



B21-CAP0454

Increased Revenue without
queues with Automated Self
Checkout by Object Detection

Go-to-Market / Sustainability Proposal

Meet our team



Hanan Iqbal Alrahma /
Mobile Development
(Android)



Akmal Adnan Attamami /
Machine Learning

Meet our team



Aditheo Firman Saputra /
Mobile Development
(Android)

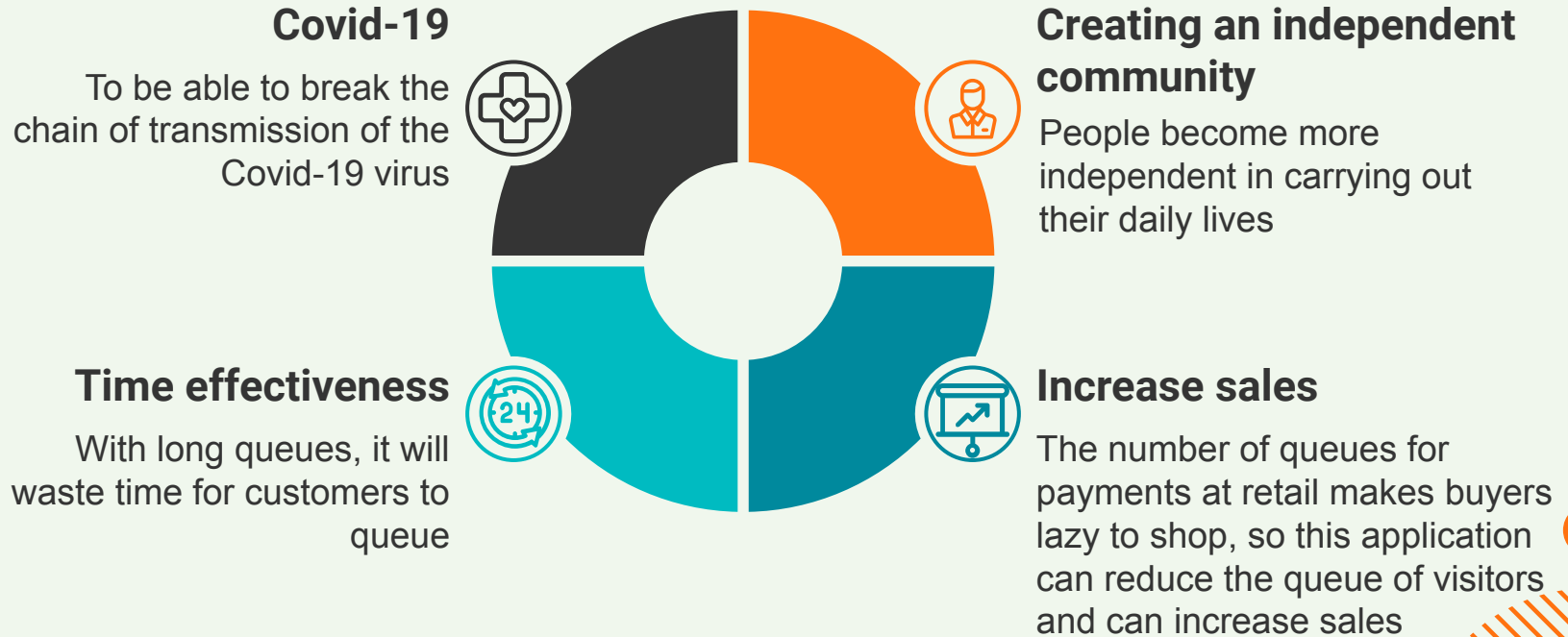


Mohammad Arif Ikhsanudin /
Cloud computing



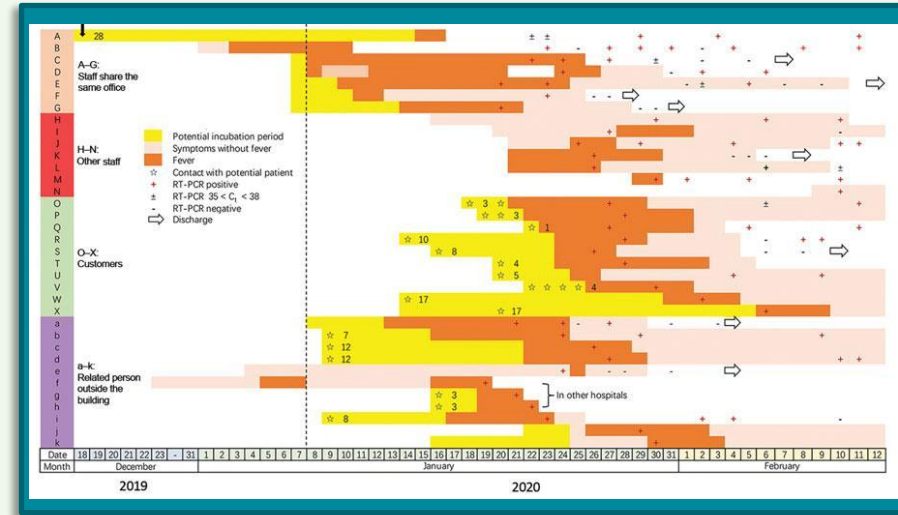
Mochamad Hakim Akbar
Assidiq Maulana /
Machine Learning

Backgrounder Facts



Background

