# **Already existing applications and what they do**

* <http://www.airtext.info/>

airTEXT provides forecasts of air quality (air pollution), UV, grass pollen and maximum and minimum temperatures for Greater London and Slough. The information is given for each Borough. Forecasts are provided here on the web site for today, tomorrow and the day after tomorrow.

The airTEXT Consortium is a consortium of London Boroughs, Slough Borough Council, the Greater London Authority, Environment Agency and Health Protection Agency.

CERC develop and operate the airTEXT forecasting and alert system It has operated across London since March 2007. <http://cerc.co.uk/environmental-software/ADMS-Forecast.html>

ADMS Forecast used in airTEXT http://cerc.co.uk/environmental-software/ADMS-Forecast.html

Strengths:

* Gives out a very detailed status of the pollution level (including temperature, pollen levels and other gases emission levels)
* Easy to access information about today and tomorrow, which potentially gives access to create live statuses
* Gives different information for each borough

Weaknesses:

* the UI of the map is not user-friendly
* does not give a self-explaining way of usage
* does not go down to street level - only gives area pollution status
* cannot access information from the past

Opportunities:

* create an advice section which is dynamical and gives different outputs according to the current status (the current section only gives general advice)
* give access for the information which was collected in the past, so that the data can be used for statistics
* <http://www.obsairve.eu/index.php?lang=en>

Take a deep breath wherever you go! obsAIRve provides you with real-time information on air quality. You can find out about the air quality in your city via a web service or on the go using the [smartphone app](http://itunes.apple.com/de/app/obsairve/id490939811?mt=8&uo=4).

The obsAIRve service is part of the GMES (Global Monitoring for Environment and Security) program and funded by the European Commission. All air quality data disseminated by obsAIRve is derived mainly from participating cities as well as from the relevant GMES projects.

Strengths:

* comes out as both a mobile app and a web app/site
* gives a short visualisation on how the pollution air masses move around for a period of 4 days (the previous date, the current date and the next 2 dates)
* gives a way of visualising the particulates, the nitrogen dioxide and ozone air masses

Weaknesses:

* the map is too high-level. It only gives a visualisation of London as a city and doesn’t go as down as the street level
* there are too many modes in which you can visualise the information - this introduces disorientation for the users
* the “knowledge base” does not contain information about past measurements and only has general information about how each of those are standardised (CAQI, for example)

Opportunities:

* create a section in which the data is analysed and the users are told how and when to use anti-pollution techniques
* enable users to zoom more on the map, so that different parts of a city can be viewed in more detail
* [www.breezometer.com](http://www.breezometer.com)

API + Mobile Application

Mobile application:

* Shows an Air Quality Index
* Suggestions on what to do (e.g. The amount of pollutants in the air is noticeable but still there is no danger to health. It is recommended that you watch for changes)
* Shows a map with location at the bottom of the main screen.
* Can save multiple locations in a list and switch between them
* Can Automatically find your location using GPS
* Can add location by address
* In Settings you can choose from a number of preferences (children, exercising, health sensitivities) - does this affect the air quality index? (to be checked)
* Zooming out on the map has bugs

Web application:

Strengths:

* it is LIVE !
* The UI is modern and self-explaining, giving a user-friendly experience
* Some of the important features in terms of visualisation are easy to turn on: color coding, air quality indicator, dominant pollutant
* The users can search using GPS location or postcodes easily
* In addition to the result itself (air quality-related information), the users are being told how to act accordingly

Weaknesses:

* there is no option to select a future or a past date
* does not give a clear explanation on what factors the app is looking at when giving the air quality out
* The information is not all in one place - a user has to navigate through the whole first page to find all the data

Opportunities:

* Could have a breakdown of the air quality results in terms of contributing factors
* Enable the user to select past dates to be shown
* <http://www.londonair.org.uk>

Also has mobile application.

Shows current, future and past pollution conditions for selected areas.

Generated statistics compared to national limit values and graphs according to current week’s pollution

Helps people determine whether they are at risk from pollution and provides health messages according to pollution levels.

