



DreamBaby

The new way to build your dream home

Cloud Team 1

Agenda

Let's get down to brass tacks!

01

Market

02

Problem

03

Ideas & Solutions

04

Minimum Viable Product

05

Solution Architecture



Project Presentation

- Team
 - IBM Garage Methodology
 - Business Opportunity
-

- Persona Profile
 - Empathy Map (As-Is Scenario)
 - Major Pain Points
 - Big Ideas, Prioritisation Grid & Storyboarding
 - Hills
-

- Assumptions and Risks
- Prioritisation of Potential Risks

- MVP Statement
- Prototyping
- Wireframe (MVP 1)
- MVP 2
- MVP Roadmap

-
- Data Flow (Security)
 - Cloud Architecture & Security
 - Components of IBM Garage Method
 - Kaizen, EDT, Agile
 - Experiment with Target & Other Users
 - DevOps
 - CI/CD

The Team



Business Development
Sean



Developer & Design
Niithiya

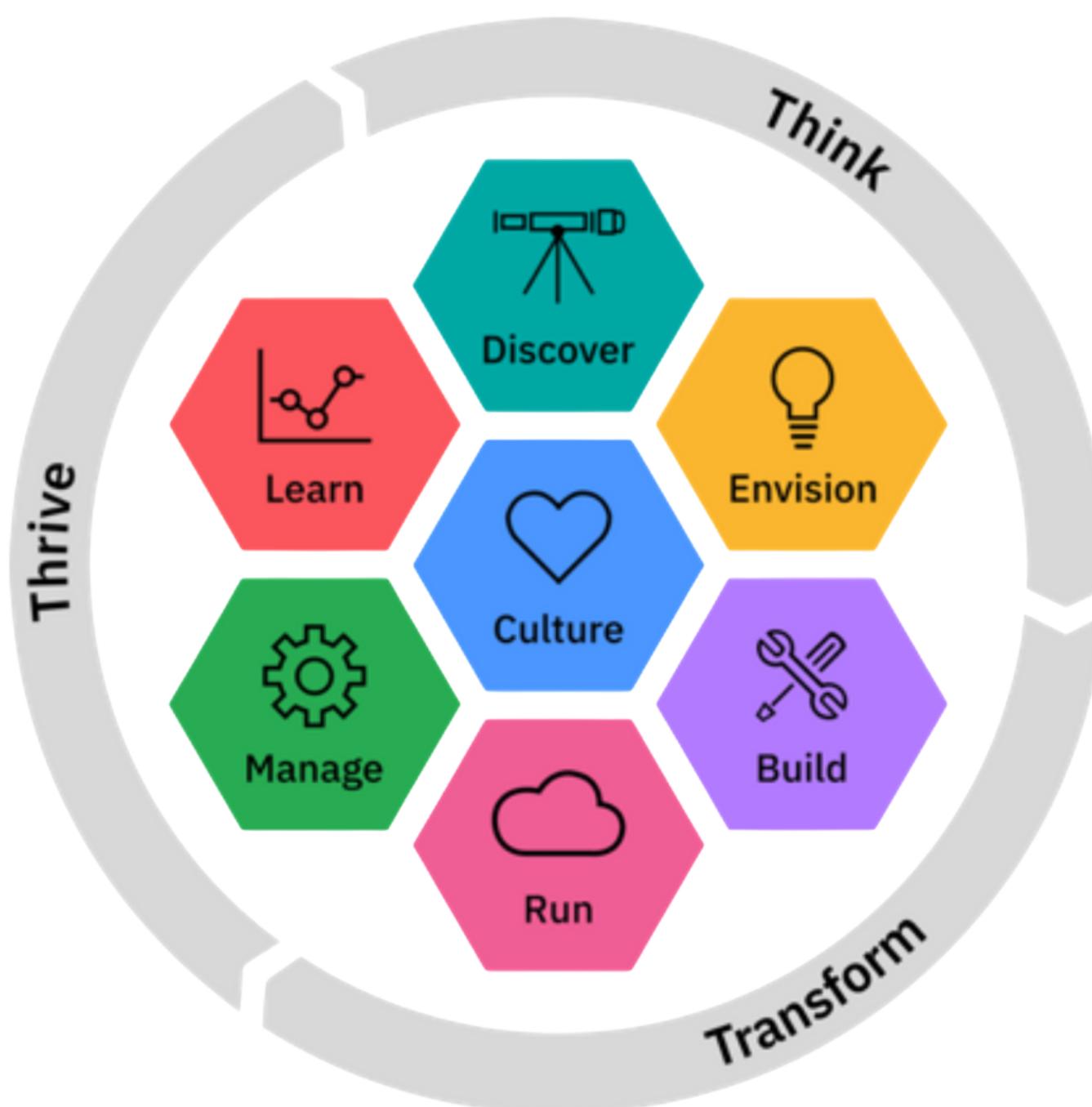


Marketing & Design
Anna

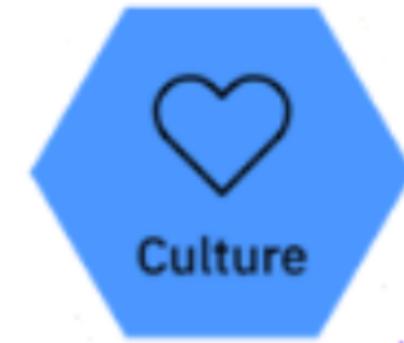


Cloud & DevOps
Pete

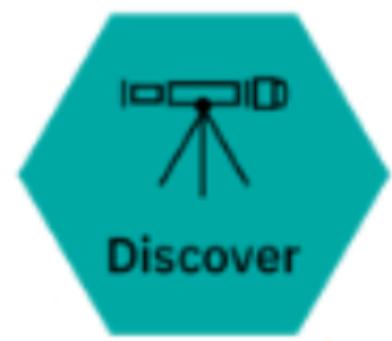
IBM Garage Methodology



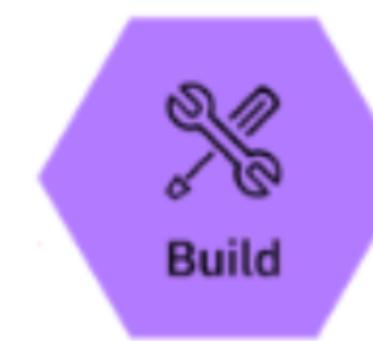
Team (Kaizen)



Think (EDT)



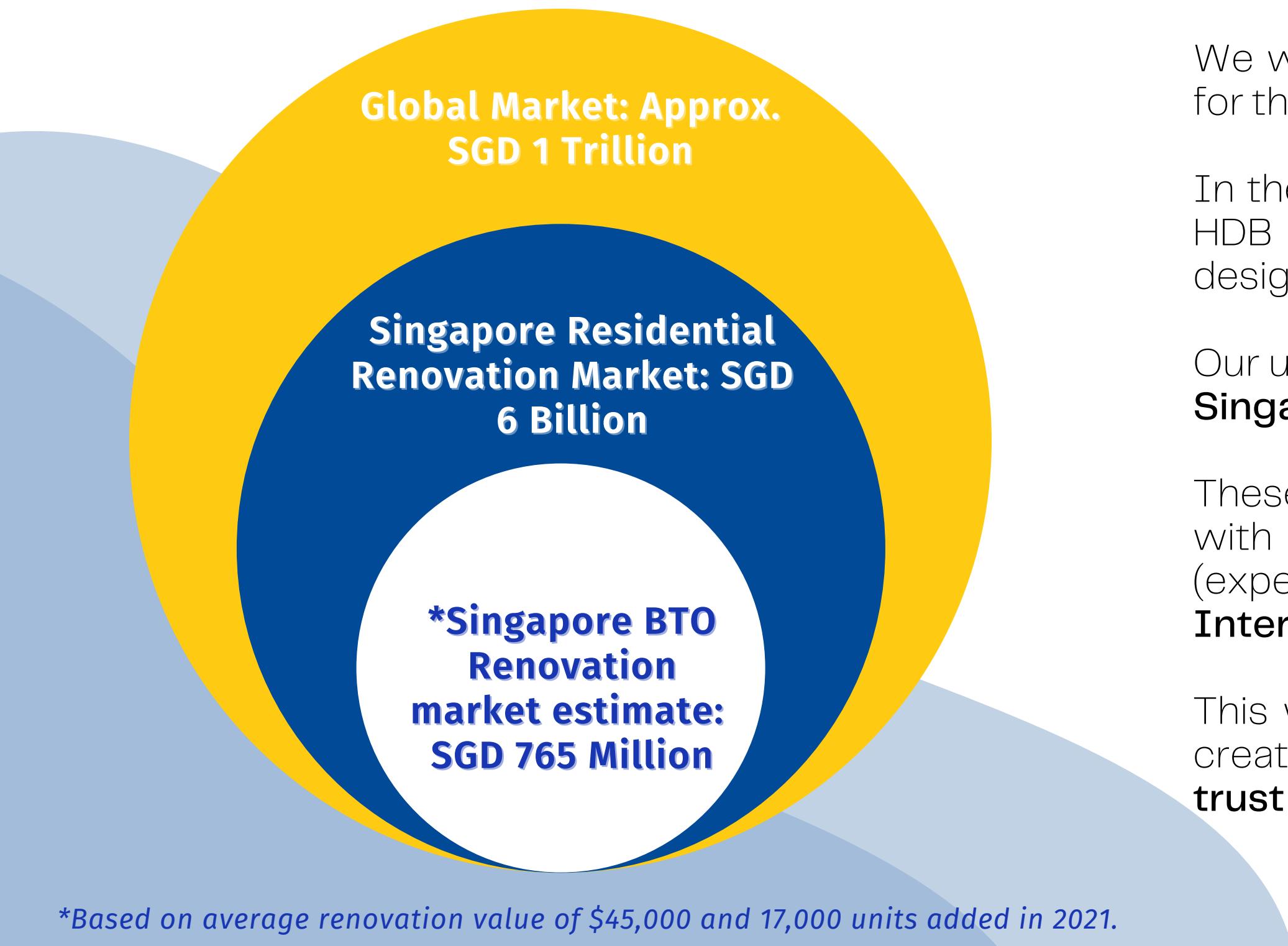
Transform (Agile)



Thrive (DevOps)



Business Opportunity



We will improve the process of **planning** and designing for their **first HDB BTO home**.

In the simplest terms, to help people who are first-time HDB owners who are unfamiliar with the planning and designing process.

Our users are first-time HDB BTO home owners-to-be in **Singapore**.

These users may struggle because they are unfamiliar with **logistics, financing and finding a reliable** (experience, user reviews and recommendations) **Interior Designer** for their house.

This would be great for our company because we can create an **integrated hub for connecting and building trust among our customers and IDs**.

**Based on average renovation value of \$45,000 and 17,000 units added in 2021.*

User Persona



Profile

Name: Elsa

Age: 28 year old female.

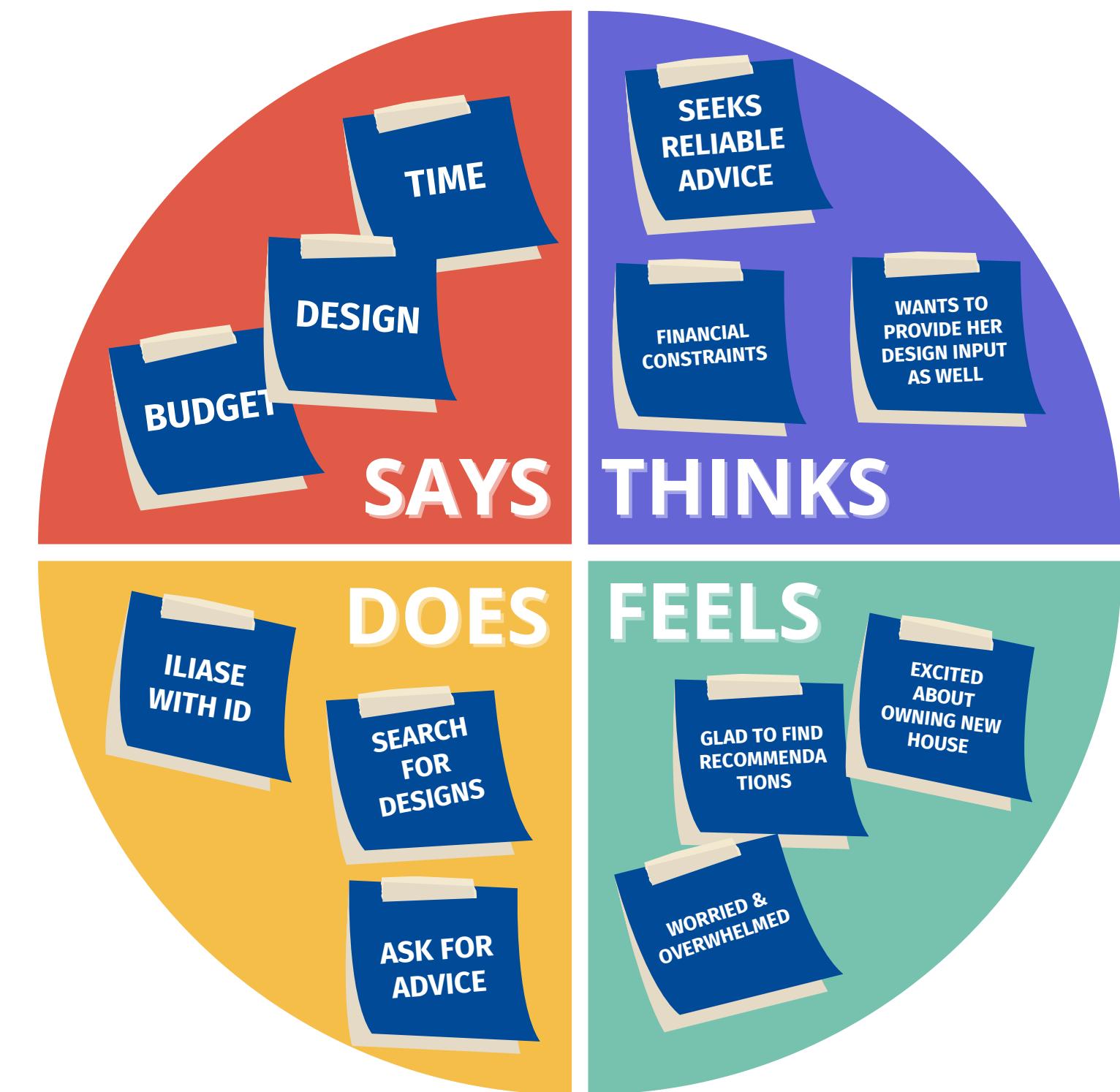
Occupation: Professional Project Manager in IT industry.

