

Non-profit Foundation

Global System for Data Capture and Analytical Reporting

Business Challenge

Our client is focused on preventing pediatric HIV infection and to eradicate pediatric AIDS through research, advocacy, prevention and treatment programs. They are a global organization and have unique challenges relating to their 1,000+ sites located throughout 18 countries. Additionally, these sites have varying degrees of staffing and IT infrastructure. Their current process for data management is manually intensive, inaccurate, time consuming and offers little insight on ownership of data. Their current goal is to improve the process in which they retrieve, validate and report on clinical data so that their executives and donors can make improvements to their programs.

The business driver for restructuring the data management environment at this organization is to obtain accountability and therefore improve quality of the data. In doing this they will be able to trust their data integrity and efficiently produce reports for executives and donors. To achieve this, Acumen Solutions consolidated disparate source system data into one global data set that provides a flexible reporting solution that is available to their global user community.

The Solution

Acumen Solutions was hired to develop and implement a large new multi-user web application to function as a high quality, user-friendly, maintainable and scalable data entry and reporting system. This full software development lifecycle project produced an application that records indicator data at both the site and grantee level. This system provides quality checks that flag erroneous data before it is submitted. This feature reduces cycles between the field and headquarters and speeds up the availability of quality data for reporting.

This system also provides the ability to manage country, grantee and site profiles that will provide valuable metadata to their quarterly indicator data. This application also provides a workflow to help manage the quality of data entry, review, verification and validation. This application also tracks user names, roles and provides audit reporting to the Monitoring and Evaluation team at the foundation.

Acumen Solutions employed our User Experience methodology to architect the user interface, interactions, and visual design. Using object oriented techniques and industry standard design patterns, the Acumen technical team created

a design that supports complex security requirements for authorization and authentication, and viewing historical data via a preserved user interface.

Acumen Solutions utilized our Enterprise Data Management team to perform the data architecture, Extract Transform and Load (ETL), and Business Intelligence (BI) aspects of this application. The Data Architecture design for this project involved two separate environments; one for the application data and one for reporting. The ETL jobs were created using SQL Server Integration Services and scheduled to run at a nightly increment. This design optimizes the efficiency of both the application and reporting by creating two distinct data models that are specific to different requirements. Reporting was developed using SQL Servers Reporting Services and is available via scheduled email or through the web application. These reports offer prompted filters, sorting, drilling, as well as the ability to save in various formats and print.

Technical/Business Expertise

- .Net Framework
- C#
- SQL Server Database
- SQL Server Reporting Services
- SQL Server Integration Services
- IIS
- HTML, CSS, JavaScript

Return on Investment

As a result of the new global web application and reporting system, our client will benefit from improvements in its processes as well as an increase in their employees' productivity. They have gone from a manual paper-based data entry system to one that is web based, with quality checks, verification and audit reporting. They have also transcended from a reporting system where reports often took weeks to generate and that couldn't offer historical reports to one that provides historical trend analysis plus the ability to create ad hoc reporting and get instant reporting results.

The ability for this foundation to view their data and verify its accuracy is invaluable. This data is truly saving lives by offering views on high mortality rates and providing the ability to slice and dice the data to help determine the cause for this disparity.

Created a web based data entry system with quality checks, verification and audit reporting that will increase employee productivity.

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