Introduction to Kanban

Flexible & **easy to implement** method for **process improvement**

Scrum: Has Strict Rules

Extreme Programming: Has Strict Practices

Introduction to Kanban

Kan 看 ban 板
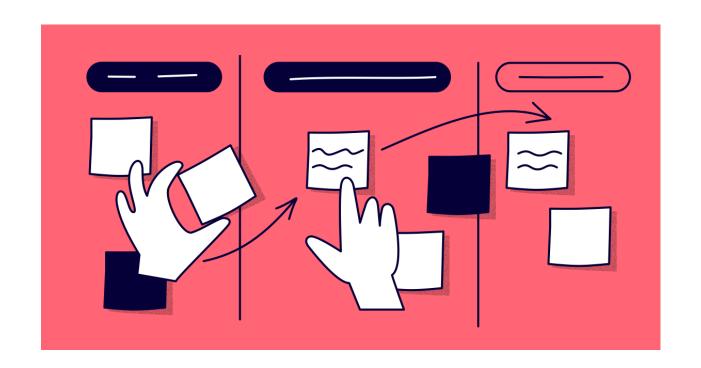
- Kan = Card
- Ban = Signal

Identified bottlenecks in the car making process using Kanban
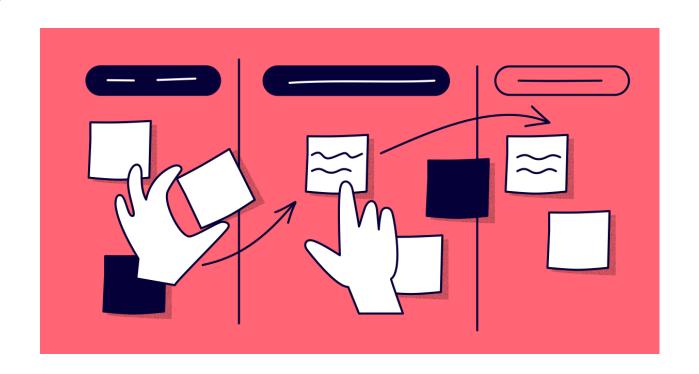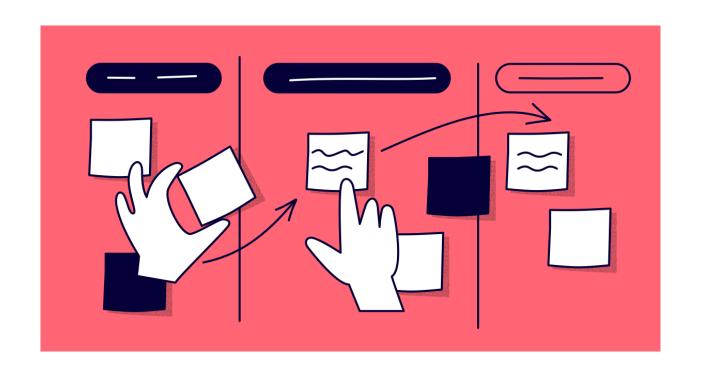
Introduction to Kanban

Visualizing the workflow
to
achieve process improvement

Introduction to Kanban

<u>Visualizing the workflow</u>

to

<u>achieve process improvement</u>

Introduction to Kanban

Visualizing the workflow

to

achieve process improvement

Limiting ~~work in~~ progress
M~~anaging~~ flow
Impleme~~nting~~ ~~feedb~~ack loops

SUGGESTION

Kanban Board

| NOT STARTED | IN PROGRESS | DONE |

Kanban Board
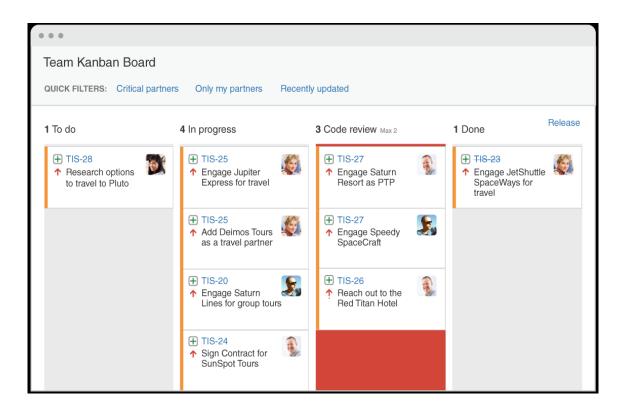
Physical Kanban Board

Software Based Board

Kanban Board

Kanban Board

| NOT STARTED | IN PROGRESS | DONE |

Kanban Board

Kanban Board

Board Reference: David Anderson's "Kanban"

Kanban Board

Board Reference: David Anderson's "Kanban"

Kanban Board

Input Queue | **Analysis** | **Development** | **Build Ready** | **Test** | **Release Ready**

In Progress | Done | In Progress | Done

TASK 1

Board Reference: David Anderson's "Kanban"

Kanban Board

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Kanban Board

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Kanban Board

Board Reference: David Anderson's "Kanban"

Kanban Board

GenMan Solutions

Input Queue		Analysis		Development		Build Ready	Test	Business Review	Release Ready
New	Sent from review	In Progress	Done	In Progress	Done				

TASK 4

TASK 3

TASK 1

TASK 2

Board Reference: David Anderson's "Kanban"

Kanban Board

Finding inefficiencies/issues in the process

Kanban Board

Finding inefficiencies/issues in the process

Business Request		Scheduled		Building		Testing		Business Review	Release Ready
New	Sent from review								

Kanban Board

Finding inefficiencies/issues in the process

Business Request		Scheduled		Building		Testing		Business Review	Release Ready
New	Sent from review								

Kanban Board

Finding inefficiencies/issues in the process

| Business Request | Scheduled | Building | Testing | Business Review | Release Ready |

Kanban Board

Finding inefficiencies/issues in the process

Business Request		Scheduled	Building	Testing	Business Review	Release Ready

New   Sent from review

Kanban Board

Finding inefficiencies/issues in the process

Business Request		Scheduled		Building		Testing		Business Review	Release Ready
New	**Sent from review**								

TASK 2

TASK 1

Kanban Board

Finding inefficiencies/issues in the process

Business Request	Scheduled	Building	Testing	Business Review	Release Ready

Too much WIP

Outflow is low

Inflow is higher

New | Sent from review

TASK 1

TASK 2

Kanban Board

Finding inefficiencies/issues in the process

Sl. no.	Situation	Suggestion
1	Too much work in progress(WIP) on a single stage **Limiting the WIP**	More team members need to work on that stage (for e.g. testing stage in this scenario) instead of any of the previous stage

Kanban Board

Limiting the WIP

- A **limit is set on the maximum number of tasks** that can be present in a column or that step at a time

- No further inflow into the step until the pending tasks in that step are cleared

