--- Wenxi (01:51:56)

Good morning, everyone! Today, we are going to introduce us and our application, we hope that you will enjoy. We are a group of UCL students interested in data science, machine learning, AI and entrepreneurship, and want to do some big things. We wish to use our knowledge to make people’s lives better, so we start this company, Dot.

At this stage, we are a 5-member team including marketing manager, Miranda, data analyst, Calvin, mobile application developer, Didar, Business development manager, Claire and CEO, Wenxi Zhao.

And we believe that in the future, this team should become a much stronger one.

Have you ever experienced any crime? We know that at least one in two people in their life experienced it, and we are trying to reduce this number.

In this era, with the huge gap between the rich and poor, even there are a lot of laws and regulations about the protection of our life and property, crimes happened every day in the world. On the one hand, **you can see from these data,** in the world, the average number of the homicide happened every day is about 437,000, and the average number of burglary happened daily is 4.62 million, can you imagine that the crime rate is still so high in today’s world? On the other hand, it is always complicated and not convenient for people to report crimes to the police, and it will take a long time to record personal information and detail of crimes. So what we can do to protect the safety of people’s life and property?

We built a mobile application, Crime Point, which allows users to check the level of danger in different areas and report about any crimes by texting and sending photos directly. In the first phase we decided to concentrate on NYC, especially in Manhattan.

My teammate, Miranda, will explain why we choose this area and will provide market analysis.

--- Miranda (2:30:09)

Thank Wenxi

1. **Firstly, let’s consider** the market itself.

The reason why we choose NYC is because of the large potential market.

It can be seen that the population of NYC is about 8.6 million people and about 60 million travelers every year.

Moreover, as you can see in heatmap, the crime concentration ratio of Manhattan is high. Therefore, Manhattan was chosen as the first launching point for Crime Point.

By data from statistics we can see that 88% of all people use Android mobiles OS, that is why we first focused on it. Later we can develop application on iOS as well.

1. **Secondly, t**he target customer will be segmented in this section.

The potential customer segment is everyone in Manhattan, but we decided to make priorities on specific population that are most likely to use our app.

Figure shows the rate of crime victimization by age group in Manhattan. It can be seen that people from 18 to 34 years old are more likely to be violated.

This figure presents the percentage of smartphone ownership by age group in the US. It is obvious that people from 18 to 49 years old have larger smartphone penetration.

Therefore, the prioritized target customer can be determined as citizens and tourists from 18 to 49 age group by combining the highest crime victimization rate and smartphone penetration.

1. **Finally, I’ll talk about existing market players**

Main competitors in the market are SpotCrime+, Citizen and Self-Evident and as can be seen Citizen is the market leader.

Let’s talk in more details about advantages and disadvantages of our competitors.

Obviously, the existing market players have **first mover advantage.** They have already accumulated a large number of users and capture the big number of users.

The existing players have user-**friendly application and** unique **advanced features**, such as Live Video.

The weaknesses of competitors that they are provide only general crime prediction.

Based on this market research and we decided to focus on Manhattan, and also, after analysis of rivals’ prons and cons we decided to make a better product.

Let my colleague, Didar, to introduce the product.

--- Didar (2:04:18)

Thank you, Miranda.

Slide 1

Let’s talk about “Product” in more details. As was mentioned before, we decided to make mobile application for Android operating system.

Application has user-friendly interface and allows users to see the level of crime in different areas of the city based on personal user’s data. Firstly, users have to register using special window and provide some personal information such as Full Name, Gender, Email, Age, Race and Citizen number. Then based on these information, application calculates the level of risk in specific area and time of day. As you can see in the left side of slide the level of risk in area close Bar named “Pitti” is 3.9 out of 10.

Additionally, through the application users can report about any crimes close to them. Application already knows user’s personal data and location, so users have to just send some photos if exist and provide short description. Then application will send this information to closest responsible police station in order to tackle it.

Slide – 2

Application was developed using Android studio. Most developers agree that this IDE is one of the best for Android development. As programming language, one of the popular and highly developed language, Java was used. All Analytics part was done using Python programming language.

As back end for mobile application we decided to use widely recommended Google Firebase. Firebase provides a lot of opportunities for easy authentication, real-time database, cloud storage and messaging, monitoring and tracking tools. All these mean that as a team we don’t have to worry about application backend and we can fully focus on Product improvement.

