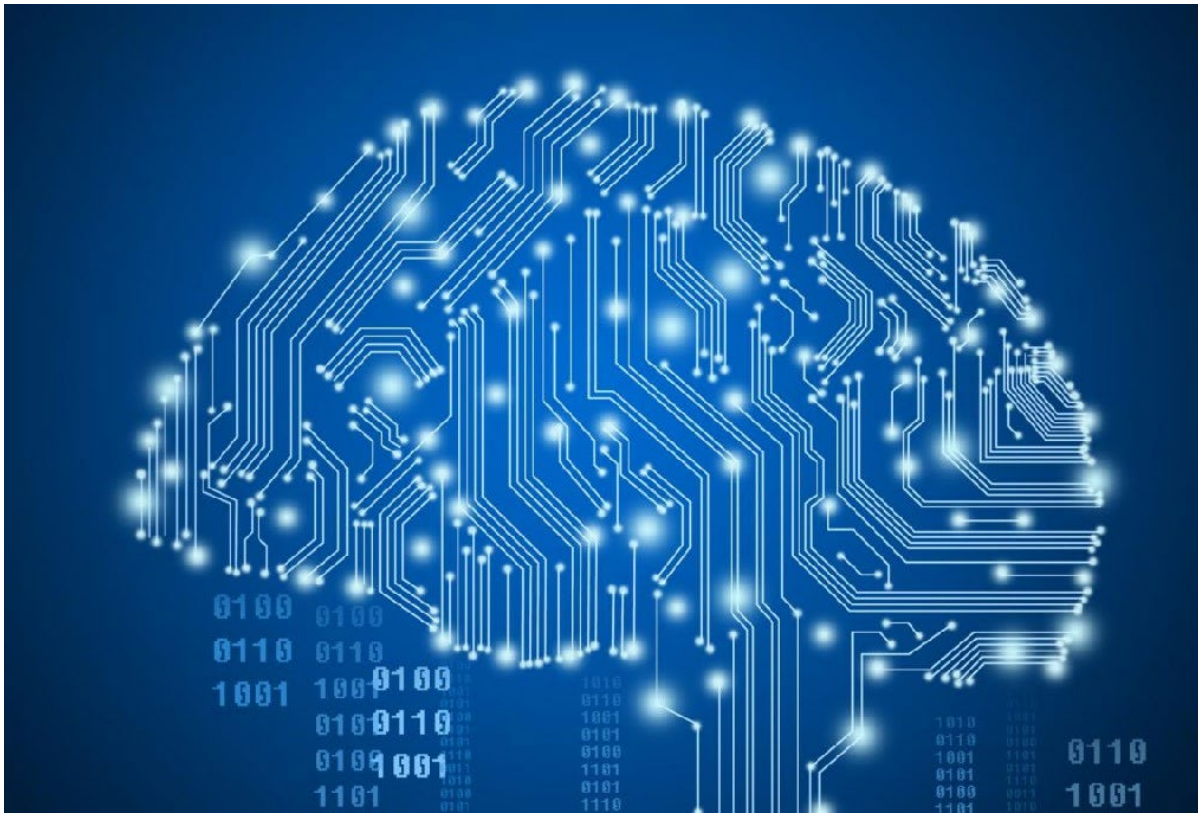

NEMO Version 2023-04-14

Release Letter

Contents

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1. Summary

As of April 14, 2023, proALPHA has released NEMO version 2023-04-14.

NEMO – standing for Natural Enterprise Management Optimizer – is a new breed of AaaS – Analytics-as-a-Service – offering from proALPHA. NEMO analyzes all sorts of event data. In particular NEMO analyzes business processes as performed with proALPHA ERP. The objective of NEMO is to enable better daily decisions by relating operational activities (input factors) with financial results (output factors).

Furthermore, we rounded out our mass forecasting for part consumption with historic predictions to ease the validation of our prognoses.

In addition, on popular demand, we decoupled Panels and Scopes. This means users can create Panels with the Metadata Editor now.

Last but not least data types of Attributes can now be changed for individual data Infoscapes in Focus.

In addition, NEMO version 2023-04-14 features various error corrections and performance improvements. Also, various housekeeping improvements have been implemented.

