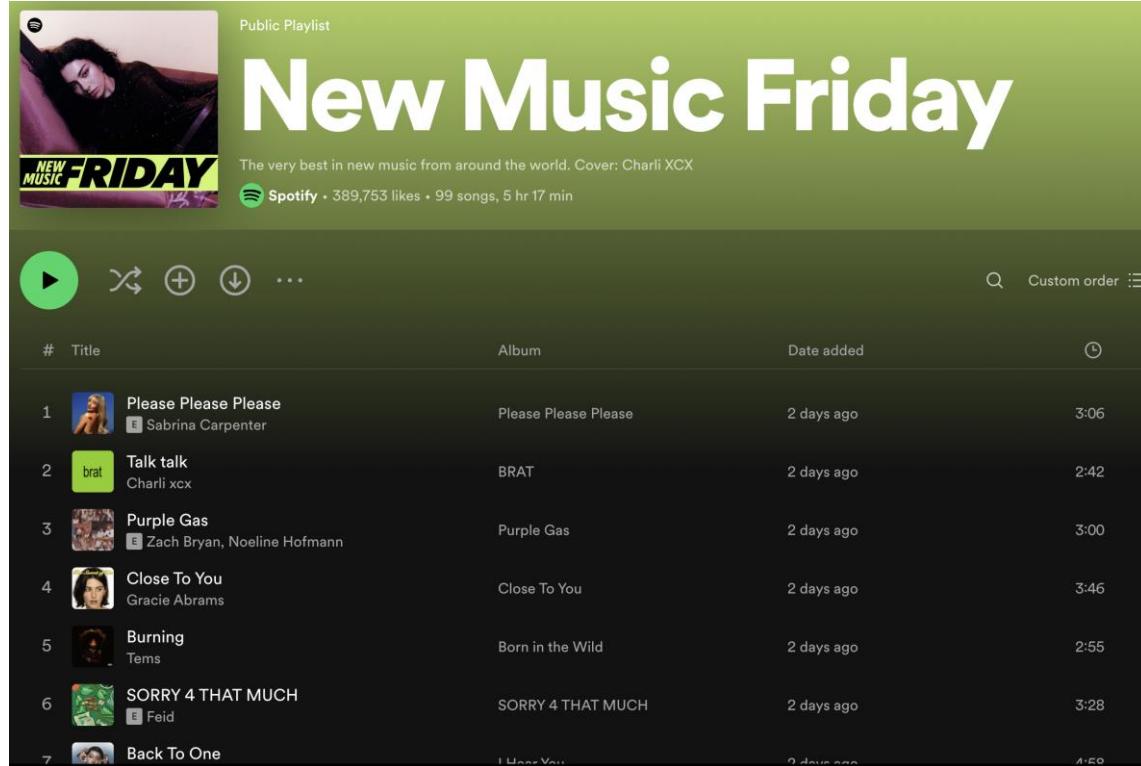
Industry tools

There are many tools used for agile teams to work together. They largely have similar features such as ticket management and Kanban boards.



Trello is lightweight and simple. It is recommended for tracking your team deliverables on the group assignment this term.

Spotify's music recommendation features



The screenshot shows a Spotify public playlist titled 'New Music Friday'. The cover image features a woman with long dark hair. The description reads: 'The very best in new music from around the world. Cover: Charli XCX'. The stats show 389,753 likes and 99 songs, totaling 5 hours and 17 minutes. The playlist is sorted by 'Date added'. The table below lists the first seven songs:

#	Title	Album	Date added	Length
1	Please Please Please	Please Please Please	2 days ago	3:06
2	Talk talk	BRAT	2 days ago	2:42
3	Purple Gas	Purple Gas	2 days ago	3:00
4	Close To You	Close To You	2 days ago	3:46
5	Burning	Born in the Wild	2 days ago	2:55
6	SORRY 4 THAT MUCH	SORRY 4 THAT MUCH	2 days ago	3:28
7	Back To One		2 days ago	4:50

Spotify editors used to manually maintain playlists to help users discover new music



Hiring manual editors would be:

- Expensive
- Manual
- Slow

Spotify's music recommendation features

Innovative

We move fast and take big risks.

