



BUSINESS PLAN

Team name: Zaporozhye_teen

Members:

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Mentor:

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Product (application) name: AirNear
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Executive summary

Our business name Zaporozhye_teen

Location – Zaporizhzhya, Ukraine

We offer Mobile Application which show the map of the city with notification of pollution status in different regions of the city.

Mobile application is connected to the Cloud Database with the information about pollutions in different regions of the city. Information in the database is collected from ecological office of the City Council

We are interested at ensuring that people (residents of Zaporozhye and everyone who cares about ecology in the city) are informed about the current state of the air in different regions of the city.

The purpose of our plan is to launch this application in all industrial cities. To attract attention to the problem of the pollution.

Company description

The kind of business

The application is a social start-up. Our app is aimed at ensuring that people (residents of Zaporozhye and everyone who cares about ecology in the city) are informed about the current state of the air. We want everyone to think about the ecology in their city and betray this problem of greater importance. No one should be a passive participant in the life of the city.

Our company's mission statement

The amount of the pollution that is emitted in the air in Zaporozhye's area (193,7 thousands of tons in 2015) is 2,5 times bigger than normal. The only Zaporozhye's Thermal power station pollutes the air for about 103,2 thousands of tons in 2015.

Furthermore, there are some areas in our region which members regularly get doses of radioactive radiation. The most radioactive areas are Zaporozhskiy and Kamensko-Dneprovskiy that are full of radioactive substances such as strontium and cesium.

This sad facts had led to that the amount of malignant neoplasms is 376 cases per 100 thousand population (statistics for 2015), and the average life expectancy of the Zaporozhye population is 71 years. The government does not make efforts to correct the environmental situation in Zaporozhye, so we have decided to create an application that will show to the people the real situation of air pollution. The goal of the work is the development of a social application that will allow any mobile phone user to find out the current situation according to the state of our city.

Our mission is creating an application that will:

1. Pay public's attention to environmental issues;
2. Inform users about the current state of the city;
3. Help in making plans for holidays and other pastime;

4. Motivate the managers of industrial enterprises to invest more in the treatment facilities of the city.

5. Attract the capital for scientific researches in the area of ecology and purchase of modern equipment by enterprises.

6. To improve the quality of life of the inhabitants of Zaporizhzhia for the sake of reducing the statistics of mass fatal diseases.

The important people in our business and the roles they play

Important people in our business - deputies of the City Council; Mayor of the city; Heads of large enterprises of Zaporozhye. Also important are the users of the mobile application, who will influence the future destiny of the city straightforwardly.

An overview of what we plan to sell and who our market will be

We plan to establish contact with Google, because we use Google Maps to display problem areas.

A brief history of how our business was created

Our team is called “Zaporozhye_teen”. The name was chosen because of the following factors: firstly, we live in Zaporozhye. Secondly, we are enterprising teenagers who are ready to incarnate virtual thoughts into the real ones. Although we are studying in different schools, we have found some time to meet and to take part in such innovational for our country project. It is our first experience in this area, but we have put much effort to realize our ideas.

Mentor Elena Tabunshchik informed us about the Technovation project, and as a result, a group was formed that started creating a start-up. Joint work of three teenagers, students in different schools, contributed to the cooperation of our mothers.

Ann Shilo is 14 years old. She studies in 9-th form at Gymnasium 25. Her favorite subjects are Mathematics, Physics, English and Information Technologies. Ann enjoys painting, playing the violin and dancing. She is the winner of various regional and

international competitions in painting and design. At weekends Ann attends the Robot Engineering Club, where she designs robots from Lego MindStorms and develops the programs to control them.

Yevgeniia Kaminska is 15 years old. She lives in Zaporozhye, study at ZL “Logos” in the 9th form (Mathematics Economics). She has finished studying in the music school in the class of percussion instruments. She played in a brass band and in an ensemble and participated in many contests, performances, concerts. Also for six years, she has been studying at the art school. She likes drawing, creating handicrafts from different materials and she is interested in scrapbooking. She is fond of dancing so she is a member of a team "Phoenix" in Zaporozhye and has been taking part in contests and festivals for five years, participating in various master classes. But that is not all her hobbies. She is fond of photography: she takes photos of her family, landscapes, Zaporozhye’s architecture, take part in the Zaporozhye’s contests.

Daria Tabunshchyk is nearly 15 years old. She has many hobbies: playing the piano and the guitar, singing. Music is an important part of her life because everything is connected with it. She also like dancing, taking and editing photos, filming videos. Reading books, watching serials and films make her free time wonderful, but If she had to choose between serials and travelling, she'd choose the second one. Her life consists of studying and learning something new. She is not a person without developing myself. She also can't imagine her life without her friends and family, because they are the closest people whom she has.