Many supermarkets rely on **manual cashier** systems to serve customers. This causes the queue of customers to **get longer** and **not suitable** for COVID-19 Person **not to stay in public** for long.

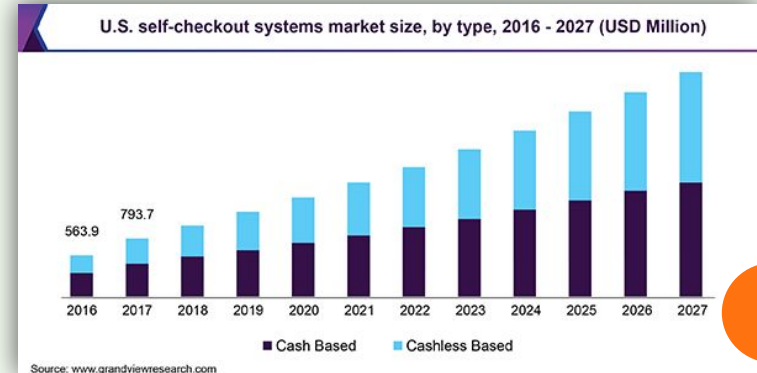


Source :
Cluster of COVID-19 at shopping mall in Wenzhou, China

Background

Increase of using Self-Checkout Systems around the world because of this **effectively** and **efficiency**.

Scanning the barcode to identify the price product is **inefficient**. **Machine Learning** make shopping checkout process **easily and quickly**

