Business Sector: **ENVIROMENTAL**

CASE STUDY:

EDMS Selection, Implementation and Integration for a Regional Wastewater Treatment Authority

OVERVIEW:

A Regional Wastewater Treatment Authority in the United States served 18 counties and cities with 18 treatment plants and over 100 pump stations. In order to manage operational complexity that included both wastewater treatment and analysis, the customer utilized a legacy Environmental Data Management System (EDMS) that included both a Laboratory Information Management System (LIMS) and a Pretreatment Information Management System (PIMS). The PIMS enabled the customer to monitor and enforce industrial user compliance, while the LIMS was necessary to effectively manage both pre and post treatment analytical data.

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As part of its initiative designed to improve and optimize its EDMS system, the customer wanted to chart the best path forward in terms of upgrading or replacing the LIMS and PIMS, and improving integration between the EDMS and other systems and devices (e.g., analytical instruments, EDS, GIS, CARS, SCADA, etc.). Due to extensive experience and expertise in environmental testing laboratories and the municipal water/wastewater industry, the customer chose Astrix Technology Group to perform an evaluation of its current systems. In addition, Astrix was contracted to design and help implement the roadmap to the optimized future state.

BUSINESS CHALLENGE:

The customer was experiencing several issues in their laboratory that they hoped to remedy with this project:

- **Feasibility of data migration and plan for data migration from legacy system to a new system to be selected.**
- **Automated generation of regulatory reports, such as Discharge Monitoring Report (DMR), and other electronic data deliverables (EDD).**
- **Viability of replacing existing PIMS with an equivalent or superior product.**

In order to address these business challenges, the project was designed to proceed in 3 phases, all of which Astrix participated in:

Phase 1: **Needs Assessment and Marketplace Evaluation**
Phase 2: **Technology Procurement Facilitation Services**
Phase 3: **Implementation and Post-Implementation Support**

SERVICES PROVIDED:

The services provided by Astrix to the customer on this project were extensive and included:

Phase I Services

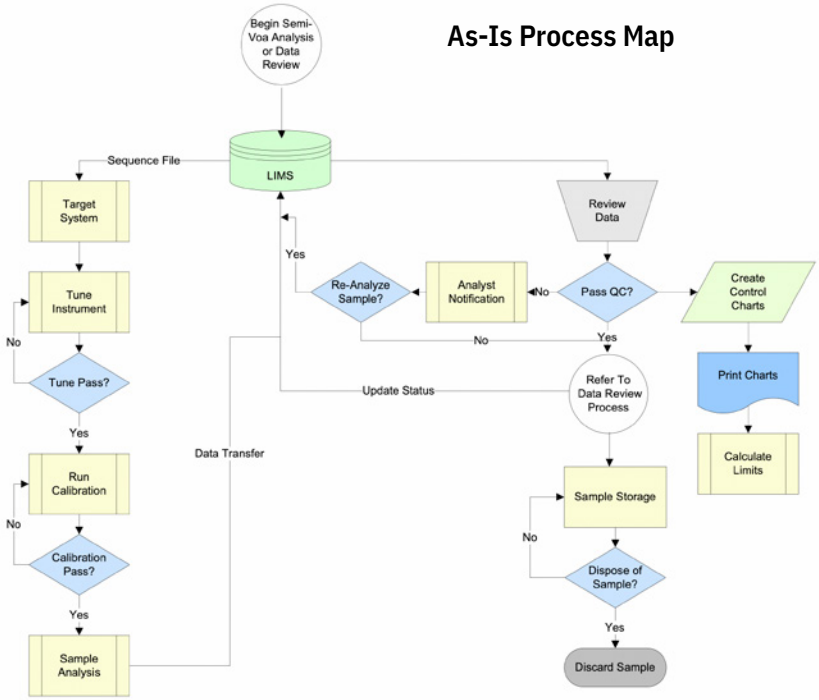
Project Initiation and Kickoff Meeting – Prior to any site visits, the Astrix team reviewed available information about the customer's laboratory environment, processes and procedures in an effort to become familiar with the customer's operations. The kickoff meeting served to introduce Astrix team members and the customer's project team staff. In addition, the project approach was finalized with input from the customer to establish a shared project vision and focus.

