

Epidemic prediction and notification triggering system

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Problem

Since the first nCOV-2019 case was identified, current government and open source models were unable to predict how far this new virus can go (how severe the situation can become).

A lot could be done if we would have known the potential severity of virus beforehand. Prediction is vital in early stages of epidemic breakout.

Our idea

Our idea is to build a model that can predict the potential severity of situation once a new epidemic case is confirmed.

Based on the predication result, the model will determine the expected transmission dynamics of epidemic and identify potential need of supplies. Thus it allows the user (e.g. Epidemic predication team) to send notification to relevant institutions (e.g. Hospital, factory, logistic center, airport, social media, etc.).

Prompt action allows prevention of a pandemic.

Predication model

R₀ factor

Average number
of other people
who get infected
by one patient

Geographic Level

previous history
and
vulnerabilities of
epidemic origin

Population dynamics

The most
frequent flights,
trains, buses
from epidemic
city

Medical Supplies

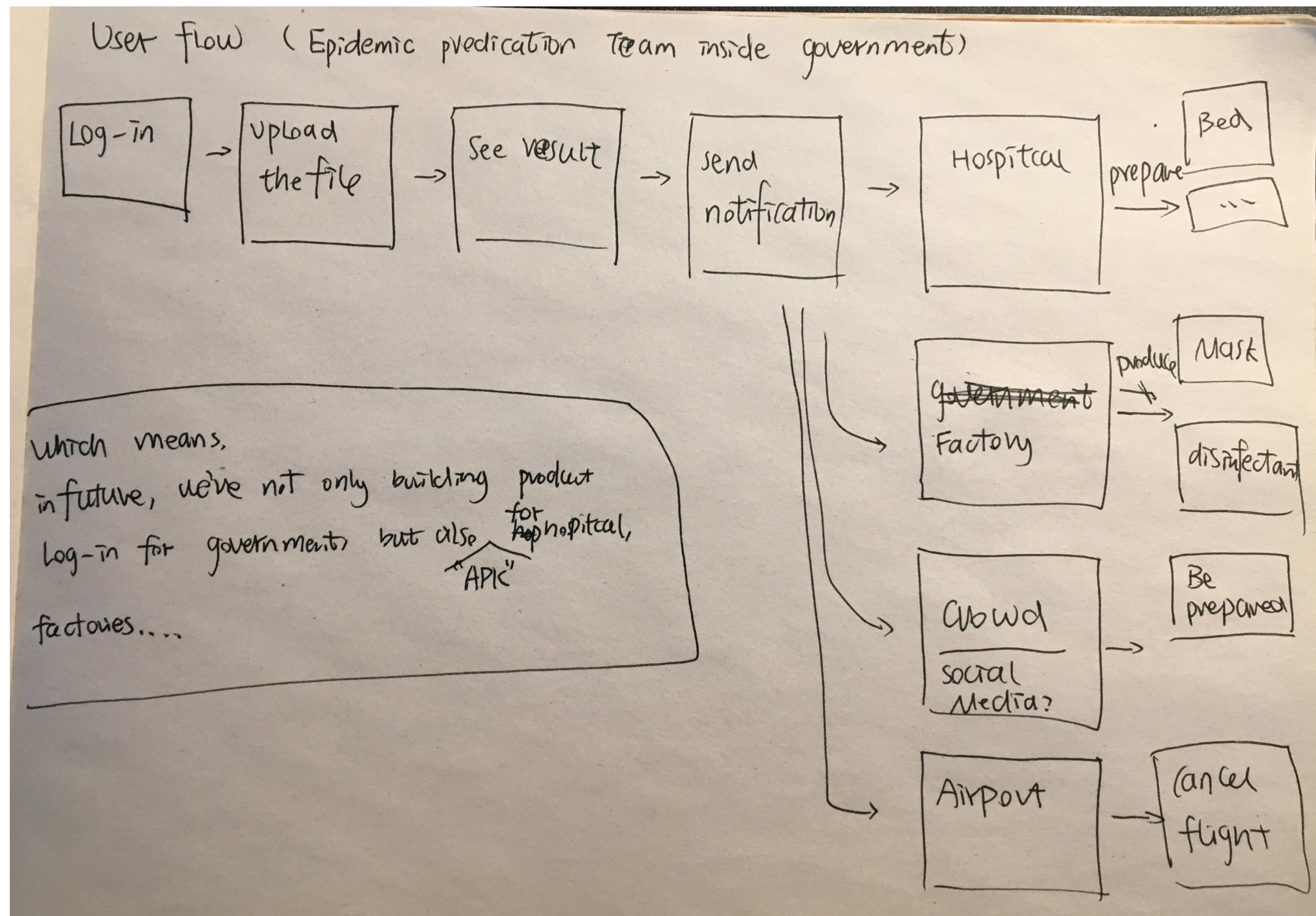
Required amount
of medical
supplies (masks,
emergency kits
etc.)