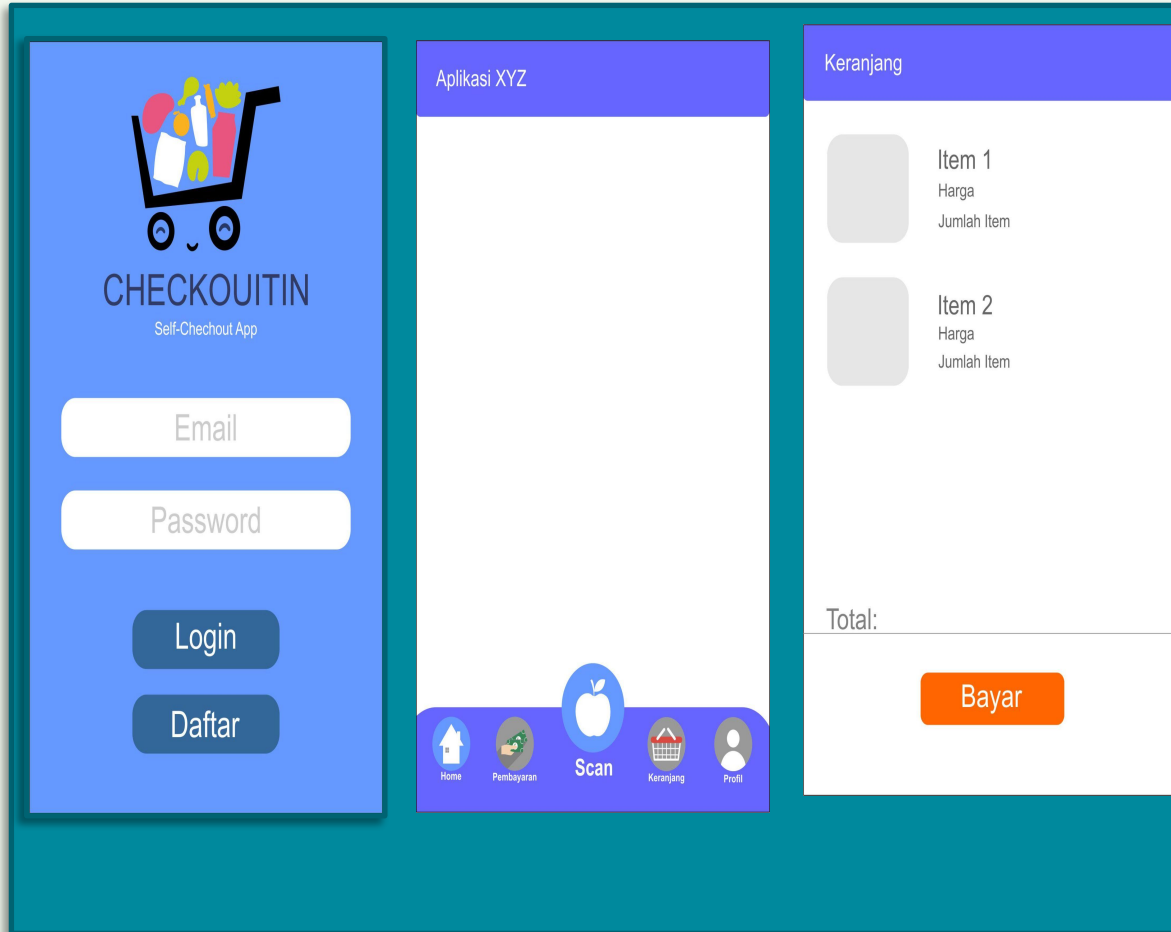


Source :
US, Global

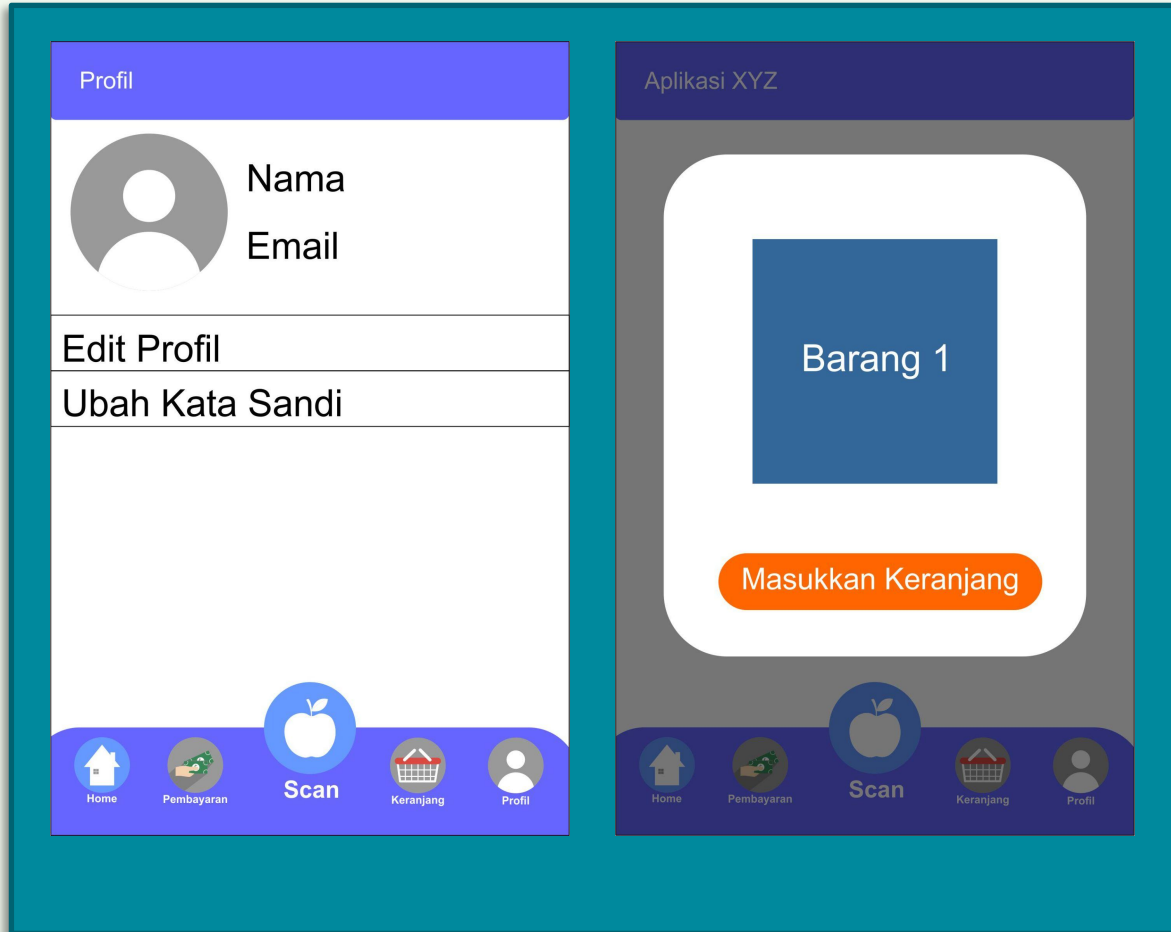
Introduction our program



- We saw from the many queues at the cashier which resulted in customers being lazy to shop and wasting a lot of time at the checkout.
- The advantage of our Capstone project is that it can make time more effective because there are no long lines, making cashier's work easier.



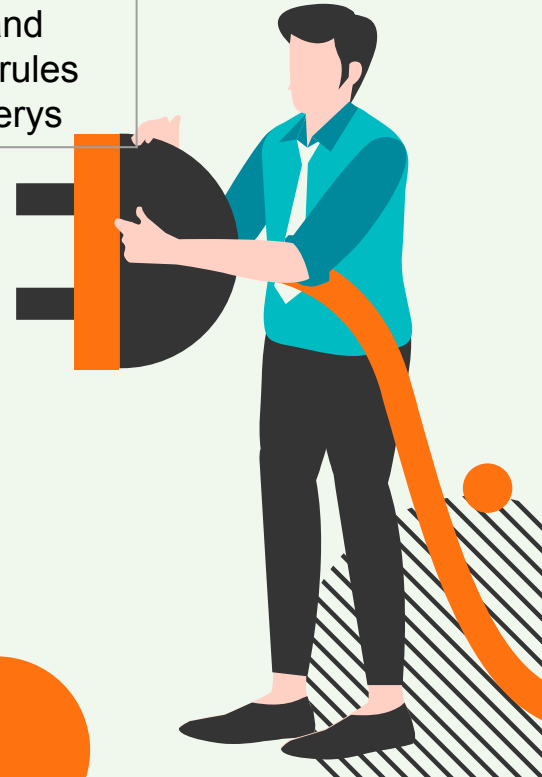
Our Application



Our Application

Our Target Market

Age Range	Profession	Roles	Specific
25-60	Owner of the grocery	Regulator & Stimulus	Who own and makes the rules of the groceries



Our solution for target market's problem

- + Driven by purpose, our team has a large number of people who spend time queuing at the cashier and there are regulations limiting the number of people in a supermarket or minimarket. so our app can boost time effectiveness and can reduce crowd



Our solution for target market's problem

- + From the data when panic buying occurs, there is a significant increase in buyers and of course results in long lines at the cashier. so our application has a solution to solve the problem



Source :

https://www.unisbank.ac.id/ojs/index.php/sen_dj_u/article/view/8039

Our solution for target market's problem


- Based on Government Regulation no. 21 of 2020 concerning PSBB in the Context of Handling COVID-19, PSBB Rules (Large-Scale Social Restrictions) from the government that limit the number of minimarkets/supermarkets



Source:
PP no.21 Tahun 2020



Our solution for target market's problem

- 
- Stakeholders who benefit from our apps include:
1. Can ease the work of cashiers and reduce payment queues
 2. Can prevent long queues and can increase sales profit



Source :

