AT A GLANCE

CUSTOMER: DEPARTMENT OF INTERIOR

INDUSTRY: GOVERNMENT

LOCATION: PITTSBURGH, PA

CUSTOMER SINCE: 2016

About the customer

The National Mine Map Repository (NMMR) is part of the United States Department of the Interior, Office of Surface Mining Reclamation and Enforcement. The facility provides and stores, in microfilm, over 183,000 abandoned/closed mine maps, with workings dating from the 1790s to the present day. It serves as a point of reference for mine maps and other information for both surface and underground mines throughout the United States. It also serves as a location to retrieve mine maps in an emergency. The main mission of the NMMR is to preserve abandoned mine maps, correlate those maps to the surface topography, and provide the public with quality map products and services.

Challenge

In 2008, the NMMR starting tracking mine maps by entering data into an SQL Server. The staff entered data into a flat-file, one-table database that housed all data points. For instance, if one map had five mines, the data was entered five times, this duplication of entry allowed for errors and inconsistencies. In addition, there was an inability to cross reference between an actual map and geospatial references, such as ArcGIS or Google Maps, and the numbering system created difficulty for the public and staff to find maps referenced by document IDs.

As a result, the NMRR employed a hand-written method for document numbering and they scanned maps into a shared folder on their network. Team members would access a small notebook to assign a document number to new maps, hand-write printed forms collecting key information like document number, location, etc., and maintain a giant filing system onsite for these forms.

Because the NMMR strives to increase public use and accessibility of its unique information, this antiqued paper-based method combined with inaccurate data outputting from the database could no longer meet their needs. They decided to transform their archive into digital geo-referenced media in 2016.

TechBlue upgraded the database to a SQL Server 2014 environment, converted the data, and designed a new intranet system.

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Our role

TechBlue was chosen as the contractor to transition data to a new database to improve accessibility. The solution was to build a new database, a new application, and integrate both with an ArcGIS component. TechBlue upgraded the database to a SQL Server 2014 environment, converted the data, and designed a new intranet system for the NMMR by establishing a parent-child relationship between maps and mines. Now, one map was entered one time, even if it depicted five mines.

The new database was developed by TechBlue "from the ground up," and supports geospatial references to communicate with ArcGIS. TechBlue led the data conversion of 180,000 records from one table and expanded the data into 15 tables in the new database. Additionally, TechBlue performed integration of this new database with their public-facing website, which enables outside users to access the data.

Internal Database

This new database now tracks maps, mines, conditions, locations, companies, types, products mined (coal, silver, gold), and local seam names. This complexity needed to be married with the national registry of valid seam names, as local seam names differed from national seam names. Local names for seams vary by company, by county, and by state. For instance, the national registry for seams names the mine as A72, but local mine company A called it Pocahontas, and company B called it Squaw Valley.

Results

TechBlue consultants documented the following six items for the NMMR team:

- Repository database and software analysis
- System analysis including a data diagram
- Training documents
- Verification documents
- Functionality documents
- Final analysis

Their paper-based system of entry has been completely eliminated from their process and TechBlue automated the manual entry process and saved hundreds of hours. The TechBlue team took the existing data, created a new structure, converted the data to the

new structure, and developed a usable, intranet application for the NMMR staff. The TechBlue team also delivered the public-facing web map functionality on-time and on-budget. This external application includes advanced search capability, current data, and refreshes with new data each week.

Think it's time to learn more about what we can do for your company? Contact us.

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Our approach to services is based on knowledge gained from performing in consultative roles for over 30 years, and the smarter, faster, better concept is a direct result of our successes. Our knowledge, coupled with a service-oriented approach based on teamwork, collaboration and consultation, provides our clients with trusted advisors that work toward meeting objectives.

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