Kanban Board

Finding inefficiencies/issues in the process

Business Request	Scheduled	Building	Testing	Business Review	Release Ready

New   **Sent from review**

Limit: 6

TASK 2

TASK 1

6 tasks pending
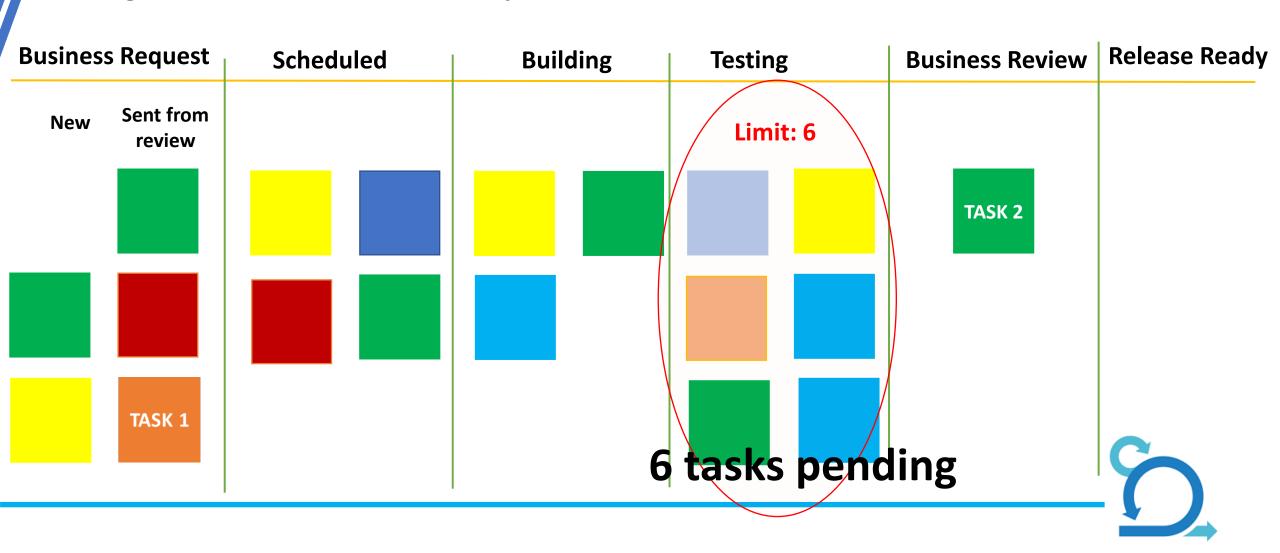
Kanban Board

Limiting the WIP

- A **limit is set on the maximum number of tasks** that can be present in a column or that step at a time

- No further inflow into the step until the pending tasks in that step are cleared

- WIP limits can be set on all the steps

- How do we decide what limit to set?

Kanban Board

Finding inefficiencies/issues in the process

Sl. no.	Situation	Suggestion
1	Too much work in progress(WIP) on a single stage **Limiting the WIP**	More team members need to work on that stage (for e.g. testing stage in this scenario) instead of any of the previous stage
2	**Under utilization of resources** Pending tasks not moving to the next step	

Kanban Board

Finding inefficiencies/issues in the process

Business Request		Scheduled	Building	Testing	Business Review	Release Ready

Kanban Board

Finding inefficiencies/issues in the process
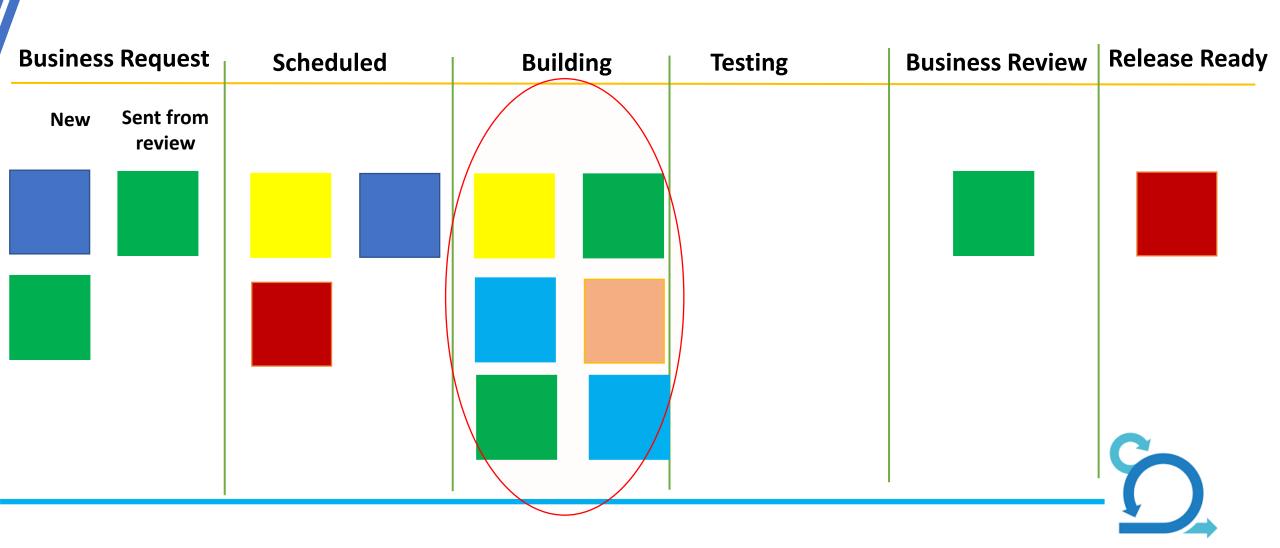
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2	**Under utilization of resources** Pending tasks not moving to the next step	Reallocate the resources somewhere else where they can be utilized optimally

Managing the Flow

Kanban

Kanban is also known as a **Pull based system**

Push based system

Manager/Team Leader

Assign tasks

Team Members
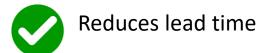
Pull based system

✅ Optimizes the work flow

✅ Reduces lead time

✅ Reduces over load on worker

Team members can themselves pull the most relevant tasks out of the list of tasks to be done

GenMan Solutions

Kanban Board

Finding inefficiencies/issues in the process

Business Request	Scheduled	Building	Testing	Business Review	Release Ready

Sent from review

TASK 3

Kanban

Finding inefficiencies/issues in the process

Sl. no.	Situation	Suggestion
1	Too much work in progress(WIP) on a single stage **Limiting the WIP**	More team members need to work on that stage (for e.g. testing stage in this scenario) instead of any of the previous stage
2	**Under utilization of resources** Pending tasks not moving to the next step	Reallocate the resources somewhere else where they can be utilized optimally
3	**Task is taking longer time than it should be**	

Kanban Board

Finding inefficiencies/issues in the process

Issue: Task is taking longer time than it should be

Reason	Suggestions
Unequal sized tasks	Break down the task into smaller sized tasks

Kanban Board

GenMan Solutions

Finding inefficiencies/issues in the process

Business Request	Scoping/Analyzing /Specifying	Scheduled	Building	Testing	Business Review	Release Ready