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2. Application Signature Features

Natural Performance Index (NPI)

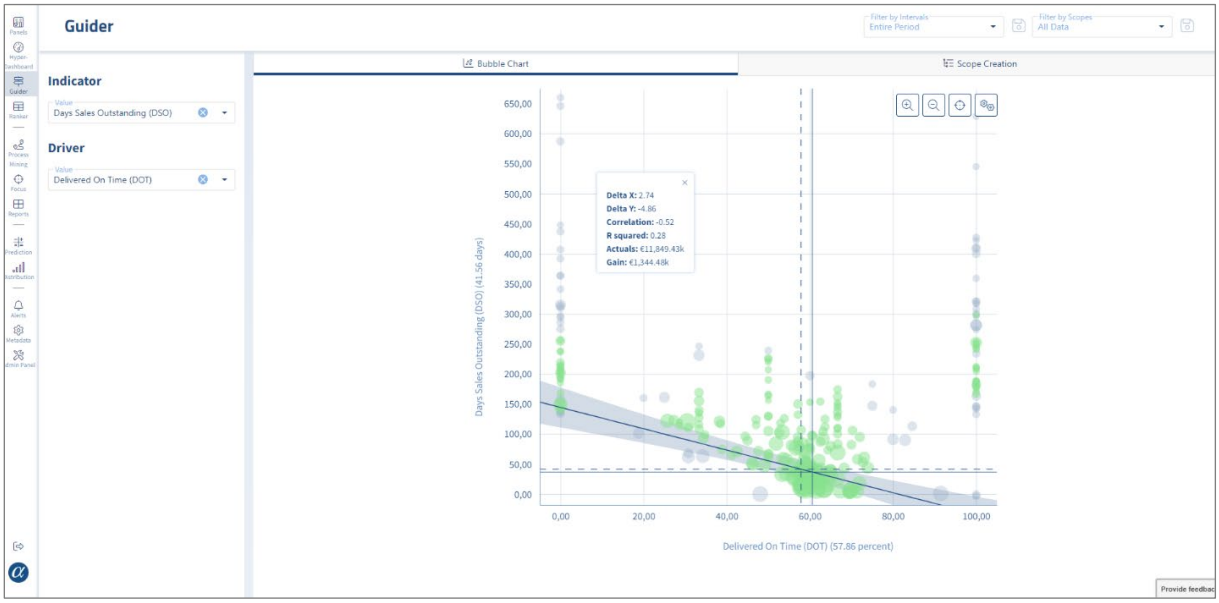
The NPI measures and ranks the fitness of a business. High NPIs indicate a significant improvement potential which is likely to be achieved. They help the user find and decide between the available optimization opportunities and are key to the daily decision support provided by NEMO.

Natural Leverage Index (NLI)

The NLI measures and ranks the degree of efficiency (“Wirkungsgrad”) of a certain operational measure. High NLIs indicate a significant leverage which is likely to be achieved. They help the user find and decide between the available opportunities and as such facilitate the daily decision support provided by NEMO.

