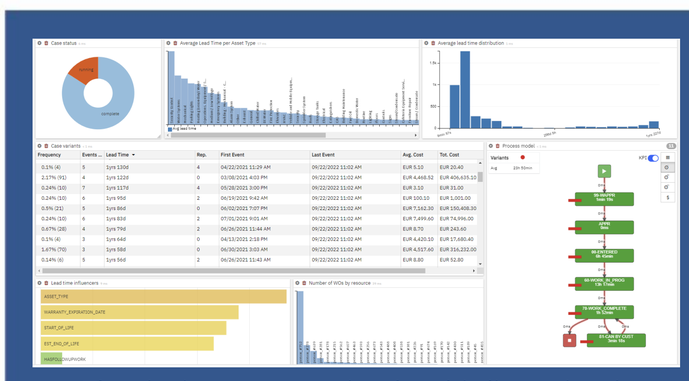
Asset Maintenance Process BI

AI-Augmented analytics dashboards for process health

- **Proper asset maintenance processes in organization are critical for business continuity and cost reduction**
- **IBM Process Mining (IPM) provides data driven process analysis solution to investigate and optimize business processes health**
- **Our proposal is to augment the IPM analytical dashboards with AI methods**
- **Different AI methods would support generic outlier detection and root-cause analysis, vrs specific process control flow deviations detection vrs business KPI-specific analysis**
- **The augmented dashboards will allow to visualize AI-derived insights into process data and support the non-business analyst user:**
  - **in finding deviations and bottlenecks in his processes**
  - **performing root-cause analysis of those deviations**

Demonstration of KPI-specific **process duration** analysis dashboard:

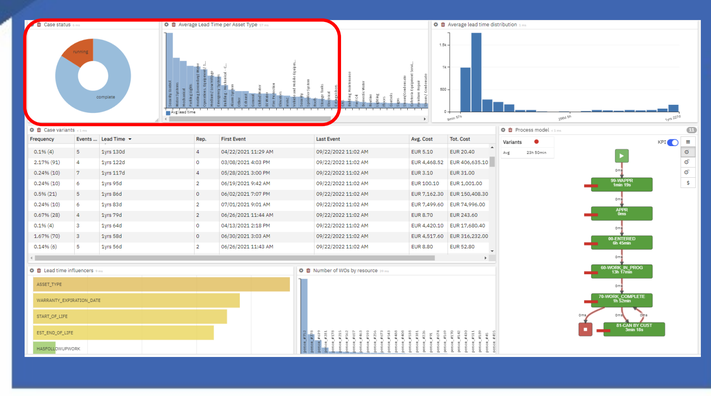


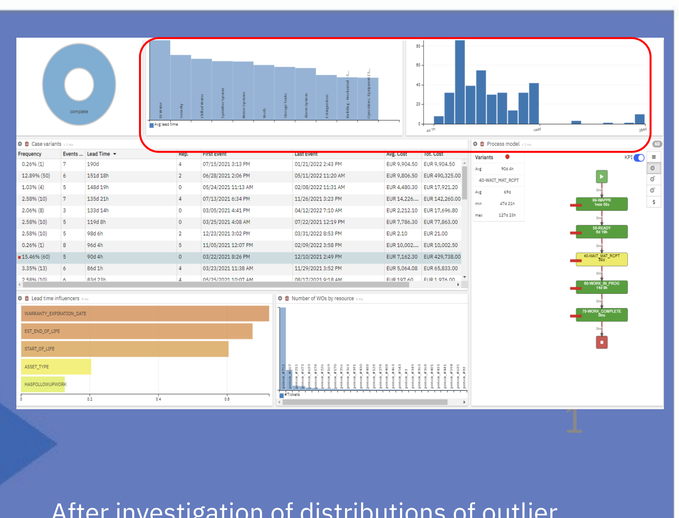
- The aim is to support visual multi-dimensional analysis of process case data to find duration outliers and perform root-cause analysis as to why they are different than normal
- The dashboards are used as a guided “breadcrumb-following” investigation path for non-business analyst user
- First part of investigation will discover outlier cases in term of duration, second part will focus on process model of those cases to discover problematic activities and third will allow us to do root cause analysis
- The same method can be applied to other KPI-specific dashboards

Process duration dashboard

Outlier dimensions detection

As first step, AI-driven analytics define which data dimensions are worth investigating - those present most in duration outlier cases. The UI widgets for those features will then be presented to the user to allow filtering-in of what he considers to be interesting cases for further analysis.

