COSMO ANALYTICS QUICKSTART

Online Help PDF

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COSMO Quick Start Analytics

COSMO Quick Start Analytics is a comprehensive but light-weight standard reporting solution for D365 Business Central SaaS customers. It is designed in a modular way, closely aligned with the most important ERP business processes.

Thus, COSMO Quick Start Analytics covers the following process areas:

- Inventory
- Demand Planning
- Manufacturing (discrete)
- Quality control
- Know Your Customer
- Sales
- Purchase
- ...

Common functionality

COSMO Quick Start Analytics has some basic functionality which is applicable to all reports.

Easy-to-understand "Star schema"

COSMO Quick Start Analytics uses Power BI best-practices when it comes to data modeling. All COSMO Quick Start Analytics modules follow the Star schema (or Kimball) modeling approach. This means, that the Power BI semantic models are optimized towards performance and usability. The analyst can easily find and understand all the dimensions (= master-data) including the attributes as well as facts (= transaction) and derived measures within the data model.

Time Intelligence

COSMO Quick Start Analytics provides a Time Intelligence calculation for all included measures. So you can automatically calculate historical values and/or comparisons over periods. The following time intelligence calculations are included:

Abbreviation	Description
Current	Current Value (Value of the selected Time Period)
PY	Previous Year
PM	Previous Month
ATD	ALL To Date (cumulative value since the very beginning)

Abbreviation	Description
YTD	Year To Date
PY YTD	Previous Year To Date
QTD	Quarter To Date
MTD	Month To Date
YoY	Year over Year comparison (abs.)
YoY %	Year over Year comparison (rel.)
R12	Rolling 12 Months

What's new in version 1.x

Version 1.x.xxxxxx.0 of COSMO Quick Start Analytics is a Hotfix of the x.x.xxxxxx.0 release.

Version 1.x.xxxxxx.0 of COSMO Quick Start Analytics adds ... . This release adds other improvements and fixes issues to enhance your overall experience.

Feature changes

The new features as well as any enhancements and/or improvements to existing functionality that are included in this release are listed in the following table.

Pull Request	Description
N/A	N/A

Technical changes

The technical changes (such as new integration events, permission set changes, etc.) that are included in this release are listed in the following table.

Pull Request	Description
N/A	N/A

Bugfixes

The issues from the previous version of the app that were fixed in this release are listed in the following table.

Pull Request	Description
N/A	N/A

Hotfixes

The hotfixes for this release are listed in the following table.

Hotfix No.	Pull Request	Description
N/A	N/A	N/A

Removed or deprecated features

The obsolete controls, objects, and methods that were removed or deprecated in this release are listed in the following table.

Pull Request	Type	Description	Replaced by
N/A	N/A	N/A	N/A

Technical specifications

The required minimum version of Business Central, COSMO Analytics, and any dependent app(s) are listed in the following table.

Details	Version
D365 Business Central (SaaS)	23.5.0.0
COSMO Analytics	2.1.0.0

Getting Started

This section covers the app installation, licensing, and registration processes required to use COSMO Quick Start Analytics.

COSMO Quick Start Analytics report templates gather data from your Business Central (SaaS) system. To do so, we use a broad set of data, not accessible via Microsoft standard APIs. Thus, we rely on a COSMO CONSULT Business Central App which can be installed from Microsoft AppSource.

> **Note**
> **To use COSMO Quick Start Analytics Power BI templates, the installation of the COSMO Analytics API app in your Business Central environment is mandatory!**

For more information on how to install and set up the COSMO Analytics API app in Business Central, see here.

The following table describes a sequence of tasks, with links to the topics that describe them.

To	See
Install COSMO Quick Start Analytics [...] in your Power BI tenant.	App Installation
License and register COSMO Quick Start Analytics.	App Licensing and Registration

App Installation

This section covers the installation of the COSMO Quick Start Analytics [...] app.

There are two ways to install the Power BI template app: externally from Microsoft AppSource or internally from your Power BI service.

AppSource

Visit the AppSource and then choose Get it now. Sign in with your Power Bi user credentials on the following Pop-Up and follow the wizard instructions to complete the installation.

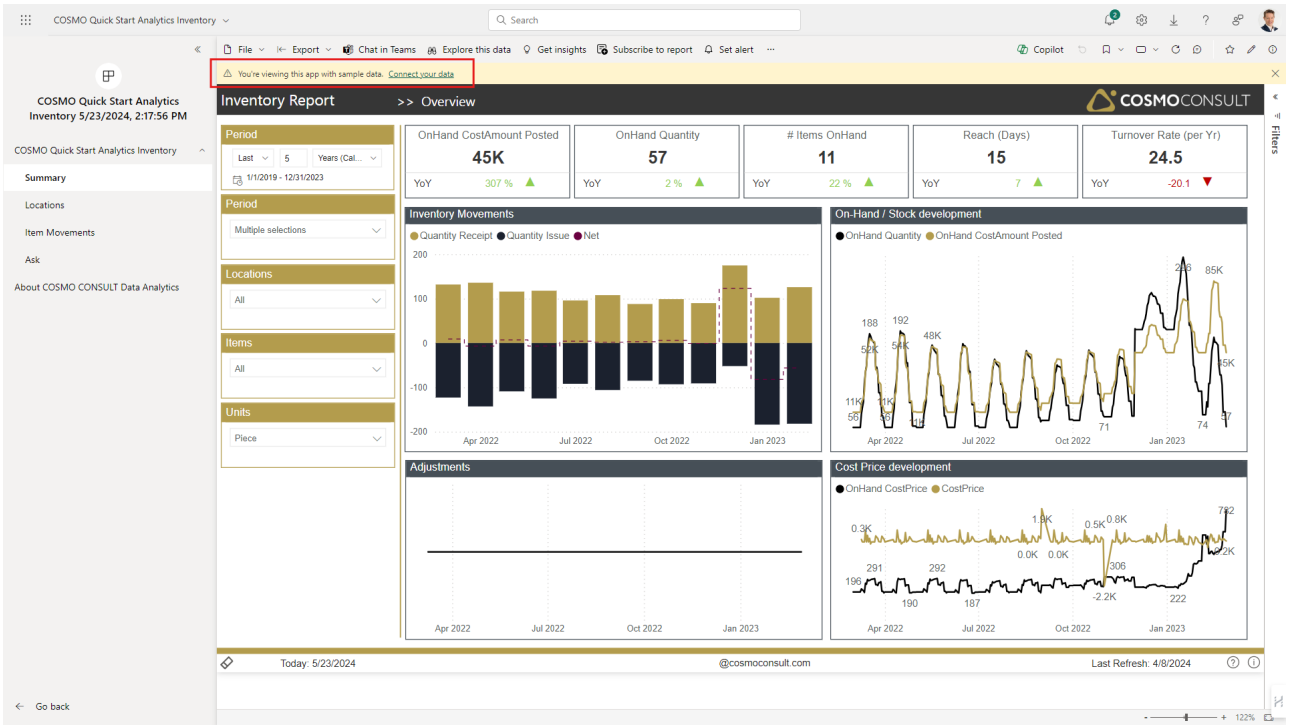
Power BI Service

1. Go to app.powerbi.com.
2. Sign in with your Microsoft user.
3. Choose Apps in the navigation area on the left side.
4. Select Get Apps.
5. The Power BI apps marketplace opens.
6. Search for COSMO Quick Start Analytics.
7. Select the desired module.
8. Choose Get It Now.

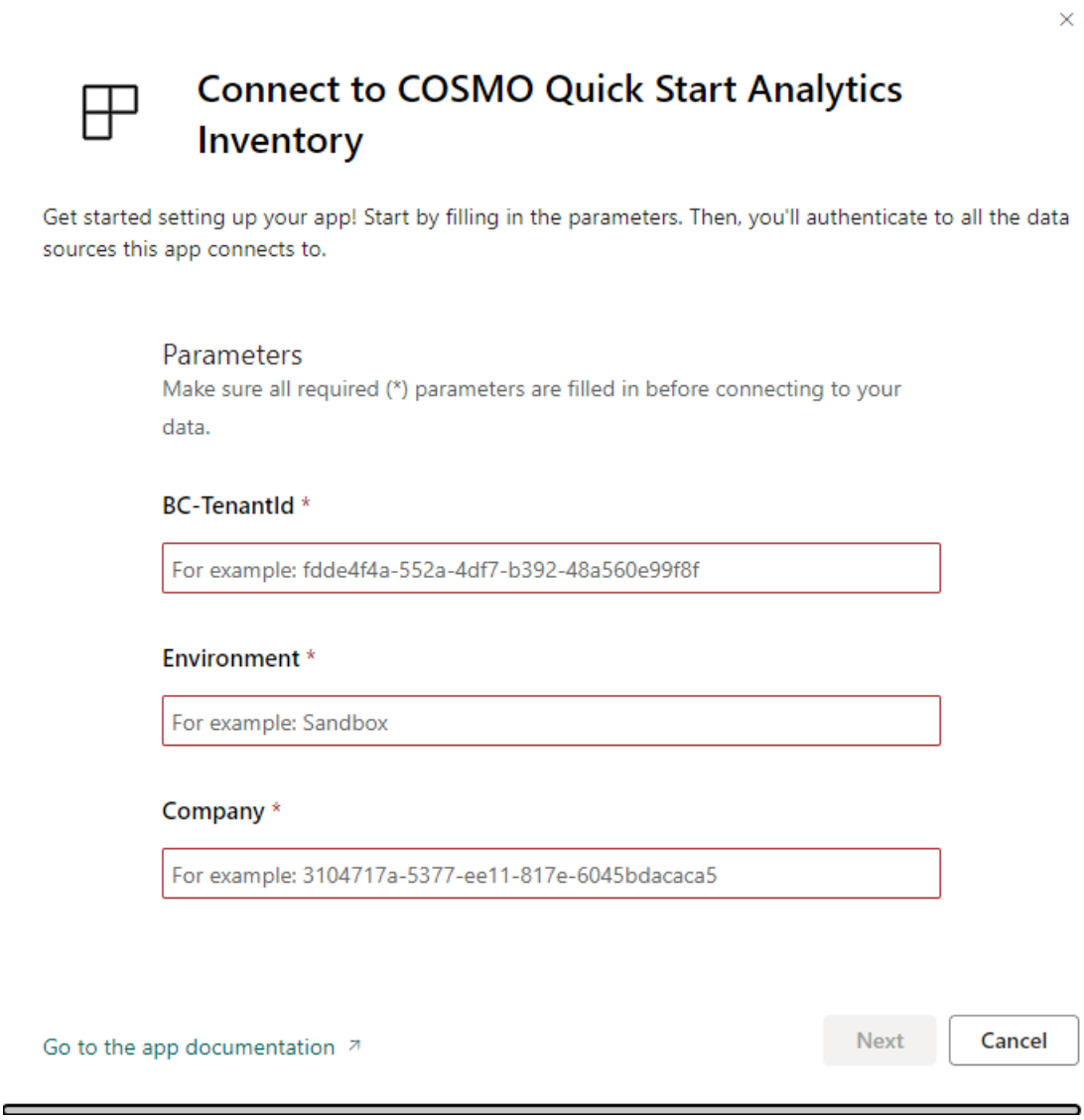
Connect your data

As soon as you have installed the app and open it, you'll see the report page with demo data. To connect the app with your *real-life* data, follow the instructions below:

1. Choose Connect your data within the yellow note-bar.

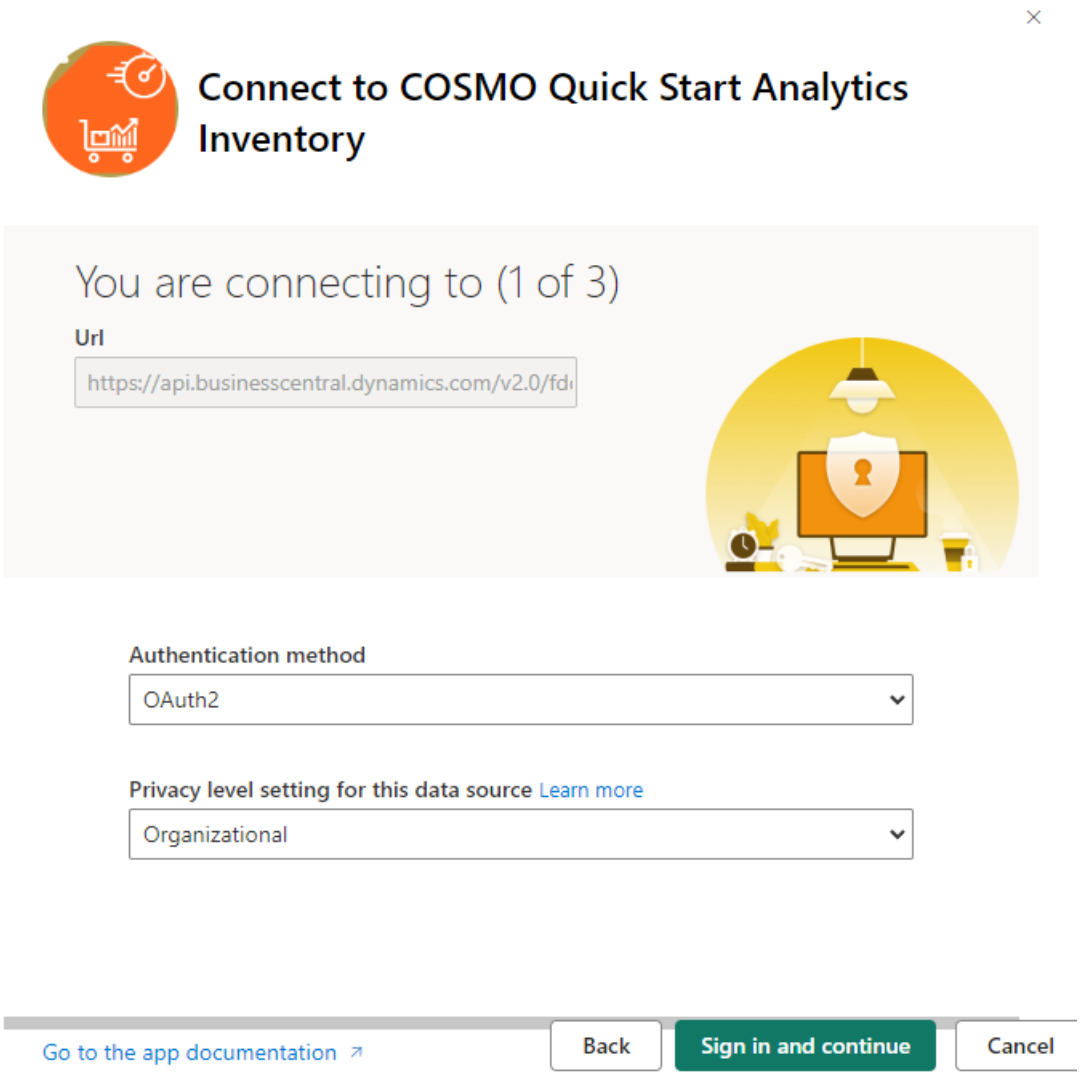


2. Fill in the required parameters on the screen according to your Business Central environment.

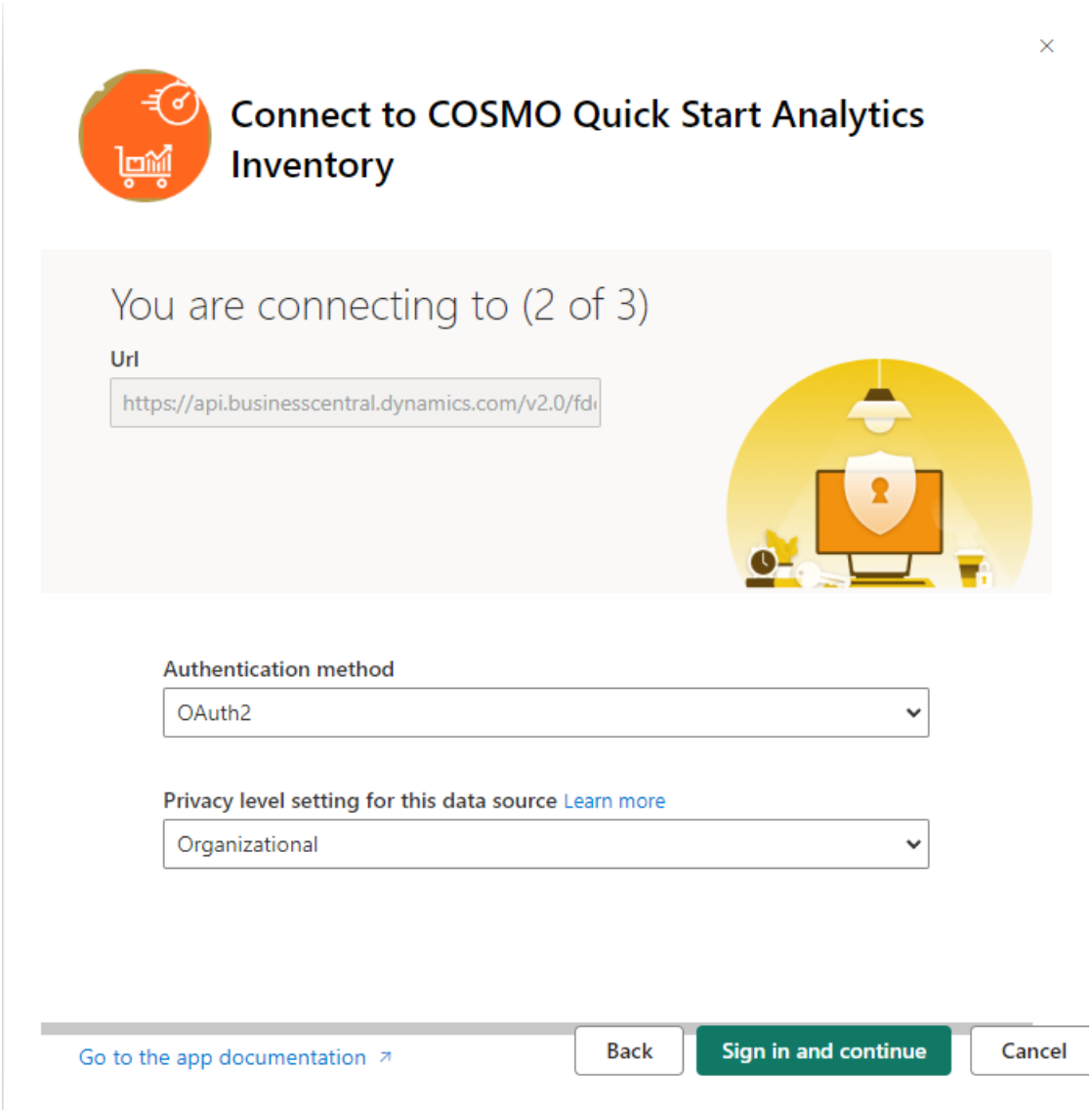


3. Authenticate to the data sources with OAuth2 authentication using OAuth2 for the Business Central data sources (1 & 2) and *Anonymous* for the COSMO-public API (3).

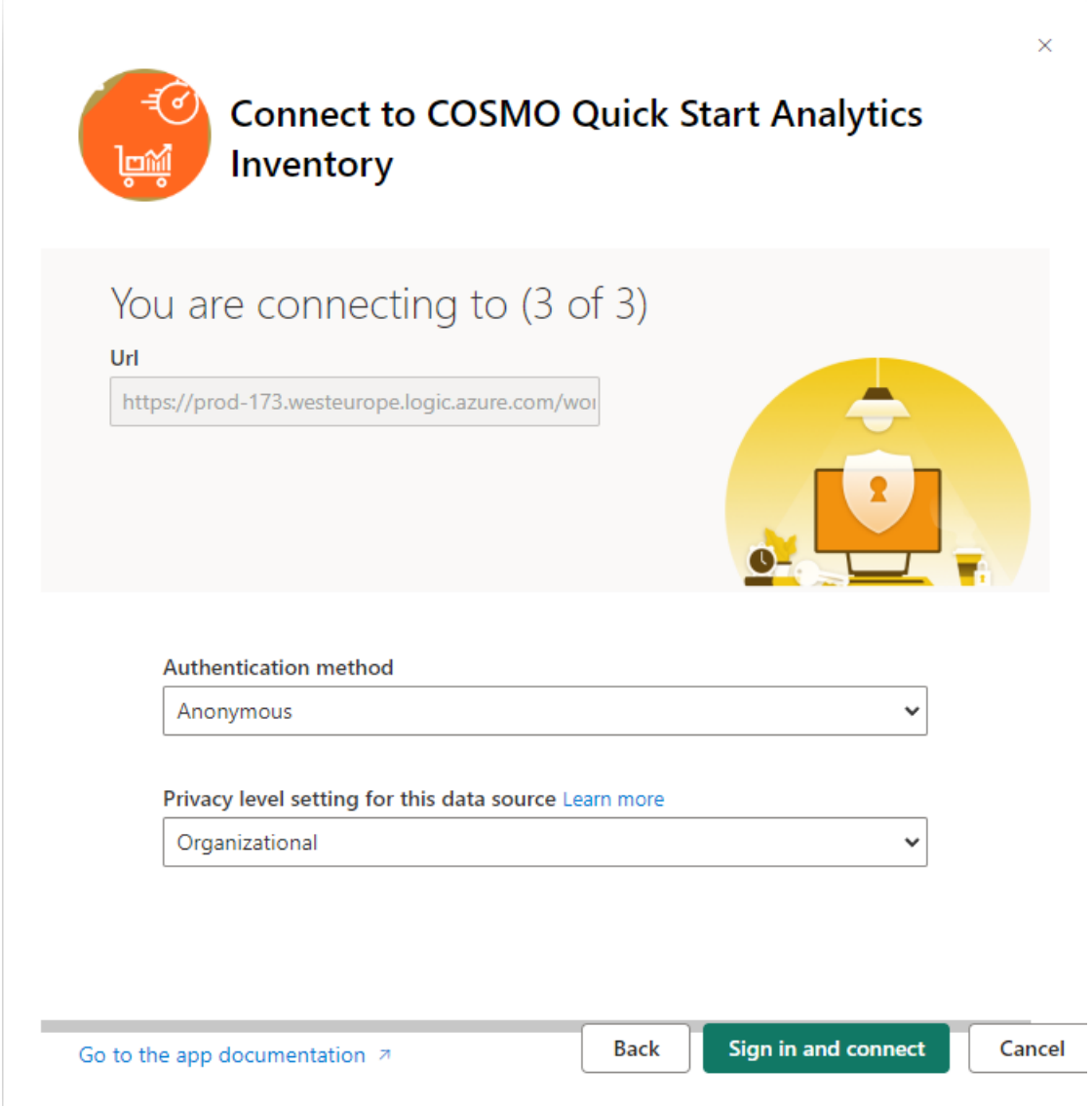
Connection 1/3



Connection 2/3



Connection 3/3



Note

You must authenticate twice against Business Central because two different endpoints are used.

Ensure to use the same Privacy Level settings for all connections - otherwise the refresh will fail.

App Licensing and Registration

COSMO Quick Start Analytics can be installed and tested *free of charge* for a maximum of 60 days. After that period the data-refresh will be paused. As soon as you've obtained a license from COSMO CONSULT, your data refresh will be re-activated.

Sales

The Sales module provides a consolidated, analytics-ready view across Sales Orders, Shipments, and Invoices. It focuses on revenue, quantity, margin, discounts, and customer behavior, with built-in time intelligence and currency conversion.

Key capabilities

- Revenue and margin analytics across orders, invoices, shipments
- Customer behavior and sales trends
- Item performance analysis
- Time intelligence (PY, YoY, YoY %, YTD, etc.)

Navigate the module

- Semantic Model: Overview · Facts · Dimensions · KPIs
- Standard Reports: coming soon

> **Tip**
> **Do you have any ad-hoc question related to sales data? Use the pre-built semantic model to create your own reports and dashboards in Power BI in just a couple of clicks!**

Sales Semantic Model

The Sales semantic model provides a consolidated, analytics-ready view of Sales Orders, Shipments, and Invoices. It centers on a unified sales fact (CUB_Sales) with role-based perspectives through dedicated measure groups for Orders, Invoices, and Shipments. Currency conversion is supported via target currency selection and daily exchange rates.

- Dimensions: See a complete list in dimensions.
- Facts: High-level description in facts.
- KPIs/Measures: Full list grouped by folders in kpis.

Integration Highlights

- Central fact table CUB_Sales containing all sales line transactions across Orders, Shipments, Invoices and Credit Memos.
- Currency conversion via CurrencyTarget and CUB_ExchangeRate.
- Order, Invoice, and Shipment perspectives implemented with separate measure tables: Measures Orders, Measures Invoice, Measures Shipment.

Navigation

- Dimensions: dimensions
- Facts: facts
- KPIs/Measures: kpis

Facts

This module uses a central fact table for sales analytics.

CUB_Sales (Sales Fact)

- Purpose: Unified sales line transactions across Orders, Shipments, Invoices and Credit Memos.
- Grain: One row per sales line; role-based views through measures.
- Main Source(s): Sales Line, Sales Line Archive, Sales Invoice Line, Sales Cr. Memo Line, Sales Shipment Line.

Notes

- Currency conversion uses CUB_ExchangeRate (linked to Calendar and CurrencyTarget) for target currency calculations; CUB_ExchangeRate itself is modeled as a helper table, not a reporting fact.

Dimensions

Below is the list of dimension and helper tables used in the Sales semantic model. Each name links to a dedicated page with a short purpose and key attribute groups.