What we want to accomplish in the immediate future based on the information in the rest of the business plan and your future goals

In the future, we plan to create not only an air map, but also a map of contamination of soil, water (the Dnieper River and its tributaries) and the location of the points of reception of used batteries, waste paper, plastics, items to be recycled, etc. The map of the water will not only indicate beaches for bathing, places for fishing, routes

for walks on the boat, but also places for the discharge of sewers to the Dnieper. We also plan to make a map not only of Zaporozhye, but also of other cities of Ukraine.

AirNear description.

In-depth description of our product/service, emphasizing the specific benefits to the customer

Our application are showing the map of the city and the locations of measuring stations. For each station there is put PIN on the map. We have measurements of different types of pollutions which are stored at the Cloud database. Our application connect to the database and show the pollution in the selected part of the city. Customer can also see the statistics for each measurement station for some period.



Figure 1. The Application Idea

The advantage for customers is that they can at any time open this application on their smartphones under Android OS and see the latest, up-to-date information on the state of air in the city. Users will be able to track the pollution in each area and following from this choose a place to rest.

An explanation of how our product/service has advantages over the competition

There are no analogue for Zaporizhzhya region.

Existing products mainly developed for concrete regions or use specialized additional equipment for measuring of the air.

Our product does not need additional equipment. We use information from ecological offices of the City Council and Google maps. So it can be used in any city of Ukraine. And as we use information from ecological offices we can show not only information about dust particulates but others such as phenol, formaldehyde, nitrogen oxide, nitrogen dioxide and any other specific for the industrial region.

Product development

A "brainstorm" method was used to identify the most critical problems of the city of Zaporozhye as effectively as possible. We examined various topics: health, proper nutrition, science and education, garbage, but settled on the topic of air pollution.

Tasks were solved by all team, but leading roles were distributed among the team members in the following way: Interface Design – Leading Zhenya, Software Development – Leading Dariya, Business plan development – Leading Anna, Video of product development – Leading Zhenya, Translation into English – Darija.

We made market research and we defined our customers and research main competitors.

We work on application solving such tasks as user identification, using location sensor, using google maps, connecting to the external database. As none of us has experience in software development before we chose AppInventor suggested by the Technovation team.

We developed paper prototypes (fig. 2) of our system and next draw and save storyboards with the help of SmartBoard.

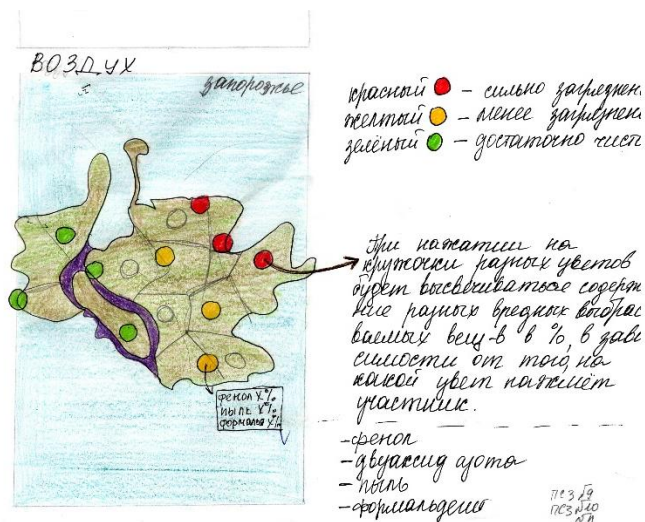


Figure 2. First ideas



Figure 3. Storyboard

When we start to implement them not in all succeeded, and application functions was a little modified.

We made demo video and pitch video.

Current stage of development product

Product is developed for 75%. . The user can get the current beta version after the Pitch-event, and at the moment the application passes alpha testing. Now we still need to improve our brand and some software functionality.

Information about how the product will be built and sent to the customer

Our team will continue working on the application. We need one more back-end developer for developing cloud database and collecting data form the different servers of ecological offices.

Our marketing strategy include distribution of the application through hospitals, tourist agencies, city council. We also will distribute it through social network.

Research and development activities that may lead to new products and services

To add information about soil and water state we need research on which harmful pollutions are critical for these natural resources.

We need to update our database with this information. We need connection with offices responsible for water and soil.

In addition, application can be improved by detecting user (and his/her family) current location and sending an alarm notification if state of pollution is critical.

Market analysis

Our key competitors

The most common solution are gadgets, the essence of which is to measure the contamination in a particular place. Nevertheless, it is expensive and in terms of functionality is inferior to our application, because less convenient and shows information. In addition, there are web-sites of ecological departments.

Further, we will describe following projects: Almaty Urban Air, Dylos DC-1100 PRO, Lapka Personal Environment Monitor, Fairyland FH20, PiMi, Atmotube, AirBeam.

