



UK Environment Agency Uses Cloud Platform to Scale from 1 Million to 15.6 Million Hits

Overview

Country or Region: United Kingdom

Industry: Government

Customer Profile

The Environment Agency UK has a strategic overview role of flooding from rivers, the sea, surface water and groundwater in England. Together with partner Agencies, it manages over 27,000 miles of flood defences and provides a flood warning service to close to 1 million properties in England

Business Situation

The Environment Agency wanted to increase the number of users of its flood warning service by employing social media and mobile devices to enhance public awareness of flood risk.

Solution

Microsoft Partner Shoothill used Bing Maps and Windows Azure to create FloodAlerts for Facebook users. The application is now available on the Environment Agency website, the Shoothill website, and Windows 8.

Benefits

- Citizens stay one step ahead of floods, with 15.6 million hits in nine days
- Application wins innovation award
- Scalable solution proves highly resilient
- FloodAlerts gains recognition from UK Government

“With more than 5 million people living or working in areas at risk of flooding across England and Wales, we’re urging communities to use the new application, alongside the existing Floodline telephone service.”

David Rooke, Director of Flood and Coastal Risk Management, Environment Agency

The Environment Agency in the United Kingdom wanted to make its flood warning service more accessible to businesses and citizens by offering near real-time updates on areas at risk in England and Wales. More than 5 million people live or work in areas in danger of flooding. Microsoft Gold Partner Shoothill used Bing Maps—the only mapping system that includes Ordnance Survey data—and Windows Azure to create the FloodAlerts map using data from the Environment Agency nationwide network of monitoring stations. Users can zoom in on any point of a map of England and Wales to see flood alerts, while customised searches can be carried out by postcode. During nine days in November 2012, the agency’s flood web pages received 15.6 million hits and the FloodAlerts service built by Shoothill for Facebook has now been extended to Windows 8 and the Environment Agency website.



“This is a fantastic example of private sector involvement in this important area, and shows how social media tools can be used for real-world benefit.”

Richard Benyon MP, Parliamentary, Under Secretary for Natural Environment, Water, and Rural Affairs, UK Government

Situation

The Environment Agency in the United Kingdom (UK) is a government agency principally concerned with rivers, flood alerts, and the prevention of pollution. In 2007, parts of England and Wales suffered floods that cost the economy £3.2 billion (US\$4.8 billion), with 48,000 homes flooded and 13 deaths. Since then, the Environment Agency has improved its flood warning service, taking advantage of mapping technologies and cloud-based services to handle sudden spikes in demand.

Frazer Rhodes, Senior Advisor, Flood and Coastal Risk Management, Environment Agency, says: “Ensuring that people are prepared for flood risk is vital. The technical challenge was to provide an application to present the existing live feed of flood alerts and warnings data from the Environment Agency on diverse channels. We wanted new ways to reach more people to increase awareness of flooding risk in a simple and visual manner. The project scope has included coverage across social media as well as improvements to our own website.”

To fulfil its objective of providing current flood information free of charge to citizens and businesses in near real time, the Environment Agency uses data from the Ordnance Survey—the official government cartography agency. It also collects data from more than 2,000 river and sea monitoring sensors. In 2010, the Environment Agency provided a secure data hub for flood risk for developers. The open data policy of the UK Government, adopted in 2010, made it easier for the Environment Agency to release data for the private sector to build appropriate flood alert applications.

Microsoft Gold Partner Shootill successfully replied to a request for proposal from the Environment Agency to

build a FloodAlerts application on Facebook. This initial project has led to further development work using Windows Azure and Microsoft mapping technologies.

Solution

In April 2012, using Microsoft technologies, Shootill deployed FloodAlerts on Facebook, which Shootill says was the world’s first graphical representation of flood warning data on a social network. The FloodAlerts application delivers localised updates every 15 minutes, informing users of the latest flood information in a visual way. Rod Plummer, Managing Director, Shootill, says: “Currently, users can register one location—such as a home, road, or office—and they receive a notification or email alert when a warning affects their registered location.

One of the key requirements for an application to track incidents of flooding is the ability to meet sudden increases in user demand. There were a number of other reasons why Shootill chose Microsoft technologies for the FloodAlerts application, including:

- **Cost effectiveness.** Windows Azure helped Shootill build and deploy the application in a way that allowed for instant scalability. It could be provisioned on a pay-as-you-go basis to match the processing power required to handle the surges in demand for the service. It also easily managed the amount of corresponding bandwidth and compute power required to process the alerts for customers.
- **Flexibility.** Using Windows Azure and Bing Maps together meant that the application could be deployed in Microsoft data centres anywhere in the world.