- Calendar
- Client
- Currency Source
- Currency Target
- Currency Transaction
- Database Source
- Data Category
- Data Source
- Dimension
- Employee
- Invent Location
- Invoice
- Invoice Customer
- Item
- [Item B (Basket Analysis)](dimensions/Item B (Basket Analysis).md)
- Order Customer
- Payment Method
- Payment Terms
- Resource
- Sales Order
- Sales Document Type
- Sales Line Type
- Shipment
- Shipment Method
- Time Intelligence
- Unit

Calendar

Time dimension providing comprehensive date attributes including year, quarter, month, week, and day levels for temporal analysis. It covers the period from the first transaction date through the current or latest posting year.

Key Attribute Groups

- Date Identifiers: DateBK (primary), DateSK, DateDisplay variants
- Time Hierarchies: Year, Half-Year, Quarter, Month, Week attributes with combined display formats
- Period Flags: IsToday, IsCurrentWeek, IsCurrentMonth, IsCurrentQuarter, IsCurrentYear for relative period analysis

Client

The Client dimension provides company-level information for multi-client/multi-tenant Business Central scenarios, enabling filtering and aggregation across multiple legal entities or companies within the organization.

Key Attribute Groups

- Company Identification: Company code and name for organizational segmentation
- Financial Settings: Local currency and accounting configuration

Currency Source

The Currency Source dimension represents the accounting currency from Business Central, enabling multi-currency reporting and currency conversion calculations.

Key Attribute Groups

- Currency Identification: Currency code, symbol, and descriptive name

Currency Target

The Currency Target dimension defines the reporting currency for consolidated multi-currency analysis, enabling conversion of transactions into a single target currency.

Key Attribute Groups

- Currency Identification: Currency code, symbol, and name for reporting currency

Currency Transaction

The Currency Transaction dimension defines the transaction currency for multi-currency analysis, representing the actual currency used on the sales entry.

Key Attribute Groups

- Currency Identification: Currency code, symbol, and name for transaction currency

Data Category

The Data Category dimension enables classification of data by type such as Actual, Budget, or Forecast, supporting variance analysis and flexible business categorization.

Key Attribute Groups

- Category Classification: Data type code and description (Actual, Budget, Forecast, Plan)

Data Source

The Data Source dimension identifies the origin system or base table of transaction data in multi-source integration scenarios, enabling filtering and data lineage tracking.

Key Attribute Groups

- Source Identification: Source system code, name, and type classification
- Table Context: Base table references for transaction origin tracking

Database Source

The Database Source dimension identifies the specific database or data warehouse source in multi-database environments, enabling filtering and database-level lineage tracking.

Key Attribute Groups

- Database Identification: Database code, name

Dimensions (Financial Dimensions)

The Dimension tables (Dimension1-6) contain Business Central's financial dimension values, enabling cross-functional analysis, project tracking, and flexible business segmentation.

Key Attribute Groups

- Dimension Values: Codes and descriptions for each dimension level based on organization-specific configuration

Employee

The Employee dimension provides employee master data including role identifications (salesperson, purchaser), enabling performance analysis and responsibility tracking.

Key Attribute Groups

- Identification: Employee number, name, and further details

Invent Location

The Invent Location dimension provides warehouse and location master data from Business Central, enabling location-based inventory analysis and multi-site planning.

Key Attribute Groups

- Location Identification: Location code, name, and facility type
- Geographic Information: Address details for regional analysis and logistics planning

Item

The Item dimension provides comprehensive product master data from Business Central with a 5-level category hierarchy, enabling product-level analysis and drill-down capabilities.

Key Attribute Groups

- Identification: Item number, name, and product type
- Item Attributes: Description, costing method, posting groups, etc.

Customer

Customer master data including identification, address information, contact details, and classification attributes from Business Central's Customer table. It enables demand analysis by customer and geographic segmentation.

Key Attribute Groups

- Identification & Contact: Customer number, name, contact person, phone, email
- Address & Geography: Street, city, state, zip code, country with formatted display variants for location analysis
- Classifications & Business Attributes: Customer groups, posting groups, etc.

Order Customer

Order Customer master data including identification, address information, contact details, and classification attributes from Business Central's Customer table. It enables demand analysis by customer and geographic segmentation.

Key Attribute Groups

- Identification & Contact: Customer number, name, contact person, phone, email
- Address & Geography: Street, city, state, zip code, country with formatted display variants for location analysis
- Classifications & Business Attributes: Customer groups, posting groups, etc.

Invoice Customer

Invoice Customer master data including identification, address information, contact details, and classification attributes from Business Central's Customer table. It enables demand analysis by customer and geographic segmentation.

Key Attribute Groups

- Identification & Contact: Customer number, name, contact person, phone, email
- Address & Geography: Street, city, state, zip code, country with formatted display variants for location analysis
- Classifications & Business Attributes: Customer groups, posting groups, etc.

Sales Order

The Sales Order dimension provides sales document header information, enabling demand analysis.

Key Attribute Groups

- Order Identification: Sales order number, document type, and fulfillment status
- Customer & Dates: Customer reference, order date, requested/promised delivery dates, and shipment date
- Order Attributes: Salesperson assignment, location, etc.

Invoice

Sales invoice header dimension enabling invoice-level analysis, grouping, and performance tracking across billing documents.

Key Attribute Groups

- Invoice Identification: Invoice number/reference, external reference, posting dates
- Deal Size Grouping: Calculated bands for invoice amount segmentation
- Relationships: Linked from CUB_Sales via InvoiceBK

Shipment

Shipment header dimension enabling shipment-level grouping, lead-time analysis, and logistics performance tracking.

Key Attribute Groups

- Shipment Identification: Shipment number/id, external reference
- Relationships: Linked from CUB_Sales via ShipmentBK

Payment Method

Dimension grouping sales by payment method to analyze settlement behavior and preferences.

Key Attribute Groups

- Method Identification: Code, id, and description
- Relationships: Linked from CUB_Sales via PaymentMethodBK

Payment Terms

Dimension grouping sales by payment terms to analyze due dates, discounts, and collection profiles.

Key Attribute Groups

- Terms Identification: Code, id, and description
- Due/Discount Logic: Due dates and discount rules
- Relationships: Linked from CUB_Sales via PaymentTermsBK

Resource

Resource dimension covering service-like offerings tied to sales transactions, supporting analysis by resource groups and utilization.

Key Attribute Groups

- Resource Identification: Resource id/code, name, and description
- Classification: Group/type/category assignments
- Relationships: Linked from CUB_Sales via ResourceBK

Sales Document Type

Dimension grouping sales by document type (e.g., order, invoice, shipment) to enable document-based analysis.

Key Attribute Groups

- Type Identification: Code, id, and description
- Relationships: Linked from CUB_Sales via SalesDocumentTypeBK

Sales Line Type

Dimension grouping sales lines by type (e.g. Item, Resource, GL Account) for line-level analysis and segmentation.

Key Attribute Groups

- Type Identification: Code, id, and description
- Relationships: Linked from CUB_Sales via SalesLineTypeBK

Shipment Method

Dimension classifying shipments by method to support logistics and carrier analysis.

Key Attribute Groups

- Method Identification: Code, id, and description
- Relationships: Linked from CUB_Sales via ShipmentMethodBK

TimeIntelligence

Calculation group providing common time-intelligence variations (YTD, QTD, MTD, PY, YoY, Rolling-12, etc.) applied across Sales measures.

Key Attribute Groups

- Calculation Items: Name, display order, and behavior
- Scope: Applies over selected measures using Calendar[DateBK] for date context

Unit

The Unit dimension provides unit of measure (UOM) information from Business Central, enabling standardized quantity reporting and UOM conversions across transactions.

Key Attribute Groups

- Unit Identification: Unit code, description, and international standard codes

KPIs

This article provides information on the available KPIs (Measures) within the Sales semantic model. Measures are grouped by functional area and aligned with the Demand Planning documentation structure.

Sales KPIs (_Measures)

Name	Description
Sales Amount	Net sales in target currency including header end discount.
Sales Quantity	Total sold quantity (base unit).
Sales Cost Amount	Cost of sales in target currency.
Profit Margin	Sales Amount minus Sales Cost Amount.
Profit Margin %	Profit Margin divided by Sales Amount.
Sales Amount Gross	Quantity × Unit Price (gross, before discounts).
Gross Weight	Gross weight (base).
Sales Line Discount	Line discount amount in target currency.
Sales Header End Discount	Header end discount amount in target currency.

Time Intelligence (explicit KPIs)

Name	Description
Sales Amount PY	Prior year value of Sales Amount.
Sales Amount YoY	Year-over-year change of Sales Amount (absolute).
Sales Amount YoY %	Year-over-year change of Sales Amount (percentage).
Sales Quantity PY	Prior year value of Sales Quantity.
Sales Quantity YoY	Year-over-year change of Sales Quantity (absolute).
Sales Quantity YoY %	Year-over-year change of Sales Quantity (percentage).
Profit Margin PY	Prior year value of Profit Margin.
Profit Margin YoY	Year-over-year change of Profit Margin (absolute).
Profit Margin YoY %	Year-over-year change of Profit Margin (percentage).
Profit Margin % PY	Prior year value of Profit Margin %.
Profit Margin % YoY	YoY change of Profit Margin % (percentage points).

Average Amounts

Name	Description
Sales Amount Ø PerUnit	Sales Amount divided by Sales Quantity.

Name	Description
Sales Amount Ø PerUnit PY	Prior year value of Sales Amount Ø PerUnit.
Sales Amount Ø PerUnit YoY	YoY change of Sales Amount Ø PerUnit (absolute).
Sales Amount Ø PerUnit YoY %	YoY change of Sales Amount Ø PerUnit (percentage).

Counts

Name	Description
# Unique Items	Distinct count of invoiced items.
# Unique Items PY	Prior year value of # Unique Items.
# Unique Items YoY	YoY change of # Unique Items (absolute).
# Unique Items YoY %	YoY change of # Unique Items (percentage).
# Unique Invoice Customers	Distinct count of invoice customers.
# Unique Invoice Customers PY	Prior year value of # Unique Invoice Customers.
# Unique Invoice Customers YoY	YoY change of # Unique Invoice Customers (absolute).
# Unique Invoice Customers YoY %	YoY change of # Unique Invoice Customers (percentage).

Orders KPIs (**Measures Orders**)

Name	Description
Order Amount	Sales amount for orders (excl. discounts filter context).
Order Amount Gross	Quantity × Unit Price from orders (gross).
Order Cost Amount	Cost amount for orders.
Order Gross Weight	Gross weight from orders.
Order Line Discount	Line discount amount from orders.
Order Profit Margin	Order Amount minus Order Cost Amount.
Order Quantity	Sales quantity from orders.
Order Header End Discount	Header end discount from orders.
Order Amount Open	Order Amount for open orders (status = Open).
Order Amount Open PY/YoY/YoY %	TI variants of Order Amount Open.
Order Amount Plan	Plan value placeholder (blank).

Discounts

Name	Description
Order Discount	Order Line Discount + Order Header End Discount.
Order Discount %	Order Discount divided by Order Amount.

Counts

Name	Description
# Unique Orders	Distinct count of orders.
# Unique Orders PY/YoY/YoY %	TI variants of # Unique Orders.
# Unique Order Customers	Distinct count of order customers.
# Unique Order Customers PY/YoY/YoY %	TI variants of # Unique Order Customers.

Average Amounts

Name	Description
Ø Order Amount	Order Amount divided by # Unique Orders.
Ø Order Amount PY/YoY/YoY %	TI variants of Ø Order Amount.
Ø Sales Price per Unit	Order Amount divided by Order Quantity.
Ø Sales Price per Unit PY/YoY/YoY %	TI variants of Ø Sales Price per Unit.

Customer Analytics

Name	Description
Ø Order Frequency (Days)	Average days between first and last order in period divided by number of orders (per customer).
# New Customers	Count of customers with first order date in current period, with TI variants.
# New Customers PY/YoY/YoY %	TI variants of # New Customers.

Formatting (IBCS and YoY)

Name	Description
Ø Order Amount YoY CF/Icon	Conditional formatting and icon helpers for YoY.
# Unique Order Customers YoY CF/Icon	Conditional formatting and icon helpers for YoY.
Order Amount Open YoY CF/Icon	Conditional formatting and icon helpers for YoY.
Order Amount Delta	Difference vs PY or Plan (if available).

Name	Description
Order Amount Delta %	Percentage difference vs PY.
Order Amount MaxValue/RedMax/GreenMax	Dynamic axis helpers for IBCS visuals.
Order Amount DeltaColor	Color helper based on delta sign.

Invoices KPIs (**Measures Invoice**)

Name	Description
Invoice Amount	Sales amount for invoices (excl. discounts filter context).
Invoice Amount Gross	Quantity × Unit Price from invoices (gross).
Invoice Cost Amount	Cost amount for invoices.
Invoice Gross Weight	Gross weight from invoices.
Invoice Line Discount	Line discount amount from invoices.
Invoice Profit Margin	Invoice Amount minus Invoice Cost Amount.
Invoice Profit Margin %	Profit margin percentage on invoices.
Invoice Unit Price	Invoice Amount divided by Invoice Quantity.
Invoice Amount PY/YoY/YoY %	TI variants of Invoice Amount.
Invoice Profit Margin PY/YoY/YoY %	TI variants of Invoice Profit Margin.
Invoice Amount Plan	Plan value placeholder (blank).

Discounts

Name	Description
Invoice Header End Discount	Header end discount from invoices.
Invoice Discount	Invoice Line Discount + Invoice Header End Discount.
Invoice Discount %	Invoice Discount divided by Invoice Amount.

Counts

Name	Description
# Unique Invoices	Distinct count of invoices, with TI variants.
# Unique Invoices PY/YoY/YoY %	TI variants of # Unique Invoices.
# Invoice Lines	Count of invoice lines.

Name	Description
# Unique Items Invoiced	Distinct count of items on invoices, with TI variants.
# Unique Items Invoiced PY/YoY/YoY %	TI variants of # Unique Items Invoiced.

Daily Sales

Name	Description
Daily Sales Moving Ø 7D	7-day moving average of Invoice Amount.
Daily Sales Moving Ø 7D Δ/Δ%	Change vs prior 7–14 day window (absolute and %).
Daily Sales Moving Ø 7D PY	Prior year 7-day moving average.
Daily Sales Today/Today-1/Today-2	Daily values for the latest three days.

Credit Memos

Name	Description
CrMemo Amount	Credit memo amount, with TI variants.
# Unique CrMemos	Distinct count of credit memos.
# CrMemo Lines	Count of credit memo lines.

Shipments KPIs (**Measures Shipment**)

Name	Description
Shipment Amount	Sales amount for shipments (excl. discounts filter context).
Shipment Amount Gross	Quantity × Unit Price from shipments (gross).
Shipment Cost Amount	Cost amount for shipments.
Shipment Gross Weight	Gross weight from shipments.
Shipment Line Discount	Line discount amount from shipments.
Shipment Profit Margin	Shipment Amount minus Shipment Cost Amount.
Shipment Quantity	Sales quantity from shipments.
Shipment Amount/Cost/Gross/Line/Profit/Quantity PY/YoY/YoY %	TI variants for shipment measures.
OTD Rate	On-time delivery rate based on promised vs shipment date, with TI variants.

Time Intelligence Variants

Most base measures provide TI variants using the TimeIntelligence calculation group:

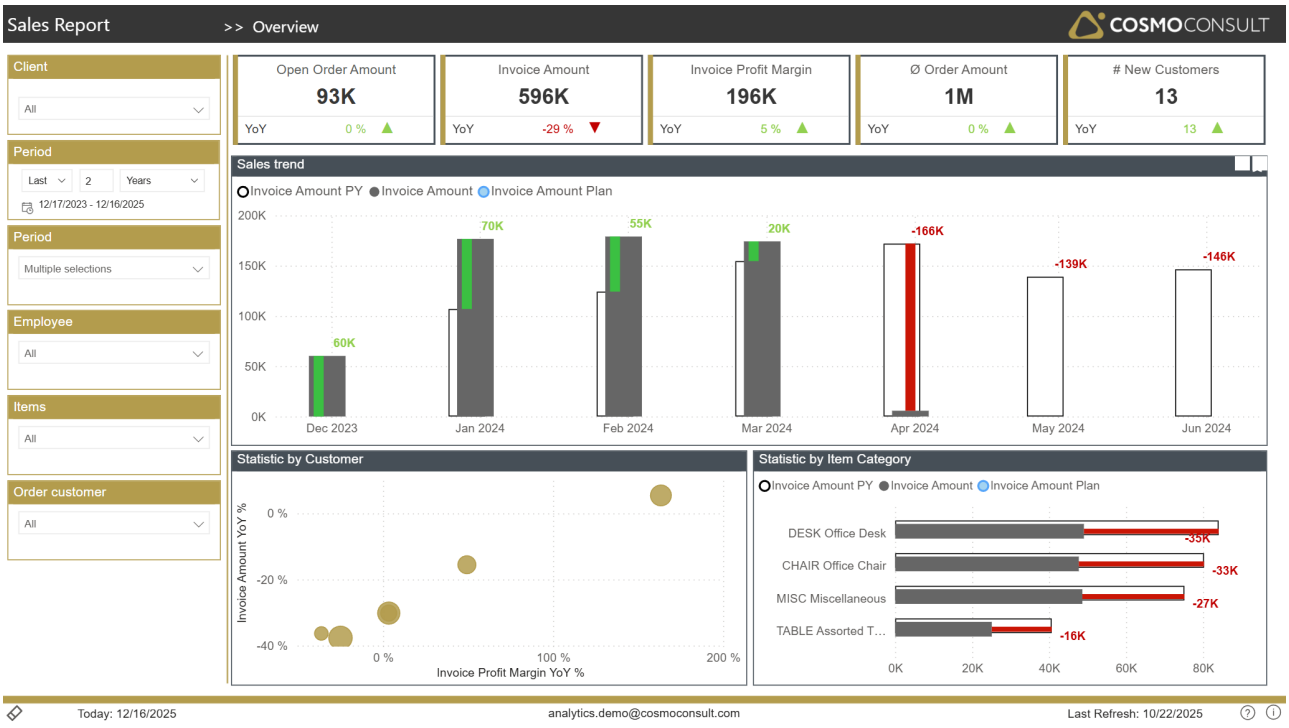
Variant	Description
PY	Prior year comparison (same period last year).
YoY	Year-over-year change (absolute difference).
YoY %	Year-over-year change (percentage).

Notes

- Currency conversion is applied in base measures via CurrencyTarget and CUB_ExchangeRate.
- Technical and formatting measures support data visualizations (color, icons, and IBCS helpers) and are not listed.

Sales Report – Overview

The Overview page is the central cockpit for monitoring overall sales performance based on D365 Business Central data.



Overview

This page helps you:

- Track the most important sales KPIs (orders, invoices, profit, new customers) in one place
- Compare actual performance against the previous year (and optionally against plan)
- Understand how sales develop over time at a monthly level
- Identify customers and product groups that drive growth or decline

Filters

Standard slicers on the left allow you to narrow the analysis to specific business segments:

- Client Selection – focus on a single company or compare entities in multi-tenant scenarios.
- Period Selection – analyze a rolling time frame (e.g. last 2 years) or zoom into specific months.
- Additional Period Filter – select multiple periods (e.g. several months or years) to compare side by side.

- Employee – evaluate sales results for individual salespersons or teams.
- Items – restrict all KPIs and visuals to selected products or product groups.
- Order Customer – focus on specific customers or customer segments.

Using these filters consistently ensures that all KPIs, trends and breakdowns reflect the exact scope you want to analyse (e.g. *sales of a specific salesperson for a defined customer portfolio in the last fiscal year*).

Key Visualizations

Top KPI Tiles

Gain a quick, management-level view of sales performance:

- Open Order Amount shows the current order backlog, supporting capacity and revenue forecasting.
- Invoice Amount reveals realized revenue in the selected period.
- Invoice Profit Margin highlights the absolute profit contribution.
- Ø Order Amount helps assess typical deal size.
- # New Customers measures customer acquisition dynamics. Each KPI is complemented by a YoY indicator, allowing instant assessment of improvement or deterioration compared to last year.

Sales Trend vs. Plan and Previous Year

A monthly trend chart compares:

- Actual invoiced sales
- Previous year's sales
- Planned (invoice/sales) amounts (custom integration required)

This view supports:

- Identifying seasonal patterns and structural trends
- Detecting months with under- or over-performance vs. plan
- Evaluating the effectiveness of sales initiatives over time

Customer Performance Bubble Chart

A scatter plot positions customers by sales growth and margin development. This enables you to:

- Spot high-potential customers with increasing revenue and margins
- Detect risk customers with declining sales and profitability

- Prioritize account management actions based on factual performance

Item Category Performance

A bar chart contrasts invoice amounts and plan values per item category and highlights variances. This helps you:

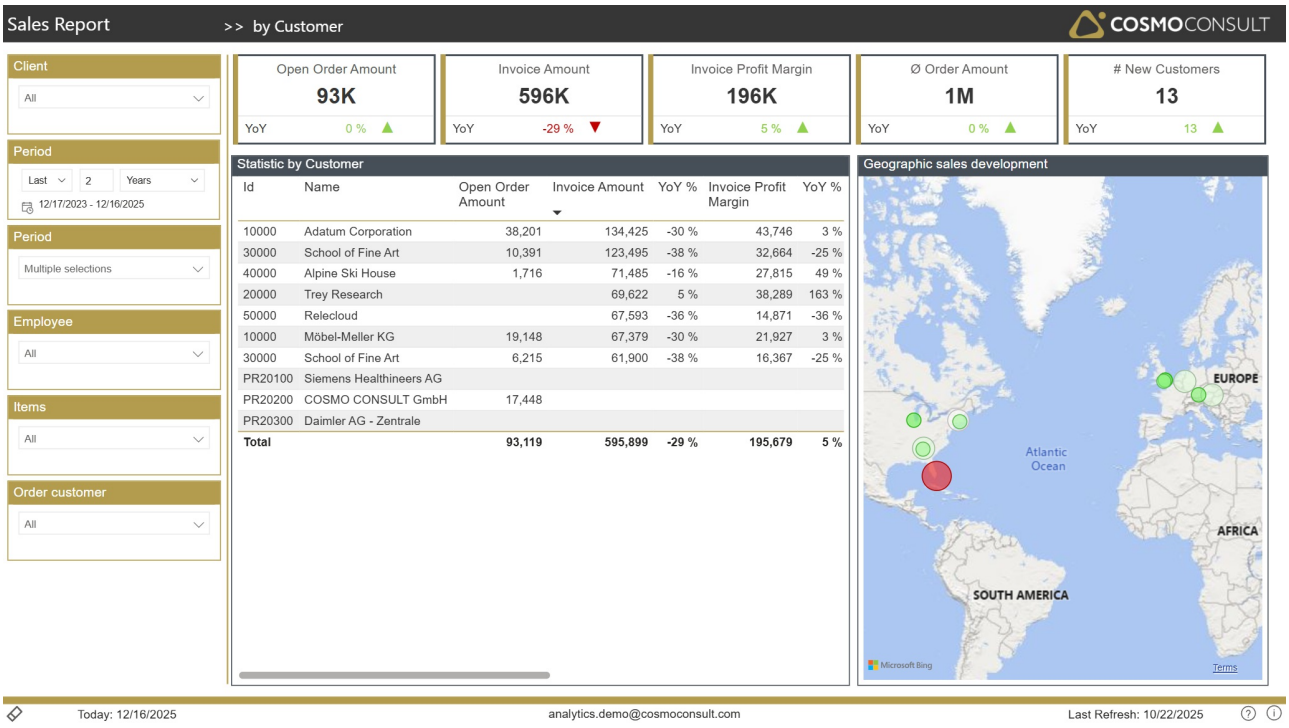
- See which product groups over- or underperform vs. expectations
- Identify categories where pricing or portfolio actions may be required
- Steer marketing or sales campaigns towards the most promising categories

Typical Use Cases

- Management Sales Review – use the page in recurring steering meetings to review overall sales health, trends, and plan fulfillment.
- Early Warning for Downturns – quickly detect negative YoY deviations at total, customer, or category level and initiate countermeasures.
- Campaign Evaluation – compare periods before and after marketing or pricing campaigns to see their impact on revenue and profit.
- Budget & Forecast Monitoring – contrast actual sales against planned values to monitor budget adherence and adjust forecasts.

Sales Report – by Customer

The by Customer page gives a 360° view on customer performance, combining sales, profit and regional information.



Overview

This page helps you:

- Rank customers by sales, margin and open order value
- Identify strategic key accounts and high-risk customers
- Understand how customer behaviour changes over time
- Visualize sales geographically to reveal regional patterns

Filters

Using the standard slicers (Client, Period, Employee, Items, Order Customer) you can:

- Restrict analysis to customers of specific salespeople or item portfolios
- Compare customer performance across time periods or legal entities
- Focus on customers related to particular products or campaigns

Key Visualizations

Customer Performance Table

A central table consolidates key indicators per customer:

- Open order value
- Invoiced sales and YoY development
- Profit contribution and margin trend

This supports:

- Account segmentation into high, medium and low value customers
- Identification of accounts with weakening revenue or profitability
- Prioritization of retention and upselling activities
- Identification of major backlogs and potential fulfillment issues

Geographic Sales Development

A map visualizes customers on a world map with markers reflecting performance indicators. With this you can:

- Recognize regional concentration of revenue and profit
- Spot areas with growth potential or declining business
- Plan territory responsibilities and regional campaigns

Drill-through capabilities

Right-clicking a customer in the performance table opens dedicated drill-through options:

- Customer documents – shows all orders and invoices for the selected customer.
- by Item – reopens the *by Item* page filtered to that customer, enabling per-customer product analysis.