Status: Single with widowed parent.

Main Concern in Life: Cares about her finances and quality of life.



Empathy Map (As-is Scenario)



Major Pain Point



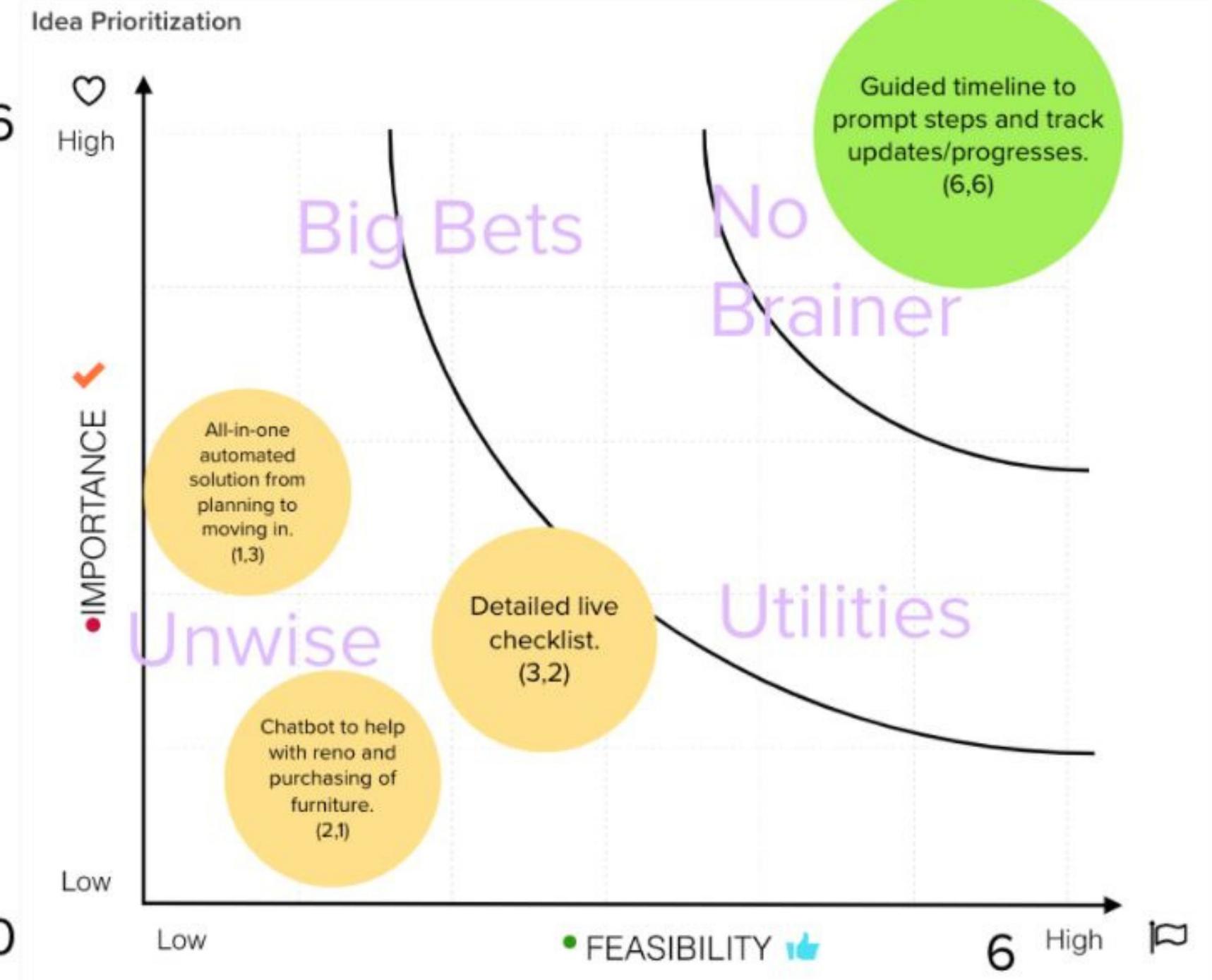
Stressed
about budgeting
and how to go
about getting
their home

Uncertainty
over process
from HDB
selection
to moving into
the unit

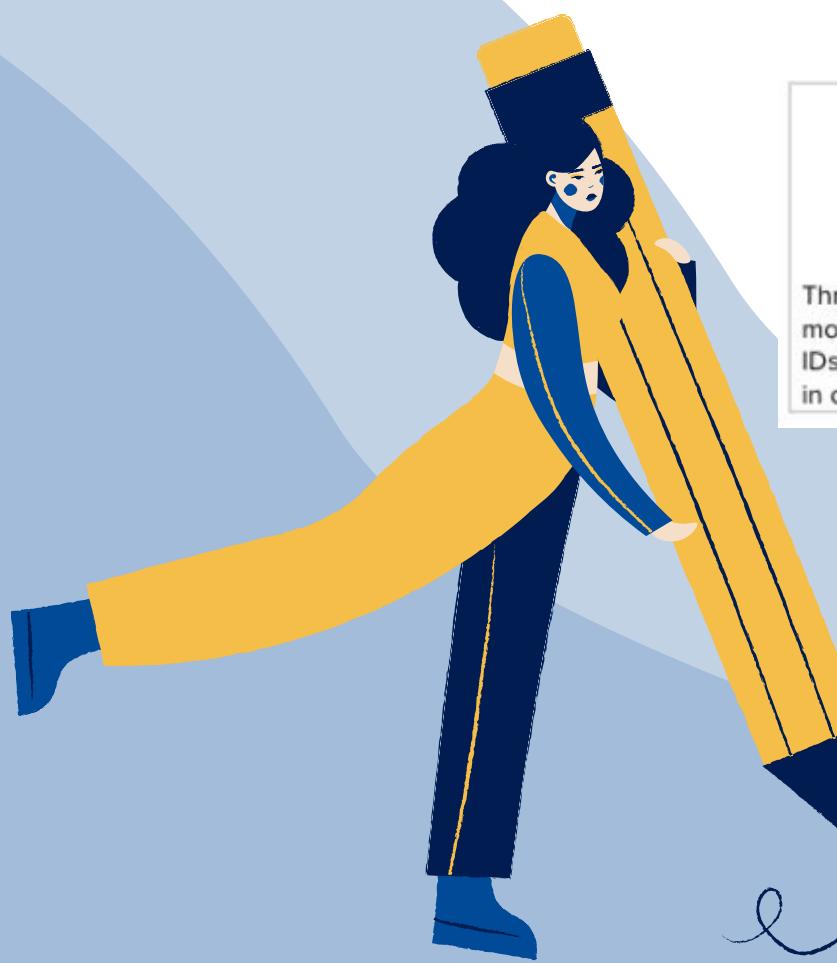
Hard to find
reliable IDs
and
overwhelmed
by choices

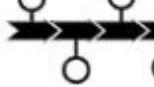
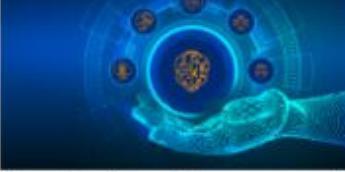
Big Ideas

Always think big.



Storyboard



 <p>After selection of unit from HDB, Elsa started to plan on her new home. However, the search for advise was not very fruitful via internet. As a result, Elsa felt concerned and worried.</p>	 <p>Elsa came across an app that promises to help her in budgeting, in keeping track of milestones and in designing her house.</p>	 <p>The app was able to assist Elsa with the planning of the different stages within a predetermined timeline and updates accordingly</p>	 <p>In the beginning, the app ask Elsa for an input to calculate her budget as a foundation.</p>	 <p>Based on the budget and her design preferences, she was given a top 3 recommendation of IDs</p>
 <p>Through our app, Elsa is able to get a mockup of her ideal home from different IDs and to relay her preferences to the IDs in one app..</p>	 <p>Elsa is able to compare among the top 3 IDs who put in their quotes based on her floor plan and design preference. She then decides on the ID to renovate her home.</p>	 <p>Elsa is then shown a renovation journey within the app where the ID checks off each section of the checklist, bringing her closer to moving to her new home.</p>	 <p>Elsa rates the ID and provides feedback based on the services they have rendered throughout the journey.</p>	 <p>Elsa felt less stressed using this app. She was able to keep track of her renovation journey within her budget throughout the guided process.</p>

HMW improve the facilitation process for new HDB BTO owners to plan what has to be done and provided a trustworthy ID for their new home so that they feel less stressed and know what to do?

HILLS



WHO: New HDB BTO Owners

WHAT: Guide them through the process (worry-free) from unit selection to moving into the new home

WOW: Fully rely on the app with zero external input

Assumptions & Risks



Anna

Assumption: New home users will fully use the app for their home search process and development.	Assumption: New app in the market to have full step-by-step guides and screenshots, advise and engage without the need to search further for other platform.	Assumption: Log in through for verification and safety point for BTO home users while using the app.
Risk: New users will just use the app to get basic info about the product instead of fully using the features of the app for the progress of their new home process.	Risk: There's already such app in the market to provide similar function but not the full complete services guides.	Risk: The sign-up rate may drop due to the privacy of the information we're asking from the BTO home users to the visual interface displayed on the app.
Mitigation: Reward system to users who fully use different part of the app features. Which can be used to encourage the user to offer their renovation guidance after the app.	Mitigation: Advertise and promote our app more. Ensure that our platform (BTO) provider adds us.	Mitigation: Enhanced Community tool also using OAuth2.0 for authentication to be eligible.
Assumption: Log in to the app via SingPass for seamless process.	Assumption: Ease to invite good and professional merchant and services provider onboard the app to provide the professional services and advice.	Assumption: Able to get merchants to join our platform.
Risk: The complexity of the backend platform to link the app via SingPass login security.	Risk: Not able to get sufficient good merchant and services onboard the app to provide professional services.	Risk: Not able to get sufficient good merchant and services onboard the app to provide professional services.
Mitigation: Using other more common digital log in methods such as google or apple/whatsapp account.	Mitigation: Create a rating system.	Mitigation: IDs would share their popular designs to customers.
		Risk: IDs not willing to provide quality products to customers.
		Mitigation: Mitigation: Create a rating system.

Niithiya

Assumption: Customers need not be technically proficient to use our platform.	Assumption: IDs are expected to provide real-time updates to customers.	Assumption: Stakeholders like IDs and home owners would want to collaborate with our platform.
Risk: Need to provide an app that is simple to use for a wide base of customers who are not of design background.	Risk: IDs not providing updates to customers on our platform in a timely manner.	Risk: They may not work due to costs and reputation factors involving eg. commission and ratings of their work.
Mitigation: hire app developer to utilize drag and drop feature.	Mitigation: provide tool a rating system that reflects how often they are recommended by customers based on their response rate.	Mitigation: To increase our potential customer base.
Assumption: We will be able to source out with an app that can attract users and IDs with simplicity and interesting work flow.	Assumption: More options e.g. readiness, budget adjustments, experience matching. Helps recruitment might possible users with a more complete experience.	Assumption: We will be able to source out with an app that can attract users and IDs with simplicity and interesting work flow.
Risk: Too many competitors using the same platform. Home design app. Those might be better designed app than ours at the market.	Risk: App too complicated, users might be overwhelmed and not even try to use the app.	Risk: Users may face difficulty in finding the platform so that we can provide users with more options.
Mitigation: Using the best, relevant qualities presented well.	Mitigation: Simplify the key features and provide a logical and focused flow.	Mitigation: Rating system.

