



SERVICE COCKPIT FOR THE ANALYSIS AND MONITORING OF SERVICE OPERATIONS

Service processes generate a large amount of data that can be used for analysis, monitoring and optimisation. Often, the value of this data is only created by combining and aggregating different data sources.

FOR THE FOLLOWING CHALLENGES

- Early recognition of trends
- Reliable long-term planning
- Continuous monitoring of service process KPIs
- Merge multiple data sources to calculate higher-value KPIs
- Target-group-oriented dashboards and visualisations (for example management or product development)
- Increasing customer satisfaction through process optimisation

THE USE CASE

- Data on various aspects of service delivery are collected in a central database.
- Based on the data, KPIs can be calculated continuously.
- The aggregated data is displayed in the Service Cockpit and can be filtered by product, location or time period, among other things.
- A clear presentation of trends allows irregularities to be identified at an early stage and resources to be planned more precisely and with greater foresight.

By combining data from different data sources, a wide variety of performance metrics can be calculated and trends identified. These can be clearly displayed in a dashboard.

THE SOLUTION IN DETAIL

Building on existing data sources, a common data basis is created for the Service Cockpit. For this purpose, data from existing data sources is queried on the one hand and data is aggregated and linked on the other hand in order to map the desired KPIs.

- Key figures such as the current number of active service cases, average completion time and trends are calculated regularly and displayed in the dashboard.
- Predictions are made for specific values, which can be used to calculate utilisation rates and costs, for example.
- Individual dashboards are created for different target groups and made available based on a predefined role and rights concept.

PROJECT STATUS

- Implementation based on data exports
- Data preprocessing using Apache Airflow
- Dashboard with Apache Superset

REQUIREMENTS

- The commissioning person or service personnel must write texts describing the error condition for each service case. These should contain precise error symptoms, but should not anticipate the diagnosis.
- Defined error classes must exist.
- For each error class, at least 50 descriptions are needed to train the model. The fewer examples and the more error classes there are, the less precise the assignments become.
- The metadata such as device age or device type must be clearly linked to the faulty device.

AVAILABILITY

- Analyses and forecasts are individually planned and implemented according to customer requirements.
- grandcentrix supports with existing concepts and know-how in the identification of KPIs.



SPECIFICATION

	Input data	Preprocessing	Data storage	Algorithms	Interfaces
High-level description	Service data	Data cleansing and calculation of KPIs	Storage of prepared data in database	Calculation of trends and prediction	Dashboard
Configurability	Select data sources	KPIs	Lead time	Prediction or model parameters	Roles and rights concept
Technical implementation	Import of source files, especially by query from other databases	Data Science Pipeline	PostgreSQL database	Data Science Pipeline	Apache Superset
Specific example from the speedboat project	Timing of service cases, error statistics for individual devices, costs	Hourly import of data, aggregation and interpolation of missing values	Prepared data is stored in the PostgreSQL database connected to the dashboard	Prediction of service cases in the course of the year	Dashboards with a thematic focus, e.g. process-oriented key figures or error statistics