Sent from review

TASK 3

Kanban Board

Finding inefficiencies/issues in the process

Issue: Task is taking longer time than it should be

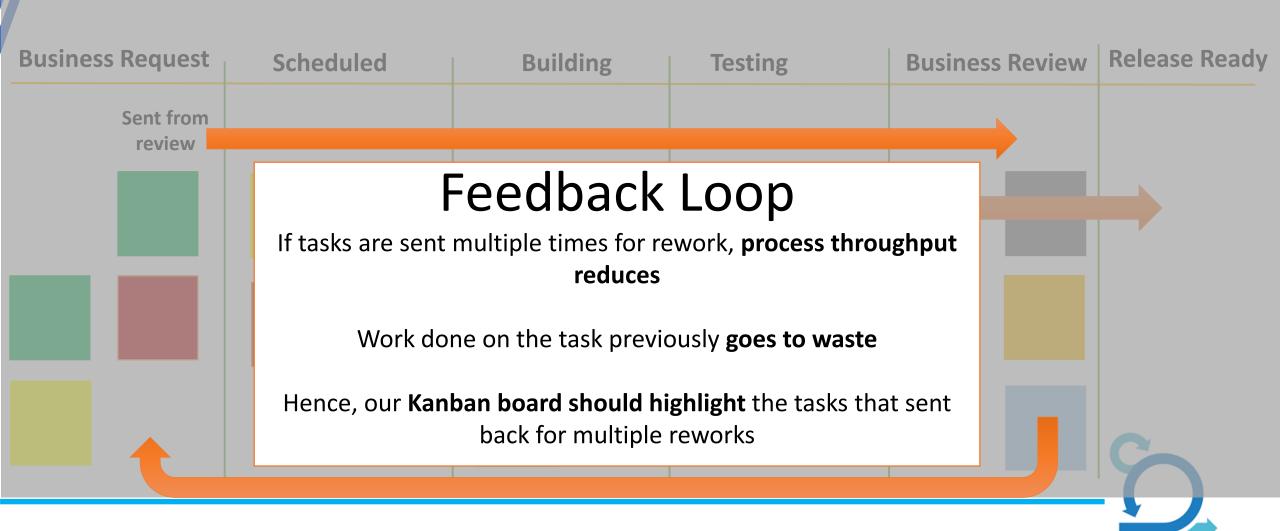| Reason	Suggestions
Unequal sized tasks	Break down the task into smaller sized tasks
Task is stuck due to some bug or issue	Keep a regular track of the board

Kanban

Finding inefficiencies/issues in the process

Sl. no.	Situation	Suggestion
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Kanban Board

Finding inefficiencies/issues in the process

Business Request	Scheduled	Building	Testing	Business Review	Release Ready

Sent from review

Feedback Loop

If tasks are sent multiple times for rework, **process throughput reduces**

Work done on the task previously **goes to waste**

Hence, our **Kanban board should highlight** the tasks that sent back for multiple reworks

Kanban Board

Finding inefficiencies/issues in the process

Business Request	Scheduled	Building	Testing	Business Review	Release Ready

Sent from review

Kanban Board

Finding inefficiencies/issues in the process

Business Request	Scheduled	Building	Testing	Business Review	Release Ready

Kanban Board

Finding inefficiencies/issues in the process

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Kanban

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2	**Under utilization of resources** Pending tasks not moving to the next step	Reallocate the resources somewhere else where they can be utilized optimally
3	**Task is taking longer time than it should be**	Keep a regular track of the board Break down the task into smaller sized tasks
4	**Multiple feedback loops**	Make a mark on the task for the number of rounds that task is going for rework

Kanban

Finding inefficiencies/issues in the process

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1	Too much work in progress(WIP) on a single stage **Limiting the WIP**	More team members need to work on that stage (for e.g. testing stage in this scenario) instead of any of the previous stage
2	**Under utilization of resources** Pending tasks not moving to the next step	Reallocate the resources somewhere else where they can be utilized optimally
3	**Task is taking longer time than it should be**	Keep a regular track of the board Break down the task into smaller sized tasks
4	**Multiple feedback loops**	Make a mark on the task for the number of rounds that task is going for rework Find optimum WIP limit for your review step

Finding inefficiencies/issues in the process

Kanban

Finding inefficiencies/issues in the process

Sl. no.	Situation	Suggestion
4	**Having a lot of external dependencies**	

Kanban

Finding inefficiencies/issues in the process

Sl. no.	Situation	Suggestion
4	**Having a lot of external dependencies**	Develop a practice of regular follow ups on tasks listed in "Tracking" column No need of a WIP limit on this column

Kanban

Finding inefficiencies/issues in the process

Sl. no.	Situation	Suggestion
4	**Having a lot of external dependencies**	Develop a practice of regular follow ups on tasks listed in "Tracking" column No need of a WIP limit on this column
5	**Team required to work on non-product features**	

Kanban Board

Finding inefficiencies/issues in the process

Business Request	Scheduled	Building	Testing	Demo/ Presentations	Business Review	Release Ready

Kanban

Finding inefficiencies/issues in the process

Sl. no.	Situation	Suggestion
4	**Having a lot of external dependencies**	Develop a practice of regular follow ups on tasks listed in "Tracking" column No need of a WIP limit on this column
5	**Team required to work on non-product features**	Create a task for such features and keep a track on the same
6	**Automate/Upgrade tasks**	Add such improvement tasks also on the board

Kanban

Finding inefficiencies/issues in the process

Sl. no.	Situation	Suggestion
4	**Having a lot of external dependencies**	Develop a practice of regular follow ups on tasks listed in "Tracking" column No need of a WIP limit on this column
5	**Team required to work on non-product features**	Create a task for such features and keep a track on the same
6	**Automate/Upgrade tasks**	Add such improvement tasks also on the board
7	**Assigning work to new person**	Assign the new person to the slowest step

Defining "Done"

Kanban
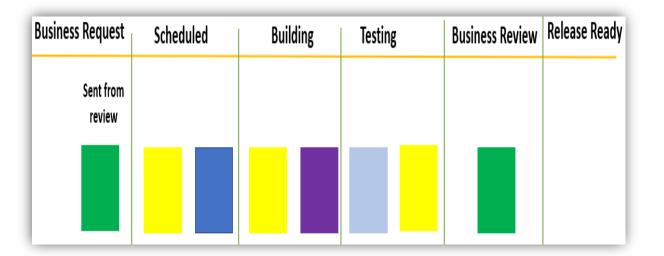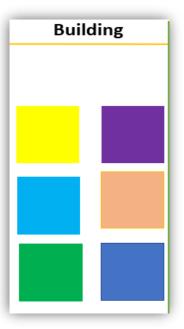
Defining "Done"

Define done for each feature

Business Request	Scheduled	Building	Testing	Business Review	Release Ready
Sent from review					

Define completion for each step

Building

Kanban

Input Queue	Analysis		Development		Build Ready		Test		Release Ready
	In Progress	Done	In Progress	Done	In Progress	Done	In Progress	Done	

Kanban
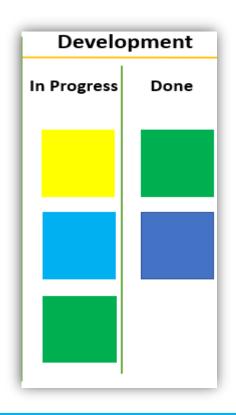
Define completion for each step

- If a step is complete on a task, it does **not necessarily mean that the task moves to the next step**

- **Task will simply sit in the done column** of the previous step

- Do not have separate WIP limits for sub columns "In progress" and "Done"

- **Write "Done" rules as notes** on the Kanban board

- **Always check if the rules for "Done" were met** in the previous step or not

The Daily Standup

The Daily Standup

Not a review meeting or demo of features built or discussion about the product etc.