How our mobile app will perform

Our product allows you to receive information from various sensors, and any mobile application user has access to this information 24/7. In contrast to competitors, which allow you to know the state of the air only in place location of the user, our application allows you to find out the situation in different areas simultaneously and accordingly plan the movement around the city, purchase an apartment, rest on the street depending on the data received. Competitors are posts of environmental measurements.

Mobile application connect to the database and get information about air pollution in the different regions of the city.

Information is presented first as a list of measurement stations, next user can choose or to show location on the map or to show the list of harmful particulates in the air and their level. Also statistics for the week, month and year and be provided for the user.

Customer research

Our customers are people who are worrying about ecology of the city and organizations whose profit depends on the pollution in the different parts of the city. The

main customer is City Council as their main role is to make city more attractive and improve the level of life of the citizens of industry city.

Such organization as hospitals and estate companies can suggest our application to their customers when they choose the place of living. Schools and sports organization can monitor the air pollution to limit outdoors exercises when the level of the harmful elements are critical. All our customers are depicted at the picture.

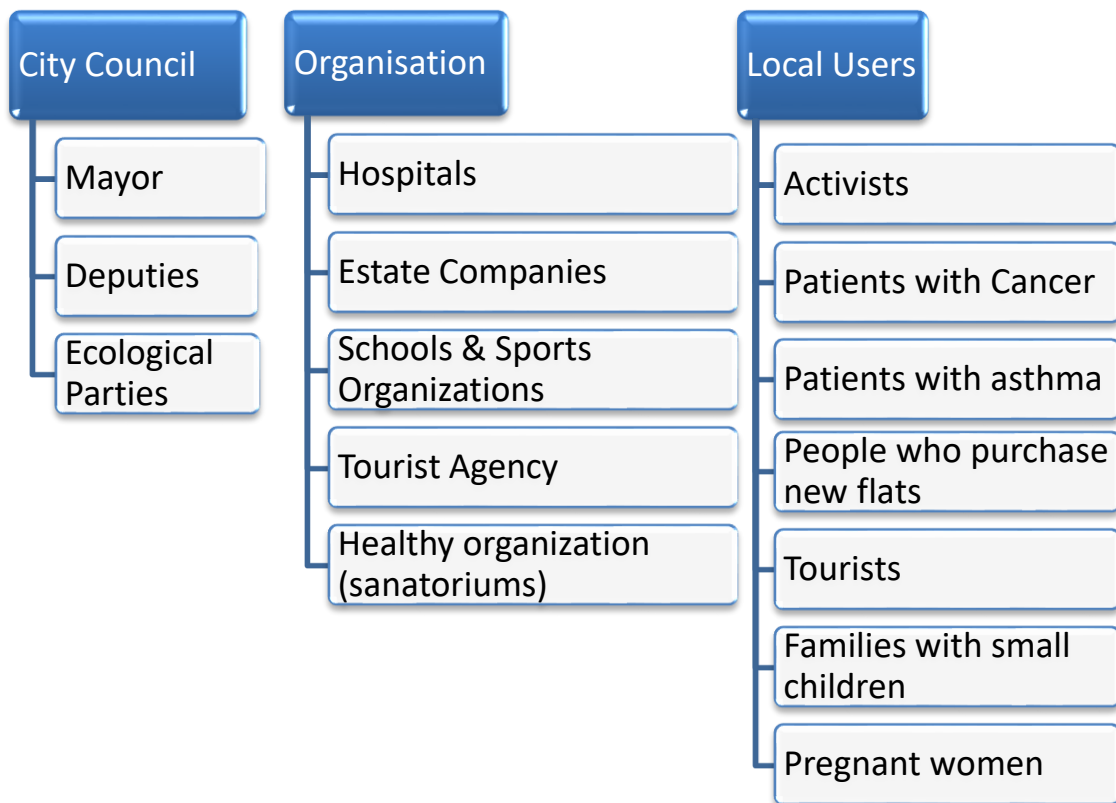


Figure 4. Customers research

Competitor analysis

Application Almaty Urban Air: Users of iPhones and Android OS have opportunity to learn the level of air pollution of Almaty. Application shows the air condition and give advices if customers should stay at home and limit their stay in the open air or to go for a walk outdoors. The project appeared as web-application almatyurbanair.kz, which depicted the level of PM10 (particulate matter), small parts of dust in the air size of 10 microns. The available concentration of it is 60 microgram per cube meter.

The weakness that this application depicts only the level of PM10, when our application will show different harmful elements concentration.

Dylos DC-1100 PRO – laser scanner which calculate the number of dust particles in the air. It can detect two types of particles: small (bacteria, mold etc.) and big (pollen). Information about both types of particles are depicted on the LED display. The device can collect the statistics about concentration changings and safe results during the month. The price of Dylos DC-1100 PRO is near 90 USD.