We cultivate curiosity. We're unafraid to fail, knowing that each mistake contains a valuable lesson and gets us one step closer towards creativity and innovation.

Our mission

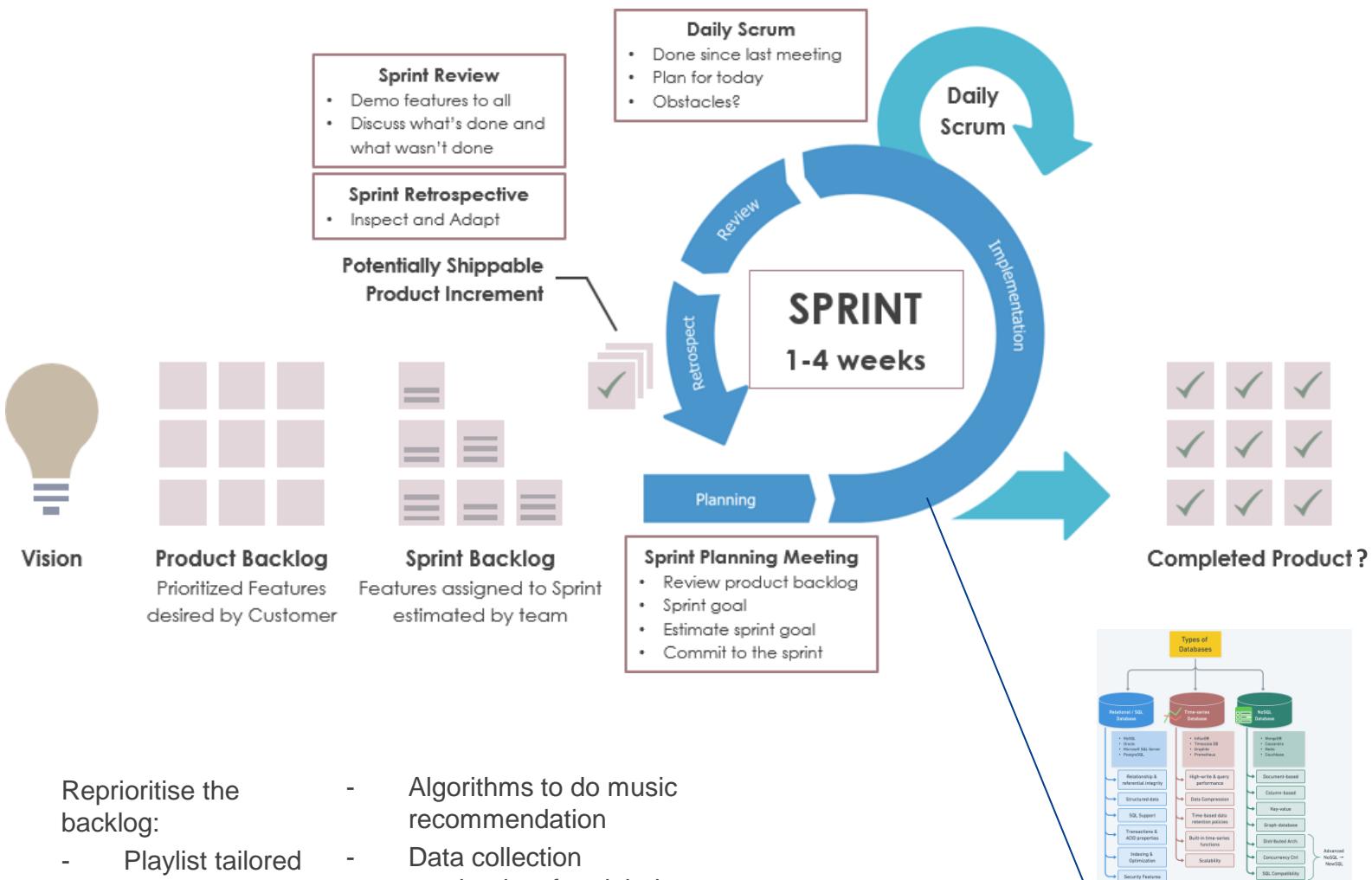
To unlock the potential of human creativity by giving a million creators the opportunity to live off their art and billions of fans the opportunity to enjoy and be inspired by it.

Can we build software to automate the music recommendations?