Scrum has rules on:

- How long[...]g will be?
- Who will[...]g the meeting?
- What wil[...]ed in the meeting ?

Kanban is flexible with no such rules

- **Any team member can run the meeting** even a fresher
- **No fixed duration of the meeting**, depends on the team's experience
- Daily stand up is the **time to get the board up-to-date, identify issues, highlight problems** if any etc.
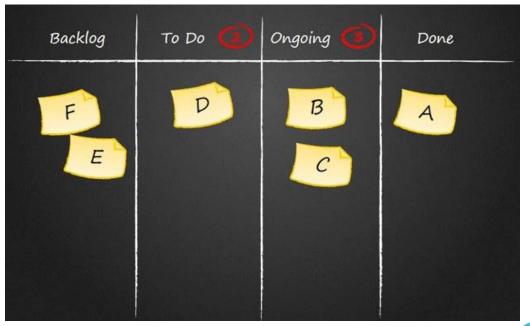
Specifying rules

Specifying rules

Ensure **rules are explicitly mentioned** and **everyone understands** them clearly

- Writing WIP limit on top of the column

- Define "Done"

Introduction to Key Agile Concepts
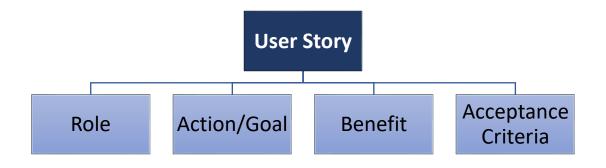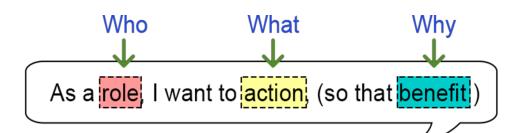
GenMan Solutions

User Story

- Work divided into functional increments called "user stories

- Short description of a feature from the perspective of the person who desires the new capability

- User story should be potentially shippable

- Size of a user story is measured in story points

```
                    ┌─────────────┐
                    │ User Story  │
                    └──────┬──────┘
        ┌──────────┬───────┴───────┬──────────┐
   ┌────┴───┐ ┌────┴──────┐ ┌──────┴──┐ ┌─────┴──────┐
   │  Role  │ │Action/Goal│ │ Benefit │ │ Acceptance │
   │        │ │           │ │         │ │  Criteria  │
   └────────┘ └───────────┘ └─────────┘ └────────────┘
```

Introduction to Key Agile Concepts

User Story

Who — What — Why

As a **role**, I want to **action** (so that **benefit**)

Role

The user should be an actual human who interacts with the system

•Be as specific as possible

•The development team is NOT a user

Action

The behavior of the system should be written as an action

•Usually unique for each User Story

•Describes intent & not the feature

•The "system" is implied and does not get written in the story

•Active voice, not passive voice ("I can be notified"

Benefit

The benefit should be a real-world result that is non-functional or external to the system

•Many stories may share the same benefit statement

•The benefit may be for other users or customers, not just for the user in the story.

User Story

Acceptance Criteria

- Should be testable

- Should be clear and concise

- Everyone must understand

- Should provide user perspective

Who is Responsible for Writing Acceptance Criteria?

When Should User Story Acceptance Criteria Be Written?

How Should You Format User Story Acceptance Criteria?

Introduction to Key Agile Concepts

User Story Examples

•As a [**customer**], I want [**shopping cart feature**] so that [**I can easily purchase items online**].

•As a [**manager**], I want to [**generate a report**] so that [**I can understand which departments need more resources**].

•As a [**customer**], I want to [**receive an SMS when the item is arrived**] so that [**I can go pick it up right away**].

As a [**manager**], I want to be able to [**understand my colleagues progress**], so I can [**better report our success and failures**].

A good user story should be: **INVEST**

•"I" ndependent (of all others)
•"N" egotiable (not a specific contract for features)
•"V" aluable
•"E" stimable (to a good approximation)
•"S" mall (so as to fit within an iteration)
•"T" estable (in principle, even if there isn't a test for it yet)

Example of a good User Story

As an **[online visitor]**, I want to **[add products in my shopping cart]** so that **[I can purchase multiple products at one go]**

Acceptance Criteria [Abstract]

- Products can be added to the cart

- Products can be removed from the cart.

- Shopping cart will be empty initially

- Shopping cart will be empty after purchase

- Products can be added with multiple quantities in the cart

- Shopping cart will show the total product breakdown quantity and cost with grand total

Product Backlog

A	
B	
C	
D	
E	

- Lists & Prioritizes the task-level details to execute a plan- To do list!
- Includes user stories, new features, changes to existing functionalities, bug fixes, and other tasks like infrastructure changes etc.
- Single source of requirements that defines the product
- Contains short description of functionality desired in the product
- Can be represented in physical form or in electronic form
- Owned & maintained by the product owner
- User Stories is the most common format
- Dynamic in nature: addition, deletion and reordering of requirements possible

Product Backlog

A	• Lists & Prioritizes the task-level details to execute a plan- To do list!
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Product Backlog

C
B
A

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Introduction to Key Agile Concepts

Difference Between a Product Backlog and Product Roadmap

From Product Vision to Backlog

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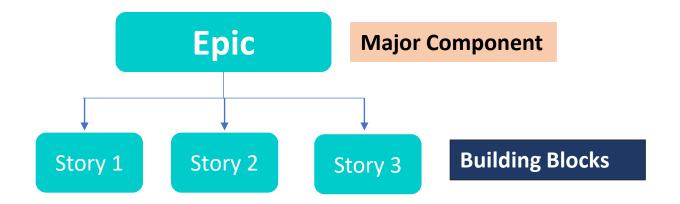
Difference Between a Product Backlog and Product Roadmap

	Product Roadmap	Product Backlog
Content	High-level: themes and epics or outcomes and goals	Task-level: user stories and defects
Audience	Executive team (and other stakeholders)	Primary for product and development teams
Intent	Convey a strategy	Conveys tactical steps in execution of plan
Time Frame	Varies, typically ~3 Months	1 or 2 sprints

Epic

- Series of user stories with a broader strategic objective

- A large user story that cannot be delivered as defined within a single iteration or is large enough that it can be split into smaller user tasks/user stories

- No standard format to represent epics

Epic Example: Selecting Marketing Campaigns

1: As a VP Marketing, I want to review the performance of historical promotional campaigns so that I can identify and repeat profitable campaigns.