Comparison to similar apps

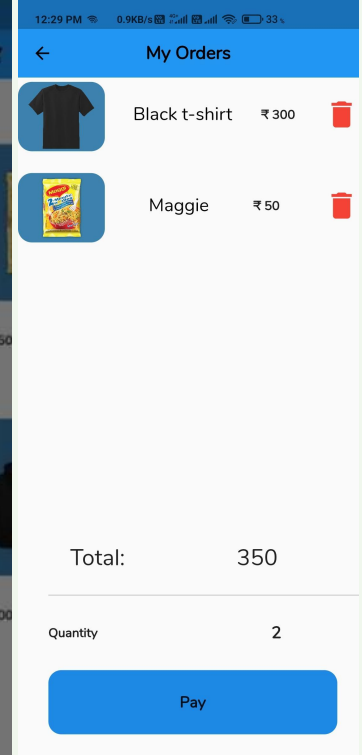
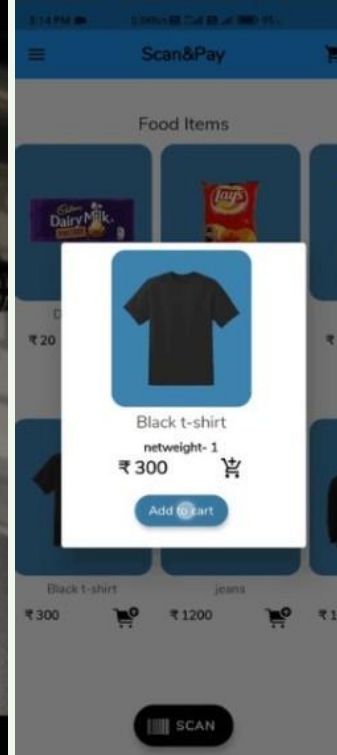
There are other product vs Our solution



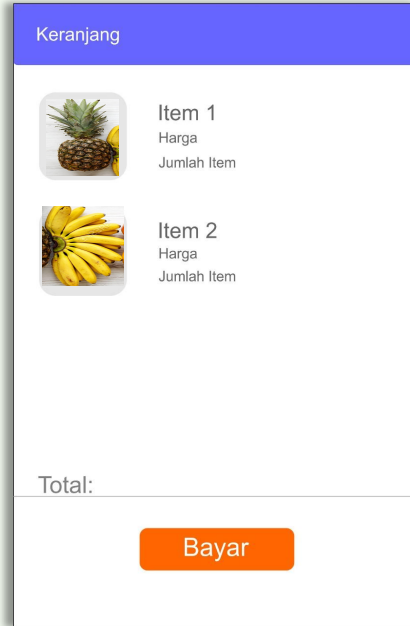
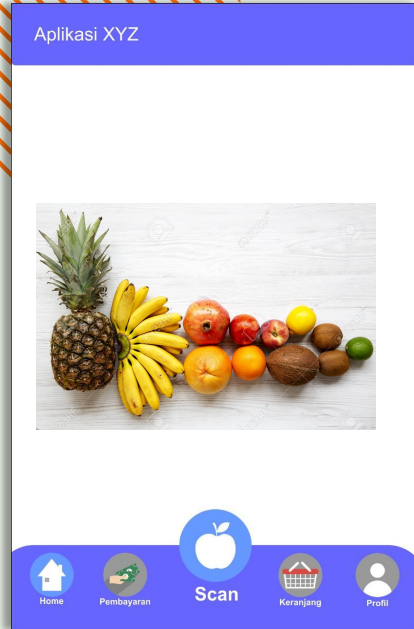
Comparison