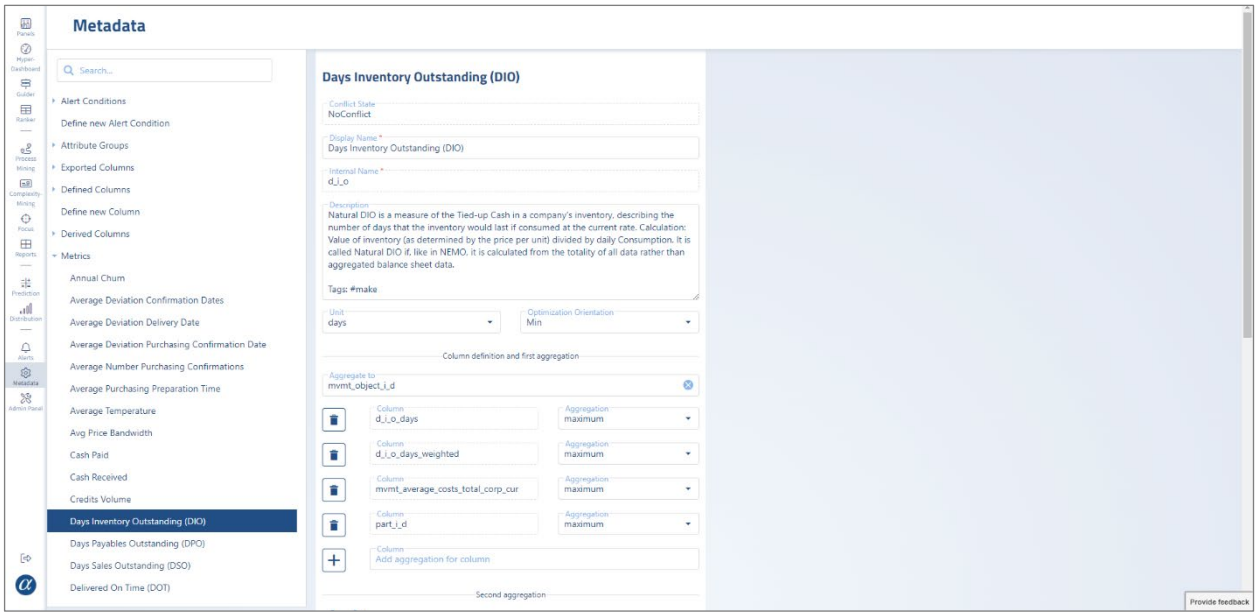
Unsupervised Learning

Since there is no optimum for business process optimization typical machine learning approaches don’t apply. Hence NEMO leverages robust advanced statistics out of the so-called space of unsupervised learning algorithms.



Meta-data Driven

NEMO is not only data- but also metadata-driven. This means that virtually all metrics and scopes can be formed – either manually or automatically.



Hyper-Dashboard

NEMO continuously ranks all business process correlations. This enables dynamic dashboards which are complementing classical dashboards.