1a: As a VP Marketing, I want to select the timeframe to use when reviewing the performance of past promotional campaigns, so that …

1b: As a VP Marketing, I can select which type of campaigns (direct mail, TV, email, radio, etc.) to include when reviewing the performance of past so that …

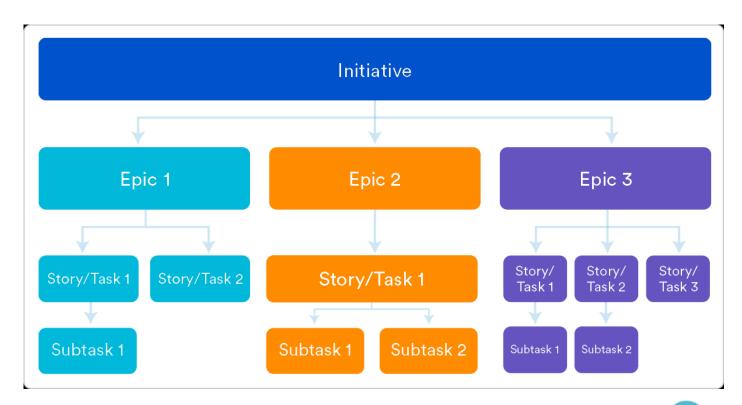**1b1:** As a VP Marketing, I want to see information on direct mailings when reviewing historical campaigns so that…

1b2: As a VP Marketing, I want to see information on TV ads when reviewing historical campaigns so that…

1b3: As a VP Marketing, I want to see information on email ads when reviewing historical campaigns so that…

and so on for each type of ad campaign.

GenMan Solutions

Initiatives

- Initiatives are collections of epics that drive toward a common goal

- The product roadmap is expressed and visualized as a set of initiatives plotted along a timeline

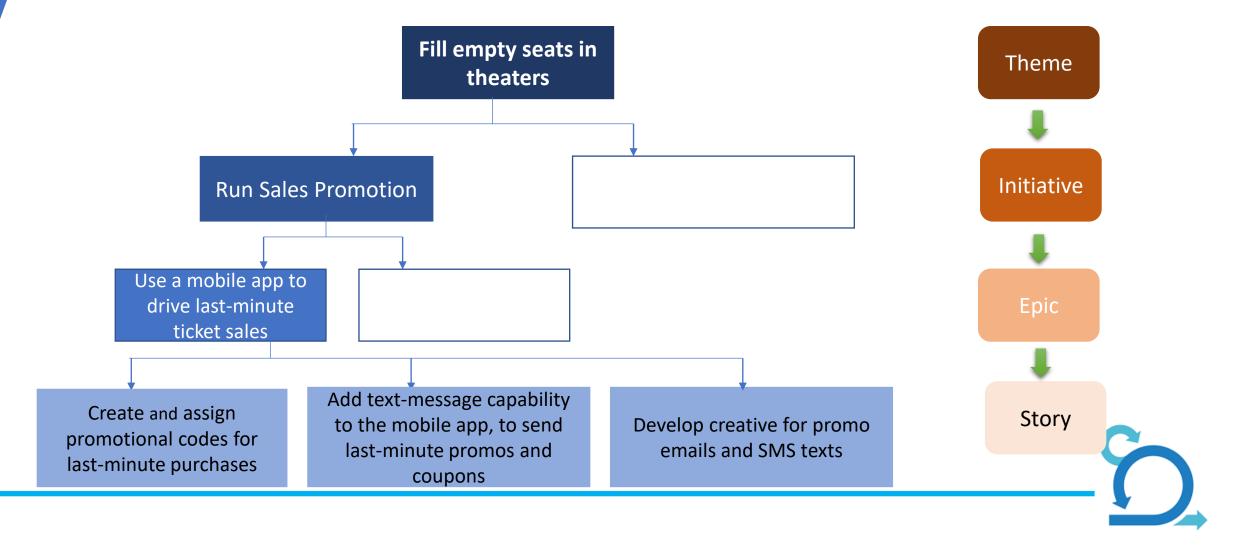- Completion of epics will lead to the completion of the initiative

Introduction to Key Agile Concepts

Themes

- Themes are large focus areas that span the organization

- A theme is an organization goal that drive the creation of epics and initiatives

Introduction to Key Agile Concepts

Theme, Initiatives, Epic & Story

Fill empty seats in theaters

Run Sales Promotion

Use a mobile app to drive last-minute ticket sales

Create and assign promotional codes for last-minute purchases

Add text-message capability to the mobile app, to send last-minute promos and coupons

Develop creative for promo emails and SMS texts

Theme

Initiative

Epic

Story

Introduction to Key Agile Concepts

Benefits of Using the Theme-Initiative-Epic-Story Development Framework

- It allows for more strategically sound decisions

- It improves performance monitoring and timeline estimates

- It keeps the team focused on key goals

Estimation

38+19 is about 60

For reasonable guess, you estimate basis what you know or see

TRY → FAIL → TRY AGAIN HARDER → SUCCESS

Agile Estimation

Traditional Estimation	Agile Estimation
Efforts were estimated	Business values or Complexity is estimated
Unit: Hours	Unit: Story Points or bucket
Estimation is done in task level	Estimation is done in user story level
Provides absolute estimate	Provides relative estimate
Estimates once done are not revised	Estimates are revisited in every iteration

Agile Estimation

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Agile Estimation

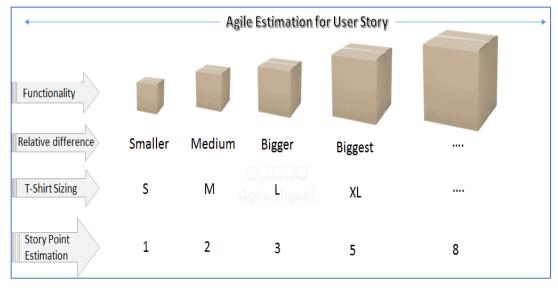| Traditional Estimation	Agile Estimation
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Traditional Estimation

Functionality				
Estimation	5 Hours	14 Hours	19 Hours	25 Hours	....

Agile Estimation for User Story

Functionality				
Relative difference	Smaller	Medium	Bigger	Biggest	....
T-Shirt Sizing	S	M	L	XL	....
Story Point Estimation	1	2	3	5	8

Introduction to Key Agile Concepts

Agile Estimation

Story Points

3 Story Points: Study Room
5 Story Points: Bedroom 1 and Bedroom 2
8 Story Points: Kitchen

Introduction to Key Agile Concepts

Agile Estimation

Influencing Factors of Story Point :

- Business Value
- Complexity
- Risks
- Dependencies
- Amount of work

Image Source: Dilbert.com
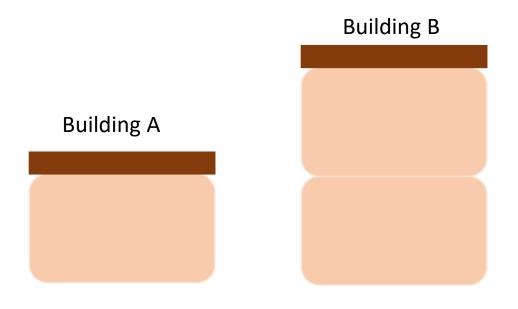
GenMan Solutions

Agile Estimation: But why relative estimation?