This drill-through workflow connects high-level customer KPIs with detailed transactional context.

Typical Use Cases

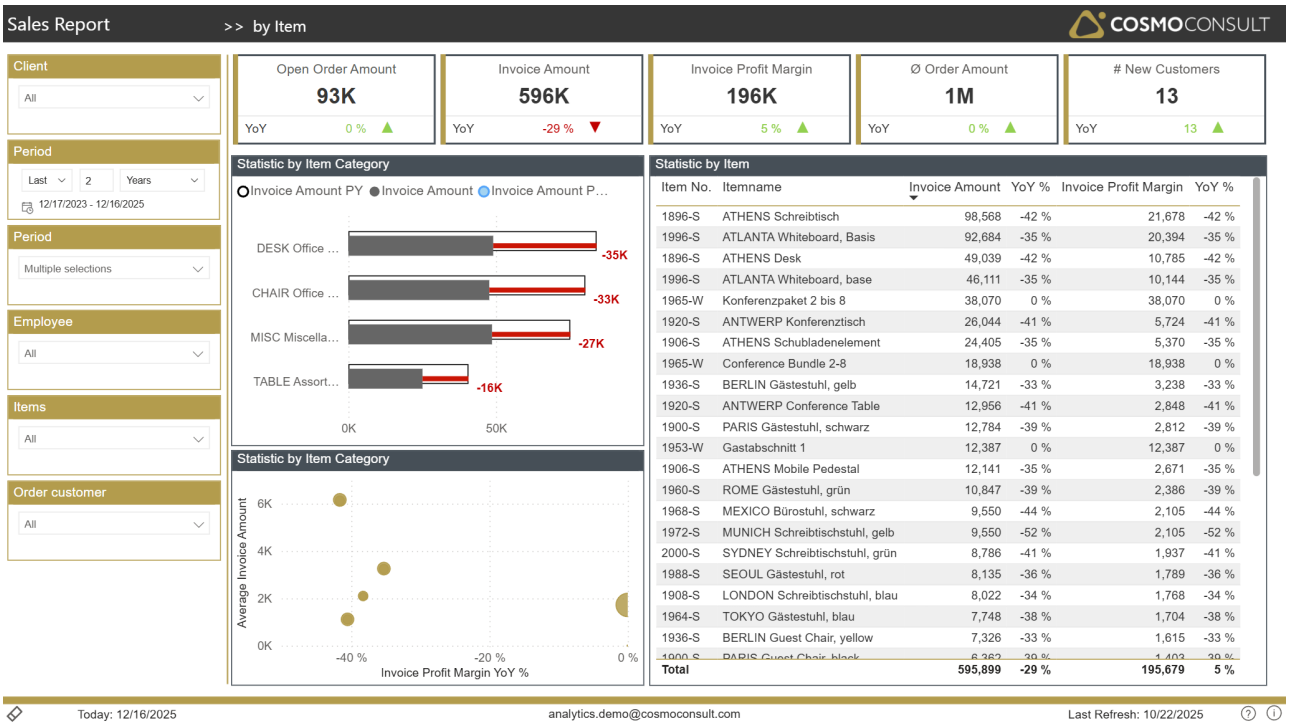
- Key Account Management – monitor the health of strategic accounts and prepare customer meetings with up-to-date numbers.
- Churn & Risk Detection – identify customers with declining sales or margins and trigger pro-active retention measures.
- Territory Planning – align sales territories with actual geographic distribution of

revenue.

- Campaign Targeting – define target groups for marketing campaigns based on customer value and development.
- Lookup & Analysis – quickly access detailed customer documents and item-level sales data for ad-hoc investigations.

Sales Report – by Item

The by Item page provides an item-centric view on sales performance, allowing you to manage your product portfolio based on facts rather than intuition.



Overview

This page helps you:

- Understand which items and item categories drive revenue and profit
- Identify slow- and fast-moving products from a sales perspective
- Monitor how item performance evolves over time compared to last year
- Support assortment, pricing and promotion decisions with detailed item KPIs

Filters

The same global filters as on the Overview page are available (Client, Period, Employee, Items, Order Customer). In an item context they allow you to:

- Analyze performance of a single product or product family
- Focus on items sold by a specific salesperson
- Compare product behaviour between time periods or companies

Key Visualizations

Item Category Comparison

A bar chart contrasts sales per item category. Benefits:

- Quickly identify winning and underperforming categories
- Provide input for category/product management and purchasing decisions

Item Ranking Table

A detailed table ranks items by invoice amount, showing for each product:

- Sales volume and YoY change
- Profit contribution and margin development

This enables you to:

- Focus on the relatively small number of items that generate most of your sales
- Recognize products with high revenue but weak margins
- Detect items where sales are shrinking despite stable or attractive margins

Item Category Profitability Scatter

A scatter plot compares item categories by average invoice size and margin development. This helps you:

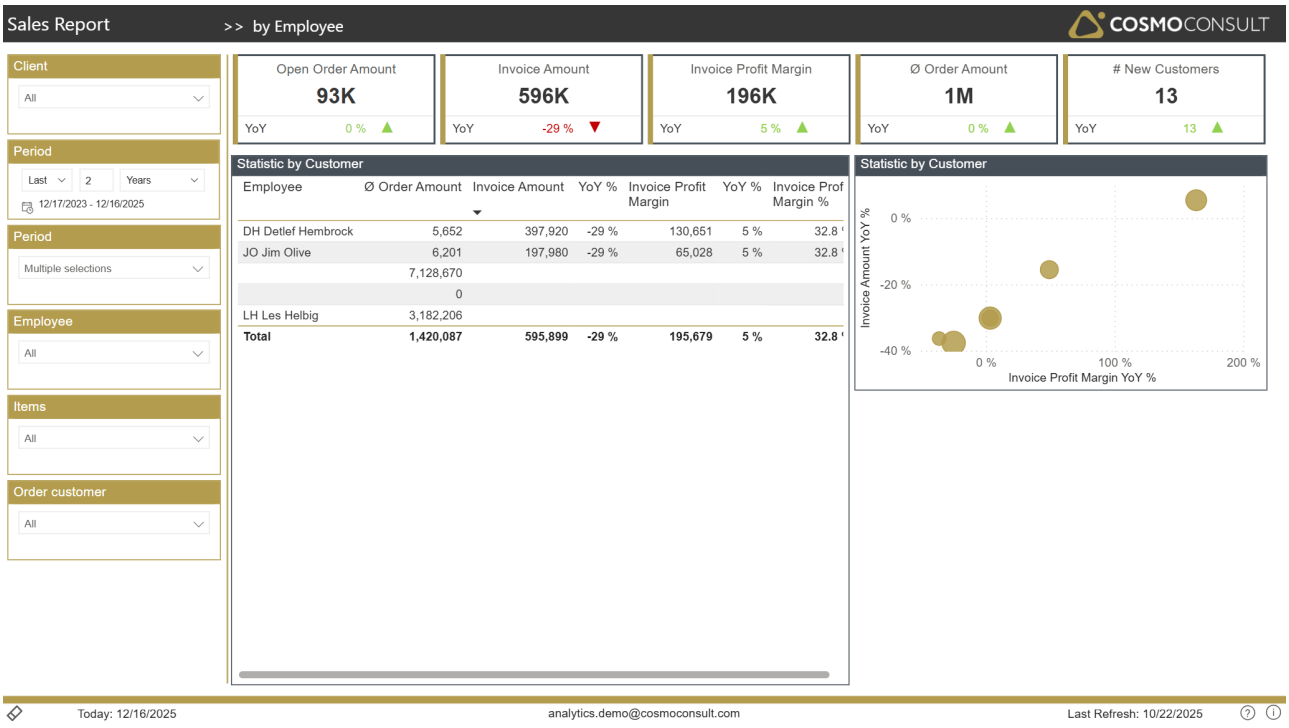
- Differentiate between high-value, low-frequency items and low-value, high-frequency ones
- Identify categories that are becoming more or less profitable over time
- Prioritize product groups for detailed deep-dive analysis or promotional activities

Typical Use Cases

- Portfolio Optimization – decide which items to promote, maintain or phase out based on revenue and margin insights.
- Pricing Review – focus on items with strong sales but low margins to evaluate pricing, discount structures or sourcing.
- Sales & Purchasing Alignment – share item performance data with purchasing to negotiate better conditions for key products.
- Campaign Targeting – select suitable items for campaigns (e.g. slow movers with healthy margins or fast movers with high contribution).
- Identify Top Customers per Item – use the drill-through functionality to see which customers are driving sales for specific items.

Sales Report – by Employee

The by Employee page focuses on sales performance per salesperson, enabling sales management to steer teams and individuals based on objective data.



Overview

This page helps you:

- Compare sales and profit between employees or sales teams
- Understand how average order size differs across salespeople
- Track how each employee's performance develops compared to last year
- Support bonus, target setting and coaching discussions with fact-based KPIs

Filters

By combining the usual slicers (Client, Period, Items, Order Customer) you can:

- Evaluate an employee's performance for a defined product portfolio or customer group
- Compare team performance across companies or regions
- Analyze long-term trends by looking at multiple years

Key Visualizations

Employee Performance Table

This table aggregates core KPIs per employee:

- Average order size
- Invoiced sales and corresponding YoY change
- Absolute profit and margin development

It enables you to:

- Rank employees by revenue, profit or margin
- Identify top performers and those needing support
- Recognize patterns such as high revenue but low margins (indicating aggressive discounting)

Employee Performance Scatter

A scatter chart positions each employee by sales and margin change versus last year. This visual quickly shows:

- Who is growing both in revenue and profitability
- Who maintains sales but at the cost of margin
- Who is losing volume and profits, signalling potential issues in territory or customer portfolio

Typical Use Cases

- Sales Team Steering – use the page in sales meetings to review targets, highlight successes and address performance gaps.
- Incentive & Bonus Planning – base variable compensation on transparent KPIs such as revenue growth and margin improvement.
- Coaching & Training – identify employees who might benefit from pricing or negotiation training.
- Territory Realignment – combine employee and customer insights to redistribute responsibilities for better market coverage.

Purchase

The COSMO Analytics Purchase module delivers out-of-the-box analytics for purchasing processes in Microsoft Dynamics 365 Business Central. It consolidates purchase Orders, Receipts, and Invoices into a consistent model to analyze spend, quantities, prices, and discounts across vendors, items, time, and locations.

With our app, you can:

- Analyze: purchase spend and quantities over time by vendor, item, or location
- Compare: Orders vs. Receipts vs. Invoices with dedicated KPIs and YoY/PY variants
- Track: open order amounts, status, and other attributes to monitor inbound pipeline
- Evaluate: discounts (line and header) and unit prices to identify savings potential
- Monitor: supplier coverage and item portfolio activity with unique counts and frequencies

Explore the data model and KPIs:

- Semantic Model Overview: Semantic Model
- Facts: Facts
- Dimensions: Dimensions
- KPIs: KPIs

Pre-Requisites

- Microsoft Power BI
- Microsoft Dynamics 365 Business Central
- Data history of purchasing data (purchase lines, receipts, invoices with item, vendor, dates)

Data Model

The COSMO Analytics Purchasing semantic model follows Power BI best-practice standards using a Star schema design. The model enables analysis of purchase orders, receipts, and invoices including spend, quantities, discounts, and vendor coverage with full time-intelligence support.

Model Purpose

This semantic model provides the foundation for data-driven purchasing by:

- Analyzing order, receipt, and invoice amounts and quantities
- Tracking discounts, cost amounts, and gross weight
- Assessing supplier coverage and item portfolio activity
- Comparing trends with PY/YoY time-intelligence variants

Model Structure

The model integrates purchasing transactions in a consolidated fact table with rich dimensions (calendar, vendor, item, locations, payment and shipment settings, document types, and more) to enable analysis across time, products, suppliers, and logistics.

In the following sections, you find a comprehensive documentation of available data and derived KPIs:

- Facts – Transactional data for purchasing
- Dimensions – Master data with attributes for analysis
- KPIs – Key Performance Indicators and measures

Facts

This article provides information on the fact tables used within the Power BI semantic model. These tables contain the transactional data that forms the basis for purchasing analysis.

CUB_Purch

The consolidated purchasing fact table that combines orders, receipts, invoices, and credit memos into one model for end-to-end procurement analysis. It provides measures for amounts, quantities, discounts, cost amounts, and gross weight, with built-in currency conversion.

Base Tables (BC):

- Purchase Line
- Purch. Rcpt. Line
- Purch. Inv. Line
- Purch. Cr. Memo Line

Key Information:

- Amounts (net and gross), discounts (line and header), cost amount
- Quantities and gross weight
- Currency conversion via exchange rates (target vs. local currency)
- Document identifiers (Order, Receipt, Invoice) and vendor/item keys
- Multiple date roles for analysis (Order, Requested/Promised/Planned/Expected Receipt, Receipt, Invoice, Document)

> **Note**
> **Use the dimension Purchase Document Type to slice measures into Orders, Receipts, and Invoices; dedicated measure groups are provided for each scenario.**

Dimensions

This section covers a brief description of the available dimensions within the Power BI semantic model. These dimension tables provide the master data attributes needed to analyze purchasing across various perspectives.

Calendar

Time dimension providing comprehensive date attributes including year, quarter, month, week, and day levels for temporal analysis.

Client

Company dimension for multi-tenant scenarios, containing client/company information.

CurrencySource

Source currency dimension for currency conversion scenarios.

CurrencyTarget

Target currency dimension for currency conversion scenarios.

DataCategory

Data categorization dimension for classifying transactions.

DataSource

Data source dimension identifying the origin of transaction data.

DatabaseSource

Database source identification for multi-source scenarios.

Dimension 1-6

Flexible dimension attributes (Global Dimensions and Shortcut Dimensions) from Business Central for custom analysis perspectives.

Employee

Employee master data for analyzing responsibilities (e.g., purchaser).

Invent Location

Warehouse/location master data, essential for inbound logistics analysis.

Item

Item/product master data with attributes such as categories and replenishment settings relevant for procurement.

Payment Method

Payment method settings used on purchase documents.

Payment Terms

Payment terms for due date calculations and document conditions.

Purchase Document Type

Document type classifier (Order, Receipt, Invoice, etc.) used to group purchasing transactions.

Purchase Line Type

Line type classifier (Item, G/L Account, Resource) for purchase lines.

Purchase Invoice

Invoice header identifiers and external references for invoice-level analysis.

Purchase Order

Order header including order number and status for order-level analysis.

Resource

Resource master data for non-item purchase lines.

Shipment Method

Shipment method settings used on purchase documents.

Time Intelligence

Calculation group providing PY/YoY variants for time-based comparisons.

Unit

Unit of measure dimension for quantity conversions.

Vendor

Vendor master data including address and contact information for supplier analysis.

Calendar

Time dimension providing comprehensive date attributes including year, quarter, month, week, and day levels for temporal analysis. It covers the period from the first transaction date through the current or latest posting year.

Key Attribute Groups

- Date Identifiers: DateBK (primary), DateSK, DateDisplay variants
- Time Hierarchies: Year, Half-Year, Quarter, Month, Week attributes with combined display formats
- Period Flags: IsToday, IsCurrentWeek, IsCurrentMonth, IsCurrentQuarter, IsCurrentYear for relative period analysis

Client

The Client dimension provides company-level information for multi-client/multi-tenant Business Central scenarios, enabling filtering and aggregation across multiple legal entities or companies within the organization.

Key Attribute Groups

- Company Identification: Company code and name for organizational segmentation
- Financial Settings: Local currency and accounting configuration

Currency Source

The Currency Source dimension represents the accounting currency from Business Central, enabling multi-currency reporting and currency conversion calculations.

Key Attribute Groups

- Currency Identification: Currency code, symbol, and descriptive name

Currency Target

The Currency Target dimension defines the reporting currency for consolidated multi-currency analysis, enabling conversion of transactions into a single target currency.

Key Attribute Groups

- Currency Identification: Currency code, symbol, and name for reporting currency

Data Category

The Data Category dimension enables classification of data by type such as Actual, Budget, or Forecast, supporting variance analysis and flexible business categorization.

Key Attribute Groups

- Category Classification: Data type code and description (Actual, Budget, Forecast, Plan)

Data Source

The Data Source dimension identifies the origin system or base table of transaction data in multi-source integration scenarios, enabling filtering and data lineage tracking.

Key Attribute Groups

- Source Identification: Source system code, name, and type classification
- Table Context: Base table references for transaction origin tracking

Database Source

The Database Source dimension identifies the specific database or data warehouse source in multi-database environments, enabling filtering and database-level lineage tracking.

Key Attribute Groups

- Database Identification: Database code, name

Dimensions (Financial Dimensions)

The Dimension tables (Dimension1-6) contain Business Central's financial dimension values, enabling cross-functional analysis, project tracking, and flexible business segmentation.

Key Attribute Groups

- Dimension Values: Codes and descriptions for each dimension level based on organization-specific configuration

Employee

The Employee dimension provides employee master data including role identifications (salesperson, purchaser), enabling performance analysis and responsibility tracking.

Key Attribute Groups

- Identification: Employee number, name, and further details

Invent Location

The Invent Location dimension provides warehouse and location master data from Business Central, enabling location-based inventory analysis and multi-site planning.

Key Attribute Groups

- Location Identification: Location code, name, and facility type
- Geographic Information: Address details for regional analysis and logistics planning

Item

The Item dimension provides comprehensive product master data from Business Central with a 5-level category hierarchy, enabling product-level analysis and drill-down capabilities.

Key Attribute Groups

- Identification: Item number, name, and product type
- Item Attributes: Description, costing method, posting groups, etc.

Payment Method

Dimension grouping sales by payment method to analyze settlement behavior and preferences.

Key Attribute Groups

- Method Identification: Code, id, and description
- Relationships: Linked from CUB_Sales via PaymentMethodBK

Payment Terms

Dimension grouping sales by payment terms to analyze due dates, discounts, and collection profiles.

Key Attribute Groups

- Terms Identification: Code, id, and description
- Due/Discount Logic: Due dates and discount rules
- Relationships: Linked from CUB_Sales via PaymentTermsBK

Purchase Document Type

The Purchase Document Type dimension classifies purchasing transactions by document type (e.g., Order, Receipt, Invoice, Credit Memo), enabling focused analysis by process stage.

Key Attribute Groups

- Document Classification: Document type code and description
- Process Context: Groupings used by measures to filter Orders, Receipts, and Invoices

Purchase Line Type

The Purchase Line Type dimension classifies purchase lines by content type (Item, G/L Account, Resource, etc.), supporting spend analysis by line category.

Key Attribute Groups

- Line Classification: Line type code and description
- Analysis Context: Filtering and grouping of line types in measures and visuals

Purchase Invoice

The Purchase Invoice dimension contains invoice-level identifiers and references from Business Central for invoice analysis and reconciliation.

Key Attribute Groups

- Invoice Identification: Invoice number (BK), invoice ID

Purchase Order

The Purchase Order dimension provides purchase document header information, enabling procurement tracking and vendor delivery performance monitoring.

Key Attribute Groups

- Order Identification: Purchase order number and ID
- Order Status: Status code and description (Open, Released, etc.)

Resource

The Resource dimension represents non-item purchasing resources, enabling analysis of services and other resource-based purchases.

Key Attribute Groups

- Resource Identification: Resource number and name
- Classification: Resource groups and types

Shipment Method

The Shipment Method dimension documents shipment methods used on purchase documents to analyze logistics preferences and lead times.

Key Attribute Groups

- Method Identification: Shipment method code and description

TimeIntelligence

Calculation group providing common time-intelligence variations (YTD, QTD, MTD, PY, YoY, Rolling-12, etc.) applied across Sales measures.

Key Attribute Groups

- Calculation Items: Name, display order, and behavior
- Scope: Applies over selected measures using Calendar[DateBK] for date context

Unit

The Unit dimension provides unit of measure (UOM) information from Business Central, enabling standardized quantity reporting and UOM conversions across transactions.

Key Attribute Groups

- Unit Identification: Unit code, description, and international standard codes

Vendor

The Vendor dimension provides supplier master data from Business Central, enabling supplier performance tracking and segmentation.

Key Attribute Groups

- Identification & Contact: Vendor number, name, and communication details
- Address & Geography: Location information for supplier network analysis

KPIs

This article provides information on the available KPIs (Measures) within the Power BI semantic model. The measures are organized by functional area to support different purchasing scenarios.

Purchasing KPIs (Basic)

Name	Description
Purch Amount	Net purchase amount including header end discounts, with target-currency conversion support.
Purch Amount Gross	Gross amount (quantity × unit price) before discounts.
Purch Quantity	Total purchased quantity (base).
Purch Unit Price	Average unit price (amount ÷ quantity).
Purch Line Discount	Line-level discounts on purchase lines.
Purch Header End Discount	Header-level end discounts on purchase documents.
Purch Discount	Total discount (line + header).
Purch Cost Amount	Cost amount based on value entries.
Gross Weight	Total gross weight.

Time Intelligence Variants

Most base measures include time intelligence variants for trend analysis:

Variant	Description
PY	Prior Year comparison (same period last year)
YoY	Year-over-Year change (absolute difference)
YoY %	Year-over-Year change (percentage)

Examples: Purch Amount PY/YoY/YoY %, Purch Quantity PY/YoY/YoY %, Purch Unit Price PY/YoY/YoY %, Purch Discount PY/YoY/YoY %.

Counts

Name	Description
# Unique Vendors	Number of vendors with activity in the selected period.
# Unique Vendors PY	Prior-year comparison of active vendors.
# Unique Vendors YoY	Year-over-year delta of active vendors.
# Unique Vendors YoY %	Year-over-year delta of active vendors in percent.

Orders

Name	Description
Order Amount	Purchase order net amount (document type = Order).
Order Amount Gross	Gross amount on orders before discounts.
Order Quantity	Ordered quantity.
Order Unit Price	Average order unit price.
Order Line Discount	Line discounts on orders.
Order Header End Discount	Header end discounts on orders.
Order Discount	Total discount on orders (line + header).
Order Gross Weight	Gross weight on orders.
# Unique Orders	Number of distinct purchase orders.
Order Frequency (Days)	Days in filter ÷ number of orders.
Avg Order Amount	Order amount ÷ number of orders.
Order Cost Amount	Cost amount filtered to orders.
Order Amount PY	Prior-year comparison of order amount.
Order Amount YoY	Year-over-year change of order amount.
Order Amount YoY %	Percentage YoY change of order amount.
Order Amount Open	Net amount of orders with status Open.

Receipts

Name	Description
Receipt Amount	Net amount filtered to receipts.
Receipt Quantity	Received quantity.
Receipt Gross Weight	Gross weight on receipts.
# Unique Receipts	Number of distinct purchase receipts.
Receipt Frequency (Days)	Days in filter ÷ number of receipts.

Name	Description
# Unique Items Receipt	Number of distinct items received.

Invoices

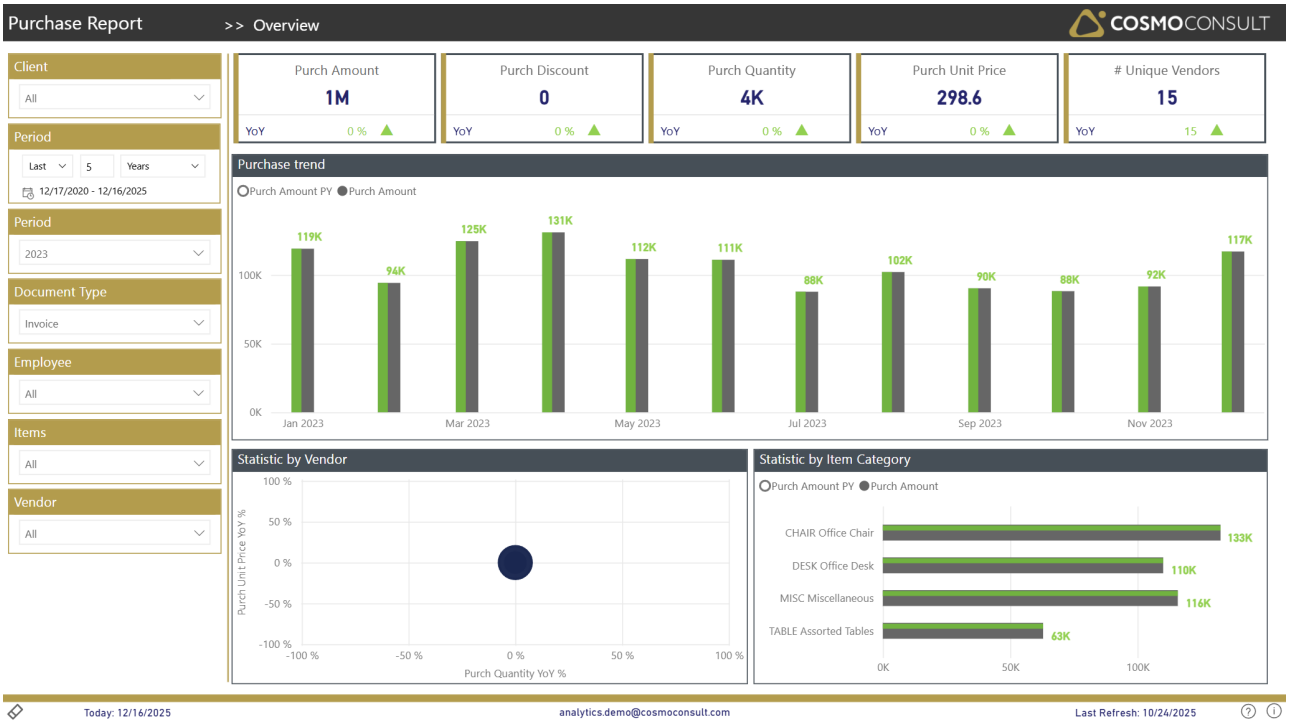
Name	Description
Invoice Amount	Net amount filtered to invoices.
Invoice Amount Gross	Gross amount on invoices before discounts.
Invoice Quantity	Invoiced quantity.
Invoice Unit Price	Average invoice unit price.
Invoice Line Discount	Line discounts on invoices.
Invoice Header End Discount	Header end discounts on invoices.
Invoice Discount	Total discount on invoices (line + header).
Invoice Gross Weight	Gross weight on invoices.
# Unique Invoices	Number of distinct purchase invoices.
Invoice Frequency (Days)	Days in filter ÷ number of invoices.
Avg Invoice Amount	Invoice amount ÷ number of invoices.
# Unique Items Invoiced	Number of distinct items invoiced.
Invoice Cost Amount	Cost amount filtered to invoices.