If this works, users would get deeper music recommendations using data from millions of users globally! It could also save us lots of time and money!
The project might not pay off though, but please explore these ideas.

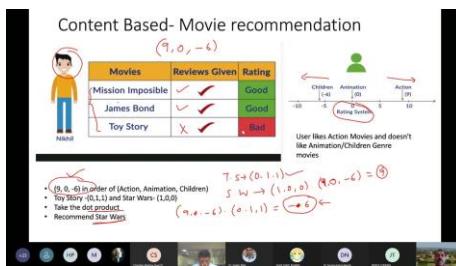
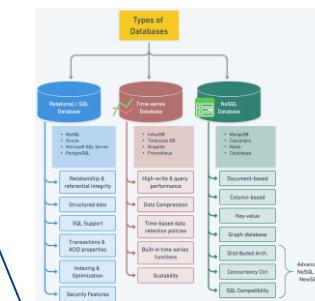




- ## Automated music recommendations

- Reprioritise the backlog:
 - Playlist tailored to customers
 - Regular updates to playlists
 - Other new features

- Algorithms to do music recommendation
 - Data collection mechanism for global user base
 - User interface for new playlists

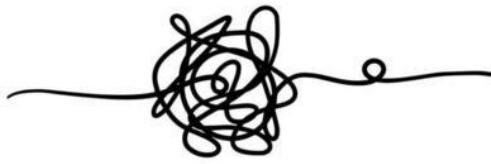
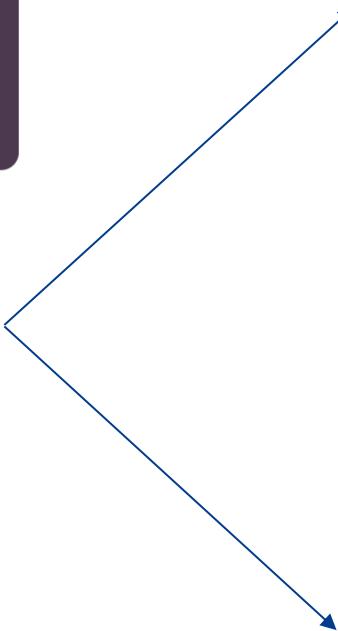


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Completed Product?



Messy implementations
that don't work too well



Internal prototype with
basic functionality



Looks like it doesn't work so well. Maybe you can spend a bit more time on it at a future date, and we could improve our approach when we try again.

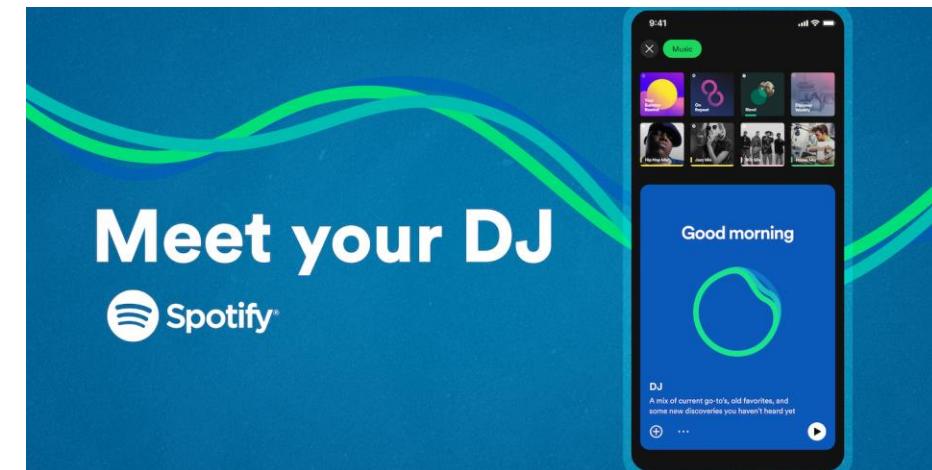
Looks like it works well internally! We will add this to our product roadmaps. Our project and product managers can get this into backlogs for the engineering teams.

Example of how Spotify's cross-functional teams and Agile management developed “Discover Weekly”



Released in 2015

Relies on music from users with similar tastes



Released in 2023

Adds use of generative AI and editor expertise to provide deeper recommendations