Illustration 1

Building B

Building A

Which one is taller?
Which one is more complex?
Which would take more time to build?
Which would cost more?
How much money?
How much time?

1 Story vs 2 Story

Introduction to Key Agile Concepts

Agile Estimation: But why relative estimation?

Illustration 2
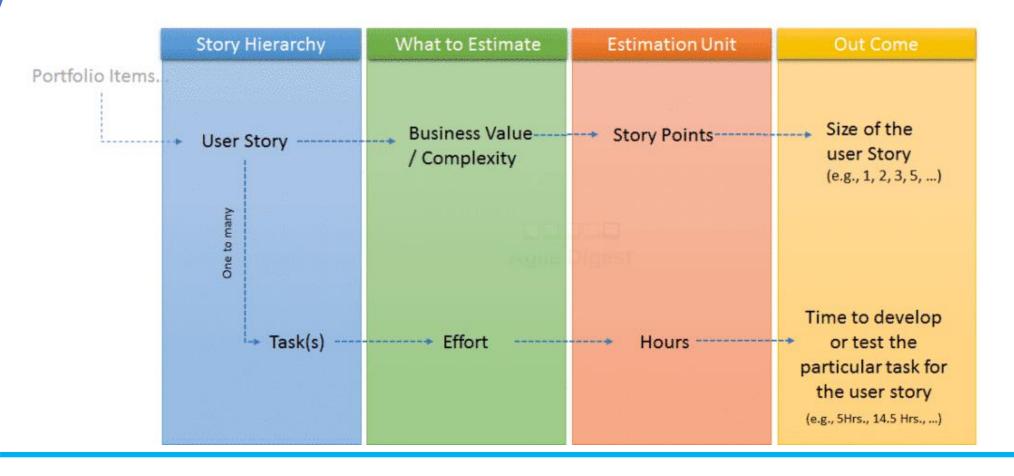
100 Story vs 101 Story

What about these
Which building is taller?
Which one is more complex?
Which would take more time to build?
Which would cost more?
How much money?
How much time?

Introduction to Key Agile Concepts

Estimation

Story Hierarchy	What to Estimate	Estimation Unit	Out Come
Portfolio Items...			
User Story	Business Value / Complexity	Story Points	Size of the user Story (e.g., 1, 2, 3, 5, ...)
One to many			
Task(s)	Effort	Hours	Time to develop or test the particular task for the user story (e.g., 5Hrs., 14.5 Hrs., ...)

Agile Estimation

Agile Estimation is a team sport

Agile Estimation

Agile Estimation is a team sport

Estimation methods include:

- T-shirt sizes (XS, S, M, L, XL) or the
- Fibonacci sequence (1, 2, 3, 5, 8, 13, 21, 34, etc.)

Introduction to Key Agile Concepts

Agile Estimation

T-shirt sizes (XS, S, M, L, XL)

Small
1pt

Medium
2-3pt

Large
5pt

TOO BIG -
Break into
Smaller
Stories

Extra Large
8 Points

Agile Estimation

Fibonacci sequence

1,2,3 is equivalent to 10,20,30

0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89... and so on.

0+1=1
1+1=2
1+2=3

Agile Estimation

Fibonacci sequence

0, 1, 1, 2, 3, 5, 8, 13, 21........

} Infinite

Agile Estimation

Fibonacci sequence

0, 1, 1, 2, 3, 5, 8, 13, 21........

0.0%

Infinite

Agile Estimation

Fibonacci sequence

0, 1, 1, 2, 3, 5, 8, 13, 21.......

100%

0.0%

Infinite

Agile Estimation

Fibonacci sequence

0, 1, 1, 2, 3, 5, 8, 13, 21.......

50%

100%

0.0%

Infinite

Agile Estimation

Fibonacci sequence

0, 1, 1, 2, 3, 5, 8, 13, 21……

66.7%

50%

100%

0.0%

Infinite

Agile Estimation

Fibonacci sequence

0, 1, 1, 2, 3, 5, 8, 13, 21…….

60%

66.7%

50%

100%

0.0%

Infinite

Agile Estimation

Fibonacci sequence

0, 1, 1, 2, 3, 5, 8, 13, 21........

62.5%

60%

66.7%

50%

100%

0.0%

Infinite

Agile Estimation

Fibonacci sequence

0, 1, 1, 2, 3, 5, 8, 13, 21.......

61.5%

62.5%

60%

66.7%

50%

100%

0.0%

Infinite

Agile Estimation
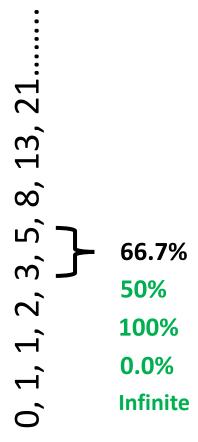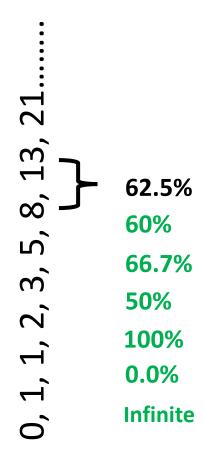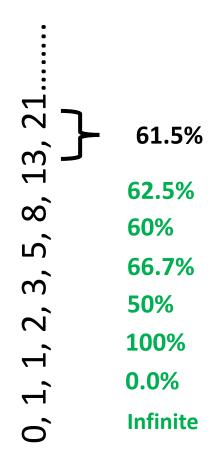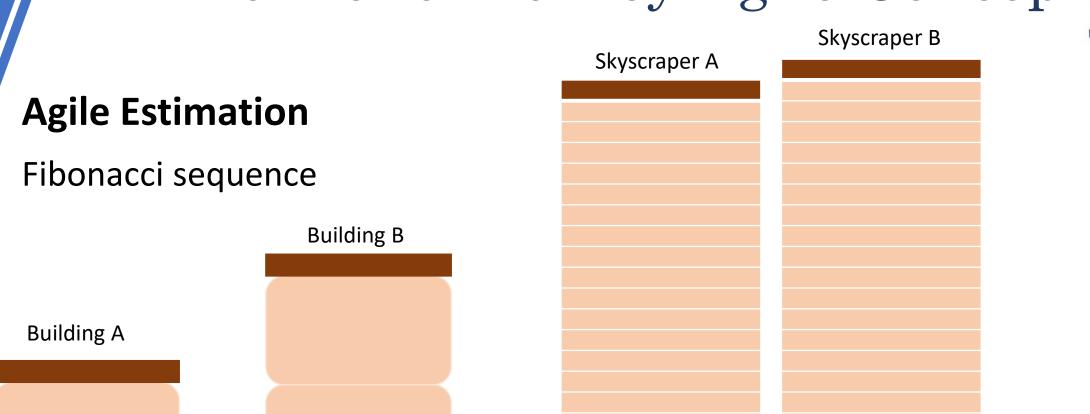
Fibonacci sequence

In Agile Estimation, slightly modified version of Fibonacci estimation is used

1, 2, 3, 5, 8, 13, 21, 34, 55, 89… and so on.