Existing Solution

Other solution only use Barcode to analyze the description of Product



Comparison

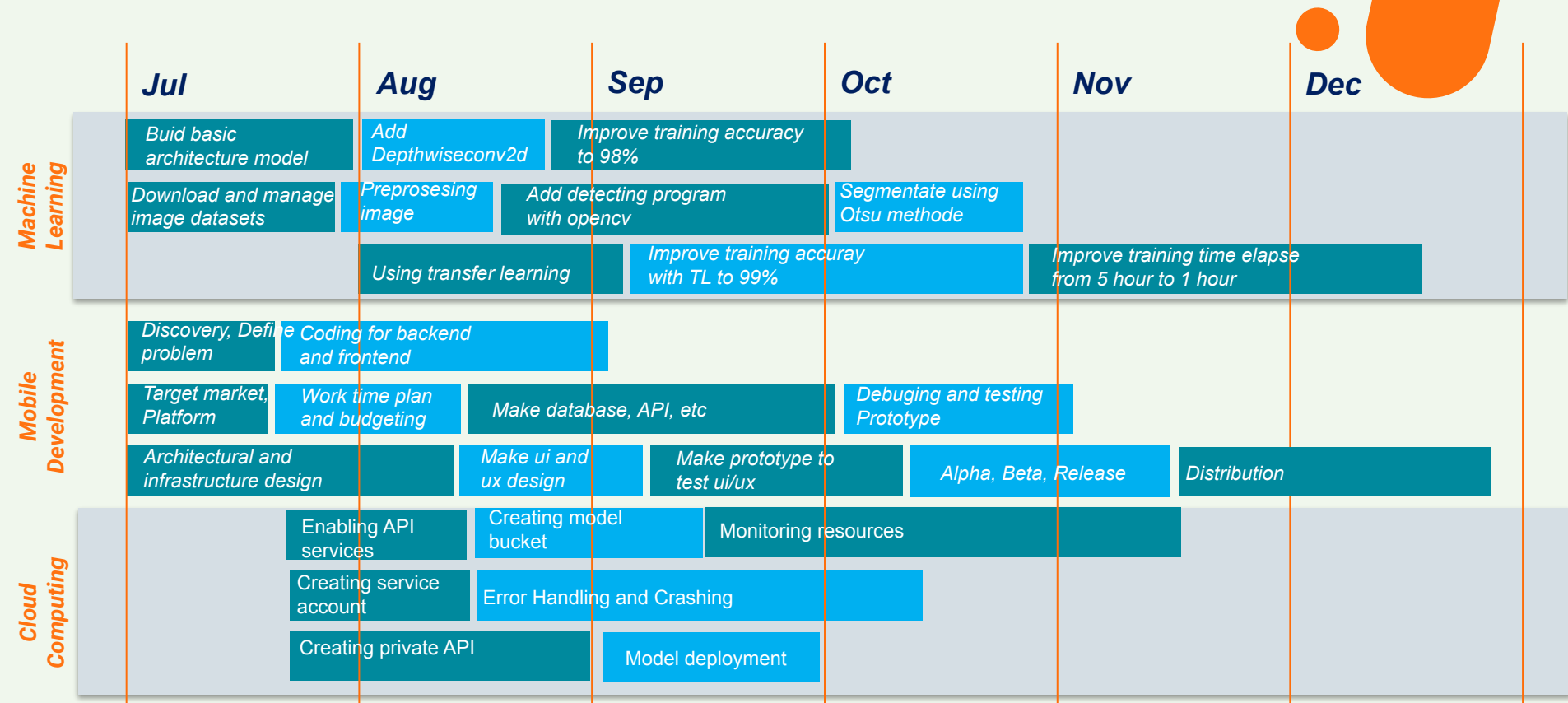


Our Solution

Using Object Detection
Algorithm to extract
image feature to get
Product description

Our Roadmap

2021



Local Deployment

Timeline	Roles	Budget (max) in USD
Early July - End of July	Market Research & Analysis (Observation ,Questionnaire & Market Analysis)	\$1.000 / Rp14.000.000
Early August – End of September	Research & Development, Production (Other Design, Improvements, and API Services)	\$1.000 / Rp14.000.000
Early October – End of December	Advertising, Operations and Maintenance with Cloud Services	\$1.500 / Rp21.000.000
July - December	Other (Team Salary, Electricity, Internet, Transportation, and Taxes & Legalities)	\$2.500 / Rp35.000.000
TOTAL		\$6000 / Rp84.000.000

