



# BUILD ON

## PHILIPPINES 2021

BUILDING YOUR FUTURE

# CHALLENGE STATEMENTS

# Things to note

- Register for the hackathon [here](#) and await for us to contact your team leader. Challenge statements are on a first-come-first-served basis, please register early to avoid disappointment. When a challenge statement is fully subscribed, your team can no longer select it during registration.
- More info will be shared via email on the proposal template and details for submission. If you didn't receive the email, check your junk/spam folder.
- The top 6 teams per company will be [shortlisted based on their proposal](#), to proceed onto prototype development. Regardless if the company has provided 1 or 2 challenge statements, the company can only pick the top 6 teams who worked on their statements, for e.g.
  - Challenge statement A (1 team); Challenge statement B (5 teams)
  - Challenge statement A (3 teams); Challenge statement B (3 teams)
  - Challenge statement A (4 teams); Challenge statement B (2 teams)
  - Challenge statement A (6 teams)
- Subsequently, we will add your team members into the Slack channel for mentorship. You can discuss with your mentors if you require additional help/time from them. The top 6 shortlisted teams will also be provided with an AWS exclusive SWAG box.
- After 2 weeks of prototype development, you will be doing a live pitch against the other 5 teams in the Company Finale. You will be evaluated against [this set of judging metrics](#).
- Additional prizes and internship opportunities may be awarded by the individual companies at their own discretion.
- All hackathon participants will receive a certificate of participation.

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## AIDE

### Challenge Statement #1

#### Healthcare

For the past year, we have seen a behavioral shift in people's activities due to the COVID-19 pandemic. People work remotely from home, have food and goods delivered, and refuse to go to hospitals and clinics due to the over-capacity of hospitals or for fear of contracting the virus. This has resulted in the emergence of all types of health tech platforms in the country with services such as telemedicine, e-prescription, and medicine delivery. Despite the growth in the market, the penetration of these apps remains at 40%, most of which have users concentrated in Metro Manila.

Given the current climate of the health tech industry, below are the challenge statements of AIDE:

- a. With all the health tech platforms saturating the market, how can one constantly innovate and what innovations must be done in order to maintain constant and steady relevance to its users? What features of a platform may be introduced in order to set it apart from other platforms and target potential users who have yet to use health tech platforms?
- b. Since the health tech platforms are concentrated in Metro Manila, how do we extend the reach of these to rural areas to provide health tech solutions to those in need, taking into account the high development cost of expanding a platform's reach?
- c. What opportunities can be explored with local government units to extend health tech solutions to our localities?

[Find out more about AIDE here](#)

## Challenge Statement #2

### Healthcare

As the COVID pandemic has dragged on and is threatening to extend further, cities, municipalities, provinces, and countries struggle to meet the healthcare demands and supplies are scarce. Hospitals are running out of basic supplies such as oxygen, PPE, equipment and even rooms for the patients afflicted with COVID. Government and health officials are finding themselves having logistics dilemmas. What can be done to improve coordination with sources of these supplies, including aid from other locations to speed up the distribution? What can be done to solve the issue of space and patient monitoring when hospitals are full capacity?

[Find out more about Cognizant here](#)

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## Challenge Statement #3

### Inclusive Society

The United Nations Sustainable Development Goals 10, 11 and 12 calls for reduced inequalities, inclusive resilient cities, and responsible and sustainable consumption. One of the best ways to achieve them together is to enable a city-level community sharing and caring model which enables easy and safe sharing of knowledge and resources. This could be sharing of resources such as clothes, toys, books, food and doing so easily, with minimum transport cost with those who need them. Similarly with volunteering time, talent, skills - help with studies, help with understanding digital applications, buying groceries, etc.

To summarize, Philippines has a lot of volunteers, donors and others who want to share or provide help in different ways while there are many others in different categories who require support and help in multiple ways. There are challenges connecting the people who need help or resources with the set of people who can provide timely help and resources based on location, availability, nature of assistance required etc. We need to develop a system that can help connect multiple stake holders and at the same time avoiding misuse.

Propose a solution which enables easy, safe, low-to-no-cost sharing of time, resources, services and skills so that we build thriving, sustainable communities.