Avg Amounts and Discounts

Name	Description
Order Discount %	Order discount share vs. gross amount.
Invoice Discount %	Invoice discount share vs. gross amount.
Purch Discount %	Discount share vs. gross amount across all docs.

Purchase Report – Overview

The Overview page delivers a high-level summary of your purchasing situation and trends. It is designed as the starting point for managers and controllers to understand the big picture before moving into detailed analysis on the other pages.



Overview

This page focuses on the overall business questions around purchasing performance:

- Understand overall purchasing health quickly – See in one place how your total purchases, volumes, and supplier base look for the selected period and document type.
- Recognize trends and seasonality – Use the monthly trend to spot recurring peaks, slow periods, or unusual fluctuations in purchasing activity.
- See how spend is distributed – Identify how your purchasing is split across vendors and item categories to understand structural dependencies and concentration risks.
- Identify where to investigate further – Use the high-level views to decide whether you should drill down by product, vendor, or employee on the dedicated pages.

Filters

The left-hand filter panel defines the context for all visuals on this page:

- Client – Selects the D365 BC company/tenant.

- Period (relative) – Sets a relative time frame (e.g., *Last 5 Years*) and shows the corresponding date range.
- Period (year) – Focuses the analysis on a specific calendar year (e.g., *2023*).
- Document Type – Filters the data by purchase document type (e.g., *Invoice*).
- Employee – Filters by responsible employee/purchaser.
- Items – Restricts the analysis to selected items.
- Vendor – Restricts the analysis to selected vendors.

Key Visualizations

KPI Summary Tiles

Top-row tiles show the main purchasing indicators for the current filter context:

- Purch Amount – total net purchase amount.
- Purch Discount – total purchasing discounts granted.
- Purch Quantity – total quantity purchased.
- Purch Unit Price – average unit price across all purchases.
- # Unique Vendors – number of active vendors in the selected period.

Each tile includes a YoY (Year-over-Year) indicator so you can immediately see how the current value compares to the previous year.

Purchase Trend

Column chart showing monthly development of purchasing:

- Compares Purch Amount with Purch Amount PY (prior year) per month.
- Helps to identify peaks, troughs, and seasonality in purchasing.
- Highlights whether current purchasing is above or below last year for each month.

Statistic by Vendor

Scatter chart displaying vendor-level changes:

- X-axis: Purch Quantity YoY %.
- Y-axis: Purch Unit Price YoY %.
- Bubbles: Vendors (bubble size indicates their relative importance).

This visual helps you:

- Detect vendors where quantities and/or prices have changed significantly year-over-year.
- Identify vendors with rising prices (positive Purch Unit Price YoY %) or declining volumes.

Statistic by Item Category

Horizontal bar chart breaking down spend by item category:

- Shows Purch Amount and Purch Amount PY per item category.

This breakdown supports:

- Understanding which product groups drive total spend.
- Comparing current-year vs. prior-year purchasing per item category.

Interactive Capabilities

- Slicer Interaction: All slicers (Client, Period, Document Type, Employee, Items, Vendor) instantly recalculate all visuals.
- Cross-filtering: Clicking a bar or bubble filters other visuals on the page to that context.
- Sorting: Tables and charts can be sorted by value (e.g., highest Purch Amount first).
- Tooltips: Hover over columns, bars, or bubbles to see detailed values (e.g., exact Purch Amount, YoY %, category/vendor name).

Typical Use Cases

Executive Purchasing Overview

Use the KPI cards and trend chart to assess whether purchasing amounts and quantities are on track compared to last year and whether the supplier base is stable.

Budget & Trend Monitoring

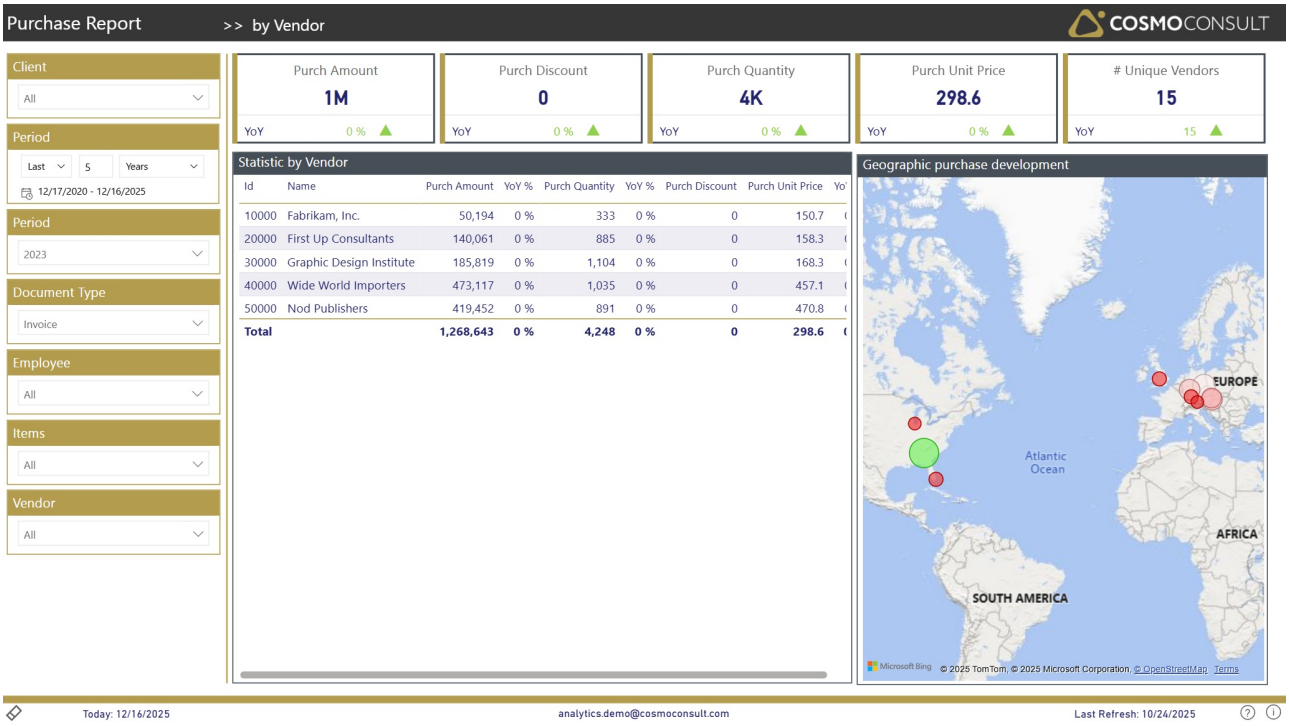
Monitor monthly developments and YoY comparisons to validate purchasing against budget or forecast and identify months that require deeper analysis.

Structural Spend Analysis

Use the vendor scatter chart and item-category bar chart to understand where spend is concentrated and which vendors or categories show unusual YoY behavior.

Purchase Report - By Vendor

The By Vendor page offers a supplier-centric view of your purchasing. It supports vendor management and sourcing decisions by combining spend, volume, and geographic information per vendor.



Overview

This page focuses on business questions around your supplier base:

- Identify strategic and key vendors - See which vendors account for the largest share of spend and volumes in the selected period and document type.
- Monitor vendor KPIs over time - Track how amounts, quantities, and average prices develop per vendor to support negotiations and contract reviews.
- Understand regional exposure - Use the geographic view to see where your supplier base is located and how spend is distributed across regions.
- Support sourcing and risk decisions - Combine vendor rankings and geography to identify concentration risks and opportunities for diversification.

Filters

The left-hand filter panel defines the context for all visuals on this page:

- Client - Selects the D365 BC company/tenant.

- Period (relative) – Sets a relative time frame (e.g., *Last 5 Years*) and shows the corresponding date range.
- Period (year) – Focuses the analysis on a specific calendar year (e.g., *2023*).
- Document Type – Filters the data by purchase document type (e.g., *Invoice*).
- Employee – Filters by responsible employee/purchaser.
- Items – Restricts the analysis to purchases of selected items.
- Vendor – Restricts the analysis to selected vendors.

Key Visualizations

KPI Summary Tiles

Top-row tiles summarize vendor-related purchasing activity for the current context:

- Purch Amount – total net purchase amount across all vendors in scope.
- Purch Discount – total purchasing discounts granted.
- Purch Quantity – total quantity purchased.
- Purch Unit Price – average unit price across all vendors.
- # Unique Vendors – number of active vendors in the selected period.

Each tile includes a YoY indicator so you can see whether vendor-related purchasing is increasing or decreasing compared to last year.

Statistic by Vendor (Detail Table)

Vendor table showing a consolidated view per vendor, with columns such as:

- Id and Name – vendor identification.
- Purch Amount – net spend per vendor.
- YoY % – year-over-year change of Purch Amount.
- Purch Quantity – total quantity purchased from the vendor.
- YoY % – year-over-year change of Purch Quantity.
- Purch Discount – total discounts granted by the vendor.
- Purch Unit Price – average purchase price per unit from the vendor.

Use this table to:

- Rank vendors by spend, quantity, or discount volume.
- Identify vendors with rising prices or shrinking volumes.
- Prepare vendor-specific views for negotiations and supplier reviews.

Geographic Purchase Development (Map)

Map visual showing where your vendors are located:

- Each bubble represents a vendor location.
- Position reflects vendor geography; size/color indicates relative importance.

This visual helps you:

- See geographic clusters of your supplier base.
- Understand regional concentration of purchasing.
- Support decisions around regional sourcing strategies and risk diversification.

Interactive Capabilities

- Vendor selection: Click a vendor row in the table to focus the map and KPI tiles on that vendor.
- Map selection: Select a bubble on the map to filter the vendor table and KPIs to the corresponding location/vendor.
- Slicer interaction: All slicers (Client, Period, Document Type, Employee, Items, Vendor) instantly update both the table and map.
- Sorting & tooltips: Sort the table by Purch Amount, Quantity, or Unit Price and hover over table rows or map bubbles to see exact values and vendor details.
- Drill-Through: Use drill-through to navigate to item details for a deeper analysis of purchased products from a specific vendor.

Typical Use Cases

Strategic Supplier Analysis

Identify key vendors by spend and quantity, and use YoY development to prioritize which suppliers require attention in negotiations or contract reviews.

Vendor Performance & Price Monitoring

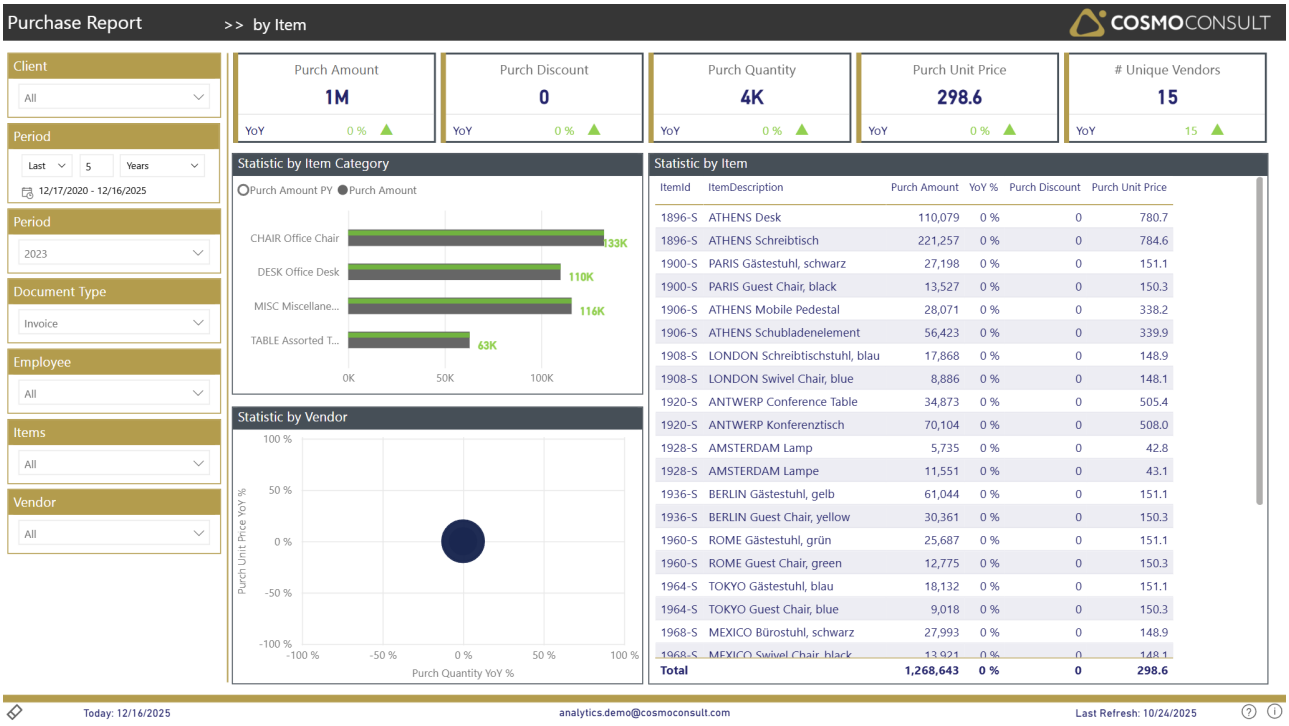
Monitor changes in volumes and average prices per vendor over time to detect unfavorable developments or opportunities for better terms.

Geographical Risk & Opportunity Assessment

Use the map to reveal regional concentration of your vendor base and evaluate where you might need alternative suppliers or new sourcing regions.

Purchase Report – by Item

The By Item page provides a product-centric view of your purchasing. It helps buyers, controllers, and product managers understand which items and item categories drive spend and how price and volume behavior changes over time.



Overview

This page focuses on business questions around items and product groups:

- Identify top-spend products quickly – See which items and categories account for the largest share of purchasing for the selected period and document type.
- Understand price and discount behavior per item – Analyze average purchase prices and discounts at item level to support negotiation and pricing decisions.
- Detect shifts in product mix – Compare current and prior-year purchasing by category and item to see which product groups are growing, stable, or declining.
- Prioritize portfolio actions – Use the detailed item view to identify products that may require renegotiation, substitution, or discontinuation.
- Identify Vendor Dependencies – Link items to their respective vendors to assess supplier concentration risks for key products.

Filters

The left-hand filter panel defines the context for all visuals on this page:

- Client – Selects the D365 BC company/tenant.
- Period (relative) – Sets a relative time frame (e.g., *Last 5 Years*) and shows the corresponding date range.
- Period (year) – Focuses the analysis on a specific calendar year (e.g., *2023*).
- Document Type – Filters the data by purchase document type (e.g., *Invoice*).
- Employee – Filters by responsible employee/purchaser.
- Items – Restricts the analysis to selected items.
- Vendor – Restricts the analysis to selected vendors.

Key Visualizations

KPI Summary Tiles

Top-row tiles show the main purchasing indicators for the currently selected items and filters:

- Purch Amount – total net purchase amount.
- Purch Discount – total purchasing discounts granted.
- Purch Quantity – total quantity purchased.
- Purch Unit Price – average unit price across all purchases.
- # Unique Vendors – number of active vendors supplying the selected items.

Each tile includes a YoY (Year-over-Year) indicator so you can immediately see how the current value compares to the previous year.

Statistic by Item Category

Horizontal bar chart summarizing item categories:

- Shows Purch Amount and Purch Amount PY per item category.

This view helps you:

- See which categories dominate overall spend for the selected period.
- Compare current-year vs. prior-year purchasing per category to detect category shifts.

Statistic by Item (Detail Table)

Detailed item table listing all relevant items in the selection with columns such as:

- ItemId and ItemDescription – product identification.
- Purch Amount – net purchase amount per item.

- YoY % – year-over-year change of Purch Amount.
- Purch Discount – total discount amount per item.
- Purch Unit Price – average purchase price per unit.

Use this table to:

- Rank items by spend, discount, or price level.
- Spot items with strong growth or decline versus last year.
- Prepare item-specific insights for negotiations or portfolio reviews.
- Cross-filter with the vendor scatter chart to identify which suppliers provide the selected items.

Statistic by Vendor (Scatter)

Scatter chart showing vendor behavior for the items in focus:

- X-axis: Purch Quantity YoY % by vendor.
- Y-axis: Purch Unit Price YoY % by vendor.
- Bubbles: Vendors that supply the selected items (bubble size indicates their relative importance).

This visual helps you:

- Link item-level findings to specific suppliers.
- Identify vendors with significant price or volume changes for the items under review.

Interactive Capabilities

- Category-driven drill-in: Click an item category bar to filter the item table and vendor scatter chart to that category.
- Item selection: Select one or multiple items in the table to focus all visuals and KPIs on those products.
- Slicer interaction: All slicers (Client, Period, Document Type, Employee, Items, Vendor) instantly recalculate all visuals.
- Cross-filtering: Clicking a bubble in the vendor scatter chart filters the item table and KPIs to the corresponding vendor context.
- Sorting & tooltips: Sort the table by any column and hover over bars or rows to see exact values (e.g., Purch Amount, YoY %, Unit Price).
- Drill-through: Right-click an item in the table to access vendor statistics for a particular item.

Typical Use Cases

Top-Item Spend Analysis

Use the item table and category chart to identify high-spend items and categories, enabling focused cost management efforts.

Price & Discount Review per Item

Analyze *Purch Unit Price* and *Purch Discount* at item level to detect products with unfavorable price development or unusual discount patterns.

Category Portfolio Management

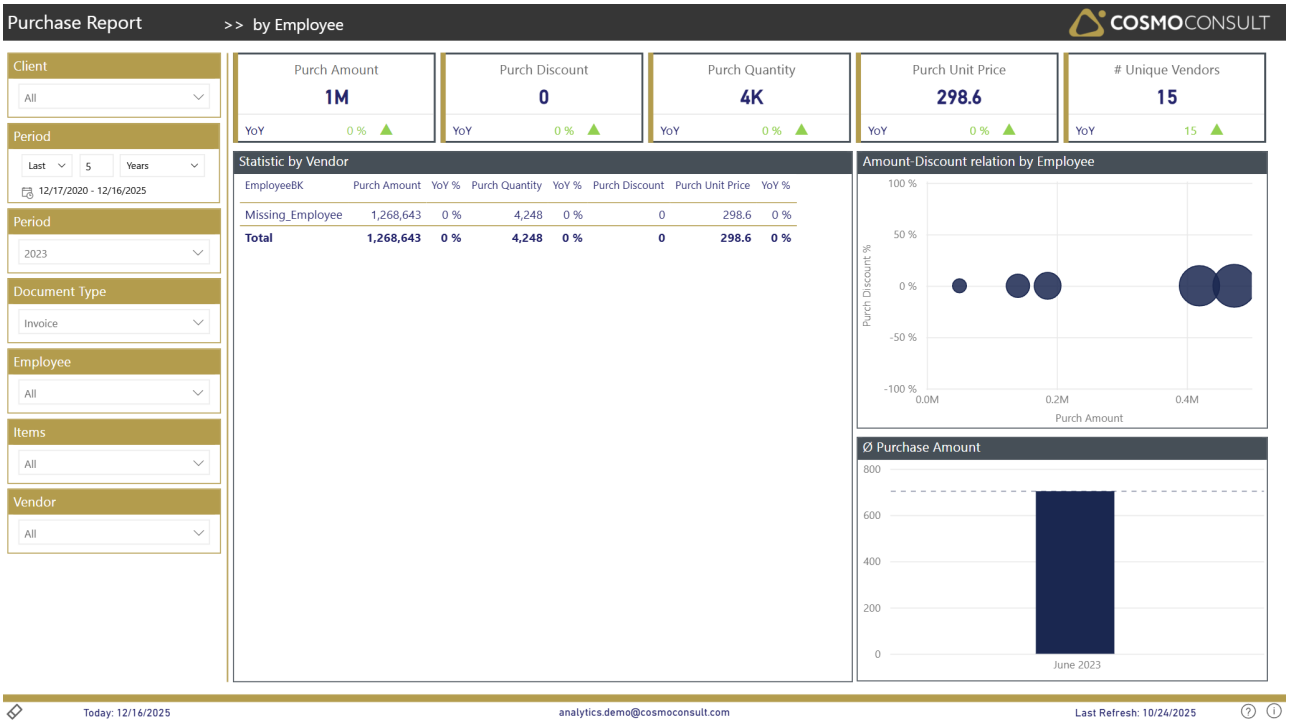
Compare current vs. prior-year spend per category to support decisions on expanding, maintaining, or reducing specific product groups.

Supplier-Item Relationship Analysis

Leverage the vendor scatter chart to understand which suppliers are critical for key items, helping to manage supplier risks and negotiation strategies.

Purchase Report – By Employee

The By Employee page analyzes purchasing by responsible employee (e.g., buyer or purchaser). It helps management understand how purchasing activity, spend, and discounts are distributed across the team.



Overview

This page focuses on business questions around roles and responsibilities in purchasing:

- Understand who drives purchasing activity – See which employees handle the largest purchase amounts and quantities in the selected period.
- Compare discount behavior across employees – Analyze how discount percentages relate to purchase amounts to support coaching and policy compliance.
- Assess purchasing patterns per employee – Use average purchase amounts over time to understand whether employees place many small orders or fewer large ones.
- Support performance and process discussions – Provide data-driven input for reviewing responsibilities, training needs, and process improvements.

Filters

The left-hand filter panel defines the context for all visuals on this page:

- Client – Selects the D365 BC company/tenant.

- Period (relative) – Sets a relative time frame (e.g., *Last 5 Years*) and shows the corresponding date range.
- Period (year) – Focuses the analysis on a specific calendar year (e.g., *2023*).
- Document Type – Filters the data by purchase document type (e.g., *Invoice*).
- Employee – Filters by responsible employee/purchaser.
- Items – Restricts the analysis to purchases of selected items.
- Vendor – Restricts the analysis to selected vendors.

Key Visualizations

KPI Summary Tiles

Top-row tiles summarize overall purchasing activity for the selected employees and filters:

- Purch Amount – total net purchase amount.
- Purch Discount – total purchasing discounts granted.
- Purch Quantity – total quantity purchased.
- Purch Unit Price – average unit price across all purchases.
- # Unique Vendors – number of vendors involved in purchases for the selected context.

YoY indicators on each tile highlight how team-level purchasing has developed compared to the prior year.

Statistic by Employee (Detail Table)

Table aggregating purchasing metrics per employee, with columns such as:

- EmployeeBK – employee identifier.
- Purch Amount – net purchase amount.
- YoY % – year-over-year change of Purch Amount.
- Purch Quantity – total quantity purchased.
- YoY % – year-over-year change of Purch Quantity.
- Purch Discount – total discounts granted.
- Purch Unit Price – average purchase price per unit.

Use this table to:

- Identify employees with the highest purchase volumes.
- Compare YoY development per employee.
- Provide transparent figures for performance and responsibility discussions.

Amount–Discount Relation by Employee (Scatter)

Scatter chart showing the relationship between purchase amounts and discount levels per

employee:

- X-axis: Purch Amount.
- Y-axis: Purch Discount %.
- Bubbles: Employees (bubble size reflects relative importance).

This visual helps you:

- Compare discount behavior across employees at a glance.
- Spot outliers where discount percentages are unusually high or low relative to spend.

Ø Purchase Amount (Average Purchase Amount)

Column chart showing average purchase amount over time for the current selection.

Use this chart to:

- Evaluate whether employees tend to place larger or smaller purchases on average.
- Identify periods with atypically high or low average purchase amounts.

Interactive Capabilities

- Employee focus: Select an employee via slicer or directly in the table to filter all visuals and KPIs to that employee.
- Scatter selection: Click a bubble in the Amount–Discount relation chart to highlight that employee's figures in the table and average-amount chart.
- Slicer interaction: All slicers (Client, Period, Document Type, Employee, Items, Vendor) immediately recalculate all visuals.
- Sorting & tooltips: Sort the employee table by any column and hover over bubbles or bars to see exact values (e.g., Purch Amount, Discount %, period).

Typical Use Cases

Team Responsibility & Workload Overview

Use the employee table to understand which team members manage the most purchase volume and how this is distributed across the organization.

Discount Policy & Negotiation Quality

Analyze *Purch Discount %* in combination with purchase amounts to identify employees who may need guidance on discount and negotiation practices.