Process Mining

Inherently NEMO discovers all executed business processes. Process Mining visualizes these as so-called process maps. The edges (lines, links) represent business process variants. They can be captured in scopes for further analysis (e.g. Focus and Guider). The nodes (vertices, points) represent the business events which, chained up, represent the executed business activities.

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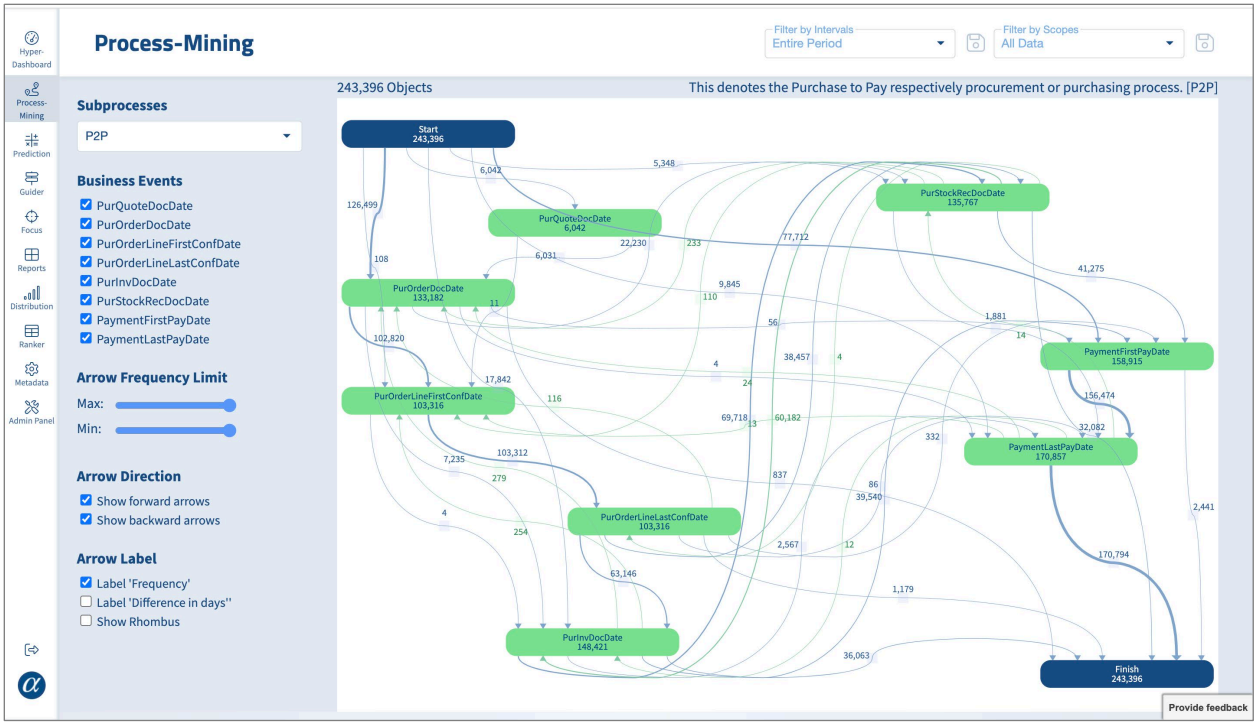
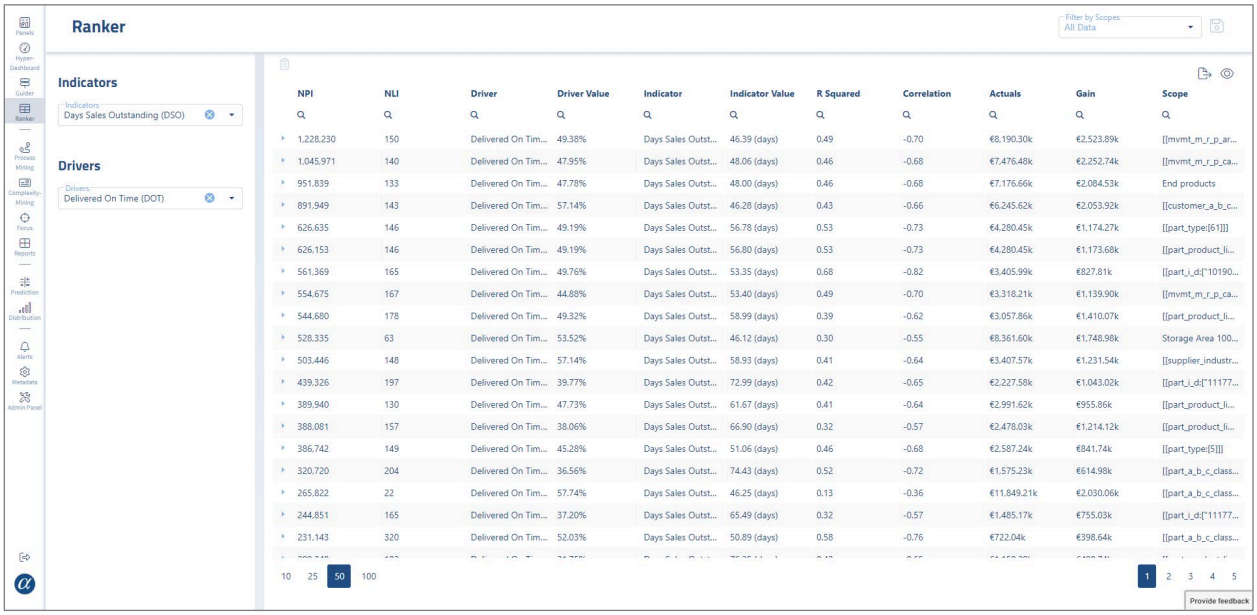