The weakness of this device that it's serve only locally and not connect to the internet so you need to pay for it if you want to know the state of the air near.

Lapka Personal Environment Monitor – it is the set of sensors for iPhone. You need to install application, which contains available parameters for different environment (flat, plane, street) with which you can compare the current measurements. Gadget can analyze the humidity, radiation level, the amount of nitrates in fruits and vegetables, as well as electromagnetic radiation. The price of Lapka Personal Environment Monitor - is 90 USD.

The weakness – it is only for iPhones, its required additional costs for set of sensors.

Fairyland FH20 – device that analyze the existence in the air Vapors of phenol-formaldehyde resins that can be drained with furniture, plastic products, parquet, paint, glue. It's constantly monitor the air and warn about critical values. It's also contains temperature and humidity. The price is Fairyland FH20 – near 90 USD.

The weakness is that is separate device which measure air pollution only near it and it doesn't contain access to the internet.

PiMi – it is a device which use not laser sensors but optical. Because of it needs additional time for light adjustment. The device show the level of particles in the air - dust, bacteria, pollen, etc., as well as temperature and humidity. Information is

synchronized with smartphones under Android and iOS. Application can compare the values received by other people, so with the help of it the map of pollution is created.

Weakness – it is working only in China.

Atmotube — small personal advisor. The device measure the level of harmful particulates, temperature, humidity, air composition and update it in the real time. The device can detect - carbon monoxide, acetone, formaldehyde and a dozen other substances that it is better not to breathe. The price is 100 USD.

The weakness of the product that it is additional device and show air condition only in the location near customer.

AirBeam fixed the level of pollution in your region and send data to the smartphone. AirBeam monitor the ecological situation in the real time. The device fix the level harmful particulates and upload it to the internet with the location of them on the map. Start-up ran on Kickstarter platform and device was sell with price 200 USD.

The weakness is that the local device is also required.

Air Quality Monitoring Stations – web-site for monitoring and depicting Air Quality Index in Europe, Asia, North and South America, Australia.

Weakness – it is`n't working in Ukraine

Marketing Plan

An explanation of how you will reach target customers and enter the market

Our target customer is any mobile phone user who is interested in their health, people who are exposed to infection, environmental inspection, media, and Internet resources.

Thanks to direct contact with polyclinics, information about our application comes to potential customers. If a person is aware of their problems when released into the air identified harmful substances, then he receives information about such emissions through the attending physician, who recommends the application to him.

Also, the target audience - public, the so-called "green" organizations a la "Helper of Zaporozhye", who also try to control the pollution of the city.

Details about pricing, promotions, and distribution of the AirNear

Our application is free for user, who can upload it from Google Play Market.

Promotion and distribution will be through the city web-site, such internet resources as hotels, tourists companies, hospitals, real estate companies, social media (Facebook etc.).

An explanation of how our company will function

We plan to continue ecological research of air, water, soil in Ukraine and improve functionality of our system.

As we are all scholars, we plan to work on it 12 hours per week.

Information on number and types of employees you have or will need

Now we have three person – for all tasks. For our future work, we need one front-end developer, one back-end developer, designer and system admin.

Financial plan & projections

To raise capital for our start-up we considered all suggested models and think that we can try crowdfunding and venture capital.

Crowdfunding model with the usage for example a Kickstarter is good as it can help our start-up to be independent from the owners of harmful industry who are not willing to inform citizens about real ecological situation in the city.

As venture capital, we want to attract attention of Google Corporation who can buy our application or invest for further development.

We make appropriate analysis of operational costs, which is listed in the table below.

Mobile App Development Component	Quantity & Cost
Equipment (computers, servers, networks)	Central server; Sensors – 1 additional measurement station is about 200 \$ Laptop with Windows 10 - 700 \$
Software (applications for development and testing, etc.)	Open source software
Registration for Apple developers or Google developers	Google Play has a one-time fee of \$25 Apple App Store fee of \$99/year
App store fees (for hosting)	150 \$/year
Office space	Renting office in Zaporizhzhya 100 \$ per month
Marketing/advertising	10% from all costs
Employee salaries (developers, designers, etc.)	Summary: 4300 \$/month for development 1 Team Lead 1500 \$/month 1 Junior developer 700 \$/month 1 Designer 700 \$/month 1 back-end developer – 700 \$/month 1 admin 700 dollars/month.

Our revenue model can be In-App Purchases and Subscriptions and In-App Ads.

For hospitals, we can add supplementary functions, which collect statistics for different periods of time, which they can use in their research activities.

We can add banners of tourist agencies, sports clubs, and ecology parties.

We can add functionality for City council for promoting their activities in the city.

References

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