Process and Efficiency Optimization

Use the average purchase amount view to detect patterns such as many small orders vs. consolidated purchasing, and derive actions to streamline purchasing processes.

Inventory

Unlock the full potential of your inventory management with our Power BI report pack, meticulously designed for D365 Business Central users. This robust tool provides an in-depth view of all your inventory transactions and related Key Performance Indicators (KPIs), enabling you to make informed decisions that drive efficiency and profitability.

With our app, you can:
- Visualize Inventory Valuation: Get insights into the value of your inventory, helping you manage financial records accurately.
- Monitor Stock Levels: Easily identify on-stock and out-of-stock items to ensure you meet customer demands without overstocking.
- Analyze KPIs: Access standardized KPIs such as turnover rate and inventory reach, which are crucial for assessing the effectiveness of your inventory management strategies.
- Optimize Inventory Management: Use data-driven insights to optimize stock levels, reduce costs, and improve overall operational efficiency.

Whether you're a small business owner or a large enterprise, our Power BI report set is the perfect tool to enhance your inventory management practices.

Data Model

Typically, COSMO Quick Start Analytics data models follow Power BI best-practice standards and, thus, are using Star schema design. In general, we are talking about Fact Data (Transactions, such as Sales, Financial Postings, etc.) and Dimensions (Master data with attributes to analyze facts - such as, customers, items, etc.).

In the following sections, you find a comprehensive documentation of available data and driven KPIs:

- Facts
- Dimensions
- KPIs

Facts

This article provides information on the used facts within the Power BI semantic model.

CUB_Inventory

Contains the base measures for calculating respective KPIs. The CUB_Inventory is primarily based on following Business Central tables:

- Item Ledger Entry
- Value Entry

Among others, it primarily uses the following fields for measure calculations:

- ItemLedgerEntryQuantity
- CostPostedToGL
- CostAmountActual
- CostAmountExpected

> **Note**
> **Posting Date is used for *Calendar* relation.**

Dimensions

This section covers a brief description of the available dimensions within the Power BI semantic model:

Calendar

Client

Customer

Dimension

Employee

Invent Location

Invent Transaction Status

Invent Trans Type

Invent Voucher

Item

Unit

Vendor

Calendar

This dimension provides a base-calendar including derived attributes from a selected period of time. By default, the calendar dimension will start on the 1st of January of the first posting of your fact-data and end on the 31st of December of either the current year or the year of the latest fact-transaction (posting) date.

Customer

This dimension uses selected attributes from the customer base table and enriches additional information related to your customers from other Business Central table objects.

Among others, address data, various group allocations and many more attributes are available.

Dimension

This dimension contains maintained financial dimensions of your Business Central system.

Employee

This dimension uses selected attributes from the employee base table and enriches additional information related to your employees from other Business Central table objects.

Among others, various group allocations and many more employee-related attributes are available.

Invent Location

This dimension uses selected attributes from the location base table.

Invent Transaction Status

This dimension uses various entry types of Business Central's Item Ledger Entry table.

Invent Trans Type

This dimension uses various document types of Business Central's Item Ledger Entry table.

Invent Voucher

This dimension uses various entry numbers of Business Central's Item Ledger Entry table.

Item

This dimension uses selected attributes from the item base table and enriches additional information related to your products from other Business Central table objects.

Among others, various group allocations and many more item-related attributes are available.

Unit

This dimension uses selected attributes from the unit of measure base table.

Vendor

This dimension uses selected attributes from the vendor base table and enriches additional information related to your vendors from other Business Central table objects.

Among others, address data, various group allocations and many more attributes are available.

KPIs

This article provides information on the available KPIs (Measures) within the Power BI semantic model.

OnHand KPIs

Name	Description
OnHand Duration (Days)	Average days of Items in stock, derived from Turnover Rate (per Year)
OnHand Quantity	Average stock quantity within selected period (On Hand quantity beginning of period + On Hand quantity end of period / 2)
OnHand CostAmount Adjustment	Cumulative Cost Amount Adjustment
OnHand CostAmount Posted	Cumulative Cost Amounts posted to general ledger
OnHand CostPrice	Cumulative Cost Price (cum. Cost Amount / cum. Quantity)
OnHand Quantity	Cumulative Quantity of inventory movements
OnHand Quantity StartPeriod	Calculates the OnHand Quantity at the start of a given period.
OnHand Quantity EndPeriod	Calculates the OnHand Quantity at the end of a given period.

Inventory KPIs

Name	Description
Reach (Days)	Average days to run out of stock (in case nothing will be receipt/produced)
Reach %	Calculates the percentage of on-hand quantity that has been issued, by dividing the on-hand quantity by the absolute value of the issued quantity.
Turnover Rate	Issued Quantity in selected period / Ø OnHand Quantity

Name	Description
Turnover Rate (per Yr)	Issued Quantity in selected period / Ø OnHand Quantity scaled on a Year

Transaction Quantities

Name	Description
Quantity	Quantity of the Inventory Transaction
Quantity Issue	Quantity for Issued Transaction Types
Quantity Receipt	Quantity for Receipt Transaction Types
Quantity Transfer (Issue) Quantity of Transaction of all Issued transfer movements	
Quantity Transfer (Receipt)	Quantity of Transaction of all Receipt transfer movements
Quantity YoY	Deviation of Quantity compared to Previous Year
Quantity YoY %	Deviation of Quantity compared to Previous Year in %

Transaction CostAmounts

Name	Description
CostAmount Actual	This measure represents the inventory cost amount actual, sourced from the value entry including adjustments.
CostAmount Adjustment	Cost Amount Adjustment, derived from actualCostAmount (CostAmount Actual) when the adjustment flag is 1.
CostAmount Posted	This measure represents the inventory cost amount posted, sourced from the value entry cost posted to the general ledger, including adjustments.
CostPrice	Calculates the cost price by dividing the posted cost amount by the quantity, returning 0 if the quantity is zero.

Counts

Name	Description
# Items Issue	Number of Items with Issued Quantities
# Items OnHand	Number of Items on stock
# Items OutOfStock	Number of Items Out of Stock
# Items Receipt	Number of Items with Receipt Quantities
# Items without Transactions	Number of Items without Transactions
# UniqueItems	Number of Items with a transaction in given period
# UniqueItems ATD	Number of Items with any transaction in data-history

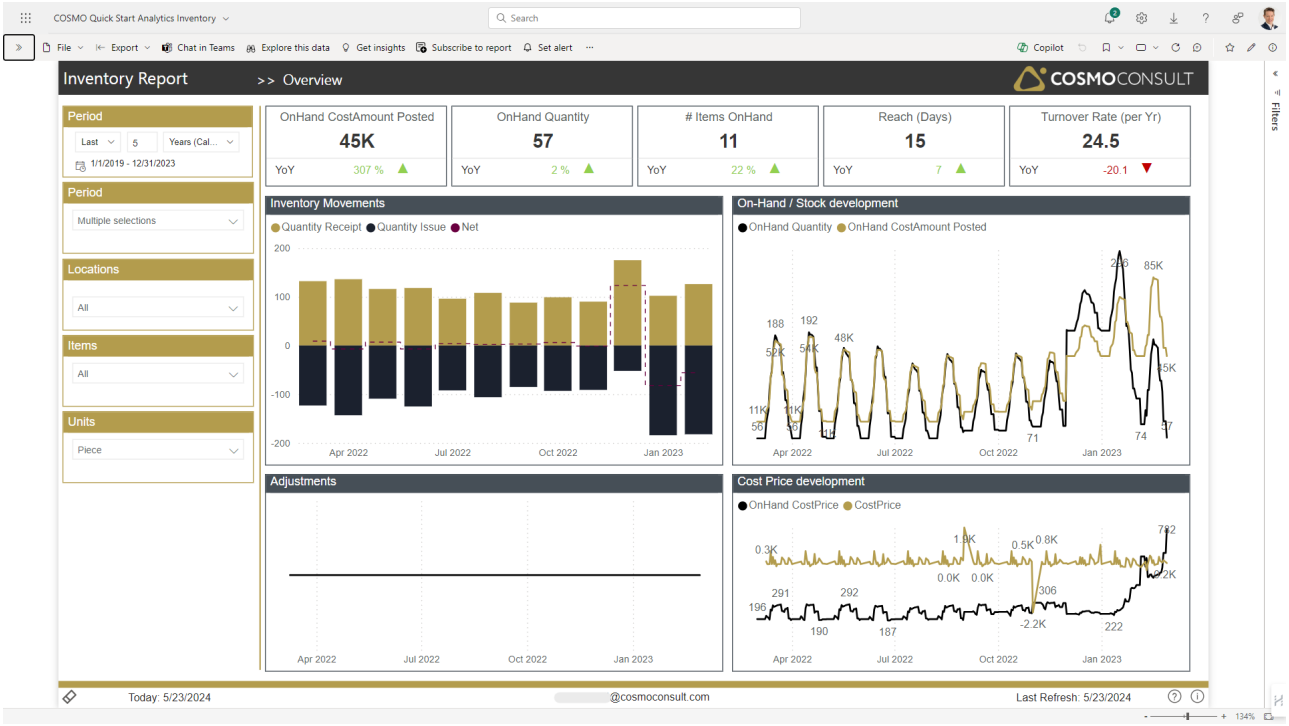
Summary

COSMO Quick Start Analytics Standard Report pages are usually divided into five sections:

- the header (black area)
- the footer (white area at the bottom)
- the filter section on the left hand side
- the KPI area on top of the visualization area
- the visualization core area

On the Overview page, you see a general summary of the most important KPIs as well as some high level trends of important KPIs:

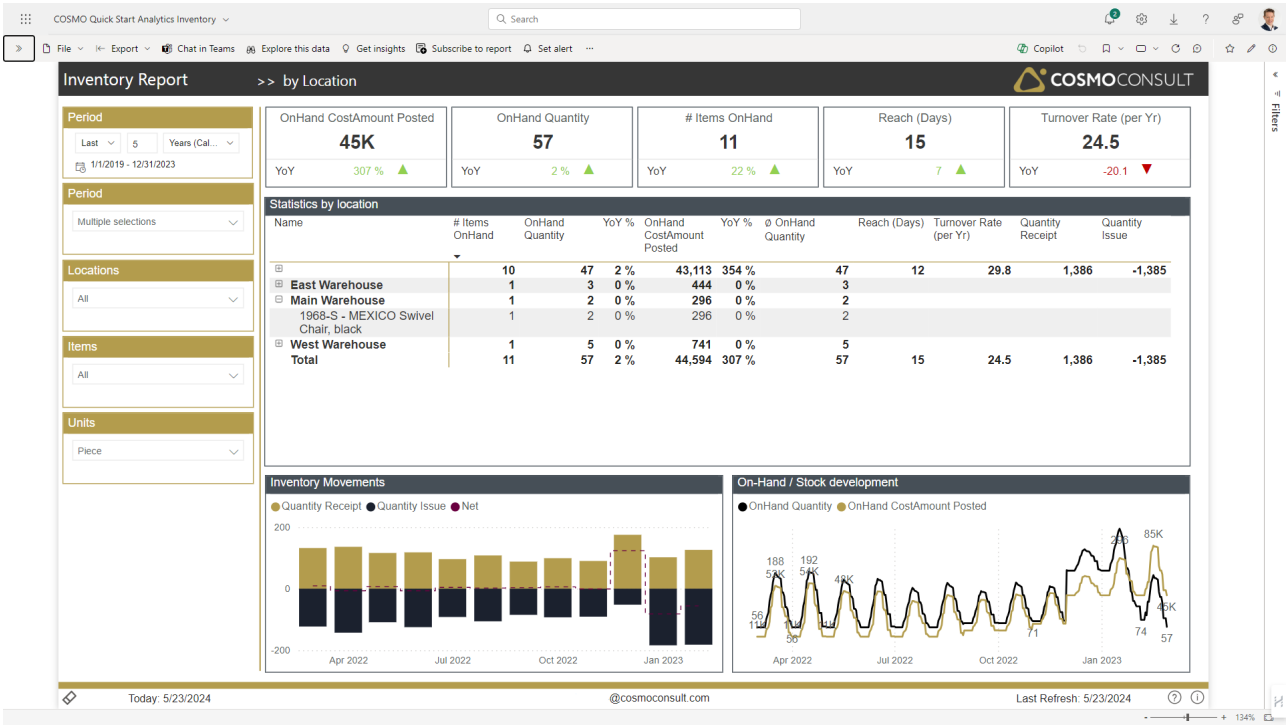
- Inventory movements to identify long term trends in issued and receipt quantities
- On-Hand / Stock developments (Quantities & Valuation)
- Adjustments of your inventory value
- Cost Price development



Locations

In the visualization area of the by Location report page, you see additional details by your inventory locations which you can use for sorting and filtering. When selecting a specific location, the visualizations for

- Inventory movements
- On-Hand / Stock developments (Quantities & Valuation) change according your selection(s).

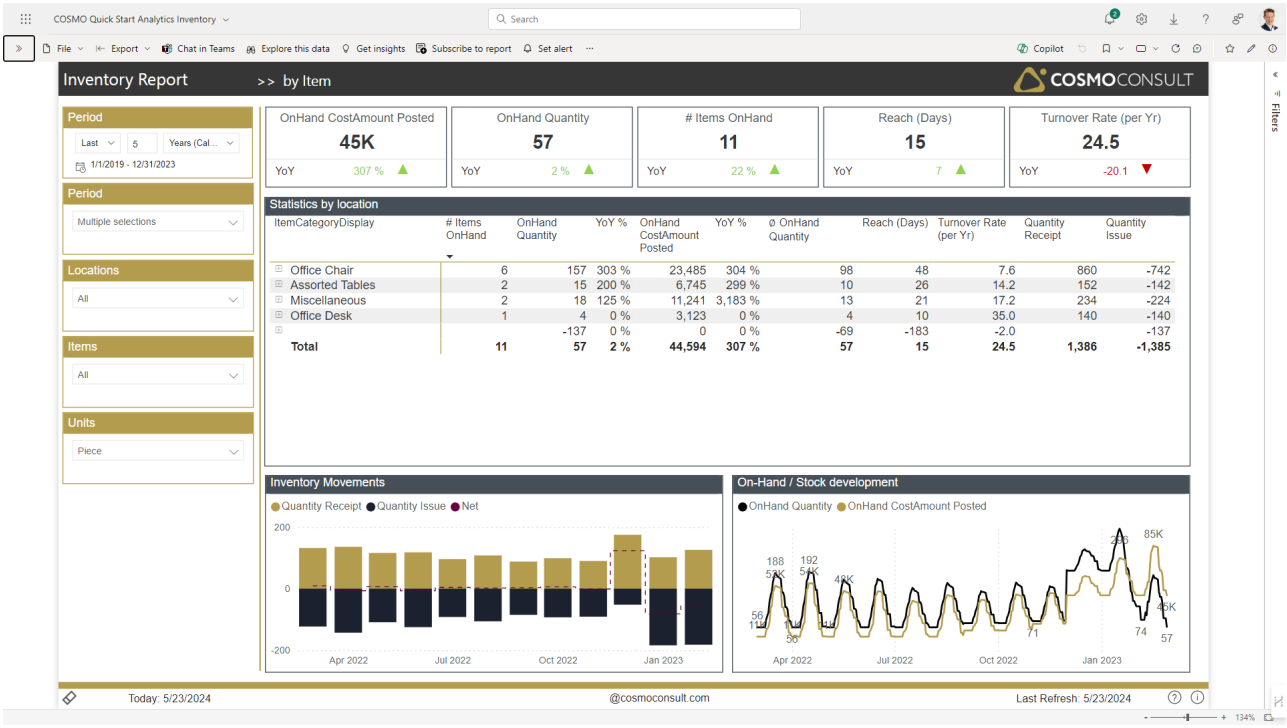


Item Movements

In the visualization area of the by Item report page, you see additional details by Item (or aggregated by Item Groups).

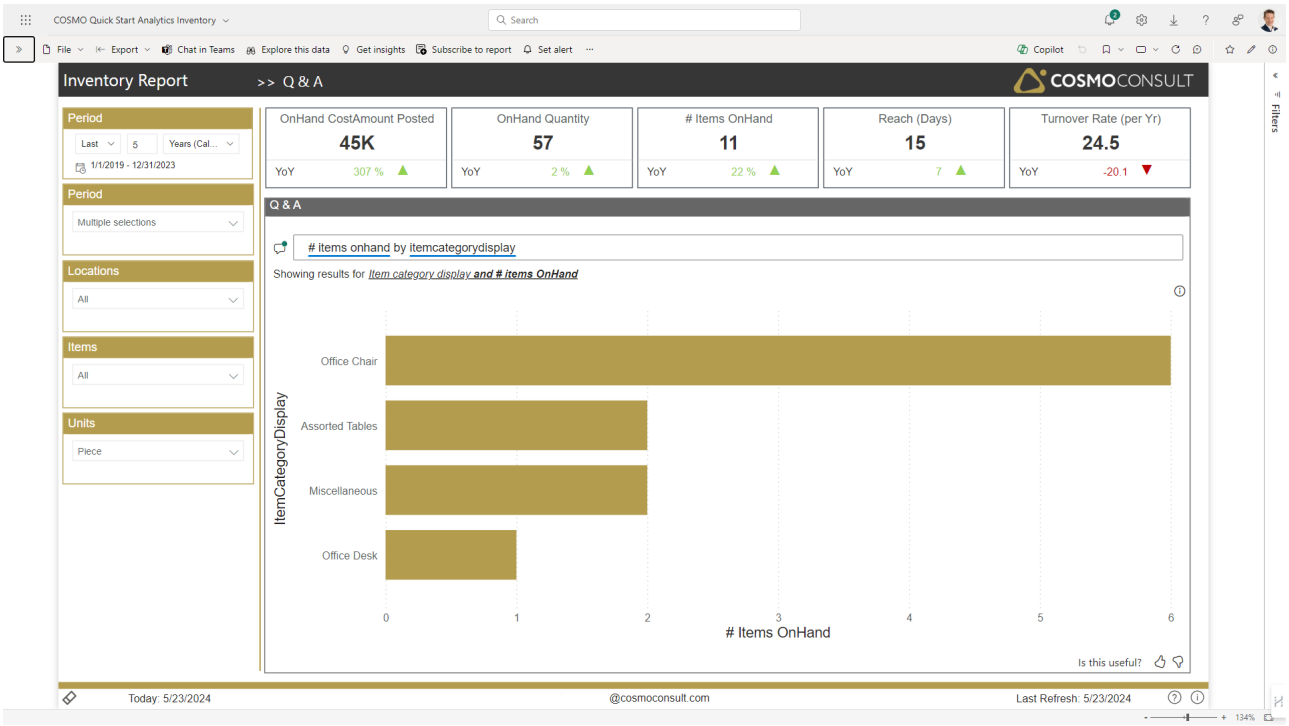
For example, you can

- use the column header Reach (Days) (sort by descending values) to detect items with the highest reach in order to *identify overstockings*.
- select specific items to see the supply-chain pattern in the charts below.



ASK (Q&A)

Use the Ask report page to prepare your individual chart according to your natural language input. Our semantic model contains much more information than shown in the default report pages, thus just create your own chart.



Demand-Planning

Too much, too little, too late? Not with data-based demand planning.

You probably know this: too much capital tied up in inventory and/or production orders that cannot be produced because materials are not available. Avoiding overstock and still reliably and timely securing supplies for production is a challenge for organizations. For this, purchasing and production management need best possible transparency of item requirements, availability, and inventory.

But wait: isn't that the task of the planning process? Yes, but... what if the replenishment parameters are not ideally set...?

This is exactly where the new cockpit helps: It determines the future availability balance based on supply and demand and compares this with the suggestions of the planning run. Based on this, replenishment parameters can be optimized and directly adjusted in the BC system.

With our app, you can:
- Analyze: expected availability balance based on demand & supply
- Identify: over- and undersupplied items for chosen periods
- Get notified: when the system detects potential drops below reorder-/safety stock
- Optimize: your replenishment parameters on Stockkeeping Unit level
- Adjust: parameters directly in BC system with a deeplink from the app

Pre-Requisites

- Microsoft Fabric
- Sufficient historical data (demand/consumption data with item, location, date)

Data Model

The COSMO Analytics Demand Planning semantic model follows Power BI best-practice standards using a Star schema design. The model enables comprehensive analysis of demand and supply planning, inventory availability, and replenishment optimization.

Model Purpose

This semantic model provides the foundation for data-driven demand planning by:

- Analyzing expected availability balance based on demand and supply
- Identifying over- and undersupplied items for chosen periods
- Detecting potential drops below reorder and safety stock levels
- Validating replenishment parameters at Stockkeeping Unit (SKU) level
- Uncovering inaccurate inventory valuations due to production orders with consumption but no output

Model Structure

The model integrates fact data from inventory transactions, planning demands, and planning supplies with comprehensive dimension tables to enable detailed analysis across multiple perspectives including time, location, item, customer, vendor, and more.

In the following sections, you find a comprehensive documentation of available data and driven KPIs:

- Facts - Transaction data for inventory, demands, and supplies
- Dimensions - Master data with attributes for analysis
- KPIs - Key Performance Indicators and measures

Facts

This article provides information on the fact tables used within the Power BI semantic model. These tables contain the transactional data that forms the basis for demand planning analysis.

CUB_Inventory

The inventory fact table contains historical inventory transactions and forms the basis for on-hand calculations and inventory KPIs.

Base Tables:

- Item Ledger Entry
- Value Entry

Among others, it primarily uses the following fields for measure calculations:

- ItemLedgerEntryQuantity
- CostPostedToGL
- CostAmountActual
- CostAmountExpected

> **Note**
> **Posting Date is used for the *Calendar* dimension relationship. This fact table uses time intelligence for historical analysis (ATD - All Time Data).**

CUB_Planning__Demands

This fact table contains all demand transactions from various sources, essential for material requirements and identifying potential stock shortages.

Base Tables:

- Sales Line
- Prod. Order Component
- Service Line
- Purchase Line (Return)
- Planning Component
- Transfer Line

- Job Planning Line
- Production Forecast Entry

> **Note**
> **Expected Receipt Date or Due Date is used for the *Calendar* dimension relationship. Demand values are represented as negative quantities.**

CUB_Planning__Supplies

This fact table contains all supply transactions from various sources, critical for understanding expected inventory receipts and production completions.

Base Tables:

- Sales Line (Return)
- Purchase Line
- Prod. Order Lines
- Requisition Line
- Transfer Line
- Assembly Line

> **Note**
> **Expected Receipt Date or Due Date is used for the *Calendar* dimension relationship. Supply values are represented as positive quantities.**

CUB_ReservationEntry

This fact table contains reservation entries created by the Material Requirements Planning (MRP) system, showing the detailed matching between supply and demand.

Base Tables:

- Reservation Entry

Purpose:

- Tracks MRP-created reservations
- Shows supply-demand matching
- Calculates availability balance after MRP run
- Identifies reserved quantities

Key Information:

- Source of reservation (demand or supply)
- Quantity reserved
- Reservation status
- Item and location
- Related document information

> **Note**
> **This table is primarily used for comparison against expected on-hand balance of raw data, derived from the system.**

CUB_WeeklyHistoricDemand

This fact table aggregates historical demand data on a weekly basis, used for statistical analysis.

Purpose:

- Historical demand patterns
- Statistical analysis for ABC/XYZ classification
- Demand variability calculations

> **Note**
> **This table provides aggregated historical data to support demand classification and replenishment parameter optimization.**

CUB_ProductionOrders

This fact table contains production order transactions.

Base Tables:

- Production Order

CUB_Production__CLE (OutputFinalOps)

This fact table contains capacity ledger entries specifically for final operation outputs in production orders.

Base Tables:

- Capacity Ledger Entry

Purpose:

- Final operation completion tracking
- Production completion date analysis
- Production duration calculations

CUB_PurchReceipt

This fact table contains purchase receipt transactions for analyzing purchase order lead times.

Base Tables:

- Purch. Rcpt. Header
- Purch. Rcpt. Line

Purpose:

- Purchase receipt tracking
- Purchase lead time analysis

Dimensions

This section covers a brief description of the available dimensions within the Power BI semantic model. These dimension tables provide the master data attributes needed to analyze demand planning facts across various perspectives.

Calendar

Time dimension providing comprehensive date attributes including year, quarter, month, week, and day levels for temporal analysis.

Client

Company dimension for multi-tenant scenarios, containing client/company information.

CurrencySource

Source currency dimension for currency conversion scenarios.

CurrencyTarget

Target currency dimension for currency conversion scenarios.

Customer

Customer master data including address, location, and contact information for demand analysis by customer.

DatabaseSource

Database source identification for multi-source scenarios.

DataCategory

Data categorization dimension for classifying transactions.

DataSource

Data source dimension identifying the origin of transaction data.

Dimension 1-6

Flexible dimension attributes (Global Dimensions and Shortcut Dimensions) from Business Central for custom analysis perspectives.

Employee

Employee master data for analyzing responsibilities (e.g., purchaser, salesperson).

Invent Location

Warehouse/location master data, essential for location-specific demand and supply planning.

Invent Transaction Status

Status classification of inventory transactions (receipt, issue, transfer).

Invent Trans Type

Type classification of inventory transactions (sales, purchase, production, etc.).

Invent Voucher

Voucher reference dimension for inventory transaction grouping.

Item

Item/product master data with comprehensive attributes including item categories, replenishment parameters, and hierarchies.

Production Order

Production order master data including status, source type, and production order details.

Production Order Line

Production order line details for analyzing production planning at line level.