All Details

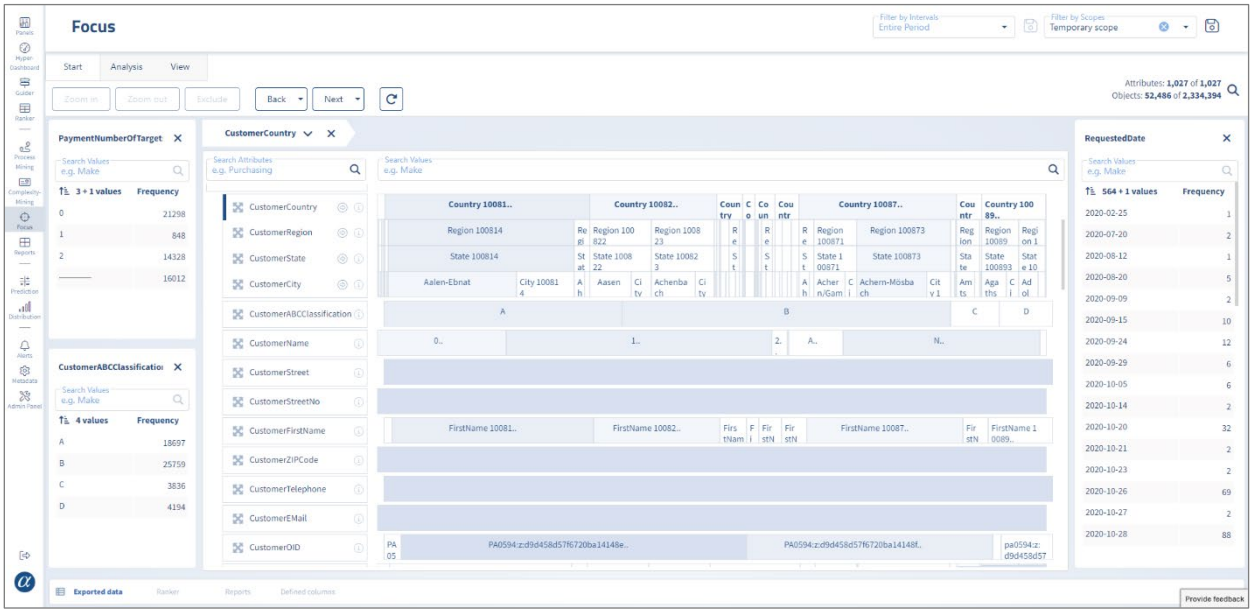
NEMO works always on details. There is no need to do any pre-aggregations at all. This means that the user can drill down to the detailed business documents at any point in time and instantaneously.

