

Implementing DAM Systems

Legacy vs. state-of-the-art to support next generation processes

Grid Asset Management, September 30th 2020

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a leading company in the energy sector



top 4 worldwide in renewable energy



present in 16 countries operating across the entire value chain



10M customers in electricity



12k employees

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EDP's Digital Factory

Agile structure to enable digital initiatives, with the ultimate goal to shorten time to market for EDP's Business Units

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Areas of focus

The Digital Factory focuses on applying digital tools, methodologies and technologies to solving challenges in 3 strategic pillars:

- Customers
- Assets & Operations
- Enterprise





ANALYTICS 4 ASSETS (A4A)

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distribuição



BACKGROUND

Rationale, business case and key drivers PROJECT

Main achievements, benefits and learnings CULTURE

Development of a data driven culture

IN A DIGITAL TRANSFORMATION CONTEXT, ASSET PERFORMANCE MANAGEMENT INITIATIVES REPRESENT A POTENTIAL VALUE THAT CAN NOT BE IGNORED...















...HOWEVER, THE JOURNEY FROM RAW DATA TO RELEVANT INSIGHTS AND IMPACTFUL ACTION REQUIRES INVESTMENT AND CULTURAL CHANGE TO BE SUSTAINABLE



Source: Gapingvoid Culture Design Group

Data is abundant: most assets produce more data that we can process or store

Transforming data into insights requires **significant investment and skilled resources**

Return on investment can only be positive if **insights are used to create favorable impact**

AT EDP DISTRIBUTION, ADVANCED ANALYTICS PROVIDES ANSWERS TO TWO RELEVANT BUSINESS CHALLENGES



INVESTMENT PLANNING

Asset investment planning was mainly based on assets projected lifespans, not considering distinct usage contexts throughout the lifespan.



ASSET MAINTENANCE

Asset maintenance was based on corrective and/or preventive (scheduled) strategies, following "blind" rules i.e. **based on time and usage, not asset condition.**



ADVANCED ANALYTICS

Develop **predictive models** to determine fundamental indicators for the planning and optimization of asset investments, as well as to anticipate operational problems allowing for proactive actions.

THE DECISION TO FOLLOW A TAILOR-MADE APPROACH WITH CUSTOM DEVELOPMENT WAS BASED ON EDP'S SPECIFIC NEEDS AND THE MARKET'S LOW MATURITY

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Key decision	drivers
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Complex problem and solution

Advanced analytics models specific for our usage scenario are not yet available in out-of-the-box tools, demanding significant customization effort

Low level of the market's maturity

In prior digital transformation initiatives several industry solutions were evaluated, showing lack of maturity in the area of Business Intelligence & Analytics applied to our specific energy sector

Phased implementation

The objective was to have a gradual scale-up, managing risk while proving the solution's suitability

Levered on in-house digital and agile capabilities as accelerators

Using DGU's Minimum Viable Product delivery model, tuned for agility and quick time-to-market

Asset diversity and capilarity as challenges

Data pipeline engineering for such diverse and capilar asset base was seen as a major challenge from the start, requiring a carefully structured approach

THE PROJECT DEVELOPED ANALYTIC MODELS AND DASHBOARDS WITH HEALTH INDEXES AND FAILURE PROBABILITIES FOR THREE ASSET CLASSES



Example dashboards



RESULTS WILL ALLOW PROACTIVE ACTIONS WITH HIGHER EFFECTIVENESS IN A PATH TOWARDS CONDITION-BASED ASSET MANAGEMENT...





AN INTEGRATED EXECUTION EFFORT DELIVERED 8 MVPs THAT OPTIMIZE IN-DEPTH KNOWLEDGE OF ASSETS, THEIR MAINTENANCE AND INVESTMENT STRATEGIES



RESULTS & BENEFITS

- Business applications promoting a datadriven culture, with a new strategy for advanced asset management, supported on condition-based investment and maintenance plans
- Solid, scalable technological platform providing better asset intelligence and skill building, with data quality audits and better awareness of the importance of data integrity
- Collaborative work, built on proximity and trust, in an optimal knowledgesharing context with end-to-end scope from data pipelines definition to modelling and visualization, mixing digital skills with subject-matter expertise

A4A IS A FUNDAMENTAL PIECE IN A DATA-CENTRIC ASSET MANAGEMENT STRATEGY



STRUCTURED DATA COLLECTION

Asset data collection, quality assurance and **cconsolidation in a scalable Data Lake.**



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Building blocks for Analytics success

An attempt at defining the key success factors for sustainably generating value with Advanced Analytics in a utility environment ECHNOLOG

Scalable platform+ Right software stack

Al Awareness + Empowerment + Subject Matter Expertise + Tech infrastructure + Data Science

EDGE

Model explainability + Ethics + Agility

SPARENC

The right use cases + Data quality + Scalability DATA eda

Thank you. jorge.simoes@edp.com

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