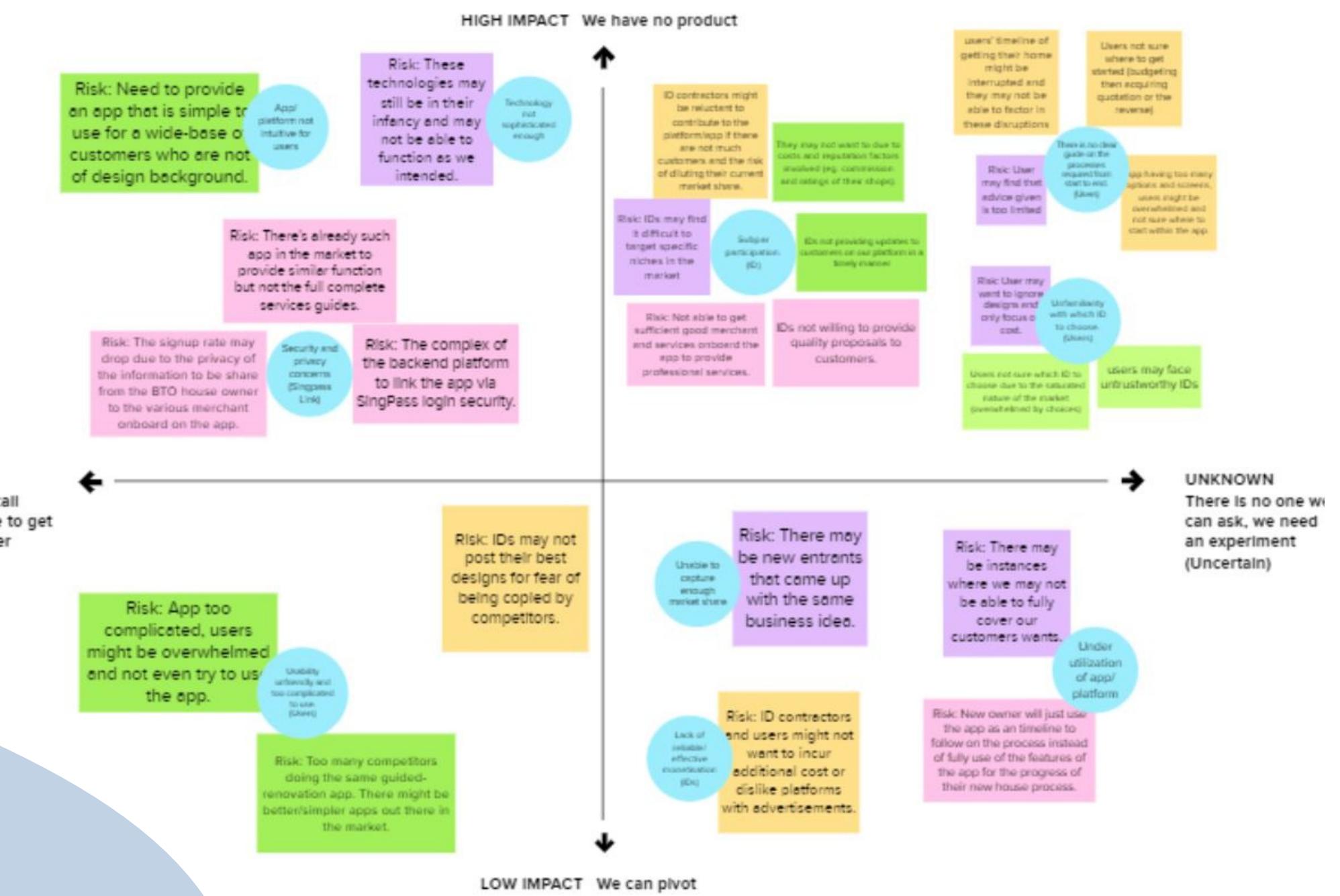
Sean Seah Jian Hao

A: ID contractors will jump onboard our platform/app to participate and compete to provide the best price and design that suits our new BTO home owner's needs.	A: Our company will be able to monetize the platform using ads or charging platform usage fees.	A: We depend on IDs for their designs and expertise. IDs are willing to post their unique designs and themes.
R: ID contractors and users might not want to incur additional cost or dislike platforms with advertisements.	R: IDs may not post their best designs for fear of being copied by competitors.	R: There may be new entrants that came up with the same business idea.
M: Let IDs use the platform for free at the initial stage. No ads on the platform.	M: Provide a warning system for possible plagiarism.	M: Patent.
Assumption: users prefer a variety of choices when doing up their new home.	Assumption: users believe that they can handle the journey to getting their dream home.	A: The app might be able to provide enough details to the user.
Risk: App having too many options and screens, users might be overwhelmed and not sure where to start within the app.	Risk: users' timeline of getting their home might be interrupted and they may not be able to factor in these disruptions.	R: User may find that advice given is too limited.
Mitigation: Roadmap to provide a streamlined approach for users.	Mitigation: Roadmap.	M: Create a channel to collect feedbacks, or a forum for users to contribute ideas.
		A: All user would use the platform due to the huge variety of designs offered.
		R: User may want to ignore designs and only focus on cost.
		M: Have a feature to help users to compare costs.

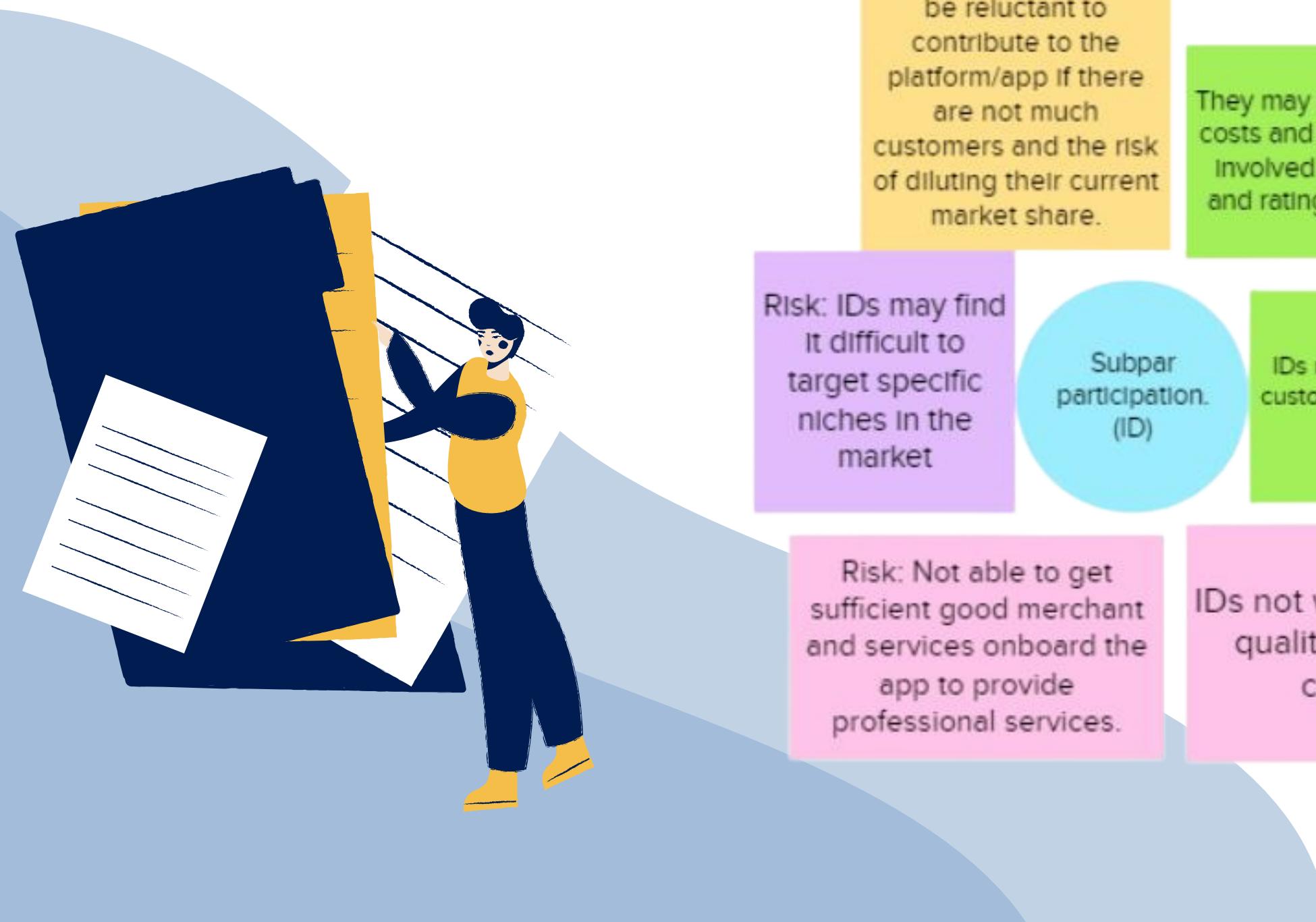
Seah Zuo Xian (Pete)

A: We are the first to come up with such an app, and therefore could dominate the niche market created.	A: We might be able to take advantage of existing technology to come up with special features in the app.	A: By mapping out the whole process from getting a new BTO to living in it, we are able to gain considerable popularity with customers willing to trust that we provide them with the full package.
R: There may be new entrants that came up with the same business idea.	R: These technologies may still be in their infancy and may not be able to function as we intended.	R: There may be instances where we may be able to fully cover our customers wants.
M: Invest in R&D on technologies that can help.	M: Patent.	M: Setup focus group for feedbacks on what is lacking.
A: IDs are able to advertise themselves to every user that use our platform.	A: The app might be able to provide enough details to the user.	A: All user would use the platform due to the huge variety of designs offered.
R: IDs may find it difficult to target specific niches in the market.	R: User may find that advice given is too limited.	R: User may want to ignore designs and only focus on cost.
M: Have a group of IDs who are able to provide special services.	M: Create a channel to collect feedbacks, or a forum for users to contribute ideas.	M: Have a feature to help users to compare costs.

Risks Prioritisation



Unknown Risks with High Impact



ID contractors might be reluctant to contribute to the platform/app if there are not much customers and the risk of diluting their current market share.

Risk: IDs may find it difficult to target specific niches in the market

Risk: Not able to get sufficient good merchant and services onboard the app to provide professional services.

Subpar participation. (ID)

They may not want to due to costs and reputation factors involved (eg. commission and ratings of their shops).

IDs not providing updates to customers on our platform in a timely manner

IDs not willing to provide quality proposals to customers.

users' timeline of getting their home might be interrupted and they may not be able to factor in these disruptions

Risk: User may find that advice given is too limited

Risk: User may want to ignore designs and only focus on cost.

Users not sure which ID to choose due to the saturated nature of the market (overwhelmed by choices)

There is no clear guide on the processes required from start to end. (Users)

Unfamiliarity with which ID to choose. (Users)

Users not sure where to get started (budgeting then acquiring quotation or the reverse)

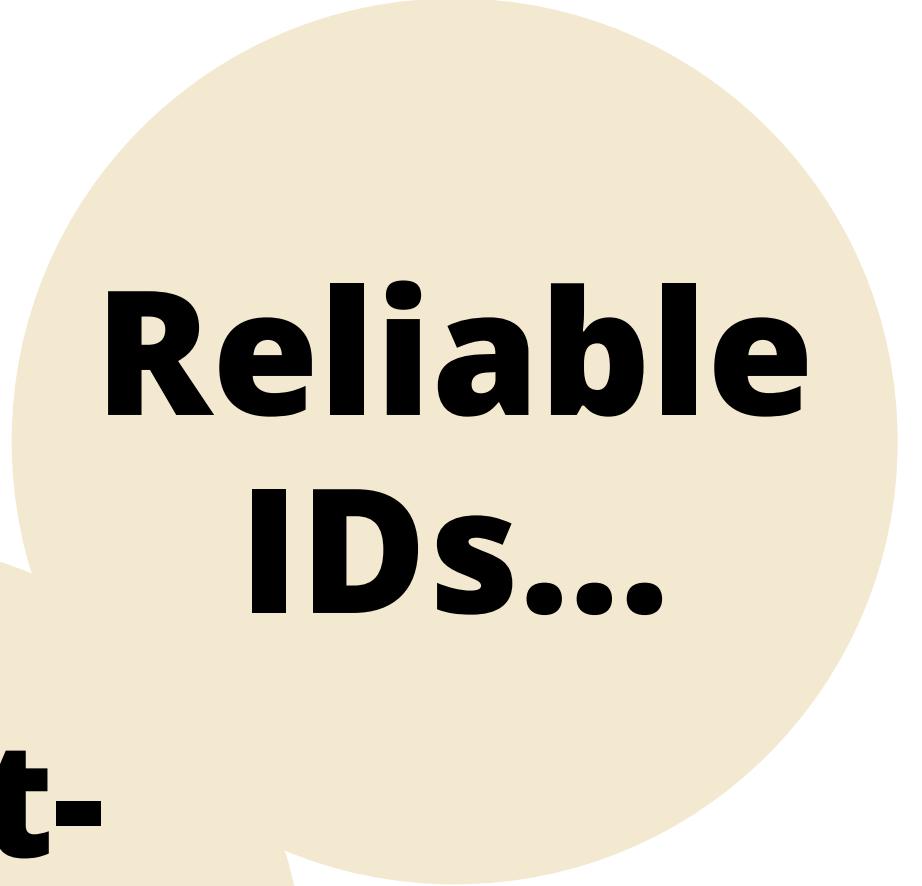
App having too many options and screens, users might be overwhelmed and not sure where to start within the app.

users may face untrustworthy IDs

Hmm...



**Solid
Guide...**



**Reliable
IDs...**



**Trust-
worthy
IDs...**

(Interior Designing
Contractors)



MVP Statements



MVP1 Statement (Target User):

If we provide Elsa with a **Road Map** (from unit selection to moving into their new HDB BTO home) and **ID rating system**, we will **reduce their uncertainties on the required processes and connecting with reliable IDs**, which can be measured by users' sign up rate via Singpass (**metric 1**), engagements with IDs (**metric 2**) and **rating system participation rate (metric 3)**.