Here an example for the Payment Method Invoice. The Hyper-Dashboard provides an overview of the top measures for process improvements.

The Ranker table gives the details behind the Hyper-Dashboard.



And the Focus view gives the details behind the Ranker table. And all within seconds.



Dynamic Dashboards

From all details arbitrary dashboards can be derived as well.

Since these so-called Panels are automatically built-in conjunction with Scopes they are correct by nature.

Especially there is no dispute about the calculation of metrics and key figures anymore since those are isolated from the Panels.

Instantly Live

NEMO doesn't need any customization. Even chart-of-account or financial calendar are not needed for NEMO to function.

3. Technology Signature Features

The NEMO technology is characterized by

- Integration
  - All applications leverage and maintain the same data
- Speed
  - Response times should be as fast as possible
  - Development times – customers or us – should be as short as possible

These objectives are achieved by leveraging following unique approaches.

Push rather than Pull Data Copying

All data are regularly pushed from the source system to NEMO.

For our ERP we push all essential order types now:

- Purchase Order
- Production Order
- Sales Order

This means following supply chain processes are covered now:

- Source
  - Purchasing, Procurement
- Make
  - Inventory
  - Production
- Deliver
  - Sales
- Return Handling
  - Sales
  - Purchasing
- Finance
  - Accounting Journal

Flat Data Structure

There is only one table in NEMO.

There are no aggregations (cubes) nor indices.

There are no Joins at all.

Process Chains

All data are organized along the performed business processes.

Dynamic Calculations

All calculations are performed in real-time.

There are no data preparation runs.

Metrics Driven

All control data (metadata) are available to all applications rather than being specific to a single application.

All control data are dynamically changeable – by the user or by us.

Metrics are maintained as separate entity rather than specific to each application.

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In-memory Columnar Data Management

Our data are particularly suited to this mode of data management.

The resulting compression rates (easily 1:10) are very beneficial to the overall performance.

Upside-down Visualization

Rows and columns are inverted compared to MS Excel.

This makes patterns (e.g. populations of columns) easier to spot.

4. New and Changed Capabilities

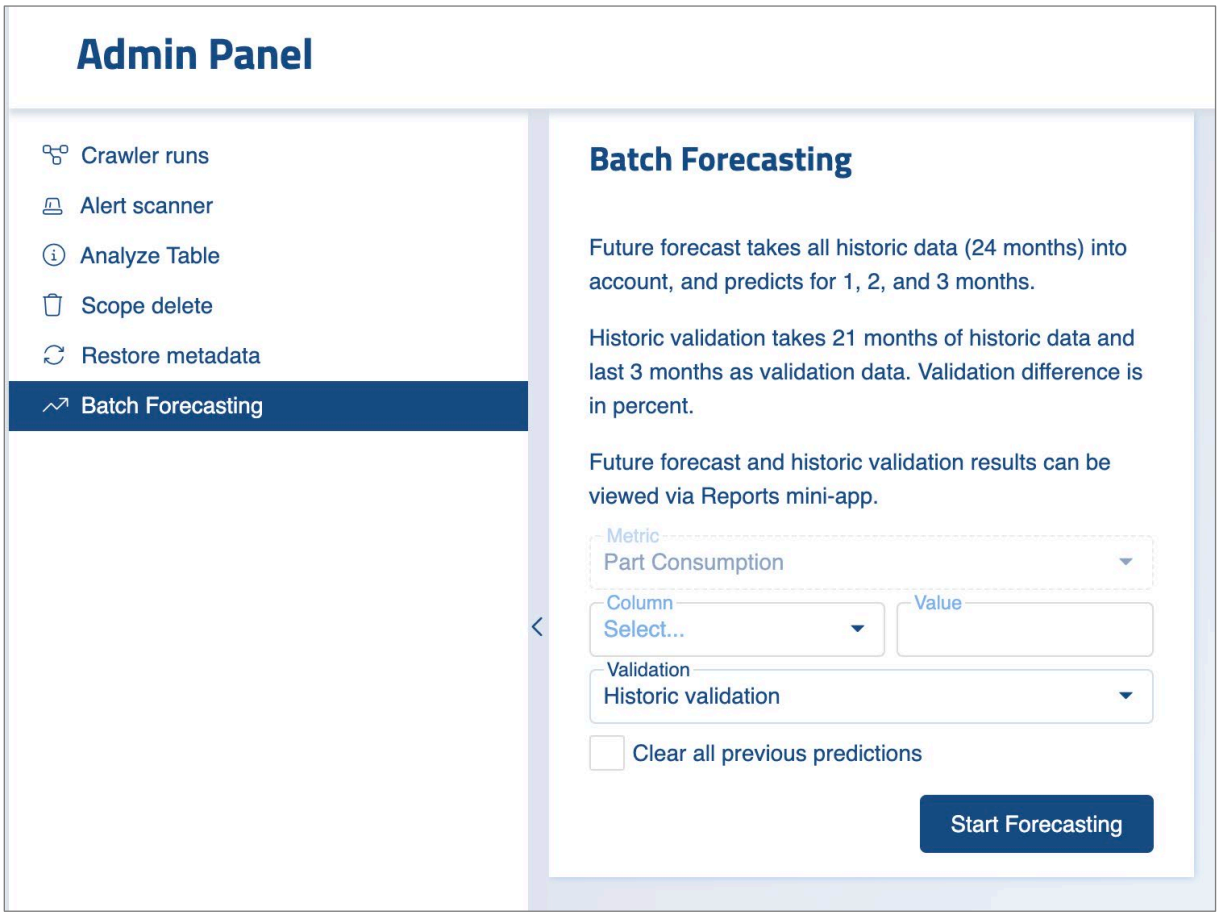
Parts Consumption Mass Forecasting (IMPROVED)