Business model

Prevent government's loss in epidemic era.
China is losing millions of dollars each day
due to epidemic. If we have prediction system,
we could have avoided loss.

Client's loss is prevented, our revenue is generated. This model
can be replicated for many other countries.

User journey



User flow

The user flow consists of the following screens:

- Dashboard:** Shows R0 factor (---), Geographic Level, Population dynamics, and Medical Supplies. Buttons: "Later" and "Upload".
- File Upload:** Prompt: "Upload the virus code now so you can see the result". Buttons: "Later" and "Upload".
- Statistics:** Infection rates: 20% (Samiliar with SARS), 10% (Samiliar with MARS), 50% (Samiliar with Conrona).
- Dynamic Map:** Placeholder for a map.
- Population Dynamics:** Data: 20% (Most frequent flights), 10% (Trains), 50% (Buses). Sub-sections: City population, Epidemic vulnerability level, Epidemic sensitive facilities, Season of the year, Prediction severity based on season of the year, Next vulnerable cities, Next Vulnerable countries.
- Medical Supplies:** Counts: 17,7778 (Masks needed), 17,7778 (Disinfectant needed), 17,7778 (beds for inpatient). Placeholder: Any other needed emergency kits.
- Emergency Facilities:** Placeholder: A drop drop-down menu to allow user to select hospitalcal, factory, logistic center, airport, hotel, donation Centers, free Volunteer Clinics and social media;
- Notification Success:** Message: You have sent the notification successfully. Buttons: "Okay" and "See the responses".

Design

The screenshot shows a dashboard interface with the following elements:

- Top Bar:** Includes a "Logo" button, a "Search" bar, "Current location: Shanghai", and several icons for notifications, settings, and file operations.
- Navigation Tabs:** "R0 factor", "Geographic Level", **Population dynamics** (which is selected), and "Medical Supplies".
- Statistics Cards:** Three cards showing percentages of different modes of transport:
 - 20% Most frequent flights
 - 10% Trains
 - 50% Buses
- Text Content:** A large block of bold text listing various epidemiological metrics and predictions.

Population dynamics:

City population:

Epidemic vulnerability level:

Epidemic sensitive facilities:

Season of the year:

Prediction severity based on season of the year:

Next vulnerable cities:

Next Vulnerable countries:

Demo

Please refer to the video demo.

Our customer

Asia

China, Japan,
Korea, etc

South-East Asia

Bangladesh,
Thailand,
Vietnam,
Philippines,
India, etc

Middle East

Dubai,
Saudia Arabia,
etc

And Europe
& US
countries

Our team



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**Muhammad
Ashfaq**

Software
engineer

**Muhammad
Shahzad**

Electrical
engineer

**Abdul
Gaffar**

Machine
learning
expert

**Muhammad
Arif**

Doctor,
MBBS

Leona lee

Digital
product
designer

New member

Micro-biology

What's next

Finish the platform, find the team member
who's an expert on Micro-biology and train
the comparison model;

A woman with dark hair and glasses, wearing a light blue lab coat, is looking intently at a test tube containing a yellow liquid. She is in a laboratory setting with other equipment visible in the background.

Thank you!