Why Use the Fibonacci Sequence for Agile Estimation?

Introduction to Key Agile Concepts

Agile Estimation

Fibonacci sequence

Building A

1 Story

Building B

2 Story

Skyscraper A

20 Story

Skyscraper B

21 Story

Story Points are Relative

1 – **QUICK TO DELIVER AND MINIMAL COMPLEXITY. AN HOUR**
Example: add field to a form

2 – **QUICK TO DELIVER AND SOME COMPLEXITY. MULTIPLE HOURS**
Example: Add parameter to form, validation, storage

3 – **MODERATE TIME TO DELIVER, MODERATE COMPLEXITY, POSSIBLE UNKNOWNS**
Example: Migrate somewhat complex static CSS into a CSS pre-processor

5 – **LONGER TIME TO DELIVER, HIGH COMPLEXITY, LIKELY UNKNOWNS**
Example: Integrate with third-party API for pushing/pulling data, and link to user profiles in platform

8 – **LONG TIME TO DELIVER, HIGH COMPLEXITY, CRITICAL UNKNOWNS**
Example: Overhaul the layout/HTML/CSS/JS of a web application

13 – **LONG TIME TO DELIVERY, HIGH COMPLEXITY, MANY CRITICAL UNKNOWNS**
Example: Migrate application from an outdated data store to new DB technology and ORM

21 – **YOU'RE DOING THIS WRONG.** 😉

Agile Estimation Techniques for user story

- Delphi
- Wide Band Delphi
- Complexity Bucket
- Estimation Poker

Agile Estimation Techniques for user story

- Delphi
- Wide Band Delphi
- Complexity Bucket

• Estimation Poker

Estimation/Planning Poker

Scrum Master can help coordinate the estimation

Product Owner
explaining all the aspects of the story requirement, dependencies, acceptance criteria and business value

Developers, testers, mutually discussing
- Amount of work
- Associated Risks
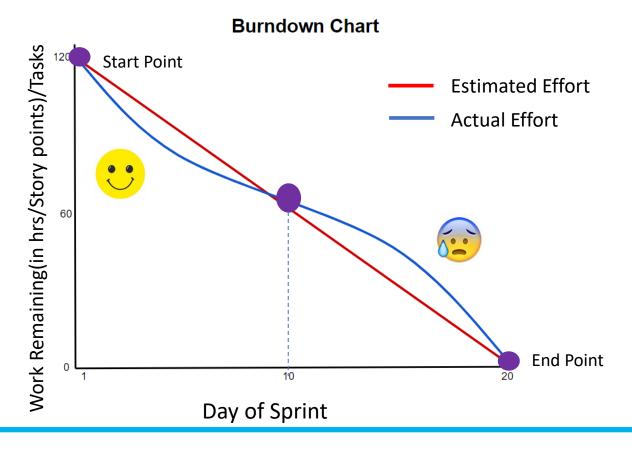- Technical Changes
- Dependencies
- Complexities
- And the value
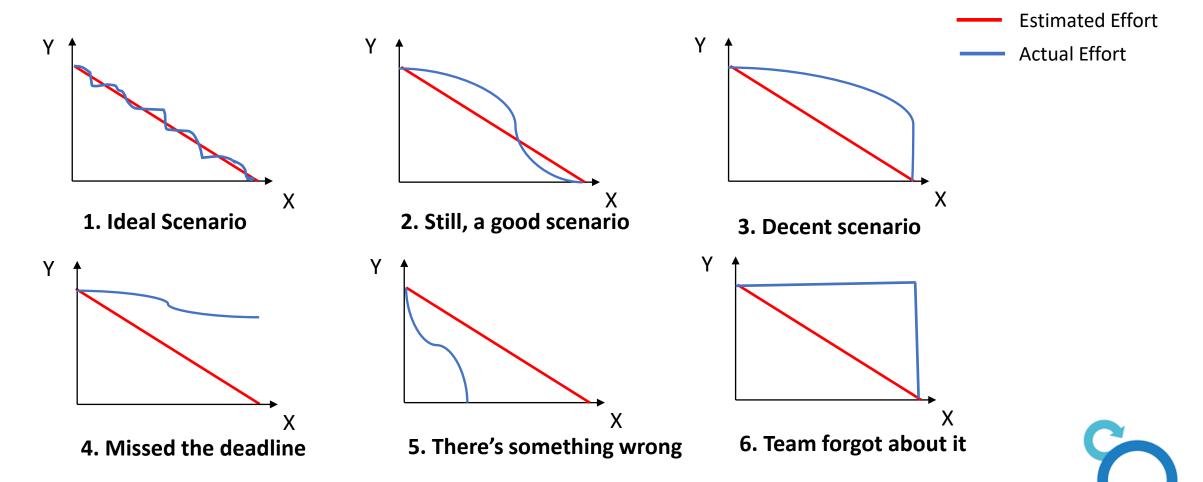
Estimation/Planning Poker

1, 2, 3, 5, 8, 13, 21, …

Burn down Chart

A burndown chart is a visual display of work completed and remaining in a project, sprint, or iteration

Burndown Chart

Introduction to Key Agile Concepts

Burn down Chart

Legend:
- Estimated Effort (red)
- Actual Effort (blue)

1. Ideal Scenario
2. Still, a good scenario
3. Decent scenario
4. Missed the deadline
5. There's something wrong
6. Team forgot about it

Burn down Chart

Benefits

- Simple & easy way to track team's progress

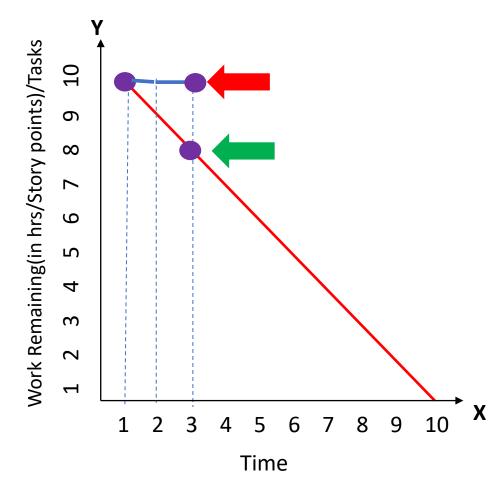- Timely prevention of issues

- Helps keep the team motivated

Burn down Chart

Creating Burn down Chart

Mike, a project manager is asked to create a burndown chart for a project by his leadership to know how things progressing based on what was planned.

Project has 10 tasks to complete in 10 days

Minimum Viable Product (MVP)

It is the version of a new product that allows a team to collect the maximum amount of validated learning about customers with the least amount of effort.