In the context of our customer-co-development initiative STOOP various new capabilities will emerge over time. These features and functions can be used as-is; i.e., there are no guarantees that they work under all circumstances. In case of further interest don't hesitate to contact us.

With this release we are introducing a mass forecasting validation capability which runs in background.

Currently it is fixed to the metric "parts_consumption".

It can be launched via the Admin Panel.



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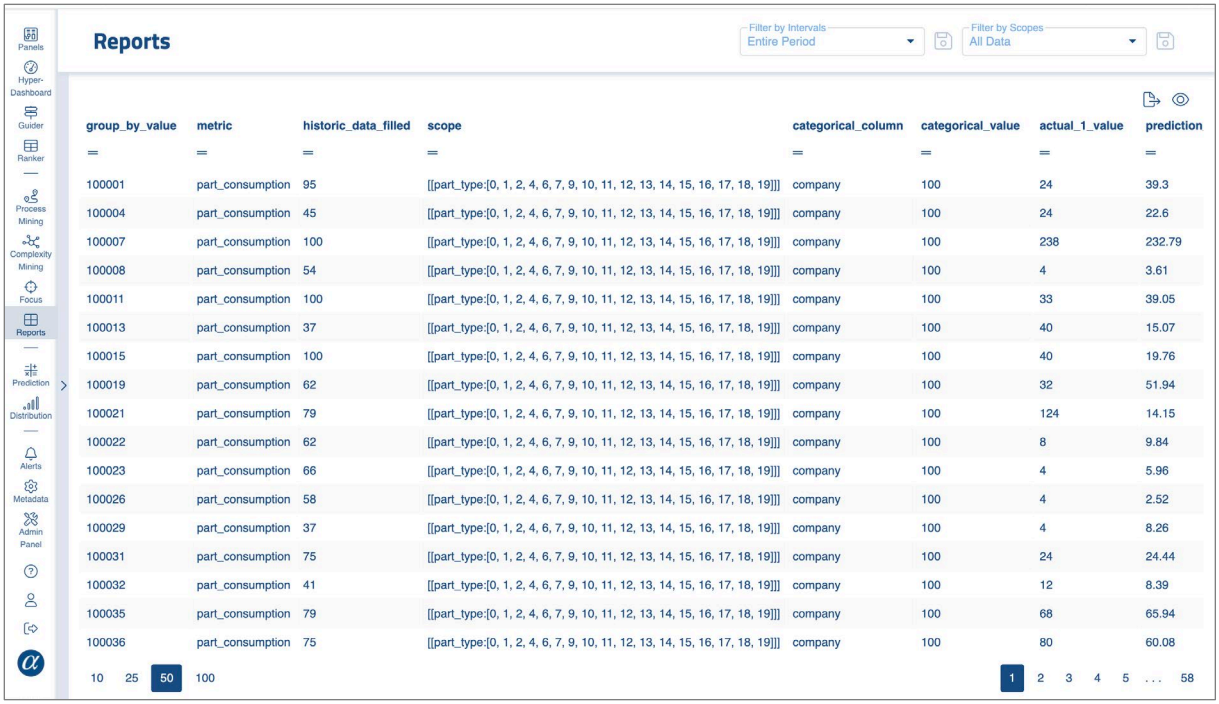
The results can be retrieved with the report “Batch Forecasting Validation”.