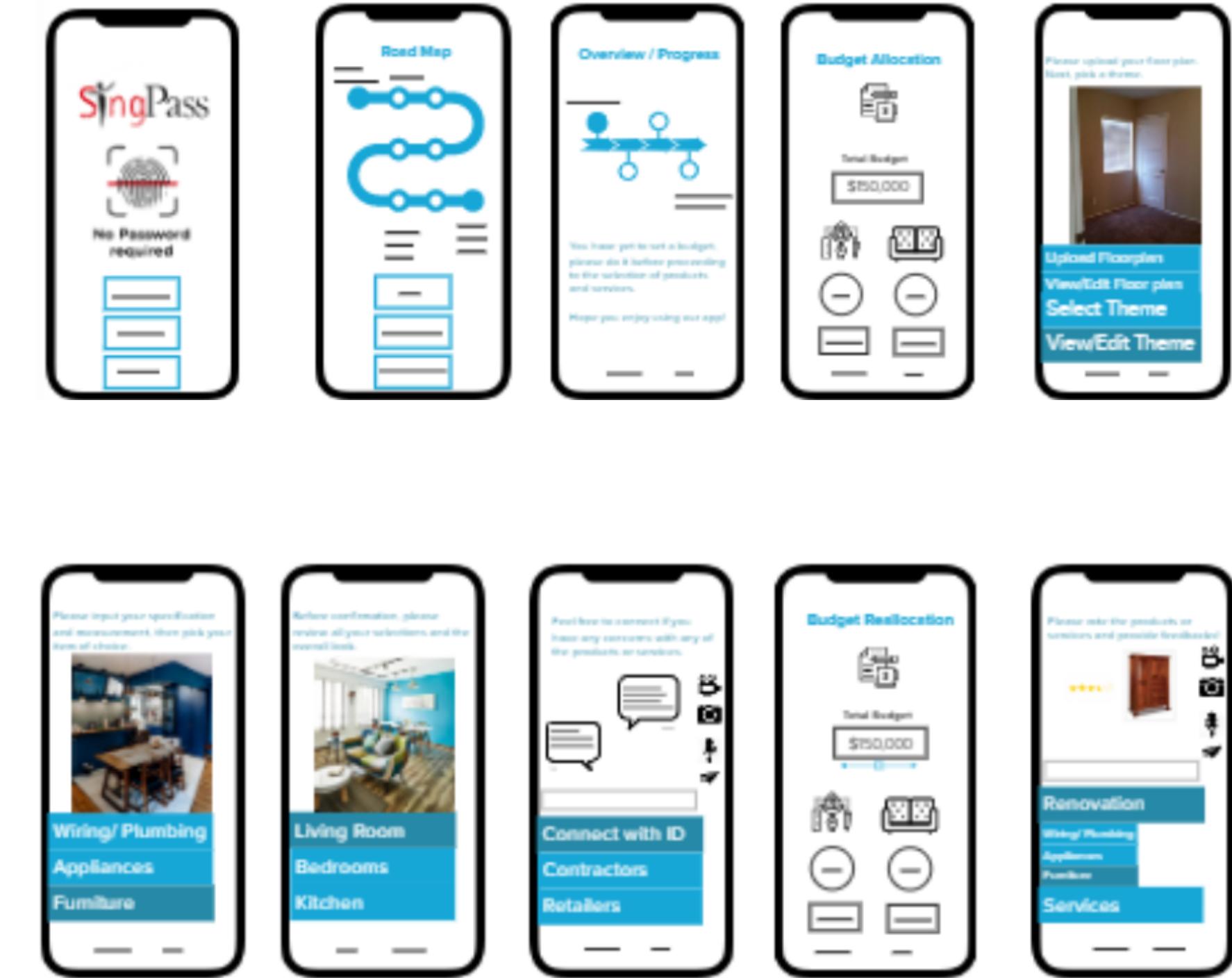
By doing so, we will observe that **they are less unsure of the processes and able to engage reliable IDs in a guided manner**.

MVP1 Statement (ID):

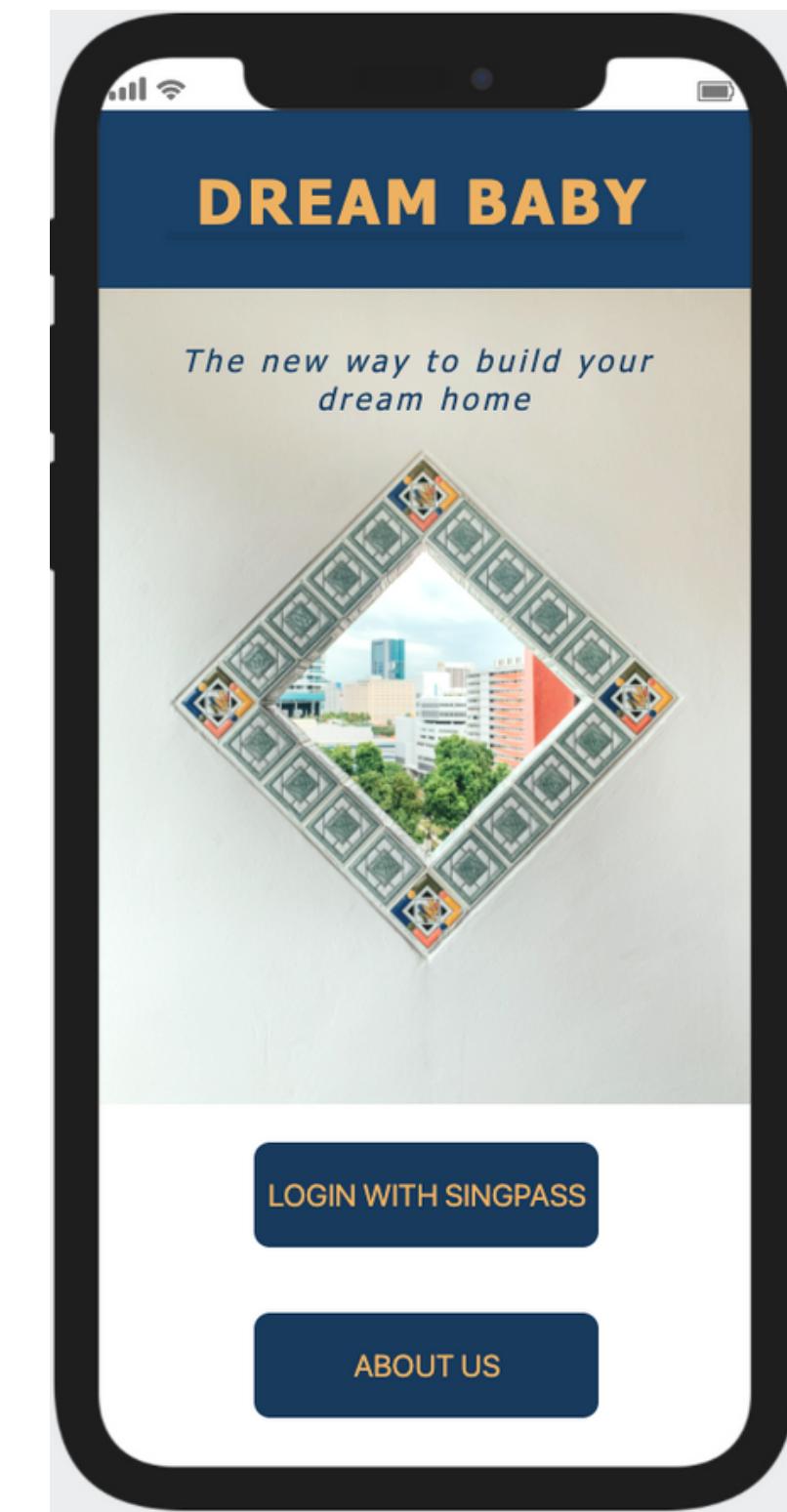
If we provide IDs with a **rating systems** from customers, it will push them to take initiative to improve their participation on the platform, which can be measured by their **activity on the platform (metric 1)**, **interaction with users (metric 2)**.

By doing so, we will observe that IDs would be more active and participate effectively on our platform.

Product Prototype



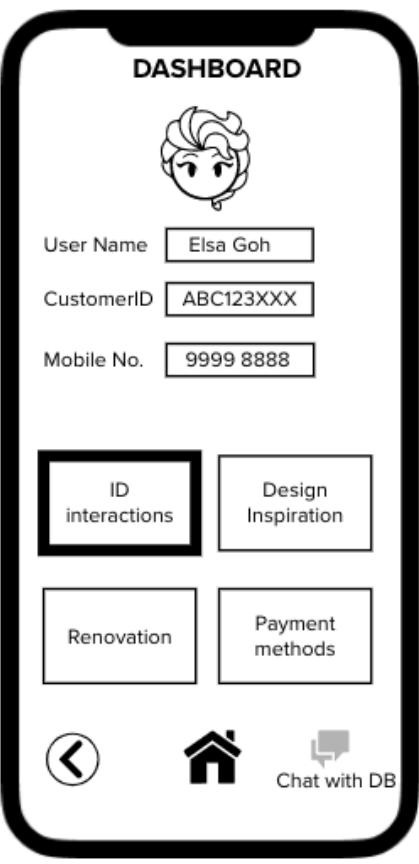
Wireframe



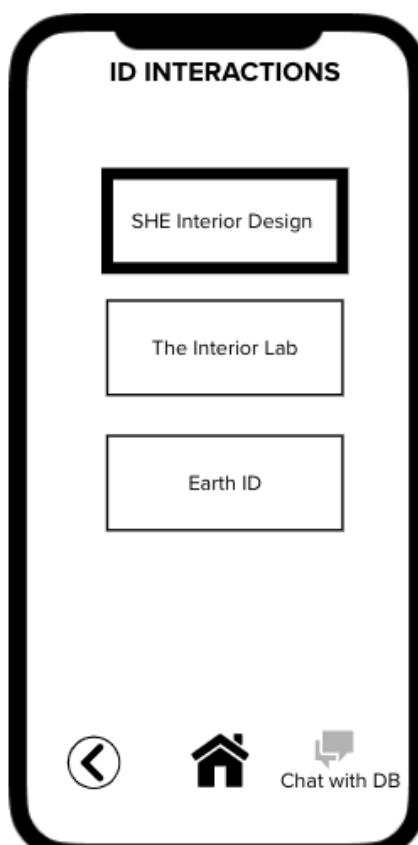
IMPROVEMENTS IN MVP 2



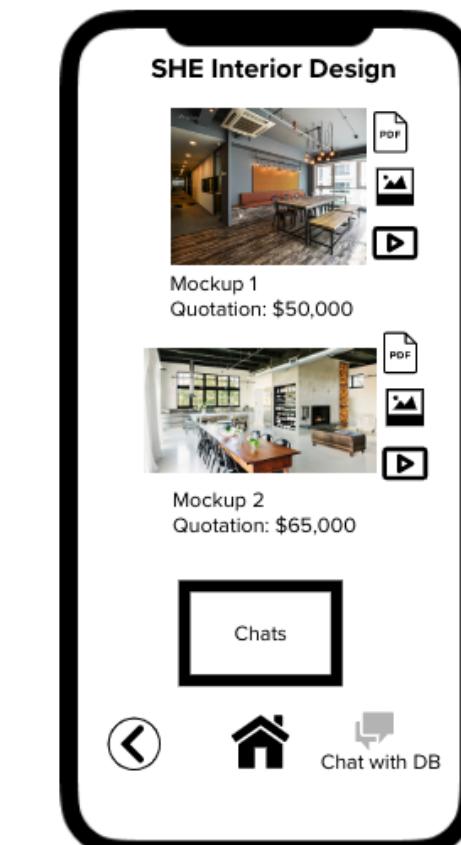
MVP 2: DASHBOARD



MVP 2: ID INTERACTIONS



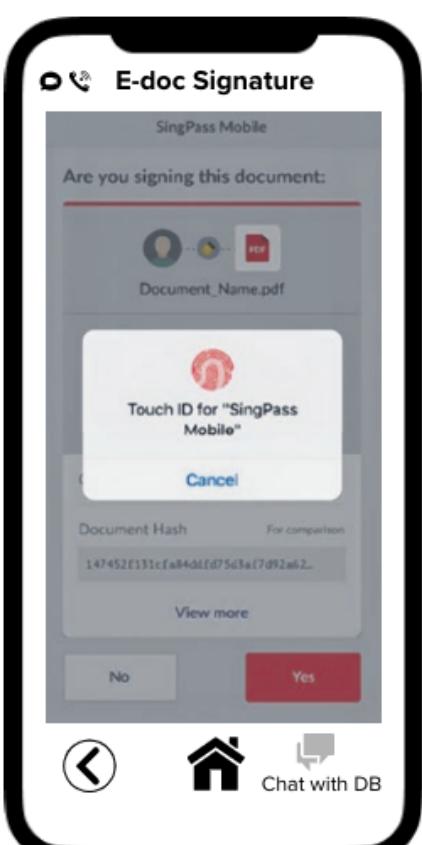
MVP 2: INTERACTION WITH SHE INTERIOR DESIGN



MVP 2: CHAT WITH ID



MVP 2: E-sign of docs



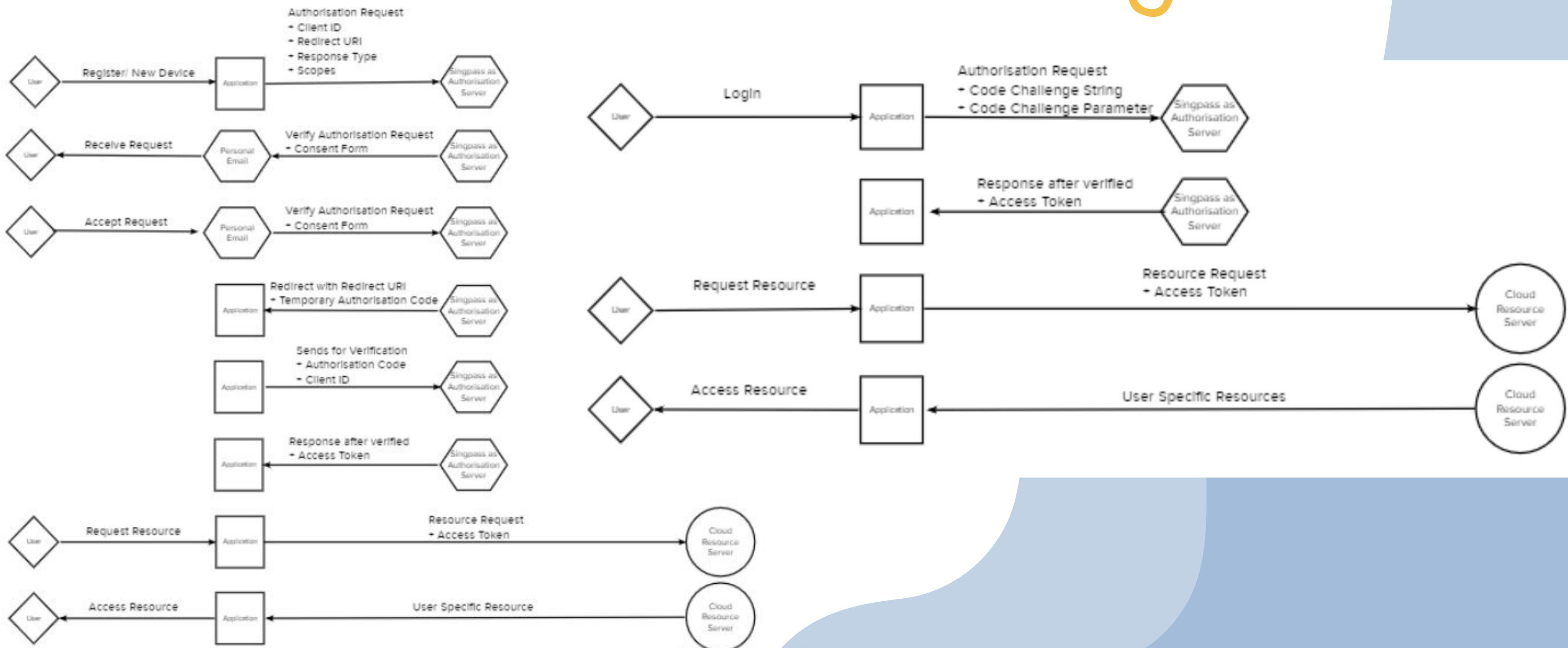
Roadmap

Market: New BTO owners looking for better ways to guide them through the process from unit selection to moving into their renovated homes as well as being willing to use platforms that provide trusted renovation ID companies