Workflow Analysis – This work was critical, as it established the foundation for the rest of the project. The Astrix team met with each stakeholder group to develop the current state or "As-Is" work process maps. Note that stakeholder groups in EDMS projects can be very diverse and include engineers, samplers, regulatory enforcement, wastewater utility operators, landfill operators, accounting, finance, procurement, information technology, legal, security administration, etc.

The current state (As-Is) process maps served to identify inefficiencies and wait states and thus helped guide development of the optimized future (To-Be) state work processes that detailed process improvements.

The System Opportunities Matrix was summarized through the creation of To-Be process maps, and both As-Is and To-Be process maps were provided to the customer's project team members for review and discussion before being finalized.

As-Is Process Map



Requirements Analysis – Once the To-Be work process was successfully mapped, the Astrix team collected and documented the EDMS requirements of all the stakeholder groups to support the new workflows. These requirements were segmented into the following categories:

Functional Requirements	**Integration** Requirements
Regulatory Requirements	**Security** Requirements
Technical Requirements	**Administrative** Requirements
Reporting Requirements	**Business** Requirements

Given that these requirements flowed from the To-Be process maps, they were constrained to business improvements.

Data Migration Evaluation – An extensive examination of the legacy data was performed with a focus on the data needs going forward by each data user group. A Data Migration Options Plan was created that identified:

- **A list of current uses of the existing data contained in the legacy systems.**
- **Definition of data sources that needed to be accessed for future reporting or information distribution.**
- **A solution options plan that proposed various data migration plan alternatives.**

System Integration Evaluation – The Astrix Team Astrix evaluated all requirements regarding the integration of current and planned systems with the EDMS. Instruments that required integration were identified and software version documented. Databases and third-party commercial systems that need to be integrated were evaluated and interface requirements defined. Finally, system integration process flow diagrams were developed for each interface.

PIMS Evaluation – The legacy PIMS was evaluated to determine the best course of action to bring the system into alignment with the upgraded To-Be work processes and overall data management strategy. A PIMS Evaluation Report and Solution Options document was created that ultimately recommended implementation of a new PIMS.

Phase II Services

Vendor Qualification and Specification (RFP) Development – Using the information from Phase 1, the Astrix Team generated a Request for Proposal (RFP) that was sent out to a list of PIMS and LIMS vendors.

Vendor Evaluation and Short List – The Astrix Team developed a score card for each vendor. Astrix also assisted with reviewing and scoring the vendor proposals and recommended a short list of vendors based on how their responses aligned with the technical, business and functional requirements, as well as the schedule and budget of the project.

Demonstration Scripts, Vendor Demonstrations and Selection – Customized demonstration scripts were developed that followed the customer's To-Be process flows using actual customer data. Additionally, a score card was developed for each of the vendors on the short list. Once the different vendors had been scored, the Astrix Team assisted the customer with the final vendor selection process.

Phase III Services

Astrix Phase III services were extensive. Work consisted of assisting the customer and/or vendor with contract administration, implementation/configuration, instrument integration, interfacing all EDMS solutions, data migration, re-work of regulatory reporting (e.g. DMR's, Electronic Data Deliverables), system testing, user training, post implementation and acceptance activities. Additionally, a Management Plan for EDMS lifecycle planning was developed by the Astrix Team.

RESULTS DELIVERED:

The customer was very pleased with the contribution of the Astrix team to their EDMS project. By re-working the customer's EDMS system and effectively interfacing all the individual solutions, the Astrix Team helped to create to a much more efficient, automated and organized process for both the laboratory and pre-treatment groups. In addition, both internal reporting and external reporting to state agencies was significantly expanded and improved.