They look like follows.

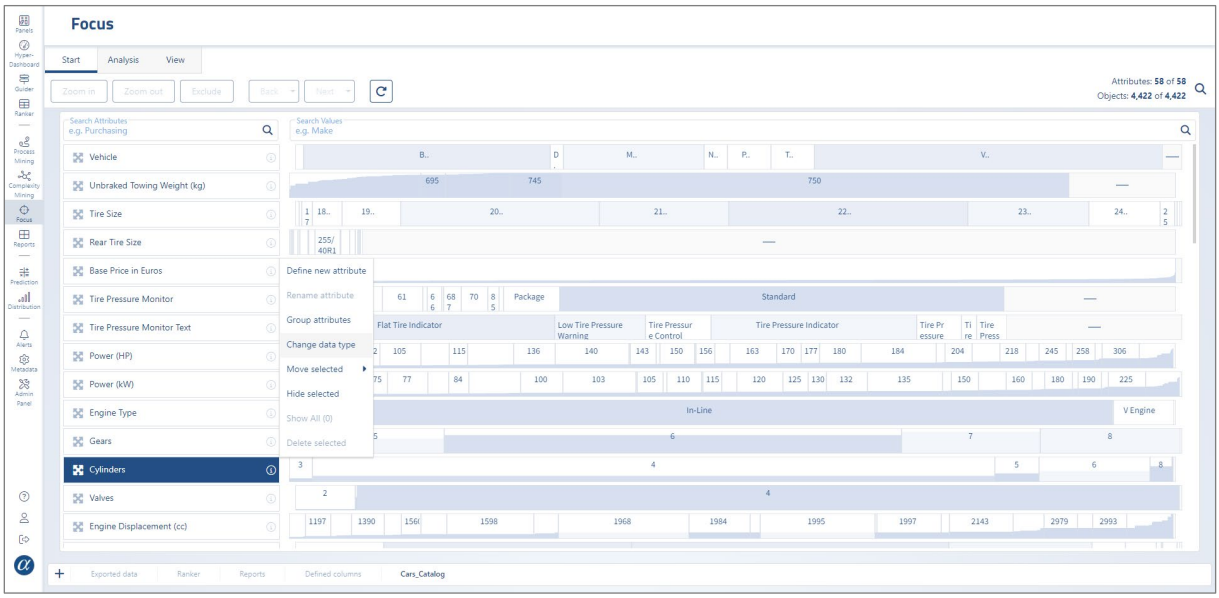


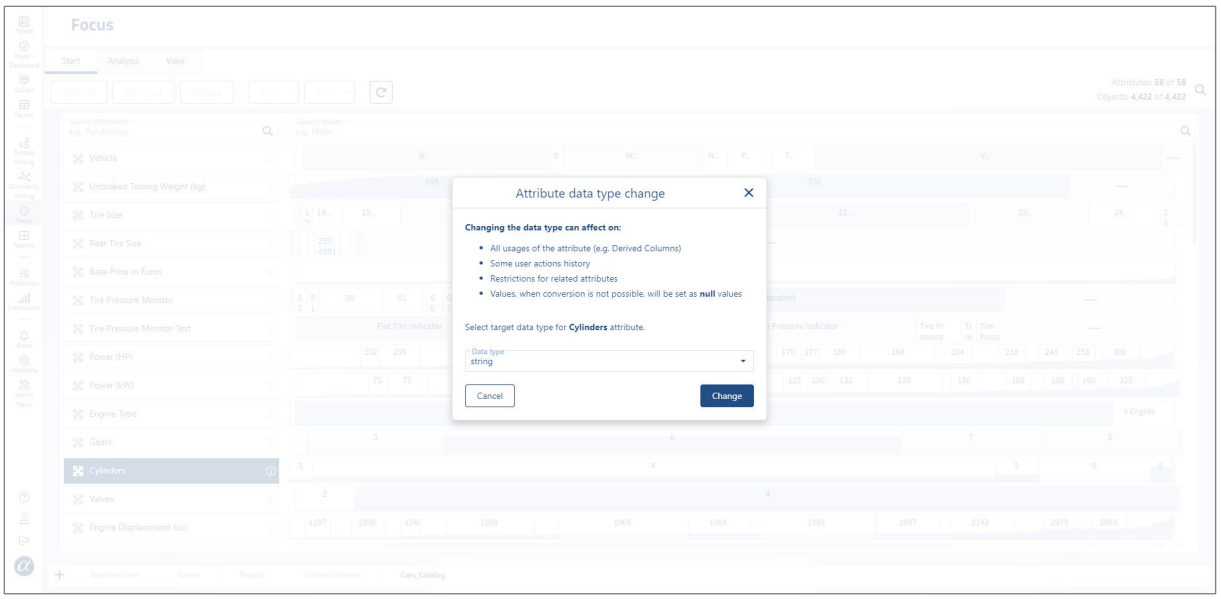
group_by_value	metric	historic_data_filled	scope	categorical_column	categorical_value	actual_1_value	prediction
100001	part_consumption	95	[[part_type:[0, 1, 2, 4, 6, 7, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19]]]	company	100	24	39.3
100004	part_consumption	45	[[part_type:[0, 1, 2, 4, 6, 7, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19]]]	company	100	24	22.6
100007	part_consumption	100	[[part_type:[0, 1, 2, 4, 6, 7, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19]]]	company	100	238	232.79
100008	part_consumption	54	[[part_type:[0, 1, 2, 4, 6, 7, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19]]]	company	100	4	3.61
100011	part_consumption	100	[[part_type:[0, 1, 2, 4, 6, 7, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19]]]	company	100	33	39.05
100013	part_consumption	37	[[part_type:[0, 1, 2, 4, 6, 7, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19]]]	company	100	40	15.07
100015	part_consumption	100	[[part_type:[0, 1, 2, 4, 6, 7, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19]]]	company	100	40	19.76
100019	part_consumption	62	[[part_type:[0, 1, 2, 4, 6, 7, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19]]]	company	100	32	51.94
100021	part_consumption	79	[[part_type:[0, 1, 2, 4, 6, 7, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19]]]	company	100	124	14.15
100022	part_consumption	62	[[part_type:[0, 1, 2, 4, 6, 7, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19]]]	company	100	8	9.84
100023	part_consumption	66	[[part_type:[0, 1, 2, 4, 6, 7, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19]]]	company	100	4	5.96
100026	part_consumption	58	[[part_type:[0, 1, 2, 4, 6, 7, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19]]]	company	100	4	2.52
100029	part_consumption	37	[[part_type:[0, 1, 2, 4, 6, 7, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19]]]	company	100	4	8.26
100031	part_consumption	75	[[part_type:[0, 1, 2, 4, 6, 7, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19]]]	company	100	24	24.44
100032	part_consumption	41	[[part_type:[0, 1, 2, 4, 6, 7, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19]]]	company	100	12	8.39
100035	part_consumption	79	[[part_type:[0, 1, 2, 4, 6, 7, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19]]]	company	100	68	65.94
100036	part_consumption	75	[[part_type:[0, 1, 2, 4, 6, 7, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19]]]	company	100	80	60.08

10 25 50 100 1 2 3 4 5 ... 58

Focus (NEW)

Since individual data from csv files can be uploaded to Focus sometimes it’s necessary to change data types of Attributes. This is now possible via the Attribute’s context menu.





Reports (NEW and IMPROVED)

Improved

- (SAMPLE) Safety Stock Check
- (SAMPLE) Replenishment Time Analysis Purchased Parts *(= alte (SAMPLE) Replenishment Time Analysis)*

New

- (SAMPLE) Replenishment Time Analysis Produced Parts
- (STOOP) Stock Optimizer

5. Compatibility

NEMO is compatible with all ERP releases from 6.1 onwards.

NEMO is optimized for Chromium based web browsers e.g., Google Chrome or Microsoft Edge.

Functional Limitations

Following functionality is restricted as of now:

- Calculations of Driver and Indicators are not based on Intervals yet.
- Stock movements for material withdrawals are not yet exported in Production.
- Warehouse movements for material storage are not yet exported in Production.

Component Status

- N.A.

Known Issues

- Very large temporary scopes created with Process Mining might fail in other apps.

6. Documentation

Apart from this Release Letter, further documentation is available on NEMO Help Portal.

7. Availability

All production environments have been updated already.

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