CASE STUDY: Pursuing Asset Management Data

Xtensible client is a utility in the United States with a customer base of approximately 7 million providing:

- Electricity
- Gas

They are partnering with Xtensible for consulting services:

- System Integration
- Business Intelligence & Data Analytics

THE NEED

The Utility wants to use their disparate asset related data for operations, maintenance, support, and financial decision making.

BUSINESS VALUE

- Asset Management
- Maintenance Planning

RESULTS

Data files where processed, including profiling and corrections, utilizing Xtensible developed IP, deposited in a standards-based data store for consumption by existing asset related applications, such as pro-active replacement strategy for assets, for ad hoc analytics, and for use by future use cases as the utility continues its modernization and innovation activities.

OPPORTUNITY

The utility is investing in system safety and reliability. This includes improvements to transmission and distribution system assets throughout their service territory. Also focusing on infrastructure modernization and innovative technologies to drive enterprise analytics. As part of their continued focus on asset management they are looking to gain additional value from regular tests they are conducting on their different asset types, such as transformers, breakers, capacitors amongst others. These tests include for instance verification of insulation integrity, capacitance testing, and detection of winding damage, also testing the mechanical integrity of power transformers. The utility recognizes the benefits of this test data across multiple business functions and are looking for a standards-based storing of data in a commercial database to make it available to end users.

THE APPROACH

With close to 15,000 files and the below key asset types to be processed initially, for inclusion in the utilities' data store, to utilize the data for analytics, a structured, automated approach is needed.

- Autotransformer with Tertiary
- Oil Circuit Breaker
- Vacuum Breaker
- Coupling Capacitor
- Potential Transformer
- Reactor
- Spare Bushing
- Two-winding Transformer
- Air Magnetic Breaker
- SF6 Dead Tank Breaker
- Live Tank Breaker
- Current Transformer
- Recloser
- Surge Arrestor
- Voltage Regulator
- Three-winding Transformer

Xtensible has in-depth understanding of and experience with IEC CIM standards-based asset related data modeling and analytics. In addition, Xtensible has developed IP over the years to process this type of information from a variety of test equipment manufacturers. The test data at the utility will be identified, profiled, and validated using existing methodology, with an understanding that an accelerator will be needed to capture some vendor specific items. Missing data and data fields will be identified, combined with gap analysis information for expeditious data transformation and correction. The data store will be designed, developed, and implemented based on the initial data scope, while keeping extensions in mind, for example additional test equipment manufacturers, their test procedures and associated file types. The embedded asset registry will be the system of record for the assets within the relational data store, allowing for consistency across systems.

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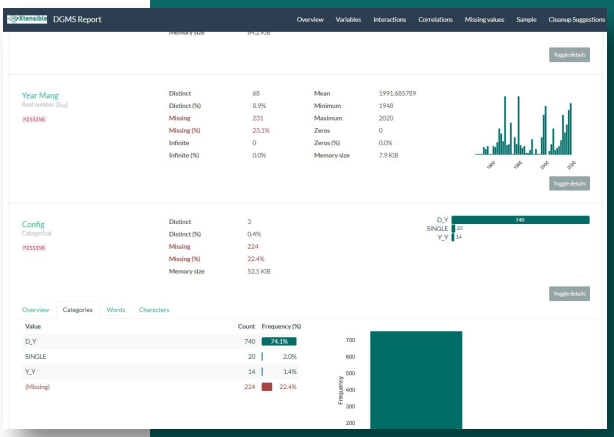
DATA PROFILING AND QUALITY

Utilizing internal IP and tools developed, Xtensible was able to profile the data and provide insights to the company of the number of assets, asset types, test sessions per year, test session per asset type and more meta data. This provided file information, giving statistics, allowing for the utility to identify files in scope and for initial correction, such as bad serial numbers, null value for test date, missing test values etc. Subsequently data profiling and quality checks were conducted to provide more in-depth insights, evaluations and recommendations around the data. This included asset name plate information, serial number and assessing other available fields.



> A VENDOR AGNOSTIC APPROACH IS NEEDED FOR ADVANCED USE OF DATA

RESULTING DATA STORE

The data store at the Utility will be critical to holding asset information for their asset fleet and will also provide asset information to multiple asset related vendor systems for different groups and end-users at the utility.

"To ensure data quality, for accurate analytics, it is important to have clean data from the past and it is also important that future data remains clean. We do have the ability to provide automated data quality scores on an on-going basis which simplifies the process", states Michael Covarrubias, VP of Strategy and Solutions at Xtensible.

ADDING VENDORS AND ASSETS

Xtensible continues to provide professional services to the client for:

- Data Architecture & Data Modeling
- Business Intelligence & Data Analytics

The initial scope includes a subset of available test files and asset types supported by one vendor. The utility is evaluating this initial implementation, we are jointly looking at lessons learned and will decide on the path forward, adding other vendors, asset types and test files.

BUSINESS UNITS INVOLVEMENT

- Information Technology
- Asset Management
- Field Inspections

TECHNOLOGIES

- Xtensible MD3i
- Xtensible Flex Data Model - Asset
- MS SQL
- ABB ABILITY™ ASSET SUITE
- Doble DTA
- Doble SFRA

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