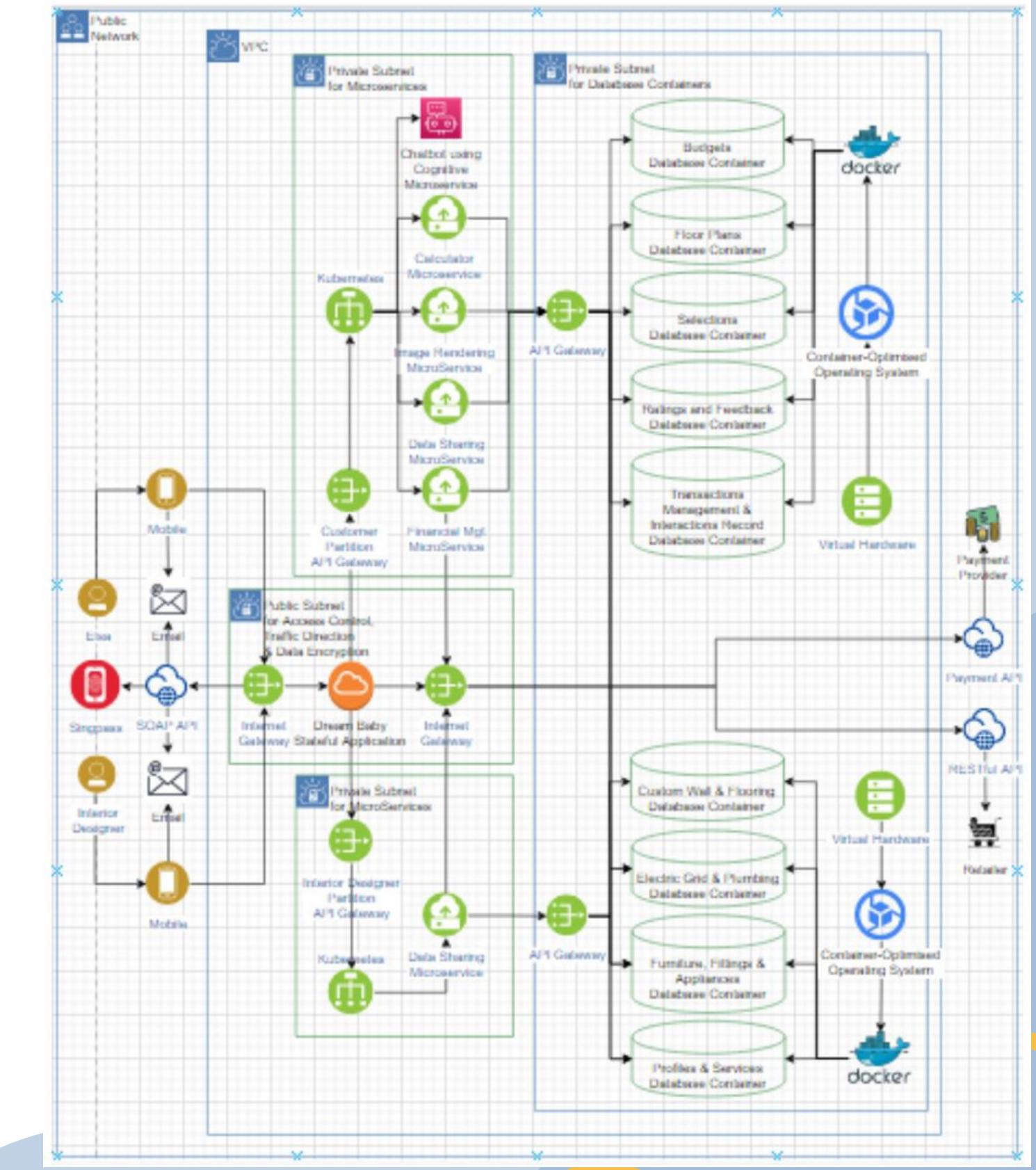
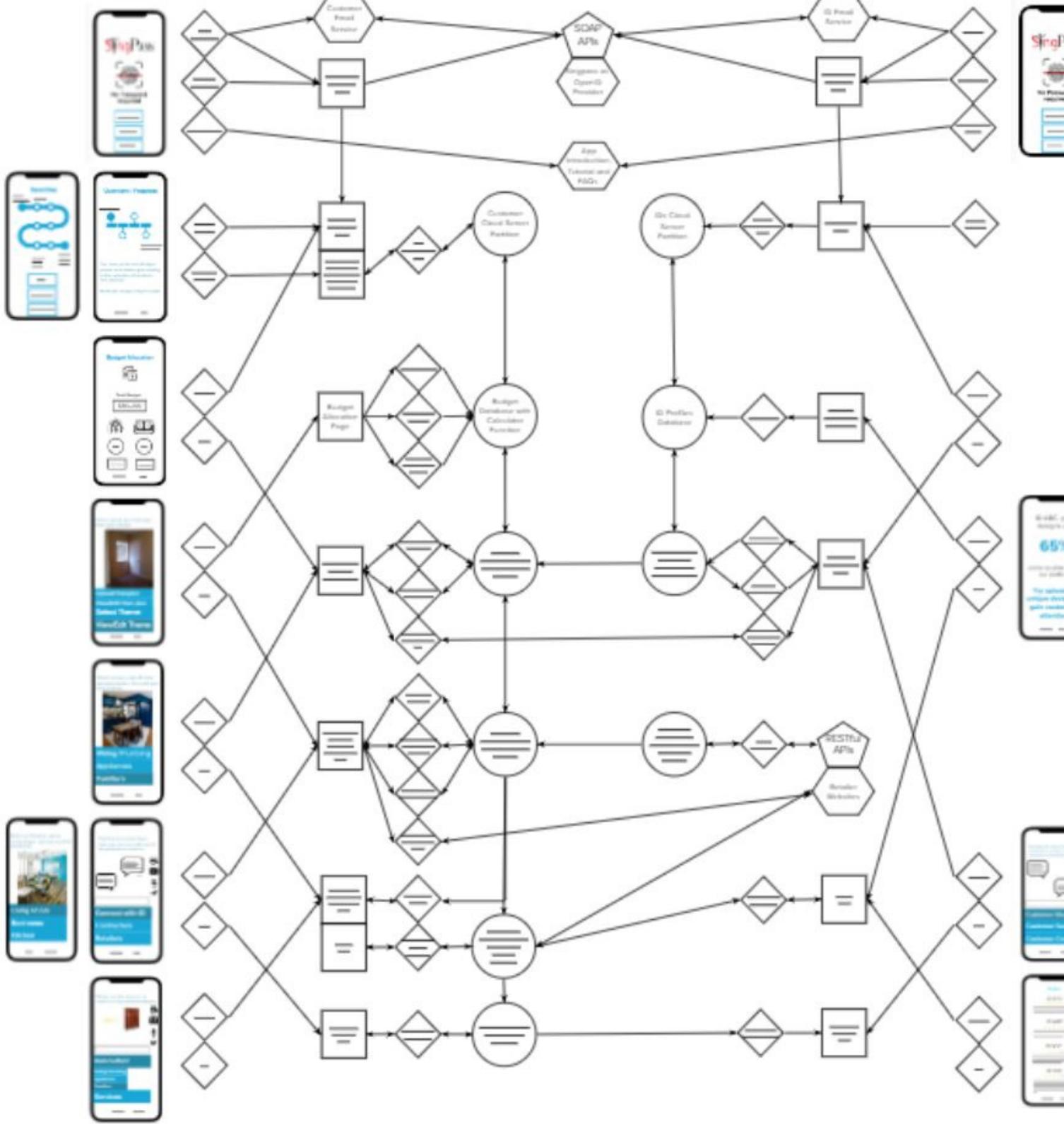
Nov 2021	Nov 2021	Dec 2021	Dec 2021	Jan 2022	Jan 2022
MVP 1 Interview Assumptions <ul style="list-style-type: none">• Customers want a platform to contact reliable IDs• Customers want a guided process in their reno & home-owning journey	MVP 1 Product <ul style="list-style-type: none">• Rating system of IDs• Roadmap for users• Recommendation feature (budget/design preference)	MVP 2 Assumption Testing <ul style="list-style-type: none">• Remove impact of chat feature• Ensure secure payment methods & ID having a secure database to access	MVP 2 Product <ul style="list-style-type: none">• Add secure doc signing (Sign with SingPass API)• Dashboard feature to show components on one page	Final MVP Interviews <ul style="list-style-type: none">• Show avg user base & growth to IDs• Confirm value proposition to IDs	Final MVP Product <ul style="list-style-type: none">• Monetisation of app through IDs once user base is achieved
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Cloud Security Data Flow

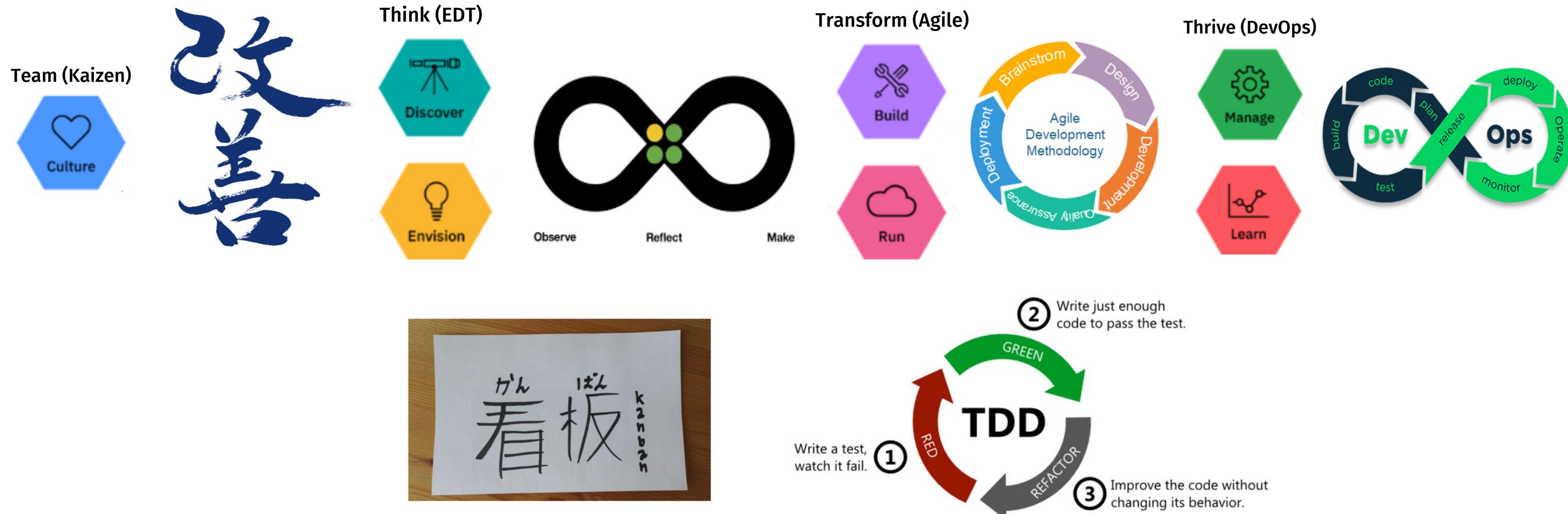
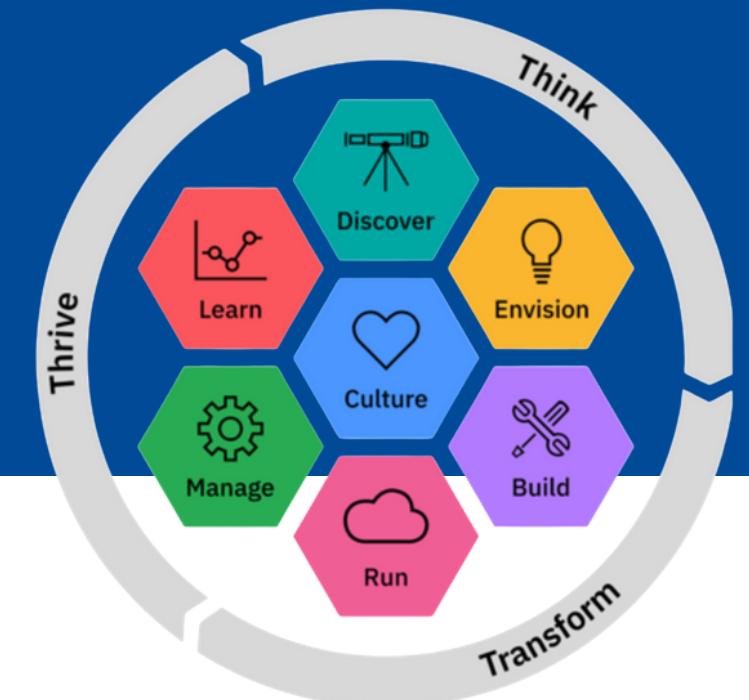
User Registration Process/First time login Process on a new device with OAuth2.0



Cloud Architecture & Security



Components of IBM Garage Method



Kaizen



What Is Kaizen?