- Agile Alliance

Why MVP

- Release a product to the market as quickly as possible
- Test an idea with real users before committing a large budget to the product's full development
- Learn what resonates with the company's target market and what doesn't
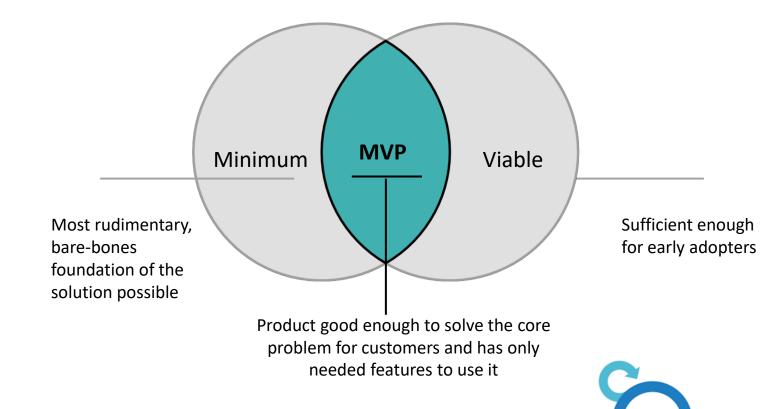
Introduction to Key Agile Concepts

Minimum Viable Product (MVP)

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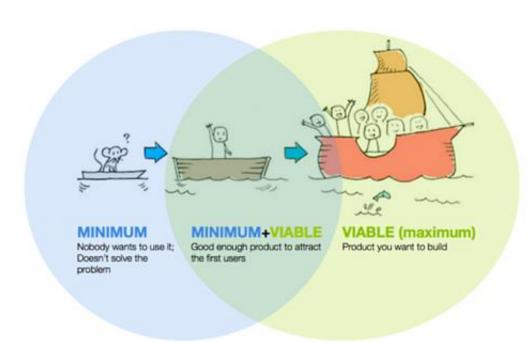
- *Agile Alliance*

Minimum + Viable Product

Minimum   **MVP**   Viable

Most rudimentary, bare-bones foundation of the solution possible

Sufficient enough for early adopters

Product good enough to solve the core problem for customers and has only needed features to use it

Minimum Viable Product (MVP)

Why MVP?

• Release a product to the market as quickly as possible

• Test an idea with real users before committing a large budget to the product's full development

• Learn what resonates with the company's target market and what doesn't

MINIMUM
Nobody wants to use it; Doesn't solve the problem

MINIMUM+VIABLE
Good enough product to attract the first users

VIABLE (maximum)
Product you want to build

GenMan Solutions

Minimum Viable Product (MVP)

Use case:

Your target audience needs a specific means of transport, but they are not sure if they want to buy a premium product right away.
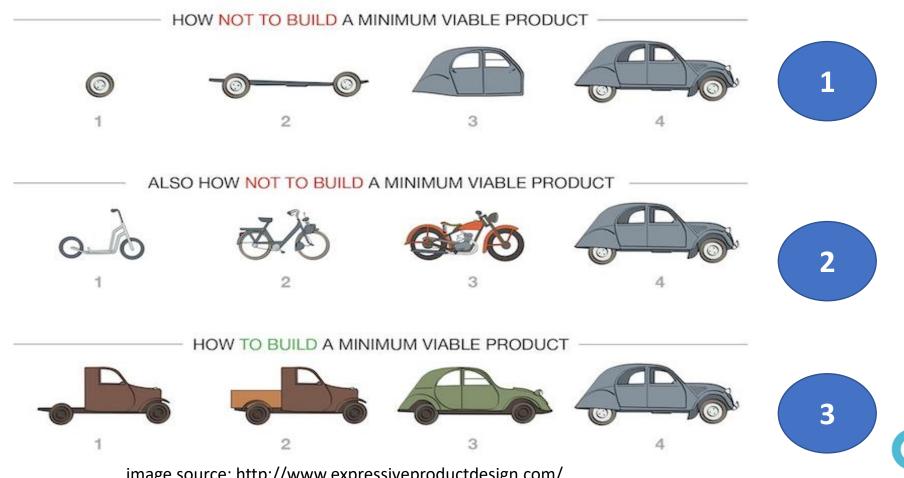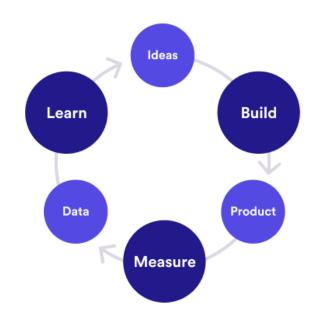
What do you do then?

Create the most basic version of the Product

Gather feedback on your product

LEARN

IDEAS

BUILD

DATA
1001011
0100110
100011

MVP3

MEASURE

Introduction to Key Agile Concepts

Minimum Viable Product (MVP)

image source: http://www.expressiveproductdesign.com/

Introduction to Key Agile Concepts

Minimum Viable Product (MVP)

Important points to be noted:

- Make sure your planned MVP aligns with your business objectives
- Identify specific problems you want to solve for your users
- Product must be viable
- MVP is based on iterative process of building

Introduction to Key Agile Concepts

Velocity

At the end of each iteration, the team adds up effort estimates associated with user stories that were completed during that iteration. This total is called velocity.

- Agile Alliance

Velocity = Units of <u>work</u> completed in a given <u>timeframe</u>

Unit of work can be <u>hours</u> or <u>user stories</u> or <u>story points</u>

Typically measured in <u>iterations</u> or <u>sprints</u>, or <u>weeks</u>

Introduction to Key Agile Concepts

Velocity

Sprint 1

User Stories	Story Points	Status
A	3	Complete
B	5	Incomplete
C	8	Complete

Velocity = 3 + 8 = **11** Story Points/ Sprint

Sprint 2

Velocity = **13** Story Points/ Sprint

Sprint 3

Velocity = **6** Story Points/ Sprint

Average velocity: (11+13+6)/3= 10 Story Points/Sprint

For the next sprint, the product manager should
pick up User Stories equivalent or not more than 10 story points

Velocity

Total Story points against remaining User Story (A) : 60

Average Velocity (B) : 10 Story Points/ Sprint

Forecast for the remaining effort for the Project: A/B = 60/10
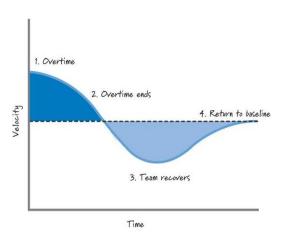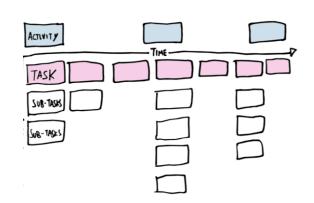= 6 Sprints with each sprint of 10 story points

Introduction to Key Agile Concepts

Velocity

Failing to bring a story to completion
❌

Velocity see-sawing

1. Overtime
2. Overtime ends
4. Return to baseline
3. Team recovers

Velocity

Time

❌

Decomposition of User Stories

ACTIVITY
TIME
TASK
SUB-TASKS
SUB-TASKS

✔

Accurate Estimation

✔

GenMan Solutions