

CASE STUDY

TCEQ - Consolidated Compliance and Enforcement Data System



Situation

As government agencies continue to collect information and develop new systems, the information tends to be duplicated across multiple systems, gradually losing integrity and consistency. Eventually, it becomes critical to the business to consolidate all of the information into a single system.

TCEQ had multiple divisions with dedicated and disparate support systems. Consolidated reporting on a single facility had become a complex task because data was stored in multiple databases, in different geographical areas, and in different formats. TCEQ decided to create a single repository for all Regulated Facility information along with its Compliance and Support related information.

SPS – Problem Solved.

SPS designed and implemented the Consolidated Compliance and Enforcement Data System (CCEDS), an integrated application to track, monitor, report, and respond to regulated-facility multi-media compliance and enforcement data.

SPS integrated over 30 legacy databases and migrated data from each into CCEDS, providing a single system with easy data entry, access, and reporting capability. SPS also developed a full set of system and training documents.

Since September 2000, SPS has provided implementation and enhancement support for CCEDS, including WEB enablement, JAVA transitioning, and Mobile and Wireless

extensions.

Methodology

SPS selected the Rational Unified Process (RUP) as the project methodology and customized it to meet TCEQ's specific requirements. TCEQ subsequently adopted the SPS-developed software development life cycle process as their new Agency-Standard.

SPS used component-based development (CBD) methods and technologies. Code and data encapsulation inherent in CBD architecture provides flexibility to make changes easily and enables reuse of components, leading to considerable time and cost savings.

CCEDS components include:

- **Business Components** – Staff, Incident, Checklist, Contact, Investigation, Violations, Enforcement, Licensing, Training, Communication, Work Plan, Comment, and Citation
- **Facility Registration Components** – Address/Electronic Communication, Legal Jurisdiction, Program, Principal, Regulated Entity, and Legacy Mapping
- **Infrastructure Components** – Audit Logging, Error Messages, Security, and Reference Codes

SPS used AllFusion Gen, Computer Associates' (CA) Life Cycle Management tool, in the development of CCEDS. CA's Harvest provided requirements management and traceability. CCEDS business components execute on HP-UX servers targeting an Oracle database. The user interface layer currently includes AllFusion Gen generated Windows client applications and limited web interfaces to allow statewide access by county and city local program areas. Crystal Enterprise

CASE FACTS

Sector

State Government

Organization

Texas Commission on Environmental Quality (TCEQ)

Customer Profile

The second largest environmental agency in the world, TCEQ maintains one of the largest systems of regulated information in the country.

Business Challenge

Identical inconsistent data collected by multiple standalone systems supporting only specific business needs. This results in inability to share information across different business functions or environmental media along with inefficient business processes, duplicate data entry, redundant data stores, increased error, and costly system maintenance.

Solution

Provide an integrated consolidated compliance and enforcement system that moves away from individual "silos" to enterprise-wide implementation that supports all environmental programs and media.

provides reporting capabilities.

CCEDS allows the TCEQ to perform the following processes across all their business areas:

- Maintain a common repository of facility information mandated by either state or federal regulations
- Maintain a repository of state and federal regulations that pertain to environmental issues
- Monitor and perform investigations of facilities for compliance and safety
- Track incidents and complaints involving facilities including pollutants that could pose an environmental hazard
- Implement and track air, water and ground enforcement actions for non-compliance, safety, or endangering the environment, and impose criminal and civil penalties
- Publish a Compliance History and Compliance rating on every facility
- Maintain facility testing and training information for the purposes of granting or denying permits or licenses
- Create reports as required by EPA, state, county, city, and other organizations/agencies

Lessons Learned

This was TCEQ's first attempt to build a consolidated system. Agreement on common business processes required proactive

leadership and involvement of area representatives. Upon our recommendation, TCEQ defined and chartered a central team responsible for maintaining and consolidating "core data."

Data migration proved to be very challenging, as bad and duplicate data had to be identified and cleaned before being added. To facilitate this, data standards were developed and enforced. Another migration challenge was the coordination of data changes between operational legacy systems and CCEDS. SPS defined and coordinated new business processes to synchronize data changes.

***"In Texas, we understand
that the air we breathe, the
water we drink and the land
we inhabit are not only
essential to our quality of
life but to the quality of life
that will be enjoyed by our
children and grandchildren."***

—Governor Perry, May 3, 2005

The CBD methodology proved to be successful. Multiple components were produced early in the project providing functionality now used by all business areas.

Results

In November 2001, SPS deployed the first CCEDS iteration, providing the TCEQ with management, incident tracking and investigation, violation documentation, and code enforcement capabilities. SPS developed over 1,200 reusable software services and over 400 client/server/WEB interfaces.

CCEDS allows TCEQ to report, track, monitor, and implement enforcement across all media (air, water, solid and hazardous waste, etc). CCEDS has successfully been in production and proven to meet all of TCEQ's functional and technical requirements.

ABOUT SPS

Software Performance Systems, Inc. (SPS), a small business based in Northern Virginia, is a privately held information technology services provider. Established in 1995, SPS specializes in the design and integration of large web-based solutions for Federal, State, and Local Governments and commercial clients worldwide. SPS has been honored with many national awards, including: #10 ranking in the Computerworld Top 100 Best Places to Work in IT, Deloitte's Virginia Technology Fast 50 and North America Technology Fast 500, and as a SBA Exporter of the Year. More importantly, SPS solutions helped our clients win prestigious awards, including the Grace Hopper Federal Government Technology Leadership Award, the E-Gov Pioneer Award, the Excellence.gov Grand Prize Award, and the Government IT Agency Award for Excellence in Government. **SPS...proven over time.**