- Kaizen is a Japanese term meaning "change for the better" or "continuous improvement." It is a Japanese business philosophy regarding the processes that continuously improve operations and involve all employees. Teamwork is core to kaizen.

Benefits of Kaizen?

- The kaizen concept posits that there is no perfect end and that everything can be improved upon. People must strive to evolve and innovate constantly.
- Kaizen is a strategy where employees at all levels of a company work together proactively to achieve regular, incremental improvements



Enterprise Design Thinking



What Is EDT?

EDT is the combination of Kaizen with the traditional Design Thinking concept. Similar to Kaizen, EDT functions through the formation of multidisciplinary teams and restless reinvention to seek continuous improvement.

However, EDT also involves the traditional concept of Design Thinking that focuses on empathy by stepping into the users' shoes and looking through their eyes, we were able to focus on user outcomes.

Benefits of EDT

Through the discovery process of interviews and empathy mapping, we are able to envision who our stakeholders were and what were their pain points. And through ideation and storyboarding, we were able to come up with a differentiating factor that would help bring value to the target user group.



Agile Methodology



What Is Agile?

The Agile Methodology is an adaptation from the Continuous Delivery Pipeline of the Agile Release Train. And uses the first three out of four elements of the pipeline work, which consists of Continuous Exploration (CE), Continuous Integration (CI) and Continuous Deployment (CD).

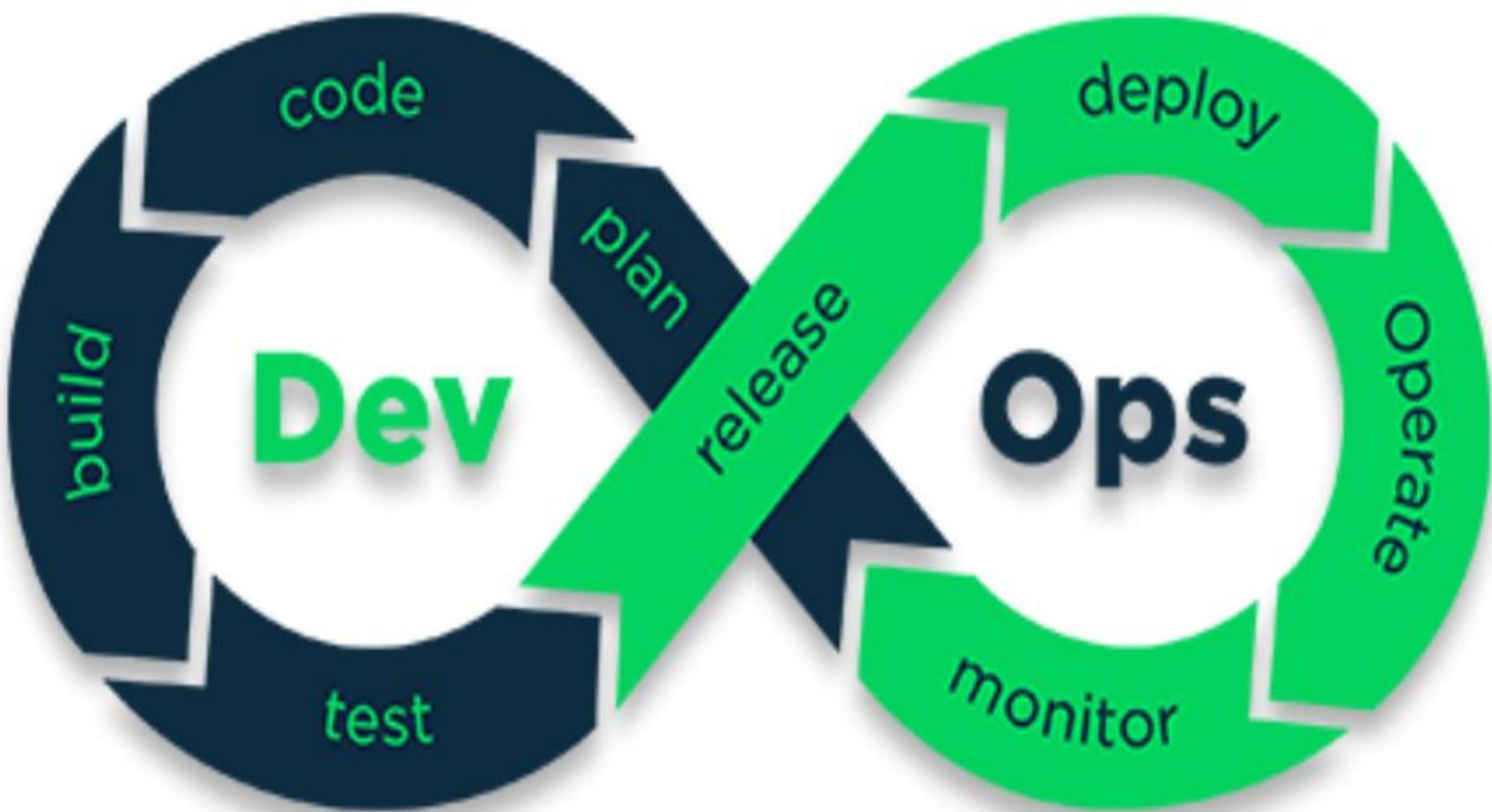
Benefits of Agile

CE focuses on creating alignment on what needs to be built, and EDT is used to ensure the team understands the users' need. It starts with a hypothesis of an idea that will provide value to users. Ideas are then analysed, leading to a Minimum Viable Product (MVP) or Minimum Marketable Feature (MMF).

CI focuses on refinement of features with EDT and implementing them. Completed work is built and integrated into a full system or solution, and tested end-to-end before being validated in a staging environment.

CD takes the changes and deploys them to production. At that point, they're verified and monitored to make sure they are working properly. This allows the team to make features available in production and determine when to release them to users. This allow the team to respond, roll back or fix forward when necessary.

DevOps Architecture



What Is DevOps?

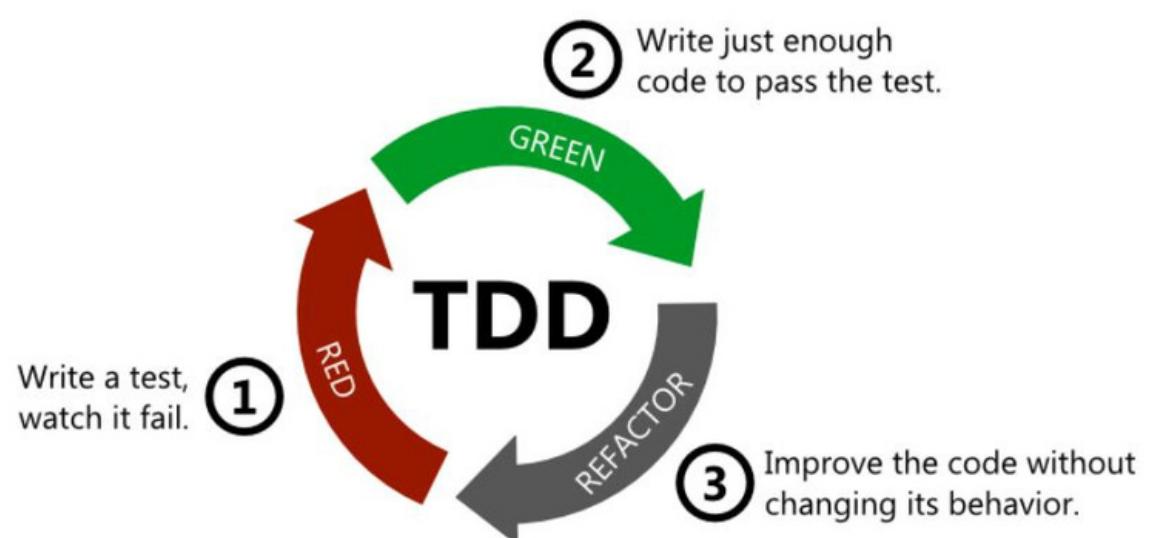
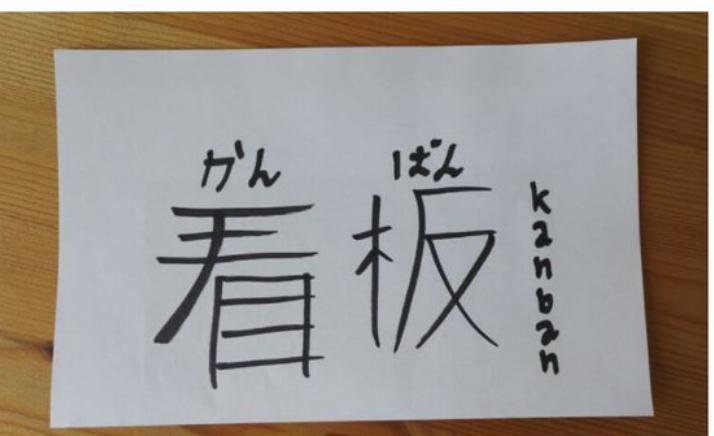
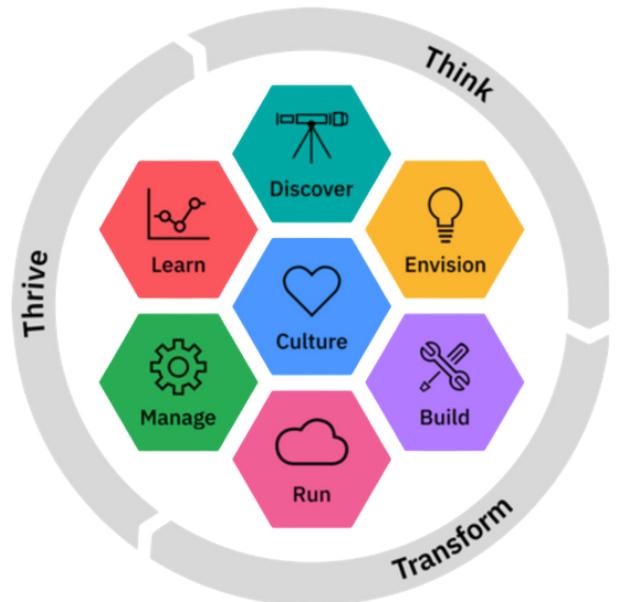
DevOps follows a culture of process improvement, with the adoption of modern automation and cloud technologies.

Benefits of DevOps

DevOps involves a change in how software is built, tested and deployed.

Traditional methods of custom scripting, manual deployments, and ad hoc testing which often resulted in errors, inconsistencies, and delays, is being replaced with modern methods through the use of integrated toolchain, pipeline automation and Blue-Green Deployment, that uses cloud native technologies that are fast, elastic, scalable and flexible.

IBM Garage Method



What Is IBM Garage Method?

The IBM Garage Method not only combines the practices of EDT, Agile and DevOps practices, but also Lean Startup and Test Driven Development (TDD).