Purchase Order

Purchase order master data including order status and identification.

Sales Order

Sales order master data including order status and identification.

Stockkeeping Unit

Stockkeeping unit (SKU) master data with item-location specific replenishment parameters including reorder point, safety stock, lead times, and ABC/XYZ classification.

Unit

Unit of measure dimension for quantity conversions.

Vendor

Vendor master data including address, location, and contact information for supply analysis by vendor.

Calendar

Time dimension providing comprehensive date attributes including year, quarter, month, week, and day levels for temporal analysis. It covers the period from the first transaction date through the current or latest posting year.

Key Attribute Groups

- Date Identifiers: DateBK (primary), DateSK, DateDisplay variants
- Time Hierarchies: Year, Half-Year, Quarter, Month, Week attributes with combined display formats
- Period Flags: IsToday, IsCurrentWeek, IsCurrentMonth, IsCurrentQuarter, IsCurrentYear for relative period analysis

Client

The Client dimension provides company-level information for multi-client/multi-tenant Business Central scenarios, enabling filtering and aggregation across multiple legal entities or companies within the organization.

Key Attribute Groups

- Company Identification: Company code and name for organizational segmentation
- Financial Settings: Local currency and accounting configuration

Customer

Customer master data including identification, address information, contact details, and classification attributes from Business Central's Customer table. It enables demand analysis by customer and geographic segmentation.

Key Attribute Groups

- Identification & Contact: Customer number, name, contact person, phone, email
- Address & Geography: Street, city, state, zip code, country with formatted display variants for location analysis
- Classifications & Business Attributes: Customer groups, posting groups, etc.

Dimensions (Financial Dimensions)

The Dimension tables (Dimension1-6) contain Business Central's financial dimension values, enabling cross-functional analysis, project tracking, and flexible business segmentation.

Key Attribute Groups

- Dimension Values: Codes and descriptions for each dimension level based on organization-specific configuration

Employee

The Employee dimension provides employee master data including role identifications (salesperson, purchaser), enabling performance analysis and responsibility tracking.

Key Attribute Groups

- Identification: Employee number, name, and further details

Invent Location

The Invent Location dimension provides warehouse and location master data from Business Central, enabling location-based inventory analysis and multi-site planning.

Key Attribute Groups

- Location Identification: Location code, name, and facility type
- Geographic Information: Address details for regional analysis and logistics planning

Invent Transaction Status

The Invent Transaction Status dimension classifies inventory transactions by their entry type, enabling tracking of inventory transactions by their type.

Key Attribute Groups

- Status Classification: Status code and description (Sales, Purchase, Consumption, Output, etc.)

Invent Trans Type

The Invent Trans Type dimension classifies inventory transactions from Business Central's Item Ledger Entry by document type, enabling categorization of inventory movements and analysis of receipt versus issue patterns.

Key Attribute Groups

- Transaction Classification: Type code and description (Sales Shipment, Sales Invoice, Purchase Receipt, Purchase Invoice, Transfer Receipt, etc.)

Invent Voucher

The Invent Voucher dimension provides voucher reference information for grouping and tracking related inventory transactions.

Item

The Item dimension provides comprehensive product master data from Business Central with a 5-level category hierarchy, enabling product-level analysis and drill-down capabilities.

Key Attribute Groups

- Identification: Item number, name, and product type
- Item Attributes: Description, costing method, posting groups, etc.

Unit

The Unit dimension provides unit of measure (UOM) information from Business Central, enabling standardized quantity reporting and UOM conversions across transactions.

Key Attribute Groups

- Unit Identification: Unit code, description, and international standard codes

Vendor

The Vendor dimension provides supplier master data from Business Central, enabling supply analysis, supplier performance tracking, and vendor segmentation.

Key Attribute Groups

- Identification & Contact: Vendor number, name, and communication details
- Address & Geography: Location information for supplier network analysis
- Business Attributes: Payment terms, purchaser assignments, and lead time settings

KPIs

This article provides information on the available KPIs (Measures) within the Power BI semantic model. The measures are organized by functional area to support different analysis scenarios in demand planning.

Demand Planning KPIs

Name	Description
Expected Future OnHand Balance	Calculates the projected inventory level by combining current on-hand quantity with cumulative future supply and demand. This key measure helps identify potential stock shortages or overstocks before they occur.
Over/Under Supply	Shows the net difference between supply and demand for a given period, indicating whether there is excess supply (positive) or insufficient supply (negative) to meet demand.
Over/Under Supply Amount	Monetary value of over/under supply, calculated by multiplying the quantity difference with the item's cost price.

Demand Planning - CUB Demand

Name	Description
Demand (-)	Total future demand quantity (displayed as negative value) from all demand sources. This measure aggregates all material requirements from various business processes.
Demand (Future cum.)	Cumulative demand for future periods, calculated from the current date forward to the selected date.
Demand on Sales Order	Customer orders
Demand on Service Order	Service requests
Demand on Prod Order Component Lines	Production material requirements

Name	Description
Demand on Transfer Order (Outstanding Shipments)	Outbound transfers
Demand on Planning Components	MRP suggestions
Demand on Purchase Return Order	Goods to be returned to vendors
Demand on Projects	Job planning requirements

Demand Planning - CUB Supply

Name	Description
Supply (+)	Total future supply quantity (displayed as positive value) from all supply sources. This measure aggregates all expected inventory receipts.
Supply (Future cum.)	Cumulative supply for future periods, calculated from the current date forward to the selected date.
Planned Receipts	Planned supply from MRP suggestions that haven't been converted to firm orders yet
Supply on Purch Requisition - Planned	Planning worksheet purchase suggestions
Supply on Prod Order - Planned	Planning worksheet production suggestions
Scheduled Receipts	Firm supply with confirmed dates from released or firm planned orders
Supply on Purch Order	Purchase orders
Supply on Prod Order - Released	Released production orders
Supply on Prod Order - Firm Planned	Firm planned production orders

Name	Description
Supply on Transfer Order (Receipt)	Inbound transfer receipts
Supply on Transfer Order (Transit)	Transfers in transit
Supply on Assembly Order	Assembly orders
Supply on Sales Return Order	Customer returns

Demand Planning - SKU Parameters

These measures display replenishment parameters at the Stockkeeping Unit (SKU) level, or fall back to item-level parameters if no SKU exists:

Name	Description
ReorderPoint	Inventory level that triggers replenishment
SafetyStockQty	Buffer stock to protect against demand variability
Lead time	Procurement or production lead time
Lot Size	Order quantity policy
Reordering Policy	Replenishment method (Fixed Reorder Qty, Maximum Qty, Order, Lot-for-Lot)
Replenishment System	Supply method (Purchase, Prod. Order, Transfer, Assembly)
Manufacturing Policy	Make-to-Stock or Make-to-Order
Max. Inventory	Maximum inventory ceiling
Reorder Quantity	Standard order quantity

Demand Planning - Reservation Entry

Measures based on MRP-created reservation entries showing supply-demand matching:

Name	Description
Demand (Res.Entry)	Demand quantities from reservation entries

Name	Description
Supply (Res.Entry)	Supply quantities from reservation entries
Over/Under Supply (Res.Entry)	Net position from reservation entries
Exp. Balance (Res. Entry)	Expected balance considering reservations
Demand (Res.Entry) (Future cum.)	Cumulative future demand from reservations
Supply (Res.Entry) (Future cum.)	Cumulative future supply from reservations

OnHand KPIs

Name	Description
Ø OnHand Duration (Days)	Average days of Items in stock, derived from Turnover Rate (per Year)
Ø OnHand Quantity	Average stock quantity within selected period (On Hand quantity beginning of period + On Hand quantity end of period / 2)
OnHand CostAmount Adjustment	Cumulative Cost Amount Adjustment
OnHand CostAmount Posted	Cumulative Cost Amounts posted to general ledger
OnHand CostPrice	Cumulative Cost Price (cum. Cost Amount / cum. Quantity)
OnHand Quantity	Cumulative Quantity of inventory movements
OnHand Quantity StartPeriod	Calculates the OnHand Quantity at the start of a given period.
OnHand Quantity EndPeriod	Calculates the OnHand Quantity at the end of a given period.

Inventory KPIs

Name	Description
Reach (Days)	Average days to run out of stock (in case nothing will be receipt/produced)
Reach %	Calculates the percentage of on-hand quantity that has been issued, by dividing the on-hand quantity by the absolute value of the issued quantity.
Turnover Rate	Issued Quantity in selected period / Ø OnHand Quantity

Name	Description
Turnover Rate (per Yr)	Issued Quantity in selected period / Ø OnHand Quantity scaled on a Year

Transaction Quantities

Name	Description
Quantity	Quantity of the Inventory Transaction
Quantity Issue	Quantity for Issued Transaction Types
Quantity Receipt	Quantity for Receipt Transaction Types
Quantity Transfer (Issue) Quantity of Transaction of all Issued transfer movements	
Quantity Transfer (Receipt)	Quantity of Transaction of all Receipt transfer movements
Quantity YoY	Deviation of Quantity compared to Previous Year
Quantity YoY %	Deviation of Quantity compared to Previous Year in %

Transaction CostAmounts

Name	Description
CostAmount Actual	This measure represents the inventory cost amount actual, sourced from the value entry including adjustments.
CostAmount Adjustment	Cost Amount Adjustment, derived from actualCostAmount (CostAmount Actual) when the adjustment flag is 1.
CostAmount Posted	This measure represents the inventory cost amount posted, sourced from the value entry cost posted to the general ledger, including adjustments.
CostPrice	Calculates the cost price by dividing the posted cost amount by the quantity, returning 0 if the quantity is zero.

Counts

Item count measures for analyzing item portfolio and stock status:

Name	Description
# UniqueItems	Number of Items with a transaction in selected period
# UniqueItems ATD	Number of Items with any transaction in data history (All Time Data)
# Items OnHand	Number of Items currently in stock (on-hand quantity > 0)
# Items OnHand (having Transactions)	Number of Items with transactions and current stock
# Items OutOfStock	Number of Items out of stock (on-hand quantity = 0)
# Items OutOfStock %	Percentage of items that are out of stock
# Items Issue	Number of Items with issued quantities in selected period
# Items Receipt	Number of Items with receipt quantities in selected period
# Items without Transactions	Number of Items without any transactions in selected period

Time Intelligence Variants

Most base measures include time intelligence variants for trend analysis:

Variant	Description
PY	Prior Year comparison (same period last year)
YoY	Year-over-Year change (absolute difference)
YoY %	Year-over-Year change (percentage)

Examples:

- OnHand Quantity PY, OnHand Quantity YoY, OnHand Quantity YoY %
- Supply PY, Supply YoY, Supply YoY %
- Demand PY, Demand YoY, Demand YoY %
- Reach (Days) PY, Reach (Days) YoY, Reach (Days) YoY %
- Turnover Rate (per Yr) PY, Turnover Rate (per Yr) YoY, Turnover Rate (per Yr) YoY %

Formatting Measures

Technical measures used for dynamic axis scaling and conditional formatting in reports:

Name	Description
Line Y-Axis (min)	Dynamic y-axis lower bound for line charts
Line Y-Axis (max)	Dynamic y-axis upper bound for line charts
Col Y-Axis (min)	Dynamic y-axis lower bound for column charts
Col Y-Axis (max)	Dynamic y-axis upper bound for column charts
YoY CF	Conditional formatting values for trend indicators
YoY Icon	Icon selection for trend visualization

Summary

The COSMO Analytics Demand Planning report consists of multiple pages designed to provide comprehensive insights into demand, supply, and inventory management.

Report Structure

Standard Report pages are usually divided into five sections:

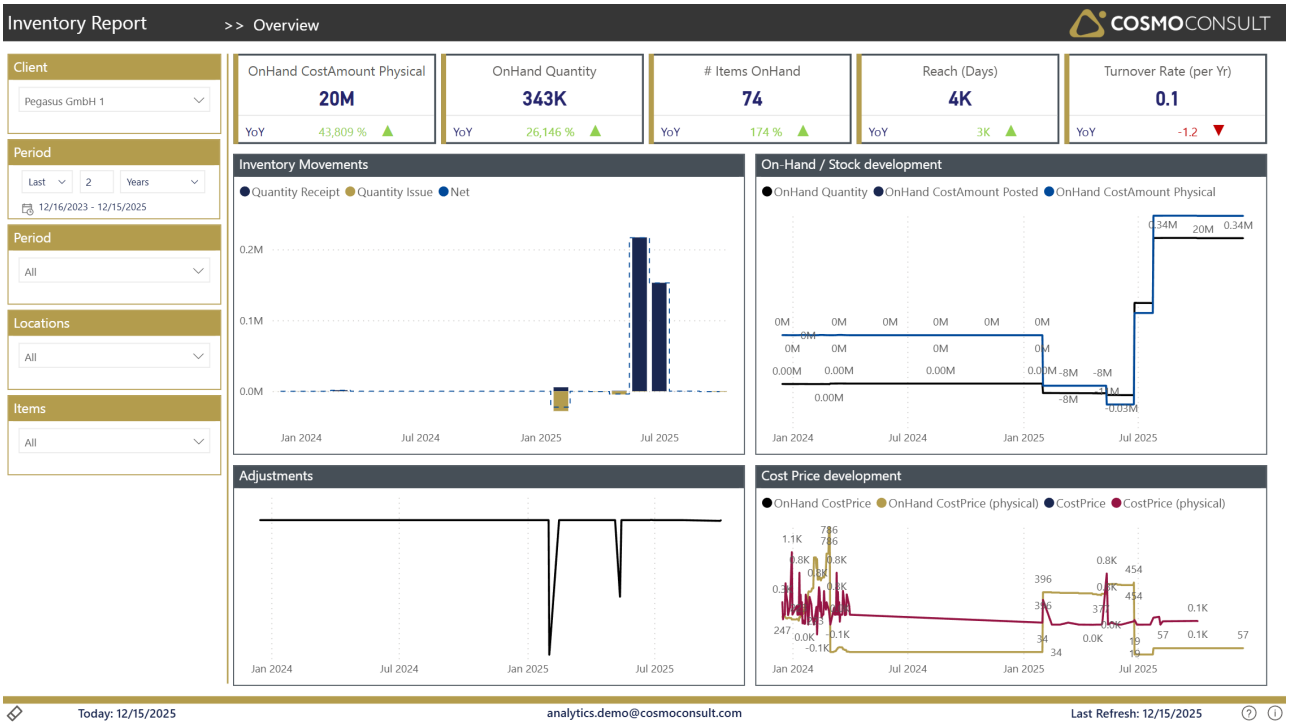
- Header (black area) - Report navigation and title
- Footer (white area at the bottom) - Last refresh date and other metadata
- Filter section on the left hand side - Interactive filters for data analysis
- KPI area on top of the visualization area - Key performance indicators
- Visualization core area - Charts, tables, and detailed analysis

Report Pages

1. Overview

The Overview page provides a general summary of the most important KPIs as well as some high level trends:

- Inventory movements to identify long term trends in issued and receipt quantities
- On-Hand / Stock developments (Quantities & Valuation)
- Adjustments of your inventory value
- Cost Price development



2. By Location

Provides a location-centric view of inventory management, enabling analysis of stock levels, movements, and performance across different warehouse locations or distribution centers.

3. By Item

Offers an item-centric view with detailed analysis of stock levels, movements, and performance for each product in your portfolio, supporting product portfolio management and item performance optimization.

4. Item Analysis

Offers detailed insights about inventory movements and stock levels for specific items, enabling validation of ledger entries and analysis of statistical lead times for procurement processes.

5. Demand Outlook

Provides detailed insights into expected future inventory balance based on current stock, planned supply, and recorded demand. This page helps identify potential stock shortages or overstocks before they occur.

6. Master Data

Displays all current replenishment parameters for items and locations, providing easy access to maintain and validate SKU settings.

7. ABC/XYZ Classification

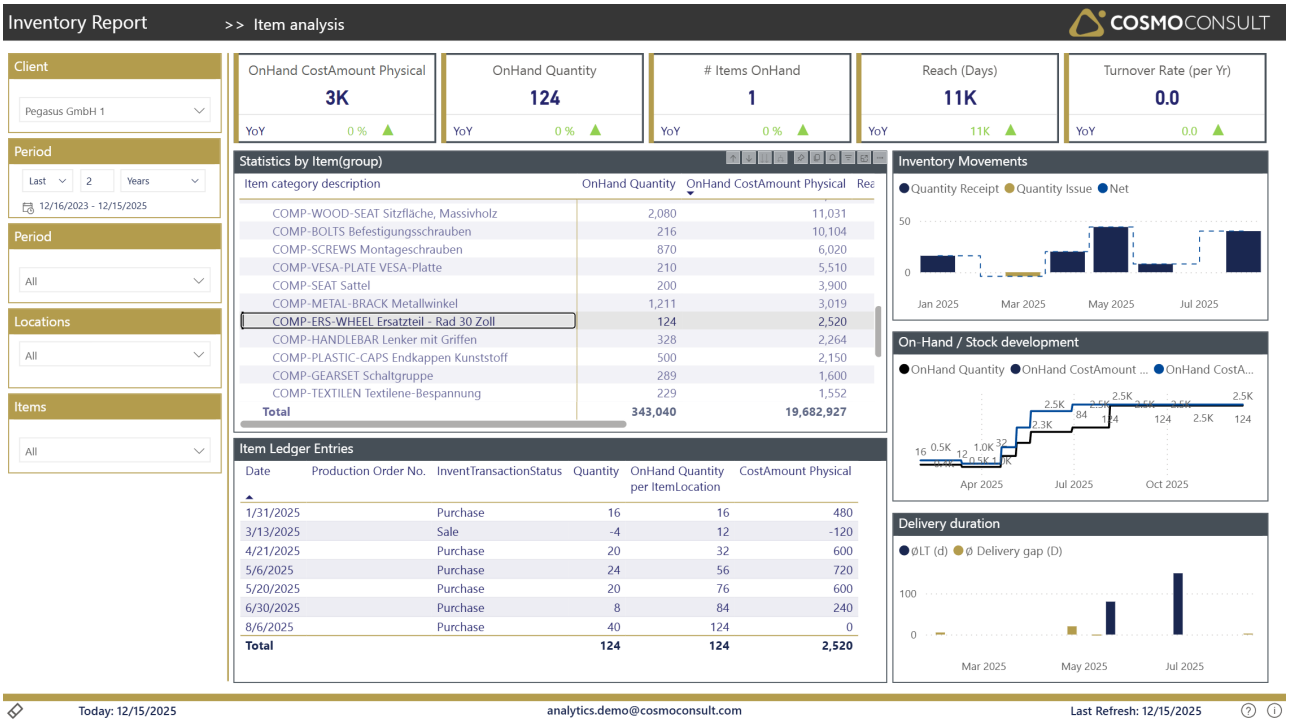
Helps categorize items based on demand significance (ABC) and demand stability (XYZ), enabling targeted strategies for inventory control and SKU parameter optimization.

8. Replenishment Optimization

Provides advanced analytics for optimizing inventory replenishment parameters based on historical demand patterns, lead times, and target service levels, with proposed safety stock and reorder point calculations.

Item Analysis

The Item Analysis page provides detailed insights about inventory movements and stock levels for specific items, enabling validation of ledger entries and analysis of statistical lead times for procurement processes.



Overview

This page helps you:

- Analyze detailed item ledger entries and validate transactions
- Calculate and review statistical lead times for procurement
- Monitor inventory movements at the transaction level
- Identify patterns in receipt and issue transactions

Filters

Standard filters available for detailed analysis:

- Client Selection: Choose the client for multi-tenant scenarios
- Period Selection: Set the date range for your analysis
- Location: Filter by specific warehouses or distribution centers
- Item Selection: Focus on specific items for detailed analysis

Key Visualizations

Item & Category Selection Table

Use the table showing items and item categories for interactive filtering of the detailed ledger entries:

- Item Number & Description: Product identification
- Item Category: Product grouping
- OnHand Quantity: Current stock level
- OnHand Cost Amount: Current inventory value
- Reach (Days): Estimated days of inventory remaining based on average usage

Click on items in this table to filter all other visuals on the page.

Item Ledger Entries Table

Detailed transaction-level view of all inventory movements:

- Posting Date: When the transaction was recorded
- TransactionStatus: Type of transaction (Purchase, Sale, Positive/Negative Adjustment, Transfer, etc.)
- Quantity: Transaction quantity (positive for receipts, negative for issues)
- OnHand Quantity per ItemLocation: Stock level after the transaction
- Cost Amount Physical: Transaction value

Statistical Lead Time Analysis

Analyze procurement performance:

- Avg LT (d): Average Lead Time in days
- Avg Delivery gap (d): Average gap in days between promised and actual delivery

This analysis helps validate and optimize the lead time parameters maintained in SKU cards.

Use Cases

Transaction Validation

Verify that inventory movements are recorded correctly and investigate any discrepancies or unexpected transactions.

Cost Analysis

Track how cost prices have changed over time and identify cost variance patterns.

Audit Support

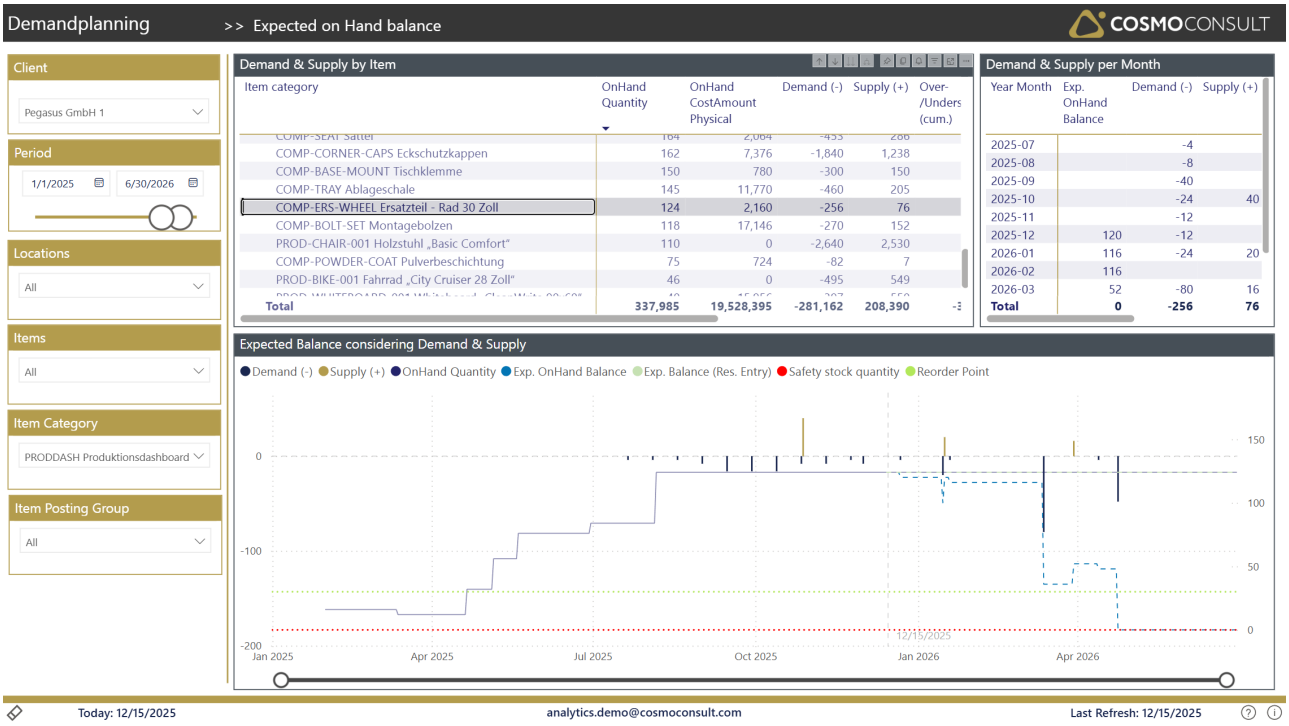
Provide detailed transaction history for internal or external audit requirements.

Root Cause Investigation

Drill down into specific items to understand why stock levels or values have changed unexpectedly.

Demand outlook

This user manual is designed to help you navigate and utilize the Demand Outlook dashboard effectively. The dashboard provides insights into demand and supply metrics, enabling better inventory management and forecasting.



Filter

- Client Selection: Choose the client from the dropdown menu to filter the data relevant to that specific client.
- Period Selection: Set the date range for your analysis using the period selector. This allows you to view data for specific time frames.
- Location Filtering: Use the location dropdown to focus on specific warehouses or distribution centers.
- Item Selection: Filter the data by item to analyze specific products.
- Item Category: Select the item category to narrow down the analysis to a particular group of products.
- Item Posting Group: This feature allows you to filter items based on their posting group for more granular analysis.

Demand & Supply by Item

This section displays a detailed list of items along with their respective metrics and can be

used for sorting and interactive filtering:

- OnHand Quantity: The current quantity of items available.
- OnHand Cost Amount: The total cost of the items currently in stock.
- Demand (-): The total demand for the items, represented as a negative value.
- Supply (+): The total supply of the items, represented as a positive value.
- Over/Undersupply (cum. outlook): This metric indicates whether there is an over or undersupply situation based on cumulative data.
- Over/Undersupply Amount (cum. outlook): This provides the total amount of over or undersupply, assisting in inventory planning.
- RP: Alerts users when the expected inventory level is projected to fall below the reorder point, prompting timely reordering.
- SS: Similar to the reorder point warning, this alerts users when inventory is expected to dip below the safety stock level, which is critical for maintaining service levels.