Our *Milestone*

CAPSTONE
START

ADMINISTRATIVE

complete the
administrative
process

PRODUCTIONS &
IMPROVEMENTS

Development
on UI, Model

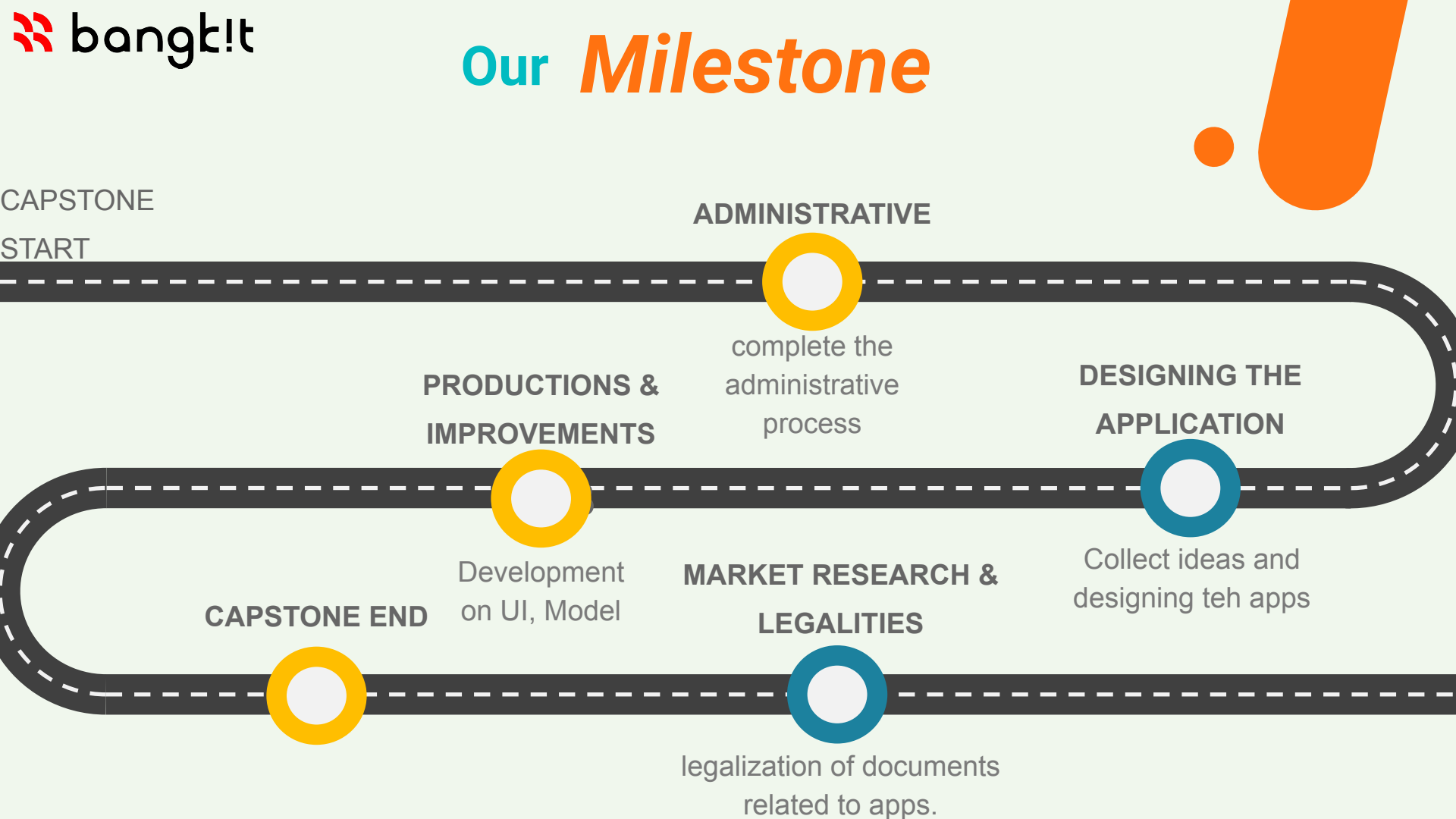
DESIGNING THE
APPLICATION

Collect ideas and
designing teh apps

CAPSTONE END

MARKET RESEARCH &
LEGALITIES

legalization of documents
related to apps.



Budgeting -1- @5000 USD

Category	Propotions	Budget (max) in USD
Team Salary	30%	\$1.000 / Rp14.000.000
Operational		
1. Renting Cloud Service		
2. Productions		
3. Reaserching		
4. Surveys		
5. Transportation, Electricity and Internet	100%	\$1.000 / Rp14.000.000
6. Advertising		
7. Paid Experts, Observer and Respondens		
8. Legalities Regristation		
9. Taxes		

Budgeting -2- @10.000 USD

Category	Propotions	Budget (max) in USD
All aspect covered in Budgeting	50%	\$5.000 / Rp70.000.000
Additional for Team Salary	15%	\$1.500 / Rp21.000.000
Additional for Research/Ops	20%	\$2.000 / Rp28.000.000
Marketing and Sales	20%	\$2.000 / Rp28.000.000
Market research competitive analysis	10%	\$1.000 / Rp 14.000.000
Future Development/R&D	20%	\$2.000 / Rp28.000.000
Other Expenses (taxes, reserves)	10%	\$1.000 / Rp14.000.000

Sustainability Source Income



Maintain Service

Business partners will be charged regular product maintenance fees upon request



Customize Service / Products

Business partners who wish to customize the service according to their taste will be charged



Upgrade Cloud Services

Business partners who wish to increase the amount of cloud storage to store more will incur a fee

Based on the 5k/10k USD Budgeting, expectations are

6 Months Development

Ready to use API for grocery store product **differentiation** services. and ready to use automatic camera as one service and deploy for android

12 Months Development

Ready to deploy **android** apps for all groceries. Including proposal to develop in business company