



CASE STUDY

Centers for Disease Control & Prevention (CDC)



Organization Profile Centers for Disease Control & Prevention (CDC) Atlanta, Georgia

The Centers for Disease Control and Prevention (CDC) is one of the 13 major operating components within the U.S. Department of Health and Human Services (HHS). It conducts research and investigations to prevent and control infectious and chronic diseases, injuries, workplace hazards, disabilities, and environmental health threats. CDC takes an action-oriented approach to apply its research and findings to improve people's daily lives and respond to health emergencies.

Solution Profile Custom Application Development J2EE applications using service-oriented architecture (SOA) principles

Environment

Servers: BEA WebLogic 8.1, JBoss 4.2, Apache 2.2.4

Database: Microsoft SQL Server 2000, 2005

Hardware: Intel Servers, Storage Area Network (SAN), Hot Site Failover

www.cdc.gov

"CIBER provided CDC with best-practice techniques in support of our emergency communication objectives. CIBER created an alerting solution to meet our mission-critical emergency communication needs. The solution is a highly flexible SOA-based application that provides an enterprise alerting solution that all of our public health preparedness and response programs can easily and securely integrate with. This allows our teams to focus on business needs instead of on technical infrastructure."

Robb Chapman

CDC Program Manager

National Center for Public Health Informatics

SUMMARY: CIBER SOA Solution Alerts Public Health Officials and Organizations Worldwide

One of the objectives of the Centers for Disease Control and Prevention is to alert public health officials of abnormal health patterns, such as a spike of symptoms in a certain geographic area that might indicate a flu pandemic or other public health situation. The sooner public health officials can be notified, the sooner they can contain the situation, treat those affected, and prevent further harm.

CDC selected CIBER, Inc. to develop an automated alert system that incorporates service-oriented architecture (SOA) principles to securely send alerts to public health officials and organizations worldwide whenever data from clinics, pharmacies, hospitals, and state and local public health departments indicate an abnormal event.

The result? CDC Alerting Service (CDCAS), an automated tool that alerts officials to potential public health emergencies. CDCAS can be used in conjunction with the CDC Team application (also developed by CIBER) so public health officials can communicate and collaborate online in a secure environment from any location worldwide to discuss events, develop action plans, and report results.

CHALLENGE: Prior Notification Methods Inadequate for Emergency Situations

Prior to CDC Alerting Service (CDCAS), public health partners communicated directly with numerous CDC programs through a variety of unconnected methods. In the event of an outbreak or other abnormal event of concern, CDC staff notified public health officials via telephone calls and emails.

This system was ineffective when large numbers of officials needed to be notified immediately, such as during the Anthrax scare following the September 11, 2001, terrorist attacks. Any event requiring rapid notification of many people entailed a

heroic effort on the part of CDC staff to make phone calls and manually send emails. In many cases, only a fraction of public health officials were able to be notified, and at great cost—in both time and money—to CDC.

CDC knew it needed a more reliable, secure, and powerful method to communicate quickly and efficiently with public health experts.

SOLUTION: CIBER SOA Solution Automates Alerting

CDC needed someone to analyze its emergency alerting requirements, perform market research regarding available commercial solutions, design a system that incorporates service-oriented architecture (SOA) principles and component architecture, and build a solution to securely send alerts to public health officials and organizations.

CDC evaluated several vendors for the project, but chose CIBER because of the breadth and depth of CIBER's technical expertise, CIBER's strong federal government experience, and CIBER's in-depth understanding of the CDC environment.

"CIBER's proposal demonstrated that they really understood our specific needs. We knew they were the right partner for the project," said Robb Chapman, Program Manager for CDC's collaboration, alerting, and shared services initiatives.

CIBER used the Rational Unified Process (RUP) and Carnegie Mellon's Evolutionary Process for Integrating COTS-Based Systems (EPIC) to identify requirements, develop use-cases, and model the CDCAS services and supporting components using Unified Modeling Language (UML).

CIBER then built CDCAS using SOA principles and J2EE technologies. CIBER ensured that CDCAS integrates with other critical CDC enterprise services, such as the PHIN Public Health Directory (PHINDIR – a central repository of contact info for public health officials and organizations) and Secure Data Network (SDN – a security framework that manages internal and external access to CDCAS).

Because CDCAS is a mission critical system, CIBER and CDC implemented a full disaster recovery plan with fail-over redundancy within the data center and a geographically redundant hot site.

Finally, CIBER provided CDCAS with integration support for vital CDC programs, such as Health Alert Network (HAN), Epidemic Information Exchange (EPI-X), and Director's Emergency Operations Center (DEOC).

BENEFITS: Alerts Reach More Officials in Less Time With Less Effort and at Lower Cost

CDCAS has greatly simplified CDC's alerting processes within and beyond the agency. CDCAS's use of SOA simplifies the adoption of new communication technologies so additional components can be added and upgrades can be completed easily without the typical upgrade disruptions and costs.

CDCAS works with disparate technologies so no one misses an alert due to technical incompatibilities. The system automatically sends alerts on a wide range of personal communication devices, such as domestic and international phones, satellite phones, email, text messaging, fax, and pagers.

The likelihood of successful receipt of the alert is enhanced because CDCAS escalates alerts through recipients' various communication devices and offers options to acknowledge receipt or enter a PIN number to receive a sensitive alert.

In addition, CDCAS ensures strong communication among agencies, while honoring each organization's jurisdictional integrity by providing for cross-jurisdictional (i.e., state-to-state) alerting. Using the "cascade alerts" feature, CDC can alert an organization, instead of an individual, so that agency can send the alert to all public health officials within its jurisdiction.

CDCAS is integrated with CDC Team, an online collaboration portal also built by CIBER, which helps CDC staff and external experts collaborate on public health issues from any location worldwide.

In short, CDCAS has greatly simplified CDC's alerting processes. Much less effort is required to alert large numbers of officials, greatly reducing the cost. Together, CDC Alerting Service and CDC Team are helping CDC protect the lives and health of Americans and all people worldwide.

Learn more

To learn more, call **800-242-3799** or visit www.ciber.com.

About CIBER, Inc.

CIBER, Inc. (NYSE: CBR) is a pure-play international system integration consultancy with superior value-priced services for both private and government sector clients. CIBER's global delivery services are offered on a project or strategic staffing basis, in both custom and enterprise resource planning (ERP) package environments, and across all technology platforms, operating systems and infrastructures.

Founded in 1974 and headquartered in Greenwood Village, Colo., the company now serves client businesses from over 60 U.S. offices, 20 European offices and four offices in Asia. Operating in 18 countries, with 8,000 employees and annual revenue of approximately \$1 billion, CIBER and its IT specialists continuously build and upgrade clients' systems to "competitive advantage status." CIBER is included in the Russell 2000 Index and the S&P Small Cap 600 Index.

The logo for CIBER, Inc. features the word "ciber" in a lowercase, bold, sans-serif font. The letters "c", "i", and "e" are in a dark blue color, while the letters "b", "r", and the final "e" are in a lighter blue color. A registered trademark symbol (®) is positioned to the upper right of the final "e".

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