



Modernizing legacy systems architecture for growth in natural gas trading



The Challenge

- Modernize existing systems architecture for natural gas trading, including managing transaction data, delivery scheduling, and physical pipeline capacity
- Eliminate legacy roadblocks to adding features and maintaining the platform
- Capitalize on automation to reduce errors, increase consistency, and simplify operations
- Increase overall stability of this critical gas trading platform, ensuring simple programming and readiness for growth



The Solution

- Align SRP's Business Analyst Center of Excellence with the line-of-business to document AS-IS and define TO-BE processes
- Pair internal SRP business analysts with a capable technology partner to collaborate in the development and deployment of the ideal platform
- Capitalize on robust industry leading technologies from Microsoft including: SQL Server, .Net web services, and Windows Presentation Foundation (WPF)
- Enforce rules and auto-populate data at every opportunity, narrowing configurations and formalizing complex transaction patterns



The Benefits

- Comprehensive slate of best practices for internal software development
- Robust, automated systems set the stage for growth and increased performance
- Reliability extends to both data architecture and the data it manages
- Economic synergies across buy, sell, transport, and store functionalities
- Auto-populated options minimize manual tasks, reduce human errors, and eliminate duplicate data entry
- Faster, more consistently performing platform drives broad business value with improved long term deal-making capacities

TECHNOLOGIES IN FOCUS

- SignalR
- SQL Server
- Visual Studio Team Services
- Windows Presentation Foundation

“Realizing a fivefold increase in services over the last two decades, it is critical we continue to prepare for the natural gas needs of our two million+ customer base. Teaming with Neudesic to modernize our mission-critical data architecture has put us on a path to expand service and capitalize on opportunities for future growth.”

– Kent Price, EIM Project Manager, Salt River Project



The Client

As one of Arizona's largest utilities, Salt River Project (SRP) has delivered low-cost, reliable power and water for more than 100 years. Serving the utility needs of more than two million people living in central Arizona, SRP has helped the Phoenix metropolitan area, known as the Valley, develop into one of the nation's most vibrant regions. The organization is an integrated utility, providing generation, transmission, and distribution services, as well as metering and billing services.

The Challenge

SRP manages both financial and material aspects of natural gas trading through its custom platform. The system ensures that gas deliveries are scheduled as needed, fueling the agency's gas-fired power plants that in turn serve electric loads to the Valley. "The platform handles deal capture, gas scheduling, and procurement. As a critical data architecture, it's our proven tool for scheduling and managing power requirements for our constituents," said Kent Price, EIM Project Manager, SRP.

SRP's system is unique – while most trading systems and networks handle financial or data transactions only, this platform manages material capacity as well. In addition to all the data and communication specific to the transaction, gas is purchased and scheduled to move through the two separately operated physical pipelines. As the volume of transactions and their complexity has steadily increased, SRP's critical platform needed modernization, as it was becoming increasingly difficult and time-consuming to keep up with changes to rules and constraints of each pipeline.

In addition, when conducting a trade either through a direct communication with suppliers or via electronic trading on the Intercontinental Exchange (ICE), SRP's traders were required to manually document transaction details such as price, volume, date, and more. "Inputting data by hand was slow and inefficient," said Price. "With buy/sell trades, delivery scheduling, and coordination of pipeline capacity all happening in real-time, we needed a modern data architecture that could handle demand effectively and ensure accuracy."

“ Neudesic took steps to understand the implications of this shift – probably the most impactful structural changes we’ve seen in the last decade – and adapt time and talent accordingly. The team’s familiarity with the tech stack and comfort level in problem-solving kept our 12-month delivery cycle on track. ”

– Kent Price, EIM Project Manager, Salt River Project

The Solution

Initially SRP hoped to utilize its own deep expertise to construct a new self-designed trader centric platform. "There are no off-the-shelf solutions that could replace this legacy system. Our team considered executing an in-house build, however we recognized the project scope and business value at stake required comprehensive expertise in digital transformation strategies as well as technology," said Price. SRP's leadership tapped Neudesic as its technical partner, tasked with design and management of a robust architecture development effort. "Neudesic had the coding talent and strategic business resources to manage this custom build from the ground up," said Price. "These were essential assets in the process, as the new system's primary design purpose was to create a more stable platform and easier technology environment – not just for the initial developers, but also for our in-house team to support in the future," said Price.

Neudesic coordinated activities with SRP's internal business analysts, guiding all team members through Agile and Scrum training. TFS was championed as an integral part of an effective project delivery strategy. It was the central hub of the project used as the code repository as well as building backlogs, documenting test cases, and clarifying acceptance criteria. "Neudesic's process both capitalized on and redefined our internal Business Analyst Center of Excellence, connecting with a range of Microsoft technologies and sophisticated coding that synchronized processes across the enterprise," said Price.

Because SRP buys, sells, transports, and stores natural gas, the agency creates and manages substantial data associated with each activity. It was determined that an automation focus would add significant value to these processes and truly create a modern gas trading platform. By incorporating auto-fill fields throughout each transaction, the new system would eliminate errors, increase consistency, and relieve the heavy documentation demands on individual gas traders.

As the project was well underway, it was discovered that one of SRP's pipeline transport providers would be changing from one scheduling model to another. "Neudesic took steps to understand the implications of this shift – probably the most impactful structural changes we've seen in the last decade – and adapt time and talent accordingly. The team's familiarity with the tech stack and comfort level in problem-solving kept our 12-month delivery cycle on track."

Focusing on Microsoft technologies also kept processes sharp. Working collaboratively with SRP's business analytics team, Neudesic not only upgraded the technology package with SQL Server platform and web and Windows services, but also provided a road map for future evolution.

“**Collaborating effectively with Neudesic was integral to achieving technology enhancements in our natural gas management platform. We now have a smart, sophisticated trading system that performs reliably, positions us for long-term technical performance, and sets us apart from our competitors.**”

– Kent Price, EIM Project Manager,
Salt River Project



The Benefits

"We now have a comprehensive set of best practices for software development," said Price. SRP's new gas trading platform is based on team norms and a robust documentation system that values clear acceptance criteria. Where the firm previously spent nearly 60% of its project effort on deal entry optimizations alone, today the process is refined to allow traders to express their intent. Schedules are linked and data is filtered using advanced business rules, presenting the user with only valid options for points, contracts, and other key scheduling inputs. "We now auto-populate every field possible, removing the open-ended nature of what is already a complex trading environment," said Price.

This approach improves overall reliability in every way. Uptime is protected with error-free data entry, while consistent, documented information drives ideal communications. The agency has progressed from 1,100 megawatts to 5,000 megawatts of gas-fired generation, and its modernized platform is poised to handle growth in real-time, remaining responsive to always changing workloads and demand profiles.

"Our new system is crucial to our leadership and capabilities in natural gas services. As a large utility, our teams are handling steadily increasing capacity with much less stress than our smaller regional peers. Our technology investment and partnership with Neudesic has ensured we have an effective data architecture that performs non-stop – it's streamlined and efficient, which are values we can share with our customers."

Contact Us Today!

303.248.8321 or visit www.neudesic.com