[Find out more about Cognizant here](#)

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## Challenge Statement #4

### Fintech

The COVID pandemic has forced Filipinos to adapt new ways of transacting for their everyday needs. GCash has enabled millions of Filipinos to do this seamlessly and securely in these trying times. However, as a financial institution, GCash is duty bound to protect customers against fraud and it also has to comply with the legal framework established by the Anti-Money Laundering Act (AMLA).

Part of the way these are enforced is through the mandatory Know-Your-Customer (KYC) process, where users and customers are required to submit a minimum set of data to validate their identity. Traditionally, this is done through a face-to-face process but given the current climate, this is difficult. It is also a challenge to maintain standards and consistency in the field through this approach.

Digital KYC is an alternative that has gained some degree of acceptance. However, it possess its own unique set of challenges.

- 1) It now becomes easier for would-be fraudsters to create fictitious identities;
- 2) manually validating each entry can become a costly in terms of time and resources at scale and;
- 3) the process would need to be as intuitive as a face-to-face process.

How can you design a solution that ensures that customer identity verification is accurate, secure, frictionless and cost-effective? Participants can use a variety of approaches -- ranging from probabilistic / statistical models, rule-based engines, biometrics, image analysis, social network (peer) validation and machine learning. Participants are also free to imagine their own approaches to solve the problem.

In summary, how can we ensure that customers can't create duplicate identities within GCash in an effective and cost-efficient manner?

**View the optional Technical Brief in the next slide >>**

[Find out more about GCash here](#)

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## Optional Technical Brief for GCash's challenge statement

Can you detect duplicate KYC applications in real time?

Build an API that will take as input user details (first name, last name, address, email address) and a selfie. The API should return one of the following responses:

- **ACCEPT:** This returns if the input details are not a potential duplicate in the existing user database
- **REJECT:** This returns if the input details are a potential duplicate (not necessarily exact).

A user may take another selfie with slight variations like different backgrounds, lighting, poses, glasses, masks, etc. Your API should detect these variations and correctly predict that this selfie belongs to an identity already registered in the database.

### Why is this a hard technical problem?

- **For data scientists**, the challenge is to create an accurate model that minimizes false positives (model predicts application is a duplicate, but is in fact not) as well as false negatives (model predicts application is not a duplicate, but in fact, is). This requires knowledge of image recognition algorithms and natural language processing.
- **For software engineers**, the challenge is to build this at scale with minimal latency. The system must return within X milliseconds of querying across a massive data set (we can provide an artificially large data set). This requires knowledge of efficient data structures and algorithms (e.g. nearest neighbor search, indexing, algorithmic complexity).



### What data or resources would competitors have access to?

- Participants would have access to a synthetic KYC training data set (fake names, profiles, and faces) provided by GCash (can use open face datasets like [VGGFace2](#)), hosted on [AWS S3](#)
- Participants can train their face detection models using [Amazon SageMaker](#), a machine learning platform. Alternatively, they can use [Amazon Rekognition Image](#) for their image recognition models.
- To maintain fairness, all participating teams would have access to the same resources (no team should have access to more powerful instances in their production deployments than other teams)
- Participants can render their API using the [AWS API Gateway](#)

### How will we choose the winning team?

- From the outset, we'll withhold a test data set, which we'll run through every competitor's system.
- We will score them along two dimensions:
  - Test model F1 score: A combination of model precision and recall
  - API latency: Average milliseconds per response
- The teams with the highest model accuracy and lowest API latency win

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## Challenge Statement #5

### Digital Asset Management

Organizations nowadays are going digital as we shift to remote working set-up. As company assets are being brought home by employees, tracking and maintaining it have been a great challenge. Maintaining confidential files and making sure that data stays within the company issued devices have also been a great security concern.

Challenge Statement: What solution are you going to introduce to promote automation for asset management. Provide a solution for an easy to use, reliable, and secured asset management for both employer and employees.

[Find out more about VBusiness here](#)



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## Challenge Statement #6

### Virtual Malls

In the midst of the new normal, more businesses are getting interested on how they can leverage on the power of cloud and integrate it for their business. Retail stores are looking for ways on how they can satisfy customer experience and innovate product promotions digitally.

Challenge Statement: As more businesses are driven through online transactions, this caused a shift on how traditional businesses are being done. What solution can you provide to promote a smarter retailing solution that can aid retail businesses in transitioning their operations online?

[Find out more about VBusiness here](#)