Slide - 3

In this slide we want to say that our mobile application can be easily scaled, we just have to pay cheap Google’s infrastructure costs per use. So, user operating time, or in other words, speed of app, will be the same for 10 users or for 1000000 users.

Now, my teammate, Calvin, will tell more about Data Analytics part

-- Calvin (2:30:27)

Our data solution is really robust and reliable because we have check points and stages for us to make sure that the prediction for level of crime is correct. As dataset we used data provided by the US government in NYC Open Data portal. The problem with this dataset is missing values and spelling mistakes. Firstly we cleaned the data using different approaches, such as multiple imputation, KNN method. After that, we visualized the data to confirm the trend and values of target variable. Subsequently, we utilised our domain knowledge to adjust the features. Then, we trained, verified and then tested the data to ensure the model is robust. Finally, we created the prediction model for the crime count.

In order to understand the data trends, we visualized data:

As you can see on these two figures, we can see that

* Fri > Sat > Week days
* Mon, Tue are the safest
* 06:00 - 12:00 is safe
* 15:00 - 21:00 is dangerous

Additionally, we checked crime types and age groups. It can be seen that in the type of robbery, the count for female is higher than male and is much higher than other types.

* Assault Male>female
* Sexual offence female>male

For the prediction model, we considered different types of model, including LSTM, RNN AR, MA and so on.

In fact, LSTM is the most robust one but it is expensive too. The AR and MA are the simplest ones but we might lose in the accuracy. So, for the balanced choice, we decided to apply ARIMA for the model in this application.

Next, welcome Claire to tell about Strategy

-- Claire (2:26.76)

Thank you, Calvin. The short-term and long-term strategies of Crime point are developed from 3 perspectives.

**Firstly, Because of the highly competitive environment in the mobile application industry, and the great number of substitutes of crime-prevention mobile applications in the market, we will implement the quick response strategy to gain consistent competitive advantages.** The research and development of CP will develop new innovative features continuously, based on consumer demand. For example, in Phase 2 of the development plan, a victim community for victims of crimes to contact and support each other will be built to increase user engagement. In addition, R&D will also work with the end users to improve the design of the app and understand user experiences to achieve good ratings.

This strategy allows instant adaption to technological changes, changes in laws and regulations and social cultural changes.

Secondly, **a differentiation strategy is adopted to stand out from our competitors.** Crime ratings and notifications are shaped according to individual demographic characteristics to provide users a sense of uniqueness.

Also, according to the market research, none of the competitors aggregate features like in-app crime reporting, crime rate prediction report and notification of crime events nearby in one mobile application. CP synthesised these features to deliver a more comprehensive crime prevention mobile application. It follows the idea that customers prefer to have one mobile application that does everything rather than several mobile applications that have different features.

Thirdly, **Crime Point prioritise and focuses on a specific market and customer segments.** As Crime Point is a new entrant to the mobile application industry, we are going to adopt a soft launching strategy. CP will first be launching in Manhattan to identify bugs and improve features early in a specific market in preparation of hard launching in a larger market as CP. That is to say, CP can understand more about market, pricing, costumer demand in this stage. Hence, we can concentrate all the resource we have to compete against our competitors in this stage.

In the long-run, we are going to gradually expand customer coverage to all cities in USA and users with iOS devices.

**Next, I am going to talk about STRATEGIC ALLIANCES AND PARTNERSHIPS (1:10:96)**

CP will form partnerships with the government in the future in order to decrease the level of crime in general.

CP will also form a long-term partnership with The National Center for Victims of Crimes as this website act as a complement to CP. It is a non-profit organization focused on helping victims of crimes to rebuild their lives. It helps CP to target straight on the customer segments of crime victims, and in turn their families and communities to achieve the maximum purpose and downloads of this mobile application. Meanwhile CP helps preventing crime and act as a mental consolation for crime victims to release their fragile mind caused by crimes to live as normal people.

I will pass back to our CEO, Wenxi, to explain the monetizing strategy.

-- Wenxi (1:25:47)

Thanks Claire.

Here is our business model, we plan to profit in this way. Our app is totally free for end users which will attract more people in the first phases. The monetizing strategy is based on providing users with personalized advertisement. We are not going to share our gathered data with third-parties because users privacy is our priority and we will do our best in this direction.

DEMO