

CASE STUDY

HEALTH PROTECTION SURVEILLANCE CENTRE

FUJITSU SYSTEM PLAYS KEY ROLE IN THE CONTROL OF INFECTIOUS DISEASES

»FUJITSU HAS DONE AN EXCELLENT JOB OF DESIGNING, DEVELOPING AND IMPLEMENTING OUR COMPUTERISED INFECTIOUS DISEASE SURVEILLANCE CENTRE. ITS FUNCTIONALITY HAS MET OUR NEEDS AND THIS WAS UNDERSCORED BY OUR POSITIVE EXPERIENCES DURING THE RECENT FLU PANDEMIC «

JOHN BRAZIL, IS MANAGER, HEALTH PROTECTION SURVEILLANCE CENTRE



THE CUSTOMER

- The Health Protection Surveillance Centre (HPSC) is Ireland's specialist agency for the monitor and control of communicable diseases.
- It is part of the Health Service Executive.



THE CHALLENGE

- Previously, Ireland had an inefficient paper-based system for notifying infectious diseases.
- Data came from different unconnected resources which produced unreliable statistics.
- HPSC needed to create a centralised, electronic system that would draw together all the different notification streams.

THE SOLUTION

- Fujitsu designed, developed and built a Computerised Infectious Disease Surveillance Centre (CIDR).
- Key design principles were security, flexibility and reporting.

BUSINESS BENEFITS

- **Swift disease control** – CIDR can detect serious health threats and trends more quickly, making it easier for the authorities to deal with infectious diseases.
- **European support** – The HPSC can now provide more relevant information to the European Centre for Disease Prevention and Control.
- **Pandemic control**– CIDR's swift and flexible reporting functionality was praised by the authorities during recent Avian and Swine Flu pandemics
- **Security** – Health professionals can be confident of the security of confidential medical information.

CHALLENGE

Ireland's Health Protection Surveillance Centre (HPSC) was established in 1998 to monitor and control the spread of human infectious diseases. It is part of the Health Service Executive and works with health service providers and allied organisations around the World. HPSC aims to protect and improve the health of the Irish population by collating, interpreting and disseminating data to provide the best possible information on infectious diseases. This is achieved through surveillance, independent advice, epidemiological investigation, research and training.

Prior to the formation of HPSC, infectious disease notification was a paper-based system which caused concerns about both the quality and timeliness of the information. That information went into the country's Department of Health which, as such a large organisation, did not always respond to data submissions..

"As a new organisation, we were charged with looking at ways and means of collecting this information in a more timely, electronic fashion," says John Brazil, IS Manager with the HPSC. "However, the scope of our task was increased because the infectious disease notification system here in Ireland has concentrated on clinical notifications from clinicians, GPs and hospital consultants through the local public health department and that was spotty, to put it mildly. We were aware that overseas, a significant amount of notification comes from laboratories and thought that this would be a more reliable flow of information."

Previously, there had been no effective way to gain a true picture by drawing all these different notification streams together. For example, if a case was dealt with by a GP but the GP also sent samples to a local laboratory, there could be two notifications for one case. They could appear on two databases and those databases did not necessarily line up.

This shaped HPSC's design requirements for a centralised and consolidated system that could associate the different notification streams and so produce more accurate statistics.

SOLUTION

Initially, HPSC went out to tender for the design of the system and then for the development and build and Fujitsu won both contracts. The result was a Computerised Infectious Disease Surveillance Centre (CIDR) which provides an integrated approach to disease surveillance. Designed to detect health threats and trends more quickly, CIDR not only manages the surveillance and control of infectious diseases in Ireland but also monitors the ability of organisms to resist antibiotic drugs. It is a shared national information system for the Health Service Executive (HSE), the HPSC, the Food Safety Authority of Ireland, the Food Safety Promotion Board and the Department of Health and Children.

Fujitsu's key design principles for CIDR were security, flexibility and the provision of an enterprise-wide reporting capability. To achieve vital security of the confidential medical data, Fujitsu employed two-factor authentication to extend basic authentication using RSA ACEServer and SecurID tokens integrated with Microsoft Active Directory over SSL encrypted communications. To provide the flexibility required to meet changing needs, a Service-Oriented Architecture with business objects and web services was developed directly in Visual Basic .NET using XML communications.

Since CIDR is a reporting tool used by 300 recipients, Fujitsu also implemented a business intelligence platform widely used to run 100's of template reports and supports the creation of sophisticated ad hoc reporting. Continuing its long and trusted association with HPSC, Fujitsu has recently completed a technology refresh of the CIDR system which mainly involved new hardware and migrating to a new operating system. Ongoing work continues to keep the system up to date with new software releases and patches and Fujitsu is also looking up to two years ahead to further refreshes.

"The big advantage of CIDR is that it has replaced a lot of separate disease databases both nationally and regionally which enables people to work from different areas, independent of their geography," adds John Brazil. "It consolidates disparate information streams that had been implemented over the previous five years as interim measures.

"Previously statistics were being collected and there was no information circle so the quality and timeliness of information was not good and people did not see the purpose and advantage of it. Now, CIDR gives more timely and accurate views of the amount of notifiable infectious diseases that are around and about in the country.

"This enables the appropriate organisations to detect trends and importantly, it also provides advanced notice of outbreaks by enabling us to pick up on early cases. Through Business Objects reporting, this information can be offered back to users as soon as it becomes available. "It also makes it much easier for us to report back to the European Centre for Disease Prevention and Control. This organisation collects infectious disease statistics from across Europe in as standard

a fashion as possible and our ability to service their data requirements would have been much more difficult without CIDR."

As CIDR has evolved, the use of its outbreak reporting functionality has increased and that was underscored during the recent Avian Flu outbreak and Swine Flu pandemic.

The HPSC's National Pandemic Influenza Team has praised the standard and speed of daily reports delivered by CIDR and the flexibility to deal with ad-hoc analysis and queries.

Other surveillance scientists and public health specialists have also commented favourably: *"CIDR delivered really well, despite the adverse operating conditions....the reporting was excellent, superb.....receiving timely standardised reports was of huge benefit both in terms of the local and national situation.....the CIDR system facilitated the national collection of standard data that would not have been as easy to achieve using standalone local health data systems that were in use pre-CIDR."*

In addition to increasing Ireland's ability to deal with serious pandemics and infections, CIDR had also enhanced the profile of the HPSC through its data quality and management and ability for rapid response.

EXPERTISE

Fujitsu has a proven track record in providing innovative and reliable IT services and solutions, incorporating the best and most appropriate technology that creates value for its customers by helping them to realise their business vision and deliver impeccable customer service.

Fujitsu's Microsoft Gold Partner status and in-depth knowledge of the required technologies, especially Business Objects and the .NET framework were a key benefit for the HPSC.

Fujitsu's MacroScope® Productivity centre™ is a robust, structured and evolving development approach encapsulating more than 30 years of know-how and described by Gartner, the World's leading information technology research and advisory company, as the most extensive set of integrated methods, techniques and tools in the marketplace.