IT Solutions

Case Study:

Full Life Cycle Application Development

CDI's custom, full software development life cycle services produces quality application for international energy company and subsequent maintenance contract.

Client Description:

A Middle East-based energy company that participates in a broad spectrum of activities including oil and gas exploration and drilling, conducting geophysical surveys and establishment of a wide range of industries and services in support of the oil and gas, petrochemicals, metals, mining, electricity and water sectors, either directly or by forming specialized subsidiaries.

Background:

Our client was affiliated with other large International Energy conglomerates to build Power and Water Desalination plants in Abu Dhabi, United Arab Emirates. Desalinated water is a bi-product of power generation. Each partnership resulted in the creation of a separate company to build a plant and to manage and operate that plant when it moved to production state.

Each plant sells power and water to a single customer, the Abu Dhabi Water and Electricity Company (ADWEC). ADWEC, a government appointed organization, is the "Single Buyer and Seller" of power and water in Abu Dhabi. ADWEC balances demand and supply through sales contracts on the basis of a Bulk Supply Tariff (BST) with distribution companies and through Power and Water Purchase Agreements (PWPAs) with multiple generation companies.

The BST and PWPA are key agreements because it is through these that plant capacity limits are set and profitability is managed and capped. The PWPA determines the plant generation service levels and ultimately the rules and regulations within which the plant can charge ADWEC for the power and water it delivers to it.

Business Issue:

When building its first plant in Abu Dhabi, our client needed a reputable software organization to help it interpret the PWPA and thereafter develop a Yield Accounting and Settlement system to gather data from electronically collected meter power signals and apply extensive and complex calculations to produce an invoice to submit to ADWEC each month. Accuracy to the penny was required on high-volume, multi-million dollar invoices each month.

CDI Solution:

CDI was selected as the vendor of choice to develop the first Invoice Settlement System for the plant in Abu Dhabi.

The solution was three-fold:

- CDI worked in collaboration with our client and their Subject Matter Consultants to interpret the PWPA and arrive at a series of highly complex and precise calculations in the form of logic diagrams.
- CDI designed the architecture and framework upon which the system would be built.
- CDI translated the logic diagrams into software, providing a robust, secure, auditable and user-friendly application.

The project was eighteen months in duration and was delivered on time and within budget. The application was deployed at both the plant itself and in the head office in Abu Dhabi. Implementation required two CDI software developers to travel to Abu Dhabi to install and deploy the application on the customer's servers. An independent CDI SQA team was responsible for qualifying the product before it was deployed at the customer plant.

Results:

CDI exceeded our client's expectations with both the product and with the quality of the resources who built it. Subsequently, CDI was awarded a second Invoice Settlement System project; to develop an application for our client's affiliated Operating Company and another Power and Water

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Desalination plant it was building.

Requiring even more complex logic diagrams and an increased volume and diversity of signal data, the new Invoice Settlement System was developed by essentially the same CDI Software Engineers and Management team that successfully delivered the previous product. Having gained enormously from the experience of delivering the initial product, the CDI team was able to develop the larger application in 16 months, at a significant cost reduction to our client.

Furthermore, CDI's knowledge of interpreting the PWPA into logic diagrams negated the need for our client to bring in expensive consultants for that aspect of the project, providing further cost savings. One software developer traveled twice to Abu Dhabi during the course of the project, first to assess the requirements and secondly to deploy the application at the plant.

Since the second project, two more applications have been developed for our client and its affiliates, one in Ghana and one in Al Jubail, Saudi Arabia.

All four applications have been enhanced, progressing from stand-alone client/server applications to web-enabled .NET technology.

Our client has further contracted CDI to manage the international application support and enhancement of all four settlement systems, which continues to this day at the Phoenix Application Center.

Technologies Used:

- VB6
- Crystal Reports
- C#.NET; ASP.NET
- HTML
- SQL SERVER 2000+
- IIS
- Windows Authentication
- Microsoft Office Products