

Helping people take control of flood risk with innovative service

“Floodline Warnings Direct is a reliable and effective system that provides our customers with critical information. It has proved itself time and time again.”

Craig Woolhouse – Head of Flood Risk Management Process, Environment Agency



Challenge

Five million people, in over two million properties, now live in flood risk areas in England and Wales. However, according to the government’s ‘Foresight Future Flooding’ report climate change will increase the risk of flooding in the UK by 20 times, which will more than double the number of people at a high risk from flooding.

It is the responsibility of the Environment Agency, part of the Department for Environment, Food and Rural Affairs (Defra), to predict and warn of the risk of flooding from rivers and seas in England and Wales. However, its effectiveness was hampered by its legacy systems, which were fragmented and had varying capabilities and compatibilities.

So, as part of its Flood Warning Investment Strategy, the Environment Agency embarked on the development of a national flood warning system that could deliver timely warnings, using multiple communications channels, to the public, professional partners, including the emergency services and local councils, and the media.

Solution

Fujitsu won three contracts with the Environment Agency spanning the full lifecycle of the Floodline Warnings Direct (FWD) application, including consultancy and design, application development and deployment and finally the provision of a fully managed service for both the application and the supporting infrastructure.

Hosted and managed in Fujitsu datacentres, the FWD application enables the Environment Agency to determine target areas for pre-defined warning messages. On receiving information of a potential severe weather situation, the Environment Agency can now utilise FWD’s advanced mapping and location information to accurately identify people at risk of potential flooding.

Categories of warning include ‘Flood Watch’ and ‘Flood Warning’, which are issued through the FWD system in order to alert emergency services and local residents simultaneously using their preferred communication methods – landline or mobile phones, using text to speech technology, and email, fax, SMS text, pager or letter. As these channels can be used in any combination in order to deliver the warnings, FWD is the first truly multi-channel information dissemination service based upon geographic targeting.

Opened up to the public at the beginning of 2006, FWD is a free service that has seen heavy usage, including successful operation during the summer of 2007 when over 47,000 homes and 8,000 businesses were flooded during the wettest

SUMMARY OF KEY FACTS

Organisation

Environment Agency

Services delivered

Consultancy, design, development, deployment and the provision of a fully managed service for the Floodline Warnings Direct application and supporting infrastructure

Key metrics

- 5 million people, in 2+ million properties, in flood risk areas
- 330,000 registered users

Benefits

- **Improve customer experience** – can provide a faster, more consistent and higher quality service
- **Reduce costs** – has reduced operational costs by replacing inefficient systems and labour-intensive activities
- **Maximise performance** – system availability is 99.999%, so warnings can be issued at any time
- **Increase productivity** – has accelerated response times by standardising procedures and automating processes
- **Optimise resource usage** – has freed up staff from administrative tasks and IT support
- **Increase operational agility** – provides a secure and highly scalable platform to cope with massive peaks in demand
- **Budget accurately** – management costs are entirely visible and predictable over the contract life
- **Achieve compliance** – is helping to meet government aims for the electronic delivery of services

CASE STUDY ENVIRONMENT AGENCY



May to July on record. The unseasonable weather meant FWD issued 220,000 warning messages to the public in June and July 2007.

In addition, in the last week of June the system delivered 44,000 warning calls to 562 areas in a 24 hour period telling people that their properties were in danger of being flooded – a 50% increase on the previous high of 29,000 calls.

One of FWD's customers is the Secretary of State for Environment, Food and Rural Affairs, The Rt Hon Hilary Benn MP, who registered for the service and received his warning in time to move his car from an area that was subsequently flooded. At the time, in a Statement to the House of Commons, Hilary Benn said, *"The flood warning system is a good one, as I know from personal experience. I urge everyone to get plugged in to it, because it gives people notice and enables them to take action in such circumstances."*

FWD now has 330,000 registered users and has issued over 2.5 million calls since its launch, including 279,000 during the coastal floods of January 2008. Despite such high volumes, 99% of customers were contacted by FWD within 30 minutes of an alert being issued, with 95% within 13 minutes.

Innovation is continual for FWD, which helps to meet the recommendations of the Pitt Review into the floods of 2007. The next change will be an enhancement to include an online registration service, making it easier for the public to sign-up and putting the citizen experience at the forefront of the service.

Craig Woolhouse, Head of Flood Risk Management Process, Environment Agency, comments, *"The Floodline Warnings Direct system is the most advanced early warning system we have ever had. However, in an age where weather systems are becoming increasingly unpredictable, we are determined to continue to evolve the system to provide residents and businesses with as much advance warning of potential flooding."*

Benefits

The FWD application developed and managed by Fujitsu is enabling the Environment Agency to:

- **Improve customer experience** – can provide a faster, more consistent and higher quality service with timely and relevant information delivered to customers in a choice of ways
- **Reduce costs** – centralisation of services has reduced operational costs by replacing inefficient systems and labour-intensive activities
- **Maximise performance** – system availability is consistently maintained at 99.999% to ensure that flood warnings can be issued at any time
- **Increase productivity** – has accelerated response times by standardising procedures and automating manual processes using innovative technology such as text to speech translation
- **Optimise resource usage** – has freed up staff from administrative tasks and IT support and enabled them to concentrate on higher value activities

- **Increase operational agility** – provides a secure and highly scalable platform to cope with the often massive peaks in demand and steady growth in users
- **Budget accurately** – management costs are entirely visible and predictable over the contract life
- **Achieve compliance** – is helping to meet government aims for the electronic delivery of services.

Craig Woolhouse confirms that centralisation of information and resources enabled by the FWD application has helped improve consistency and the level of service. He explains, *"Before we had this national system we had to rely on a number of different teams issuing their own warnings. There's no way we could have managed with the volume of warnings we issue now without FWD. Warnings can go out incredibly quickly. With the old system, that would be very difficult to do."*

Approach

At the start of the FWD project one of the major challenges facing the Environment Agency was how to communicate with large numbers of people in an effective and timely fashion, while also delivering a personalised customer experience across multiple communications channels.

As a result, the application developed by Fujitsu is based on a service oriented architecture (SOA) that uses 'standard' platforms, like XML, SOAP, and J2EE, to enable the seamless exchange of data between applications. FWD also employs a combination of highly innovative technologies, such as spatial databases, Text to Speech conversion and Outbound Communication / Telephony Control software, which are accessible through an easy to use web-browser front-end.

By continually analysing Met Office forecasts, rainfall radar, ground saturation levels and river sensor telemetry, together with detailed maps of possible flood areas, the Environment Agency can decide when to issue flood warnings. In such cases, any properties that are at risk in the expected flood area can be quickly identified using their precise geo-coordinates. The contact details and communication preferences stored in the customer database can then be used to issue a pre-defined alert message, including different variables such as the current time.

Expertise

With over 40 years experience of supporting the needs of customers, Fujitsu has a proven track record in providing complex systems integration and application development and management services that reduce costs, improve productivity and customer services and deliver a compelling return on investment.

Craig Woolhouse says, *"Following an extensive tender process the Environment Agency chose to work with Fujitsu because it was a company that could safely deliver and manage this mission-critical application."*

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