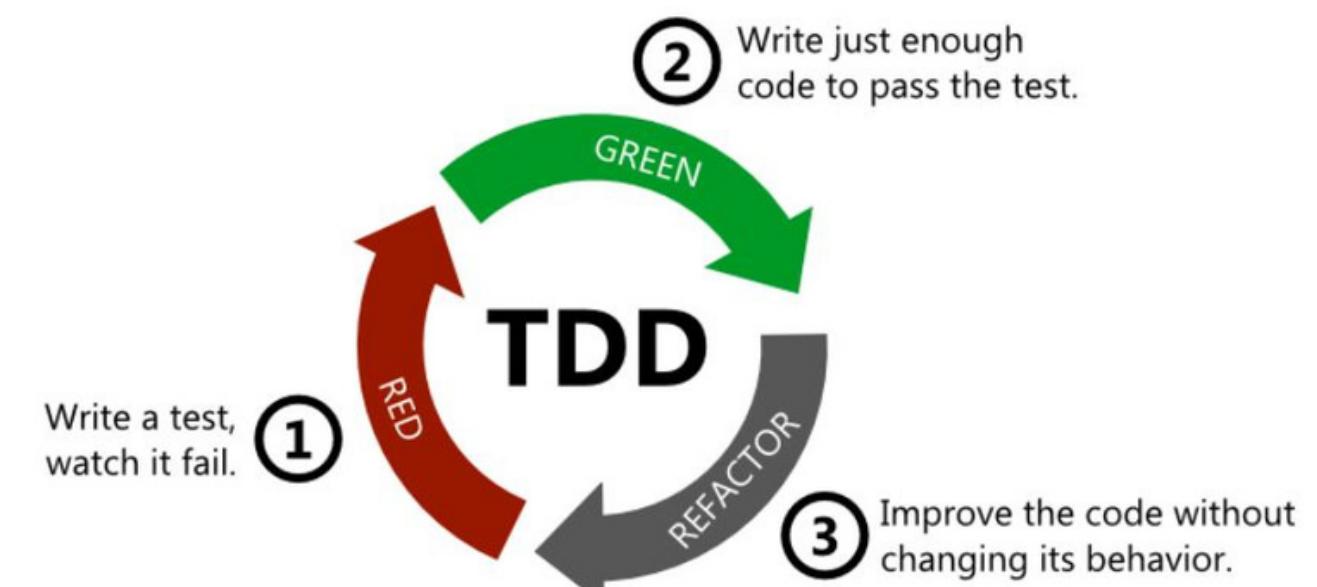
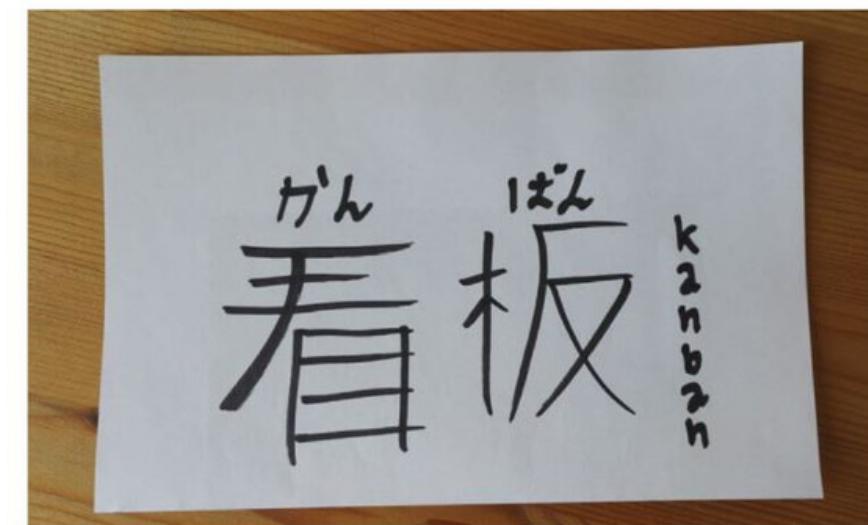
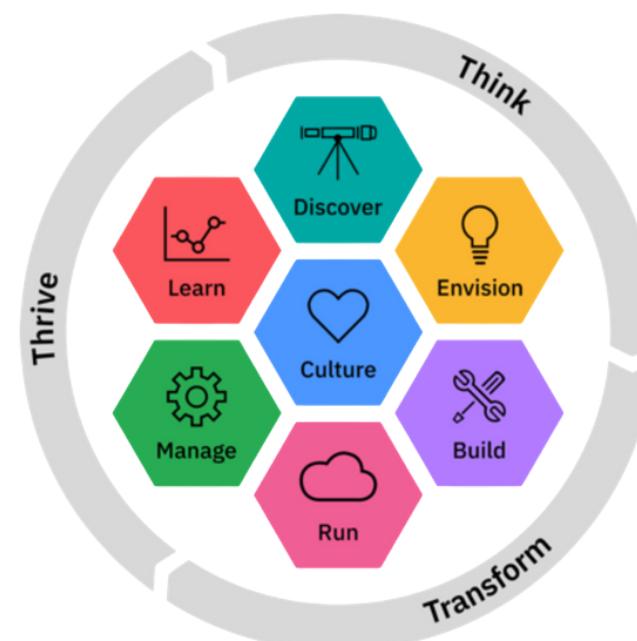
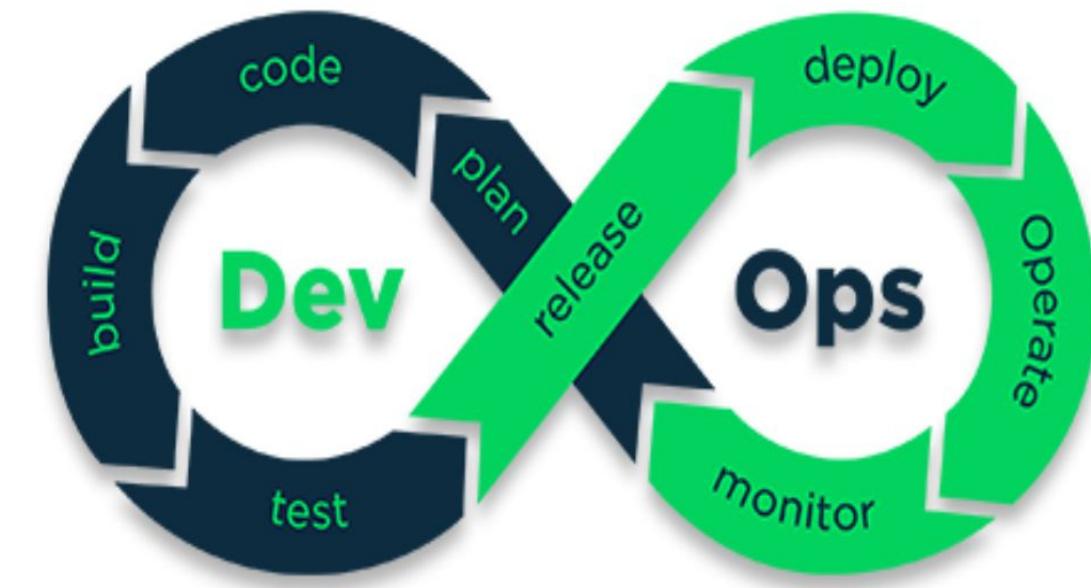
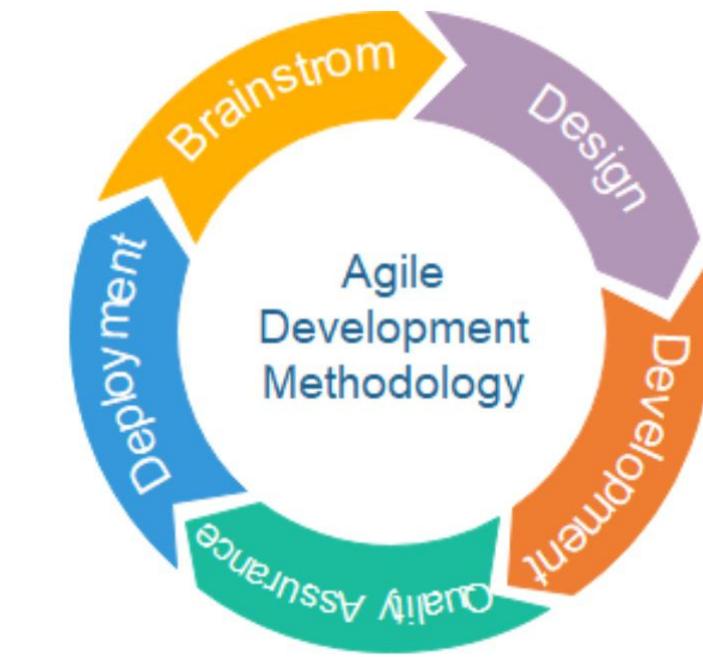
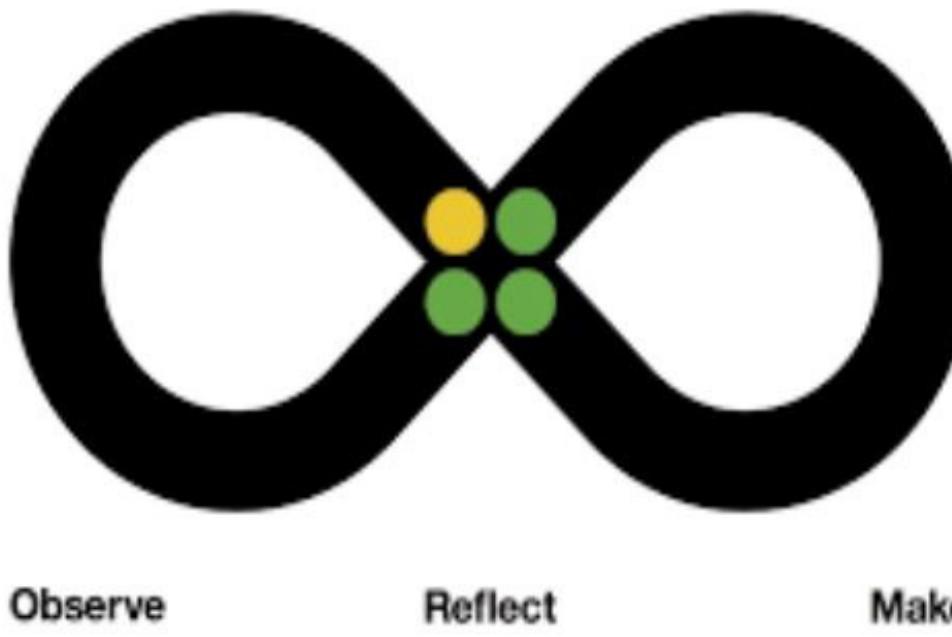
Lean Startup follows the concept of Kanban to help visualise work items in order to manage workflows based on immediate feedbacks. Through workflow control, problems are visual and evident immediately so that replanning can be done continuously to resolve problems quickly. However, unlike Lean Manufacturing the word “lean” in Lean Startup is not to reduce waste through streamlining production process by detecting mistakes or defects early, but to reduce waste through assessing user demand and meeting the demand with the least amount of resources.

TDD is similar to Lean Startup, but seeks to reduce waste and innovate faster by doing just enough to pass one use case at a time instead of aiming for the optimum solution in the first pass

Benefits of IBM Garage Method

IBM Garage method is not only able to derive the benefits of EDT, Agile and DevOps, but also the speed of transformation of existing products with TDD and the speed of innovation with Lean Startup.

Goals, Future Goals & Next Steps



Continuous Delivery Pipeline from Agile Methodology



Continuous Exploration:
Kaizen, EDT, Kanban, Lean Startup.

Continuous Integration:
DevOps' Integrated Toolchain
and Pipeline Automation.

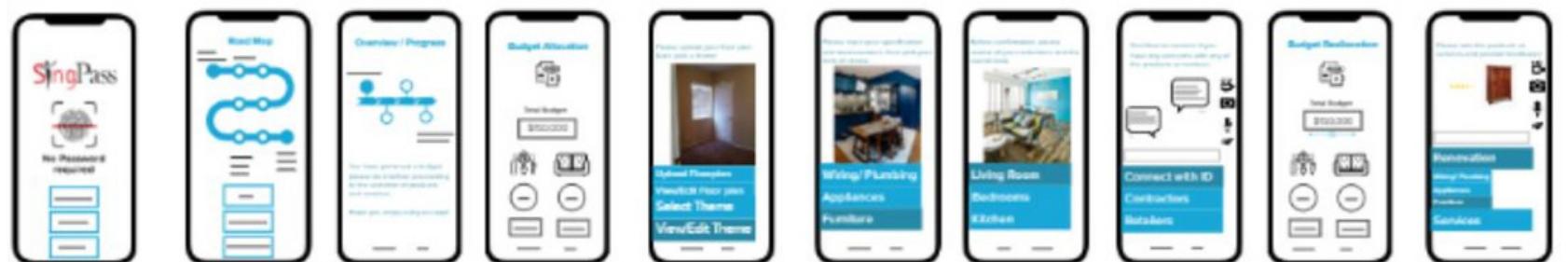
Continuous Deployment:
DevOps' Blue–Green Deployment
and Pipeline Automation.

Continuous Exploration with Users

(Kaizen, EDT, Kanban, Lean Startup)

Assumption Tests

If we provide	Elsa											
with,	roadmap	rating systems	Secure login via Singpass	Landing page: Milestones with timeline to serve as a guide	Overview and progress report, to show the difference between the ideal and current state.	Budget inputs and allocation, and red flags upon exceeding limit	Feature to search for design concepts, plus 3D look	Feature to search for appliances and furniture based on desired specifications and design	Virtual layout for final overall look, before confirmation	Liaise with ID, contractors and retailers through the app, after confirmation	Budget reallocation based on their priority in each category	Ratings and feedbacks
e will observe that	they would be more certain of the timeline of getting their home and prepare accordingly	they are more confident to approach chat with IDs that had submitted their proposals.	they will be less hesitant to provide their relevant information	customer wants a timeline that provide real-time updates	If possible, the timeline should also include a forecast on when certain work will be complete, or even possible delays.	It would be good to show average price to help customer estimate whether something is overpriced.	Customer prefers to be able to visualise the design based on the actual layout of the home.	Some prefer to have something like a shopping cart, to help calculate the total cost while selecting.	customers may be overwhelmed by the choices they have to make for their new home	There should be a channel for customers to report in order to correct defects.	Rearrangement could help customers to focus on the purchase of items with a higher priority.	may not feel uncertain by the number of IDs on our platform and who to approach in terms of design and professionalism.
	they would feel more confident of the steps required to take	able to shortlist potential IDs and ignore untrustworthy IDs.	they would feel confident in using our app	New BTO homeowners would be aware of the steps needed and time period needed for each stage	they are currently unsure of what they need to do at each stage before moving into their home	Able to provide advise and tips on the items that were over budgeted.	Before getting the key, customer able to input with their floor plan provided by HDB.	It would be better if the app is able to highlight selections that matches the overall look.	customers can use the drag and drop feature in the virtual layout to ensure ease of use	have an immediate avenue to resolve problem	Help to plan on the budgeting to ensure the allocation of the budget is sufficient.	ratings and feedbacks would help build credibility in terms of quality and expectations
	they would be less stressed as the milestones are updated in real-time	they will trust the reliability of the IDs based on the rating system on our platform?	it would result in high user uptake due to the integration of govt platform	Customer wants a complete guide to give advice on the next steps. So that they feel less uncertain, and know how to move on.	it helps them to be on better planning with the budgeting to get to their dream home.	After getting the key, is able to scan on area to input data in creating the virtual layout.	Some customers specifically requested for environmentally friendly products.	customers would be more certain if their products fit into the specs and feel of their new home	customers can feel more assured with our app overseeing the after-service process	it able to help with decision making for the essential purchase for the new house.	our app would act as a reliable hub for them to seek out their desired designs and IDs	



Focus is on finding the activity and not the activity itself

Tell me about the last time you improved your fitness level?							
STEPS?	Motivation to exercise	Decide on type of exercise	Liaison (Measuring, Equipment, Attire/Accessories)	Finding a place to exercise	Exercise	Post-exercise	
DO and SAY?	What did you want to exercise?	What type of exercise did you decide to do?	What did you do to prepare, logistics wise?	How do you choose where to exercise? Where do you usually exercise?	What did you do while exercising?	What did you do or say after exercising?	
THINK?	What were your thoughts on exercise?	What were you thinking when you were deciding?	What did you think about working out at this place?	What did you think about while exercising?	What did you feel about exercising?	What did you think about after exercising?	
FEEL?	What did you feel?	How did you feel about it?	What were you feeling when you were preparing?	What were you feeling when you found a place to exercise?	How did you feel when you're exercising?	How did you feel after exercising?	

