

## Flash Analysis

Experience demonstrates that significant economic gains can be achieved through better knowledge of the production tools, earlier detection of anomalies and better control of critical parameters. Through Advanced Analytics, it is possible to understand and quantify the link between parameters and abnormal behaviours. From a long-term perspective, once anomalies are predicted, integrated decision systems can be designed in order to help set “manipulable parameters” values and sustain optimal performance.

With over 15 years of experience in Advanced Analytics for industry, PEPITe has developed their own advanced analytics implementation methodology. Our solutions are inspired by state-of-the-art Advanced Analytics technologies but also by continuous improvement methodologies such as lean manufacturing and six-sigma.

In order to initiate analytics at client site, a Flash Analysis is proposed to compute more accurately the impact of a specific opportunity with historical data.



### 1. Process understanding and data collection

**Which Key Performance Indicators (KPIs) measure my plant performances such as yield, energy efficiency, throughput, product quality, equipment availability?**

The first phase of any analytics project allows our team to understand your process and business challenges.



### 2. Execution of the performance flash analysis and results presentation

**What are the potential savings after implementing a pilot project?**

The Flash Analysis is a preliminary analysis on historical production data to quickly quantify the potential improvements and main sources of variability that might explain low performances.

The goal is to refine the expected savings, identify possible roadblocks and prepare the brainstorming sessions with plant staff.

The duration of a Flash Analysis is about three (3) elapsed weeks, depending on client availability.

### 1. **Process** understanding and data collection

The objective is to understand the process and collect all the information and data necessary to execute the flash analysis and build the business case (1 day onsite).

#### Activities

- Define the detailed scope with the plant staff
- Process review – In particular, understand the design of the process and the operation conditions such as products, grades, quality windows, production targets, bottlenecks, etc.
- Establish the list of relevant tags
- Establish the list of KPI to be analysed, validated with the plant
- Collect data from historian for the last year

#### Deliverables

- List of validated KPI for the flash analysis

### 2. **Execution of the performance flash analysis**

The next step is to carry out a preliminary analysis of historical production data; this step is called "flash analysis". The goal of the flash analysis is to estimate the performance improvements the plant/process can realise by implementing the full OPTImaestro project. This is achieved through the analysis of the KPI variability and the study of this variability reduction.

Based on historical performance, a realistic performance benchmark will be established. Historical performance above this benchmark will then be estimated over a 6-month or 1-year period to quantify variability.

Tasks:

- Prepare data for analysis
- Explore historical data and calculate the KPI – flag possible data quality issues
- Analyse trends and assess variability
- Compare performance with best historical performance or industry benchmarks
- Define a realistic target considering production and quality requirements
- Quantify the performance gap
- Estimate the potential cost savings
- Present the results of the flash analysis

Deliverables:

- Flash Analysis presentation
- Flash Analysis presentation report in .pptx format,

Input required from Client

In order to assure the success of this project, PEPITe relies on a close collaboration with the plant staff. Thus, this project will involve the support of one or more people from Client (process/production engineers, IT engineer, furnace engineer, etc.) And this, in order to answer to all questions that may arise during the mission.

Also, the following inputs may be required:

- P&IDs and PFDs to understand the process
- If existing, list of tags available in the data historian(s) including tag ID, description and units
- If possible, .csv or .txt files with the tag values for a determined period of time
- If existing, list of parameters concerning material properties (raw and product materials) and measured/recorded (e.g.: lab data);
- Copy of relevant reports and production sheets covering KPIs
- Copy of relevant DCS/intranet/lab information/data historian screens, if applicable
- Description of data received.
- Access to key resources: engineering, management, HR, accounting, IT
- Any other useful information in the context of this project