The Tooltip provides a comprehensive overview of maintained replenishment parameters on Item & Location level.

Demand & Supply per Month

This section provides a month-by-month breakdown of expected on-hand balance, demand, and supply. It helps in understanding trends over time and making informed decisions.

- Year/Month: Displays the specific month and year for the data.
- Exp. OnHand Balance: The expected balance of inventory after accounting for demand and supply.
- Demand: The total demand for that month.
- Supply: The total supply available for that month.

Expected Balance Considering Demand & Supply

The graph visualizes the expected balance of inventory, considering recorded demands & supplies of business central documents and shows following details:

- Primary Y-Axis (Bar Chart):
  - Shows Demands (-) & Supplies (+) per Period
  - Tooltip provides additional details about
    - demand and/or supply source and
    - expected due dates

    - balances
- Secondary Y-Axis (Line Chart):
    - OnHand Quantity (blue line): Stock level - shows historic changes in stock-level. value changes usually until last load date.
    - Exp. OnHand Balance (orange): The projected balance considering OnHand Quantity (stock level on loading date) together with cumulated (future) demands & supplies.
    - Exp.Balance (Res. Entry) (light red): The projected balance according reservation entries (usually generated by MRP run).
    - Safety Stock Quantity (dotted red): The minimum level of stock to maintain service levels. This line is only visible when an item (and location) combination with maintained SKU is selected.
    - Reorder Point (dotted green): The level at which new stock should be ordered to avoid shortages. This line is only visible when an item (and location) combination with maintained SKU is selected.

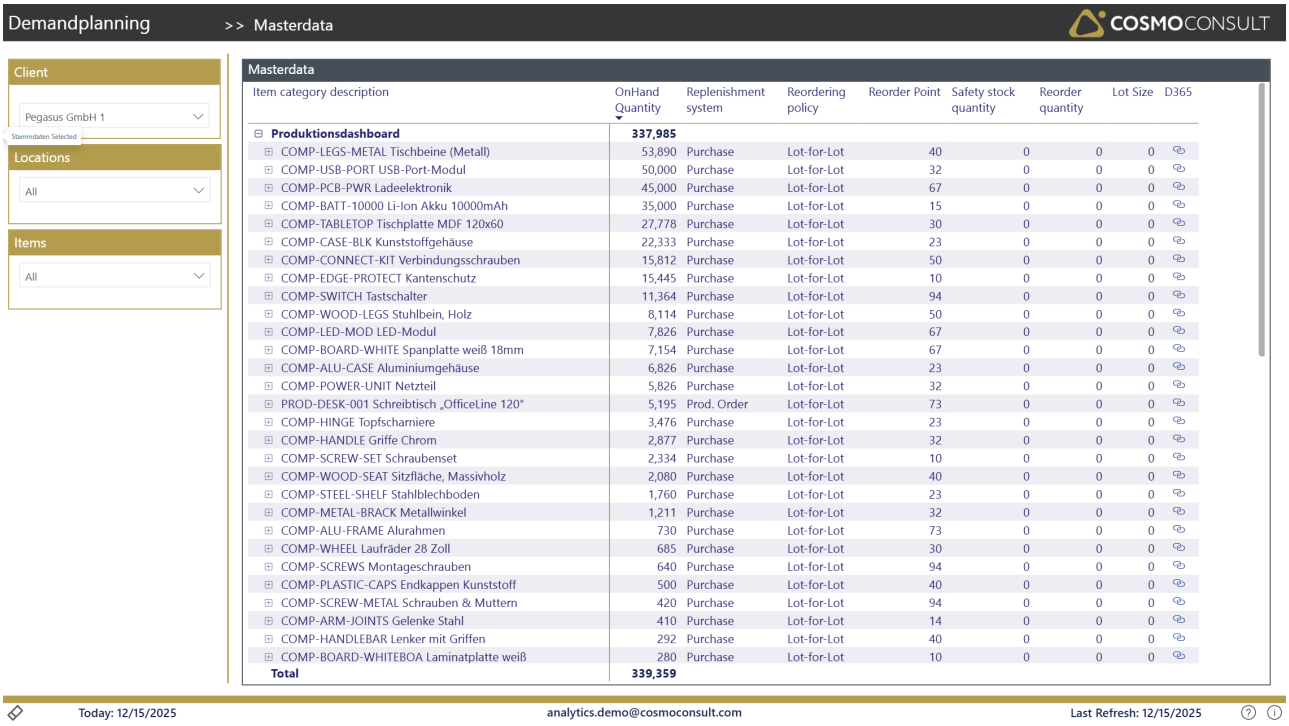
Drill-Throughs

...are available accross this report, navigating to filtered, detailed pages for

- Demand details
- Supply details

Master Data

The Master Data page displays all current replenishment parameters for items and locations (SKUs), providing a comprehensive overview for maintaining and validating inventory control settings.



Overview

This page helps you:

- Review and validate SKU parameters across items and locations
- Identify items with missing or incomplete parameter settings
- Compare parameter settings across similar items or locations
- Access SKU cards in Business Central for parameter updates
- Ensure consistent replenishment policies across your inventory

Filters

Standard filters available for master data review:

- Client Selection: Choose the client for multi-tenant scenarios
- Location: Filter by specific warehouses or distribution centers
- Item Selection: Focus on specific items

Key Visualizations

SKU Parameters Table

Comprehensive table displaying all maintained replenishment parameters:

Item Identification:

- Item Category: Product grouping
- Item No. & Description: Product identification
- Location Code: Warehouse or site
- OnHand Quantity: Current Stock level

Reorder Parameters:

- Replenishment System: How the item is procured (Purchase, Prod. Order, Transfer, Assembly)
- Reorder Point: When to trigger replenishment
- Safety Stock Quantity: Minimum stock buffer
- Reorder Quantity: Standard order quantity
- Lot Size: Order quantity determination method
- D365 Link: URL to open the Item/SKU Card in Business Central

Use Cases

Parameter Validation

Review SKU parameters to ensure they are appropriate for current demand patterns and lead times.

Gap Analysis

Identify items and locations that lack proper SKU parameter setup, especially for critical items.

Standardization

Compare parameters across similar items to ensure consistent replenishment policies.

Bulk Parameter Review

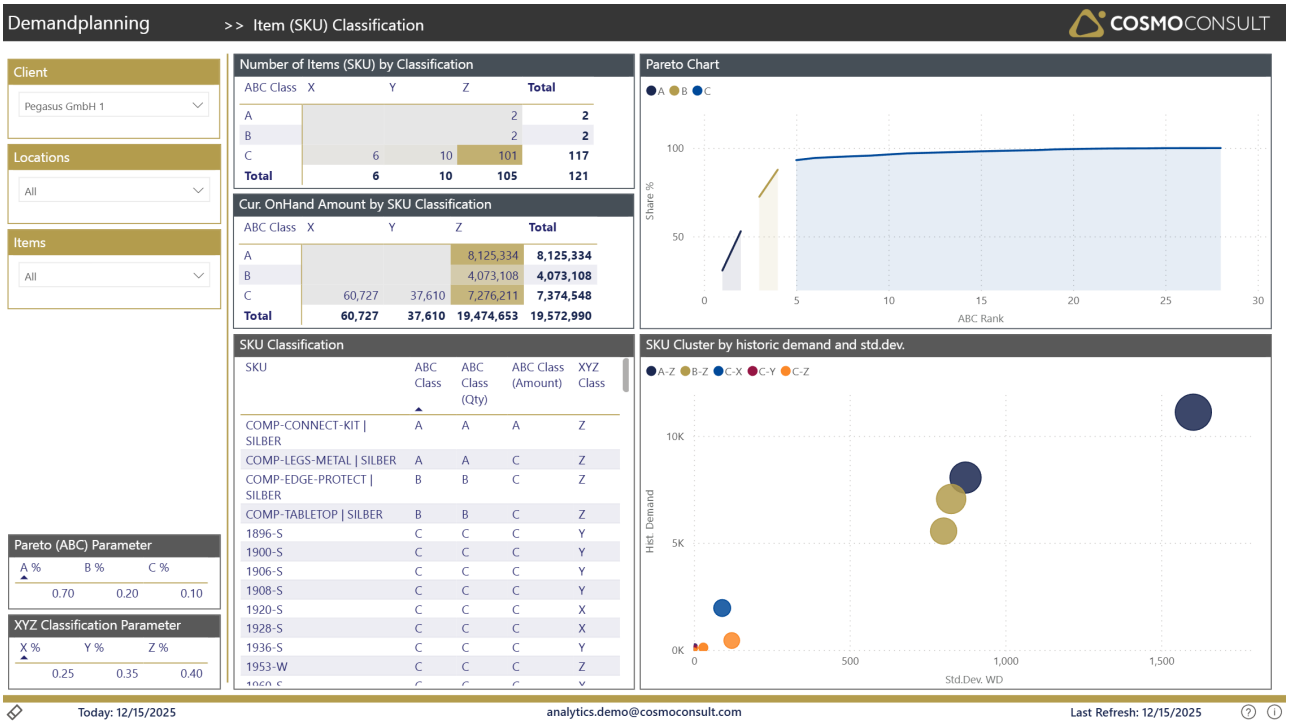
Export parameters for analysis and bulk updates through Excel or RapidStart.

Note

Changes to SKU parameters should be made in Business Central and will be reflected in the report after the next data refresh.

Item Classification (ABC/XYZ Analysis)

The ABC/XYZ Classification page helps you categorize items based on their demand significance (ABC) and demand stability (XYZ), enabling targeted strategies for inventory control and SKU parameter optimization.



Overview

For optimizing SKU parameters, it's essential to understand both the significance and stability of each item in your inventory. This page provides a comprehensive classification framework:

ABC Classification (Significance):

- A-Items: High-value items representing ~70% of demand value (Pareto principle)
- B-Items: Medium-value items representing ~20% of demand value
- C-Items: Low-value items representing ~10% of demand value
- Parameters can be adjusted according needs

XYZ Classification (Stability):

- X-Items: Stable demand with low coefficient of variation (lowest quantile)
- Y-Items: Moderate demand fluctuation
- Z-Items: Highly variable demand (40% of items with hightest variability)

- Parameters can be adjusted according needs

Filters

Standard filters available for classification analysis:

- Client Selection: Choose the client for multi-tenant scenarios
- Location: Filter by specific warehouses or distribution centers
- Item Selection: Focus on specific items

Key Visualizations

ABC/XYZ Classification Matrix

Interactive matrix showing the distribution of items across the 9 segments:

	X (Stable)	Y (Moderate)	Z (Variable)
A	AX Items	AY Items	AZ Items
B	BX Items	BY Items	BZ Items
C	CX Items	CY Items	CZ Items

Click on any cell to filter the item table to show only items in that segment.

Number of Items (SKU) by Classification

Visual showing:

- Number of items in each ABC category
- Number of items in each XYZ category
- Combined ABC/XYZ distribution

Cur. OnHand Amount by Classification

Visual showing:

- Current inventory value (OnHand Cost Amount) by ABC and XYZ categories to identify where capital is tied up.

SKU Classification Details Table

Comprehensive table with all classified items showing:

- ABC Class: Used classification (either by Quantity or Amount)
- ABC Class (Qty): Classification based on quantity
- ABC Class (Amount): Classification based on value
- XYZ Class: Demand stability classification

Use this table to identify the impact of classification either by quantity or amount to select the most appropriate method for your business.

SKU Cluster by historic demand ad std.deviation

Scatter plot visualizing each item's historic demand against its standard deviation, color-coded by ABC class. This helps to better understand demand variability and impact of clusters.

Use Cases

Understanding Inventory Composition

Gain insights into the distribution of items by value and demand stability to derive inventory strategies.

Derive Priorities

Define focus areas for inventory management based on item classification.

Define Segment-Specific Policies

Establish different inventory control policies (safety stock, reorder points) for each ABC/XYZ segment.

Manufacturing (discrete)

Recognize and Utilize Optimization Potentials in Your Manufacturing Processes.

In the world of discrete manufacturing, processes are often complex and multi-layered. Numerous dependencies and variables influence not only production workflows but also production costs.

With the COSMO Analytics Manufacturing (discrete) Dashboard, you gain comprehensive transparency over the utilization, efficiency, and quality of your manufacturing operations.

From optimizing setup times to significantly reducing scrap rates – our module helps you immediately identify areas for action and sustainably increase your competitiveness.

Are you suffering from following challenges?

- regular deviations in costs, manufacturing times or timelines?
- high scrap rates?
- low equipment utilization or efficiency?
- high setup times and costs?

Then our app is the right solution for you!

With our app, you can:

- Analyze: utilization, efficiency, and quality of your manufacturing operations
- Identify: areas for action to optimize your manufacturing processes
- Reduce: setup times and costs
- Increase: equipment utilization and efficiency
- Lower: scrap rates and deviations in costs, manufacturing times, or timelines
- Improve: overall competitiveness of your manufacturing operations

Pre-Requisites

- Microsoft Fabric

Data Model

Typically, COSMO Analytics Quick Start 4 BC & Fabric data models follow Power BI best-practice standards and, thus, are using Star schema design. In general, we are talking about Fact Data (Transactions, such as Sales, Financial Postings, etc.) and Dimensions (Master data with attributes to analyze facts - such as, customers, items, etc.).

In the following sections, you find a comprehensive documentation of available data and driven KPIs:

- Facts
- Dimensions
- KPIs

Facts

This article provides information on the used facts within the Power BI semantic model.

coming soon

Dimensions

This section covers a brief description of the available dimensions within the Power BI semantic model:

Calendar

Client

DatabaseSource

DataCategory

DataSource

Dimension

Production Order

Production Order Line

Unit

Calendar

This dimension provides a base-calendar including derived attributes from a selected period of time. By default, the calendar dimension will start on the 1st of January of the first posting of your fact-data and end on the 31st of December of either the current year or the year of the latest fact-transaction (posting) date.

Dimension

This dimension contains maintained financial dimensions of your Business Central system.

Item

This dimension uses selected attributes from the item base table and enriches additional information related to your products from other Business Central table objects.

Among others, various group allocations and many more item-related attributes are available.

Unit

This dimension uses selected attributes from the unit of measure base table.

KPIs

This article provides information on the available KPIs (Measures) within the Power BI semantic model.

Full List (todo)

Measure (EN)	Measure Description (EN)
TODO	

Summary

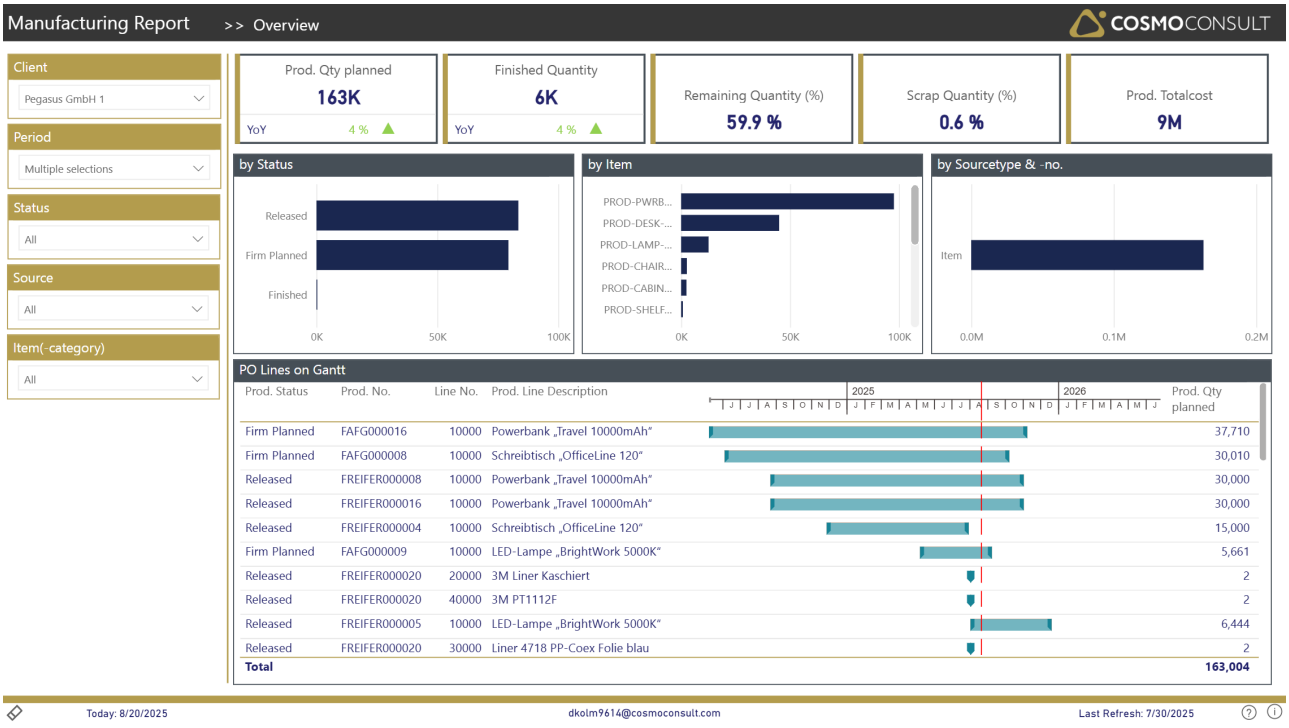
COSMO Analytics Quick Start Standard Report pages are usually divided into five sections:

- the header (black area)
- the footer (white area at the bottom)
- the filter section on the left hand side
- the KPI area on top of the visualization area
- the visualization core area

On the Overview page, you see a general summary of

- the most important KPIs
- an overview of planned production quantities by status, item and sourcetype/-no, which can be used to filter the data in the table below
- a high level overview of production orders according to filtered status on a gantt time-axis, sorted by start date

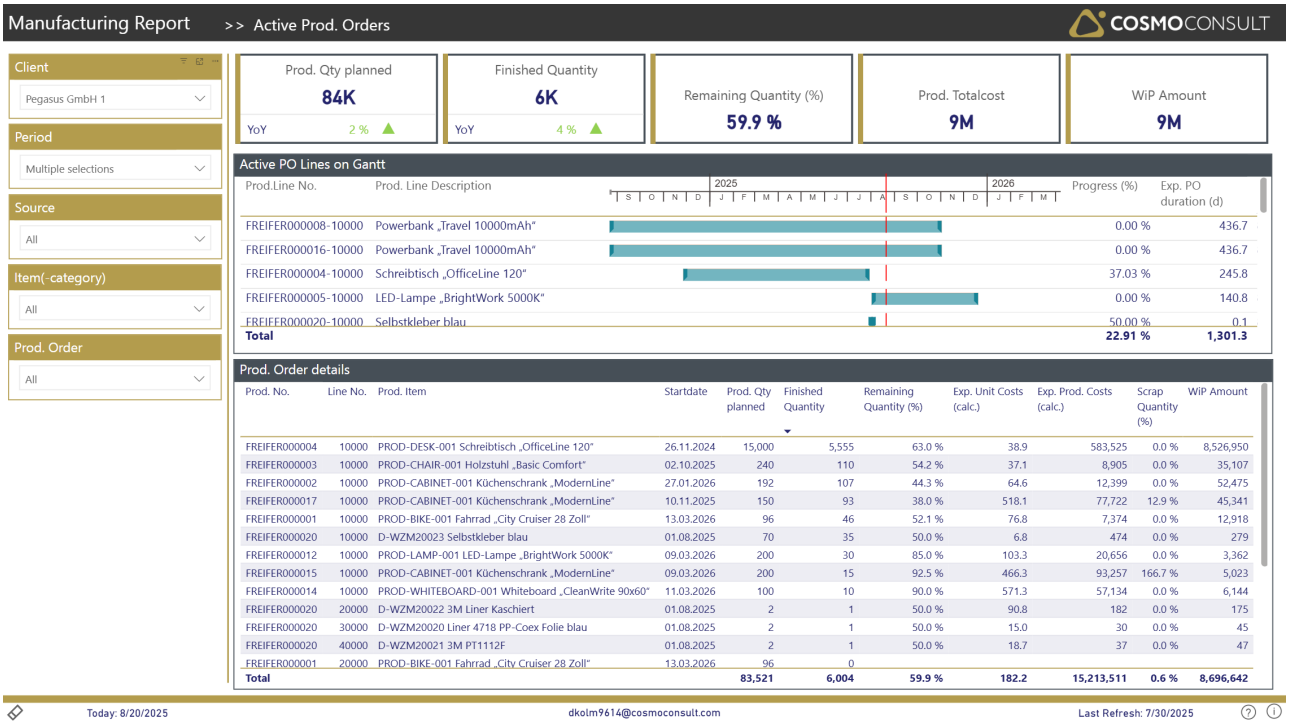
Based on this, various drill-throughs can be used to dig into details on a production order level (e.g. Scrap, Consumption, Ledger, etc.) and the tool-tip shows the key statistic of most important cost deviations.



Active Production Orders

This report provides a comprehensive overview of the current production orders that are currently released (active) for manufacturing.

Among relevant metrics, the Gantt-Chart in the upper area provides an easy to read overview with expected durations and the progress of each Prod. Order. Furthermore, the Details-Table below provides a possibility for sorting & filtering with additional KPIs.



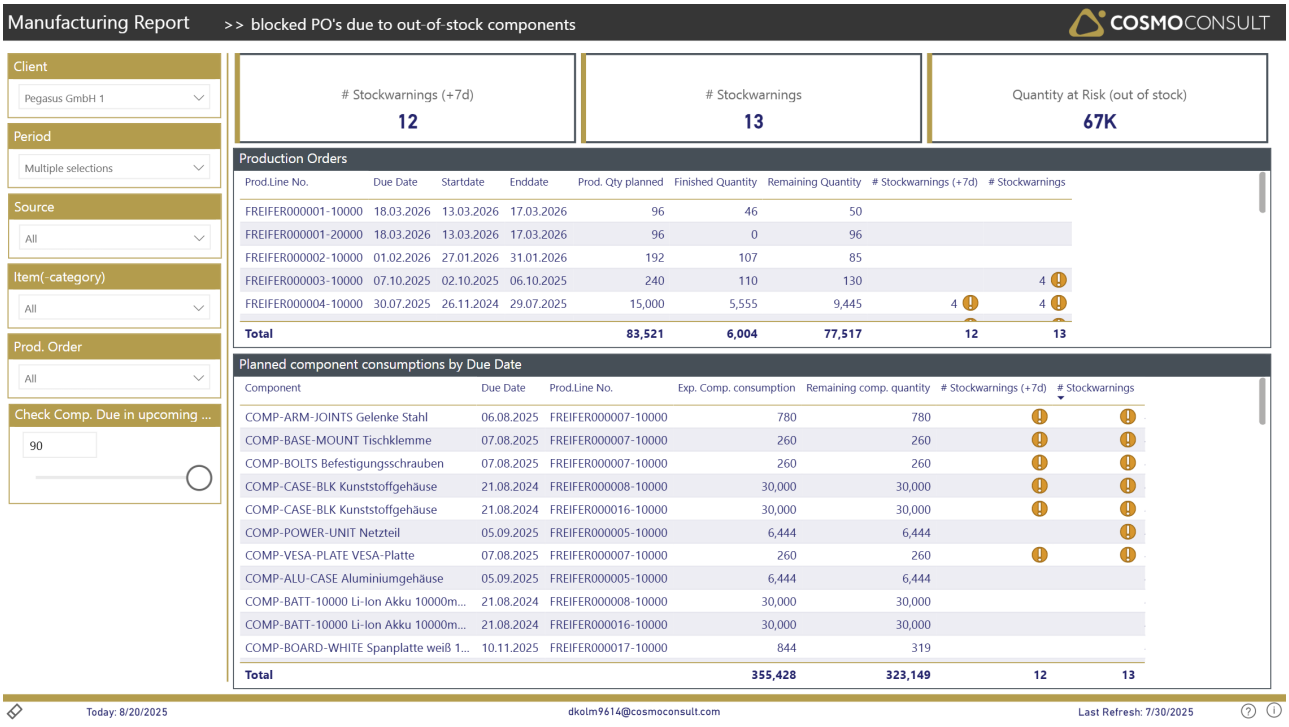
Production Orders (blocked)

As a manufacturing-dispatcher or purchaser, this report page might be yours.