“Windows Azure avoids any need to deploy expensive physical servers that could be largely idle for some of the year. With Windows Azure, there’s no risk of downtime when demand surges.”

Frazer Rhodes, Senior Advisor,
Flood and Coastal Risk Management,
Environment Agency

- **User experience.** Bing Maps was chosen to provide the added feature of the Ordnance Survey layer, which has proved vital to users in areas at risk of flooding. Other technologies on the market cannot deliver this mapping layer.

Shootherill has now implemented the application using Windows Azure and Bing Maps across two other sites—the standalone Shootherill version, which allows full registration without the need of Facebook, and the Environment Agency website itself.

Since October 2012, FloodAlerts has been developed as an application and launched on the Windows 8 operating system. The application now also incorporates the @FloodAlerts Twitter feed and a new photo gallery where users can upload their own images.

Since Microsoft launched Windows Phone, FloodAlerts users can register a monitored location using the phone app. They can also use the “near me” feature through the native global positioning system (GPS) of their Windows 8 mobile devices to see what’s happening around them.

Plummer says: “The great thing about the application is the use of Windows Azure cloud technology to handle user demand, which in one instance rose from 600 concurrent users to 30,000 in just 12 minutes. When it’s not raining, server use is quite low. With Windows Azure, thousands of servers can be brought in to handle spikes in traffic during the busiest periods, when potentially millions of people and businesses are at risk of flooding.”

Benefits

During nine days in November 2012, the new FloodAlerts web pages at the Environment Agency received 15.6 million hits—the highest to date. Website visitors can carry out customised searches by postcode, or zoom in on any point of a map of England to see flood warning statuses as issued by the Environment Agency within the previous 15 minutes. Rhodes says: “Bing Maps, Windows 8, and Windows Azure have helped make the flood warning service more visual and accessible to citizens and businesses in England and Wales.”

Service Helps Citizens Stay One Step Ahead of Floods

The Facebook FloodAlerts service has received many thousands of registrations. In its first three months, 40 per cent of Facebook users who visited the agency website went on to register.

David Rooke, Director of Flood and Coastal Risk Management at the Environment Agency, says: “Being prepared is vital to help reduce the risk of flooding. With more than 2.4 million properties at risk of flooding from rivers or the sea in England, we’re urging communities to use the new application, alongside the existing Floodline telephone service and website updates.”

FloodAlerts Application Wins National Innovation Award

Shootherill has been acknowledged at an awards ceremony for its ability to deliver big data—volumes of data too large to be processed using traditional applications—presented in innovative ways that can bring information to life. The FloodAlerts service won Shootherill the award for innovation in the 2012 Innovation Nation Awards

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Rod Plummer, Managing Director,
Shoothill

sponsored by Virgin Media Business and The Guardian newspaper.

The coverage and popularity of the application has taken off, mainly due to the dramatic rainfall experienced in England and Wales in 2012, which caused flooding to hundreds of homes.

Scalable Solution Built Using Windows Azure and Bing Maps Proves Highly Resilient

The ability of Windows Azure to scale up from 1 to 15.6 million hits to meet sharp increases in demand makes it highly cost effective for clients. Rhodes says: “For us, Windows Azure avoids any need to deploy expensive physical servers that could be largely idle for some of the year. With Windows Azure, there’s no risk of downtime when demand surges.

FloodAlerts Service Gains UK Government Recognition

Shoothill and the Environment Agency have received recognition from the UK Government for the innovative FloodAlerts application. Richard Benyon MP, Parliamentary Under Secretary for Natural Environment, Water, and Rural Affairs, in the UK Government, says: “This is a fantastic example of private sector involvement in this important area, and shows how social media tools can be used for real-world benefit.”

The UK FloodAlerts service is also gaining international recognition from countries that suffer from flooding. For example, interest in the FloodAlerts service has been expressed by the Government of Victoria in Australia which has also experienced significant flooding in recent years.

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For more information about Shoothill products and services visit the website at: www.shoothill.com

For more information about the Environment Agency visit the website at: www.environment-agency.gov.uk

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Software and Services

- Windows Azure
- Bing Maps
- Windows 8
- Windows Phone