PFE

ALBEKBASHY Rahma

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Introduction

In response to the evolving needs of our stakeholders to have a comprehensive dashboard at line level to better analyse the efficiency of all the Sidel line connected around the world.

We decided to focus on a project : the "Development of a Power BI Interface for Line Equipment."

As a packaging industry, this project is designed to provide our internal users with a Power BI interface, providing them with visibility into the performance of line equipment and then help them to elaborate a root cause analysis.

So they can enhance operational efficiency and unlock valuable insights.

Objectives

The goal of the "Development of a Power BI Interface for Line Equipment" project at Sidel is to empower internal users with a user-friendly platform for monitoring and optimizing the performance of line equipment.

By leveraging Power BI, the project aims to:

* Enhance Visibility: Provide real-time and comprehensive visibility into the operational metrics of line equipment, allowing users to monitor performance effortlessly.
* Simplify Data Interpretation: Streamline complex datasets into a visually intuitive interface, making it easier for internal users to interpret and analyse critical information.
* Enable Proactive Maintenance: Facilitate early detection of issues and predictive maintenance by identifying patterns and trends in equipment performance data, minimizing downtime and optimizing operational efficiency.
* Improve Efficiency: Streamline workflows and processes by centralizing diverse datasets, reducing the time and effort required for data retrieval and analysis.
* Drive Continuous Improvement: Foster a culture of continuous improvement by providing a platform for ongoing analysis and optimization of line equipment performance.
* Maximize Competitiveness: Position Sidel at the forefront of technological innovation within the industry, ensuring that our internal users have access to cutting-edge tools that contribute to the company's overall competitiveness.

By achieving these goals, the project aims to not only elevate the efficiency of internal processes but also empower Sidel to make strategic, data-driven decisions that positively impact the company .

Specifications

* Python on PyCharm environment:

Because all our projects on GitHub are implemented using Python language relatively to the company’s policy

* ETL (Extract, Transform, Load) on Python:

using Cloud Engine, Cloud Function or Cloud Run solutions from Google Cloud Platform.

* PowerBI:

because it is the Sidel’s company tool for data visualization

* Data:

Real data collected from Sidel machines and lines connected around the world

Planning

**Activity** **due date**

Dataset analysis and reports architecture 31/01/2024 (4 company weeks)

*Analysis and validation of the data*

*Meeting stakeholders to agree on report architecture (main needs)*

Data extraction 23/02/2024 (16 company days)

*Design the query to extract all the data with the correct correlations and/format*

Performance Compare Report implementation. 30/04/2024 (6 company weeks)

*Detailed development of the reports with all functionalities*

*Periodical meeting with stakeholders to validate report evolution.*

Validation and deployment 10/05/2024 (5 company days)

*Presentation of the report to stakeholders*

*Deployment of the reports in Sidel’s Office365 with controlled access*

Automatic data pipeline implementation 07/06/2024 (3 company weeks)

*Implementation of automatic pipeline to automatically extract the data*

*and automatically implement the data in PowerBI report*

Upgrade and new reports opportunities. ￼ 30/06/2024 (2 company week)

*Monitoring the data quality of the report, debugging and discuss features*

*Improvements with stakeholders.*

*Evaluate possible next steps of developments.*

Project closure 30/07/2024(2 company weeks )

*Prepare documentation.*

*Training materials and session to explain report functionalities*

*Project handover to Advanced Data Analytic team*