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| **Strengths:**   * Nowcast service shows live and detailed pollution conditions * Zooming in into the map allows users to see which areas are currently experiencing higher pollution levels than others * Shows street specific pollution levels * User can use postcode to find pollution levels in that area * The scales used are self-explaining * A forecast provides information on expected pollution levels (including pollutant combination) in areas of significant public exposure * Daily air quality index helps people determine whether they are likely to be at risk from pollution * Health messages corresponding to different levels of pollution is shown * A 'Statistics' link shows results from this site compared to national limit values * 'Episodes' link can show past pollution history * A graph of the current week’s pollution levels can be generated.     **Weaknesses:**   * Contains overwhelming amount of information crammed together on same page * For the user to find what they are looking for might not be straightforward   -    **Opportunities:**   * The UI could be made simpler to make it more user-friendly. Eg. Showing every option as a button and generating drop-down lists only when clicked on/mouse is hovered over them   - |

* <http://cityairapp.com/>

Provides forecast of current and following day.

Uses Google maps to let user enter Starting point and destination and displays pollution levels and warnings along the route

**Strengths:**

* Provides forecast of the current day
* Includes details like, air pressure, wind speed and air pollutant contents
* Provides forecast for the following day
* User enter starting point(street/area/postcode), destination and mode of transportation on Google maps and pollution levels and warnings along the route is displayed to them
* Shows street specific pollution levels
* Simple UI and easy to use
* 6 different categories of individuals (Pedestrian, Jogger, Cyclist, Driver, Business, At risk individual) can subscribe to emails tailored according to their category

**Weaknesses:**

* No access to past pollution conditions
* Only shows today-tomorrow conditions. No feature to select a date and view that day’s pollution levels

**Opportunities:**

* A calendar could be added to let user select a date from the past/future and view its pollution conditions
* The amount/percentage of each pollution content could be displayed
* Health advice could be shown alongside pollution level in route, once user has selected start and end point of journey
* <http://www.airnow.gov/>

US-based app

* Air Quality Index (AQI) provides daily information on how clean or polluted your outdoor air is.
* Translates air quality data into numbers and colors that help people understand when to take action to protect their health.
* Also provides info. on indoor air quality
* Map and forecast data are collected using federal reference/ techniques approved by the state, local or tribal monitoring agencies.
* The data are displayed after the end of each hour to maintain “real-time” maps
* The data in AirNow are not fully verified and validated through the quality assurance procedures monitoring organizations used to officially submit and certify data on the [EPA Air Quality System (AQS)](http://www.epa.gov/ttn/airs/airsaqs/).
* AirNow can be found on:

1. [http://www.airnow.gov](http://www.airnow.gov/index.cfm?action=airnow.main)
2. [Facebook](https://www.facebook.com/airnow) and [Twitter](https://twitter.com/airnow)
3. Through [EnviroFlash email alerts](http://www.enviroflash.info/)
4. With the free [AirNow App for iPhones and Android](http://m.epa.gov/apps/airnow.html)
5. With the customizable [AirNow Widget](http://www.airnow.gov/index.cfm?action=airnow.widget) for your organization

**Strengths:**

* Air Quality Index (AQI) provides daily information on how clean or polluted outdoor air is.
* offers daily AQI conditions for over 400 cities
* Mentions health effects that may be of concern
* Translates air quality data into numbers and colors that help people understand when to take action to protect their health
* provides info. on indoor air quality
* User can enter postcode to find area-specific pollution conditions
* Contains maps, data and archives of past air quality of cities and states
* Colour-coded air rating is easy to understand

**Weaknesses:**

* Zoom in feature on map is not user-friendly
* Cannot zoom in into areas/streets. (limited to cities)
* No zoom out option
* Not easy to navigate around map
* UI is not self-explaining

**Opportunities:**

* Zooming into states/areas and displaying air quality of specific streets
* Allow zooming out and navigating around map
* Simpler UI. Eg- ‘Links’ section could be placed as a sidebar