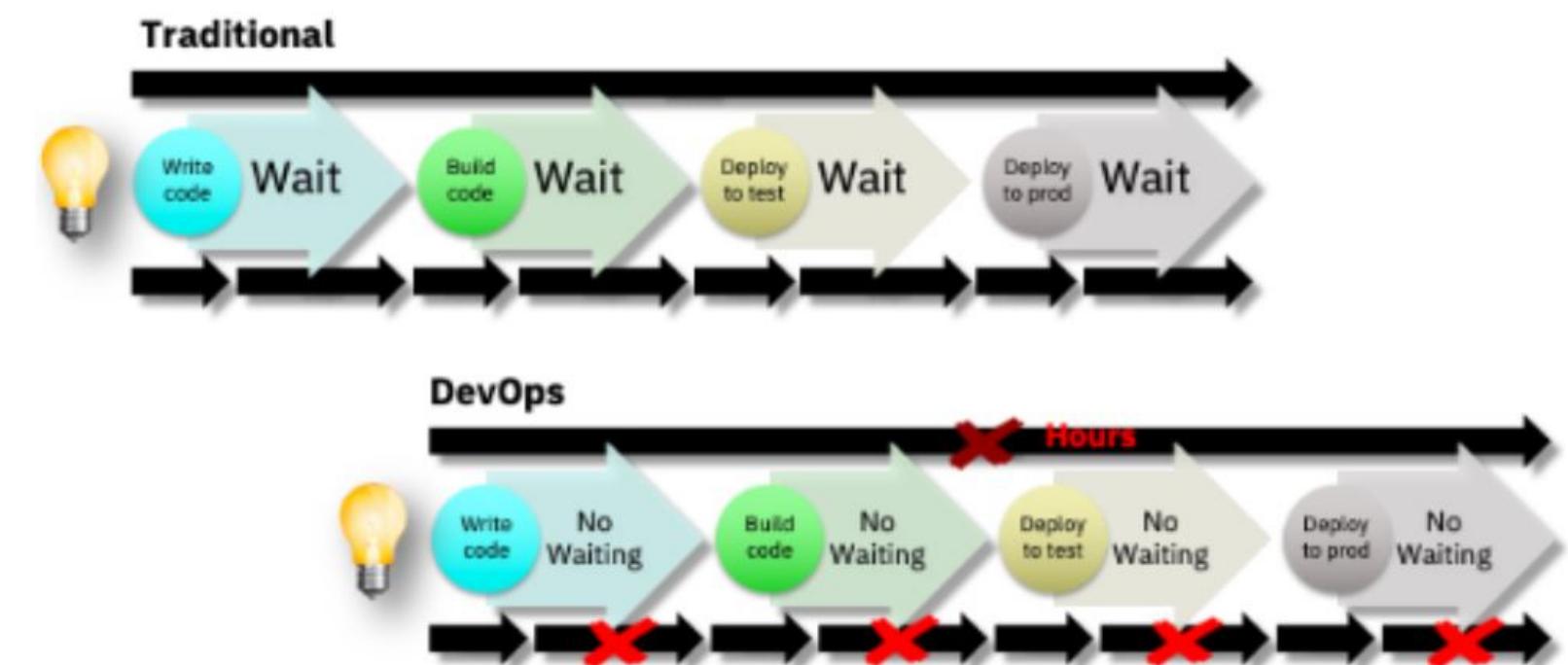
Assumption Tests

If we provide	IDs			
with,	Ratings and feedbacks from customers.	Warning system to look out for possible plagiarism by other IDs or competitors.	Liaise with customers, after confirmation with them.	Recommendation system to help attract customers to IDs with higher ratings, so that this encourage better products or services.
we will observe that	If there are any disagreements with some of the feedback, there should be a channel to negotiate a solution with the customer.	that IDs may be willing to share more of their designs on the platform.	Some may require upfront payment and signed contract.	IDs would see the need to showcase their better works
	Some IDs do not want to participate in the rating feature as it might affect their reputation in the industry.	IDs can improve themselves in this space to entice customers.	IDs takes time to respond to customers' requests.	IDs competing in our hub to gain recognition from customers
	From IDs experience, some customers would only give feedback when they are unhappy.	IDs would be more confident and less worried about copyright issues.	Some IDs/ customers prefers to discuss details outside of app/ platform.	IDs would gain access to a wider base of consumers on our platform



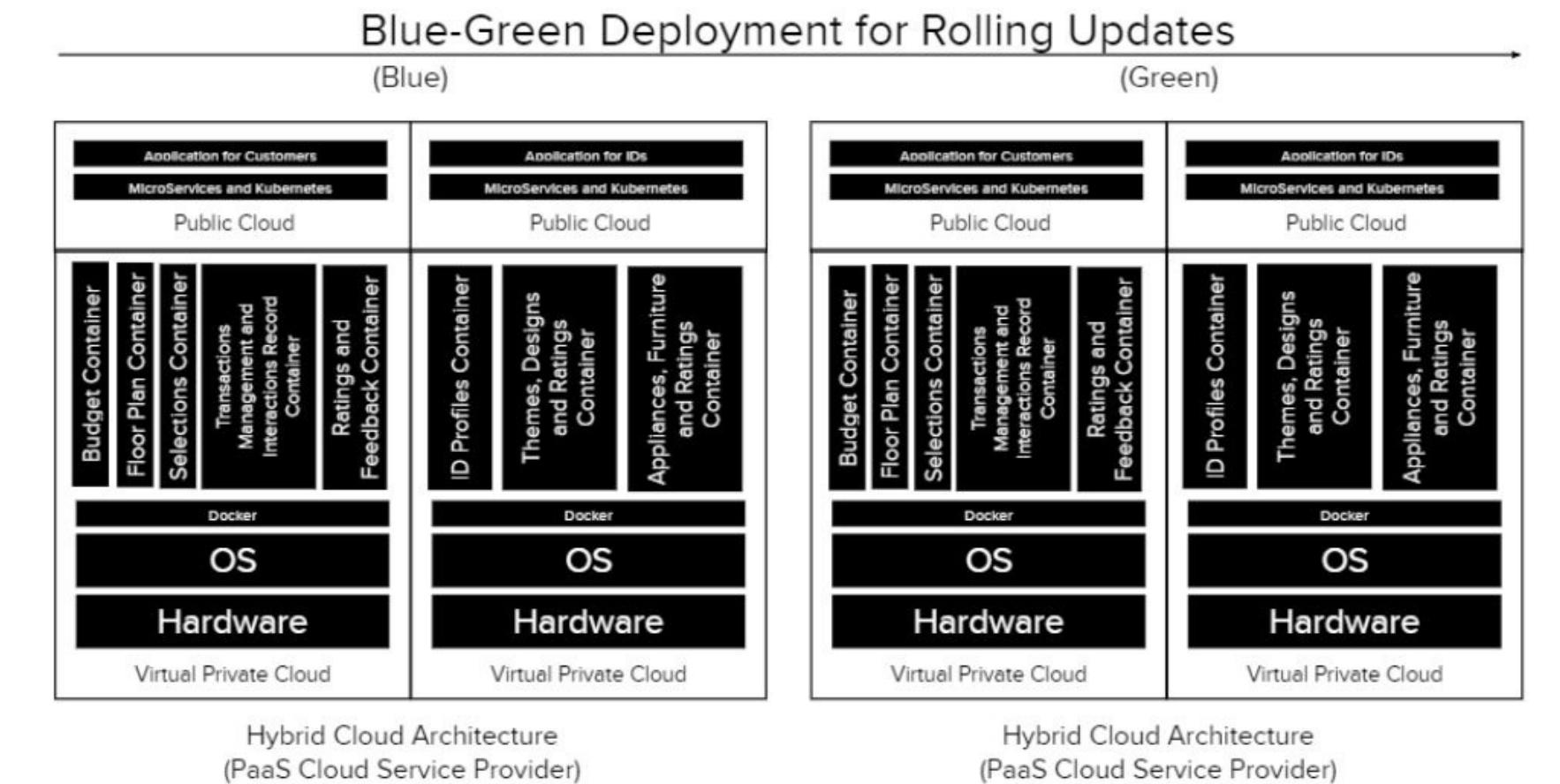
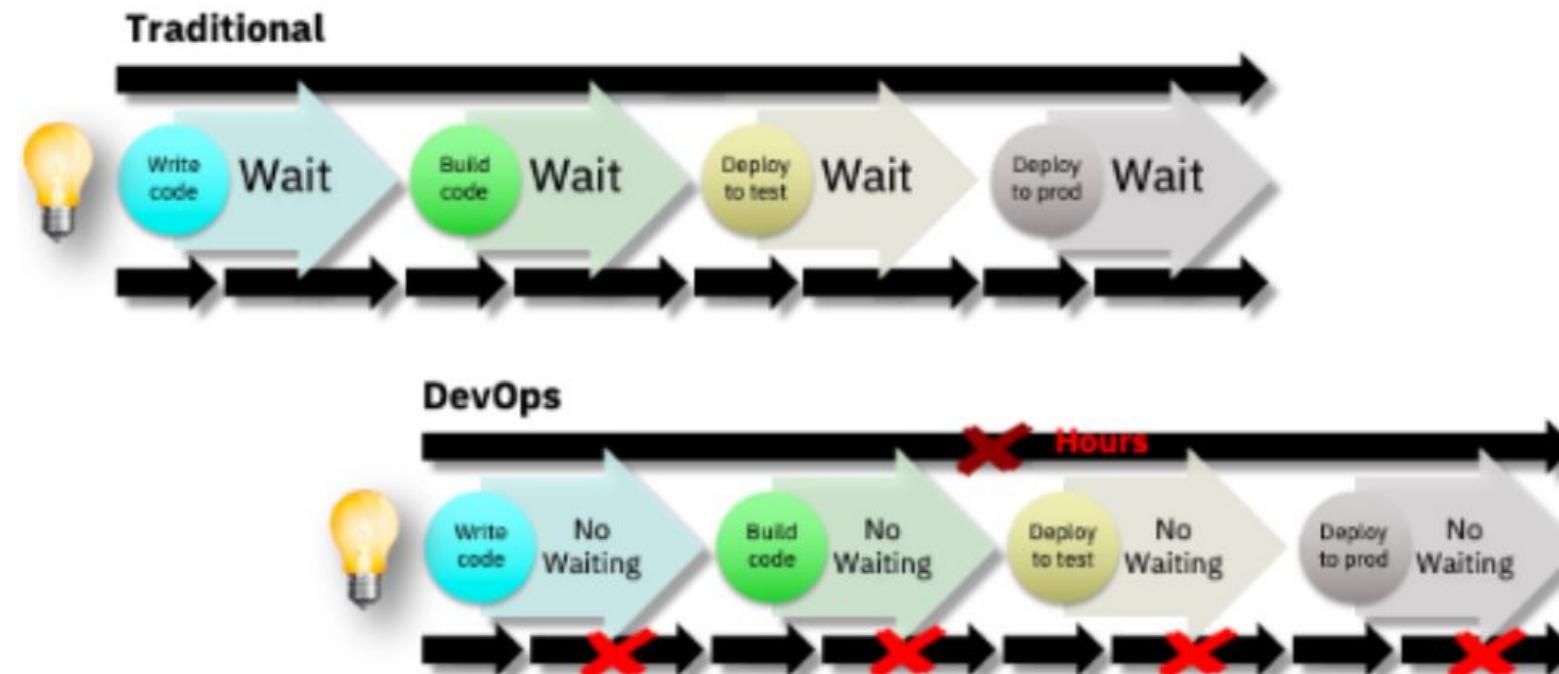
Continuous Integration

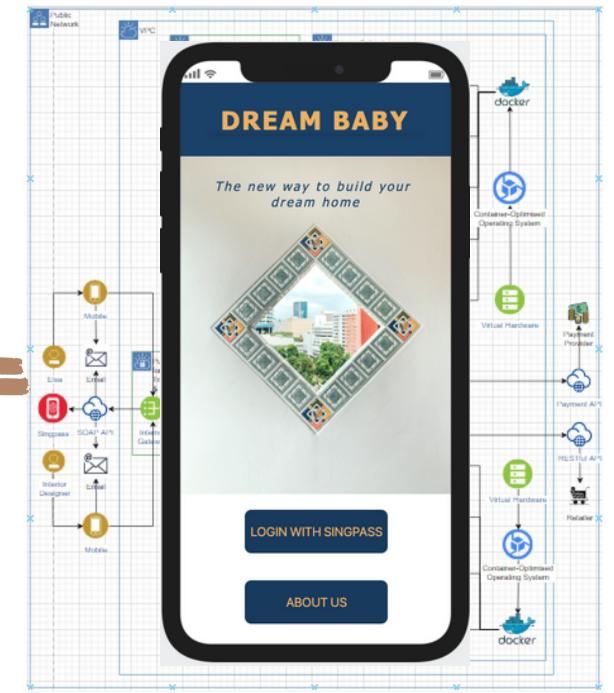
(DevOps' Integrated Toolchain and DevOps' Pipeline Automation)



Continuous Deployment

(DevOps' Pipeline Automation, DevOps' Blue-Green Deployment)





The Loop drives us

Understand the present and envision the future in a continuous cycle of observing, reflecting, and making.



Observe >

Immerse yourself in
the real world.

Reflect >

Come together and
look within.

Make >

Give concrete form
to abstract ideas.