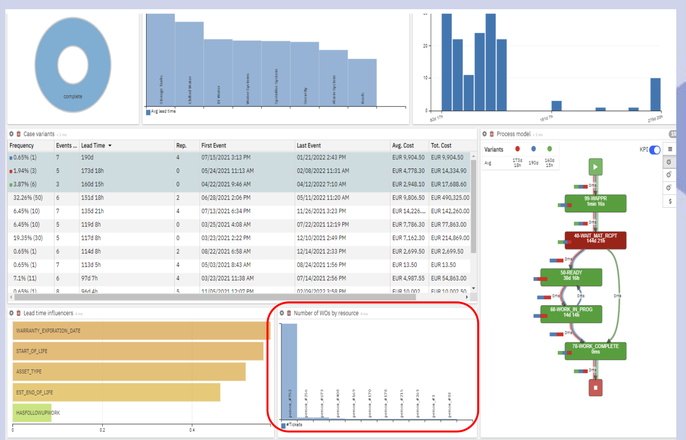




After investigation of distributions of outlier cases across significant case dimensions, we filter in dimension values with most significant deviating cases in terms of duration
Afterwards we choose a duration threshold. The user will filter out all cases bellow this duration and will remain with longest-running cases

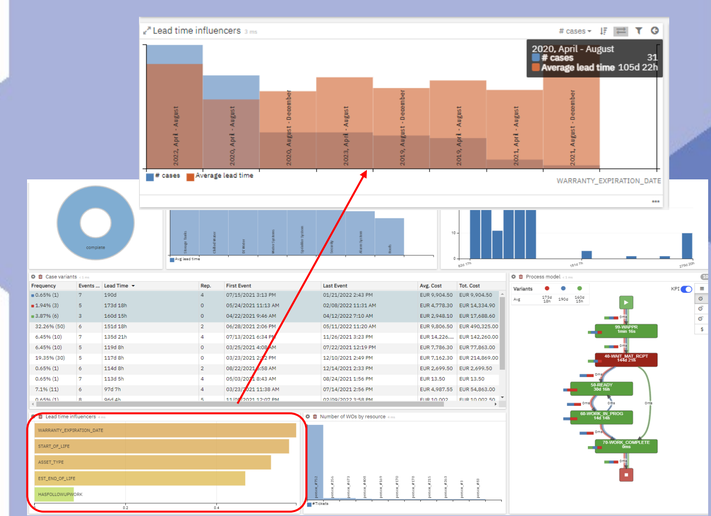
Outliers cases filtration

Finally, as last step the user would also like to understand which resources are assigned to the problematic activities and if this number is adequate for the task based on the activity properties explored in previous steps

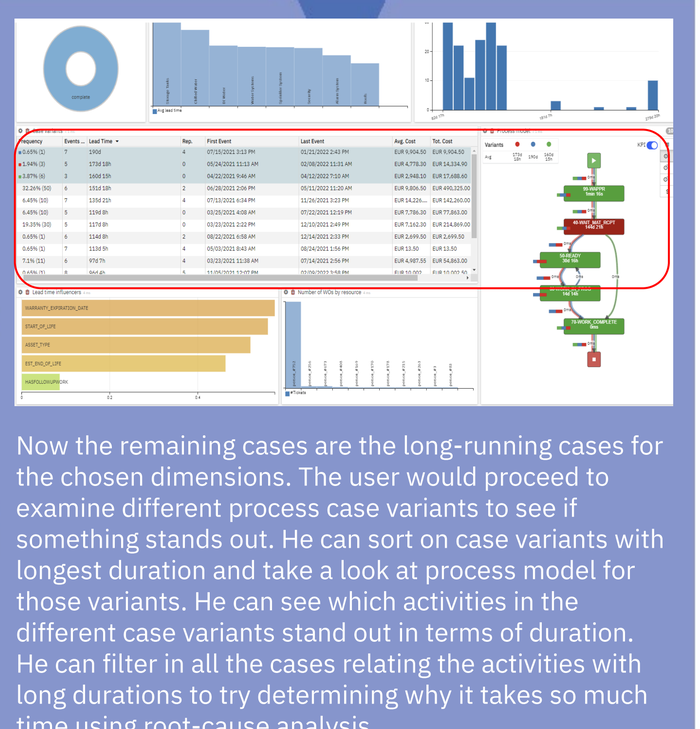


Resource usage analysis

As root cause analysis the user will use lead time influencers features to understand what features affect the duration of chosen cases. He can click on different influencer features and see the duration distribution for different values



Root cause analysis



Now the remaining cases are the long-running cases for the chosen dimensions. The user would proceed to examine different process case variants to see if something stands out. He can sort on case variants with longest duration and take a look at process model for those variants. He can see which activities in the different case variants stand out in terms of duration. He can filter in all the cases relating the activities with long durations to try determining why it takes so much time using root-cause analysis

Case variants analysis