To ensure good progress, it's important, that components are on stock when needed during production process. This report provides you with a two-level warning:

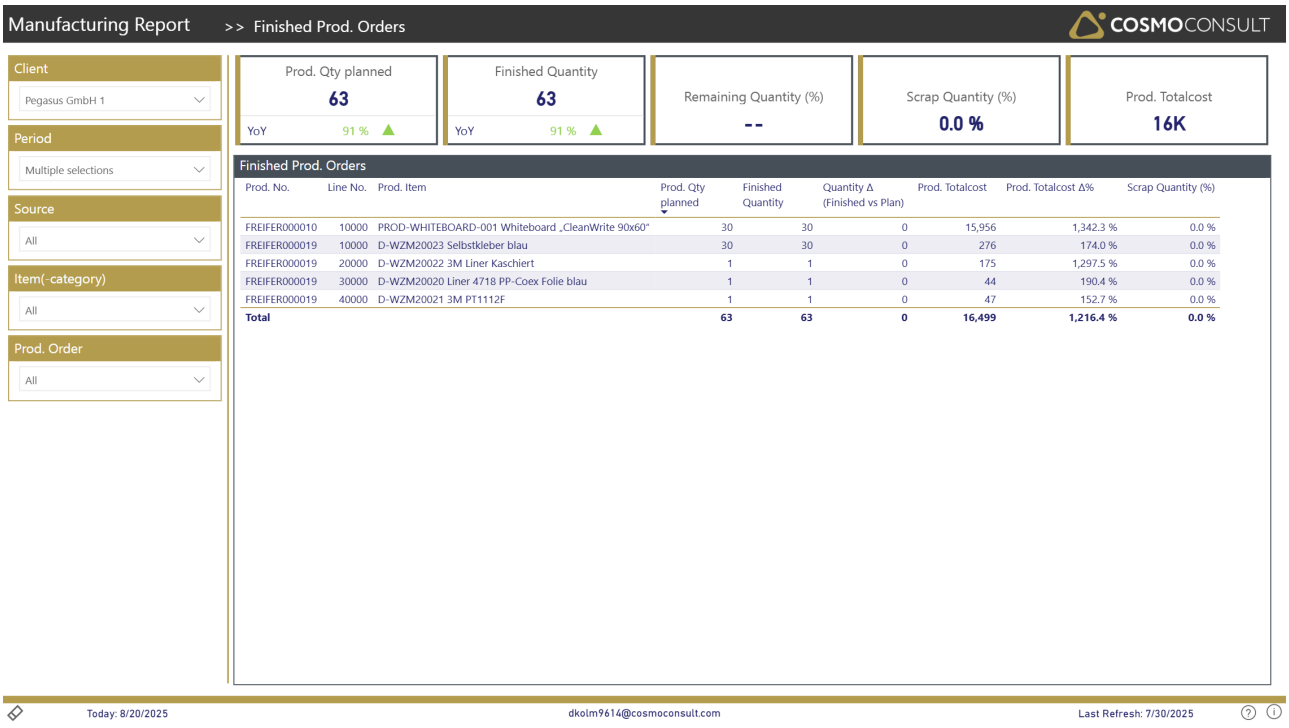
- # Stockwarnings (+7d): compares the (expected) component consumption with due in the upcoming 7 days and compares the need with current stock level. When the need exceeds stock, a warning indicates required action.
- # Stockwarnings: some components might have longer reorder-times. using the parameter "Check Comp. Due in upcoming days" in the left slicer section, you can parameterize the timeperiod when components might be checked.

Components, produced by another production order are being handled different.



Finished Production Orders

... provides a brief overview of all finsihed production orders with relevant KPIs like quantity deviations, cost deviations and scrap.

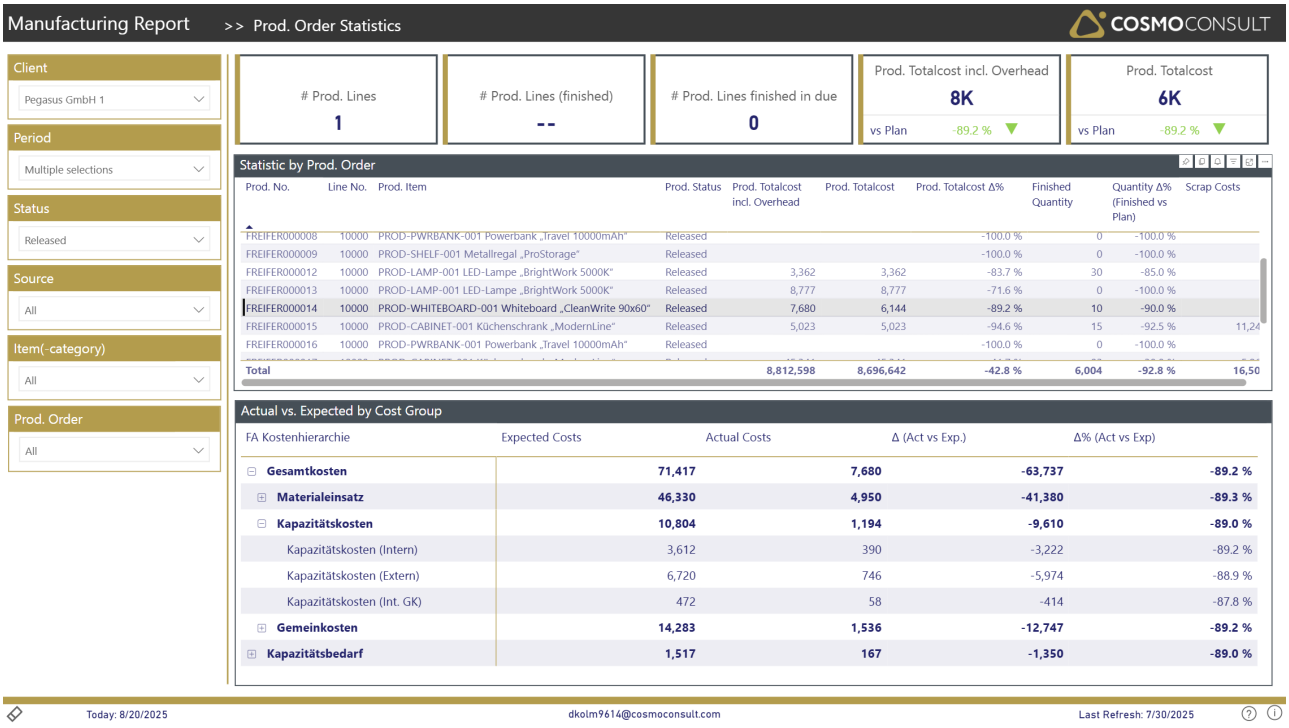


Prod. Order Statistic

...provides a brief summary of most important cost positions like component-, capacity or overhead costs and outlines deviations to planned figures.

The table in the upper area can be used to sort prod. orders based on measures like total costs, deviations or scrap costs and can be used as interactive filter for the cost-group matrix below.

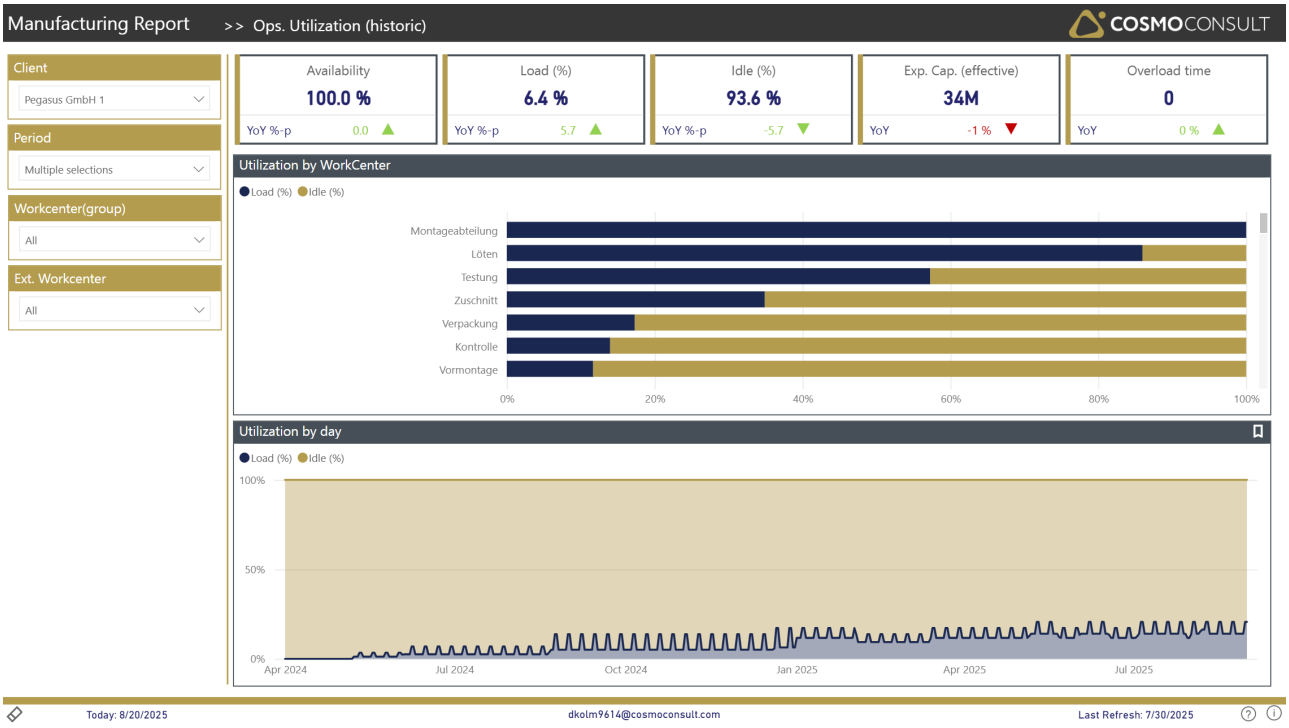
Without using the interactive filtering (or filter through Prod. Order slicer), the statistic-matrix shows an aggreagte of (e.g. all finished prod. orders), depending on your slicer settings.



Ops. Utilization (historical)

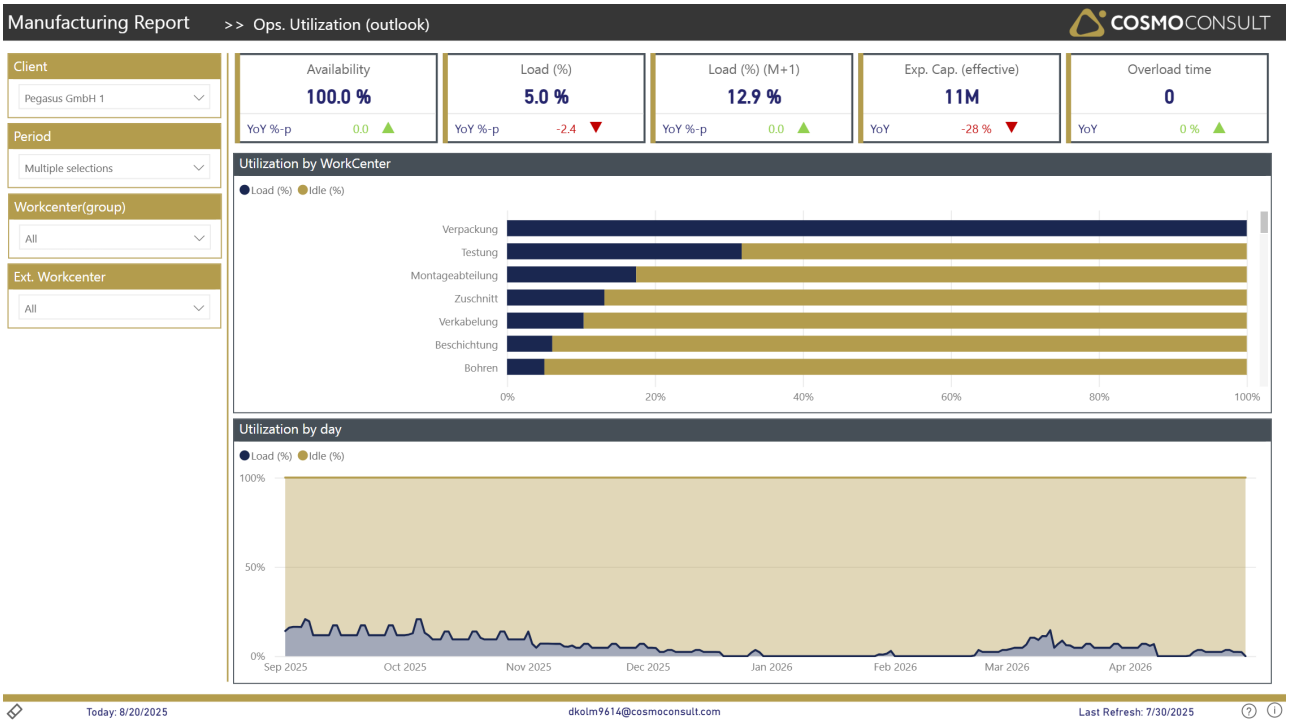
...is used to analyze historical work center (group) utilization. Slicers can be used to select specific work center groups or just internal work centers. The upper area displays the utilization on work center level. This bar chart can be used for interactive filtering to display the utilization on the area chart on a daily level.

In case additional details are needed, the "bookmark" icon in the upper-right of the area-chart can be used to display a detailed table views.



Ops. Utilization (outlook)

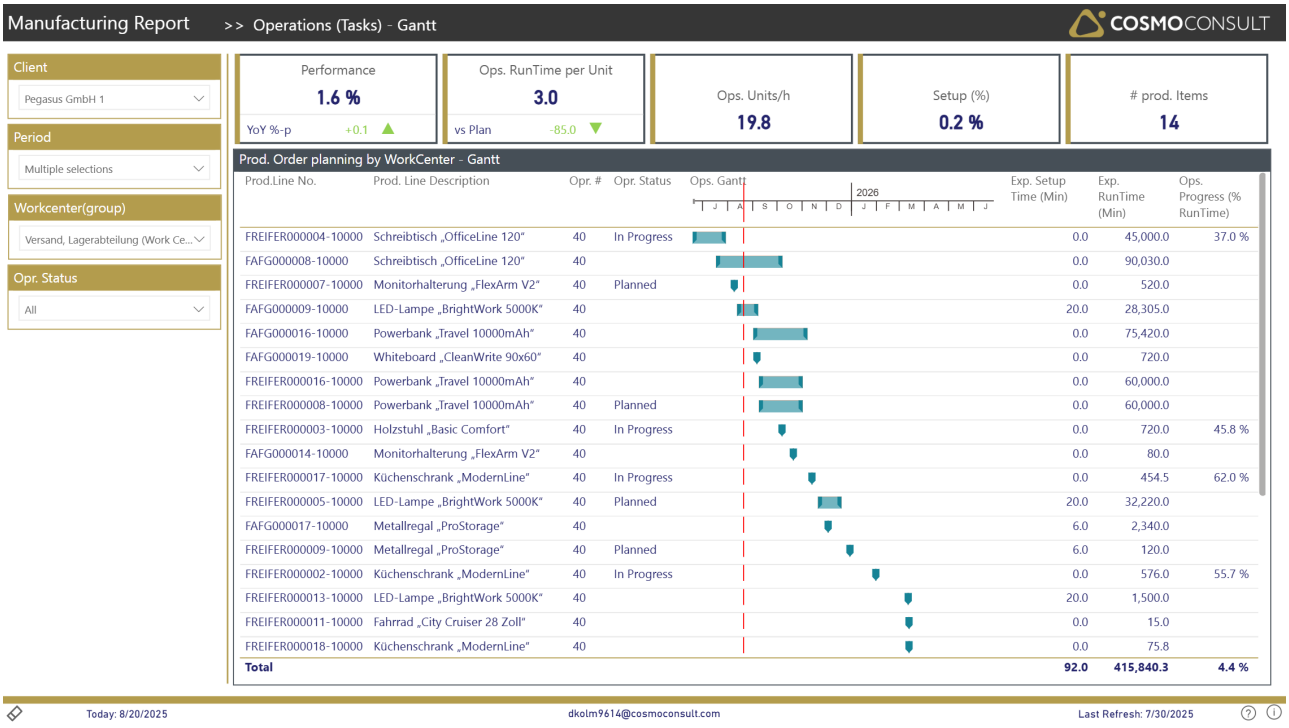
...use this report to monitor future load or idle times of your work center (groups). Ensure a future Period is set in the slicer area to analyze data according Ops. Utilization (historic).



Operations (Tasks) - Gantt

by filtering on a single Workcenter using the slicer, you can display all historic/current/upcoming production tasks on this work center. The view is sorted by startdate to easily get an overview about the status/progress of respective tasks.

This chart can be used, to analyze the number of changes in products manufactured on a specific work-center, which might come along with high setup-times. A KPI at the top indicates the share of setup-time vs. run-time to identify overall un-productive times.

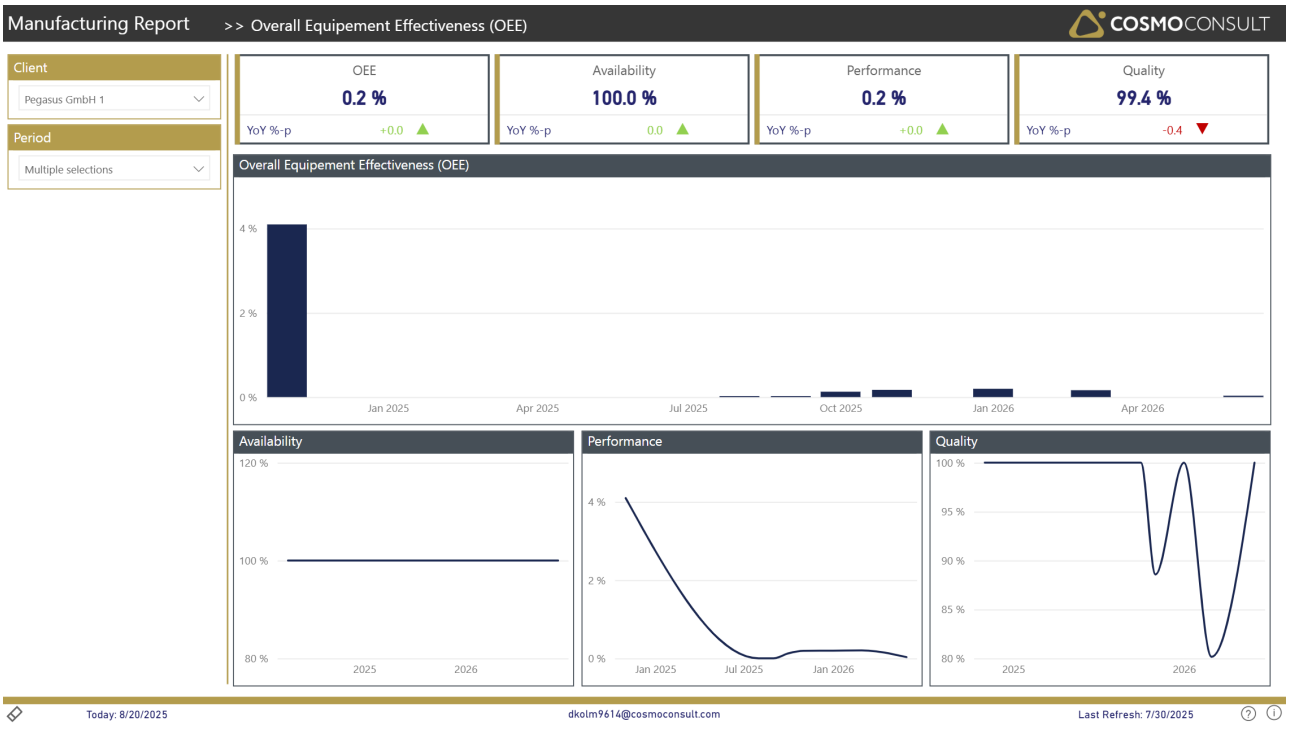


OEE

Overall Equipment Effectiveness is a high level manufacturing KPI, used to measure the overall performance of a manufacturing process.

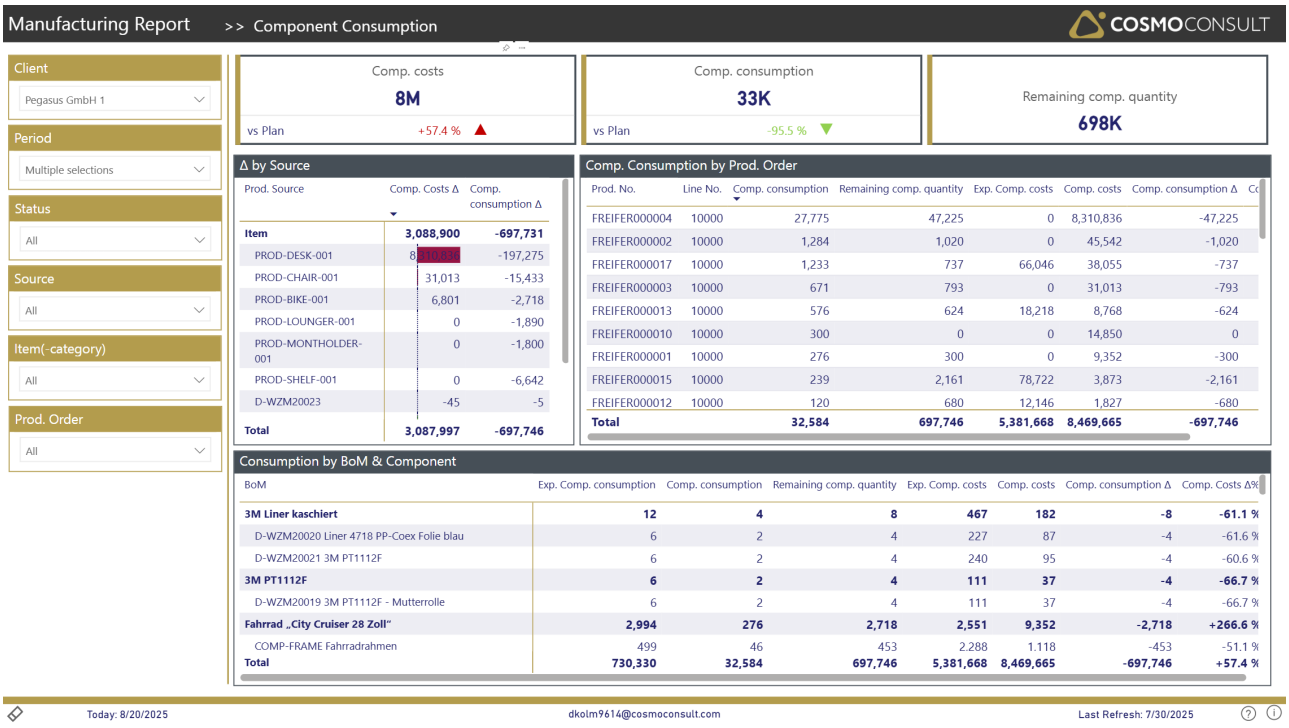
It is derived from three individual KPIs'

- Availability: defines the work center availability
- Performance: measures the "throughput" of the manufacturing process
- Quality: measures the quality of the output



Component Consumption

... is used to identify major deviations in component consumption. Initially you can check deviations by source if deviations have a peak on e.g. specific items. use this, as interactive filter and analyze respective production orders if there's a general issue or this happens just in a single case. Furthermore, select specific production orders to analyze deviations, based on concrete BoM's or components at the bottom.



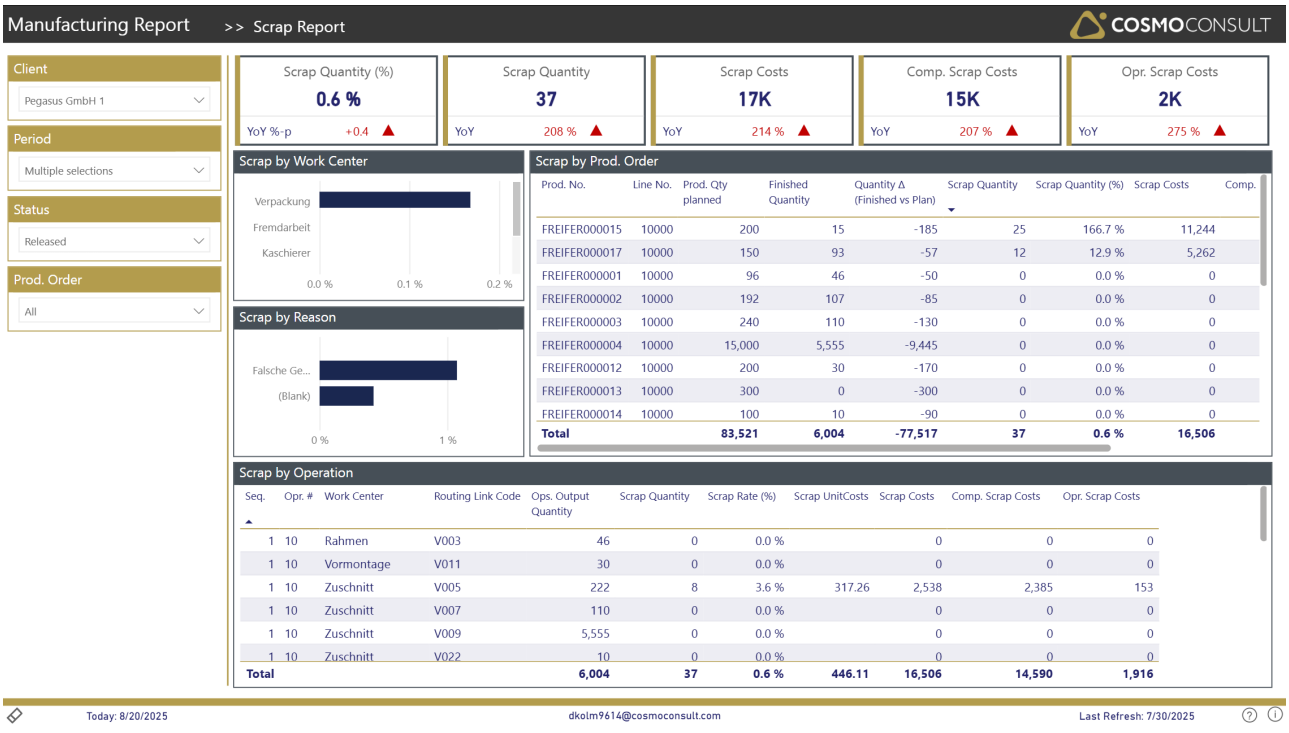
Scrap

monitoring scrap rate and -costs is essential as a high scrap increases costs for production and thus lower margins or enforces increased sales prices, which might lead to competitive issues.

Scrap costs are being calculated on an operations level and result from two factors:

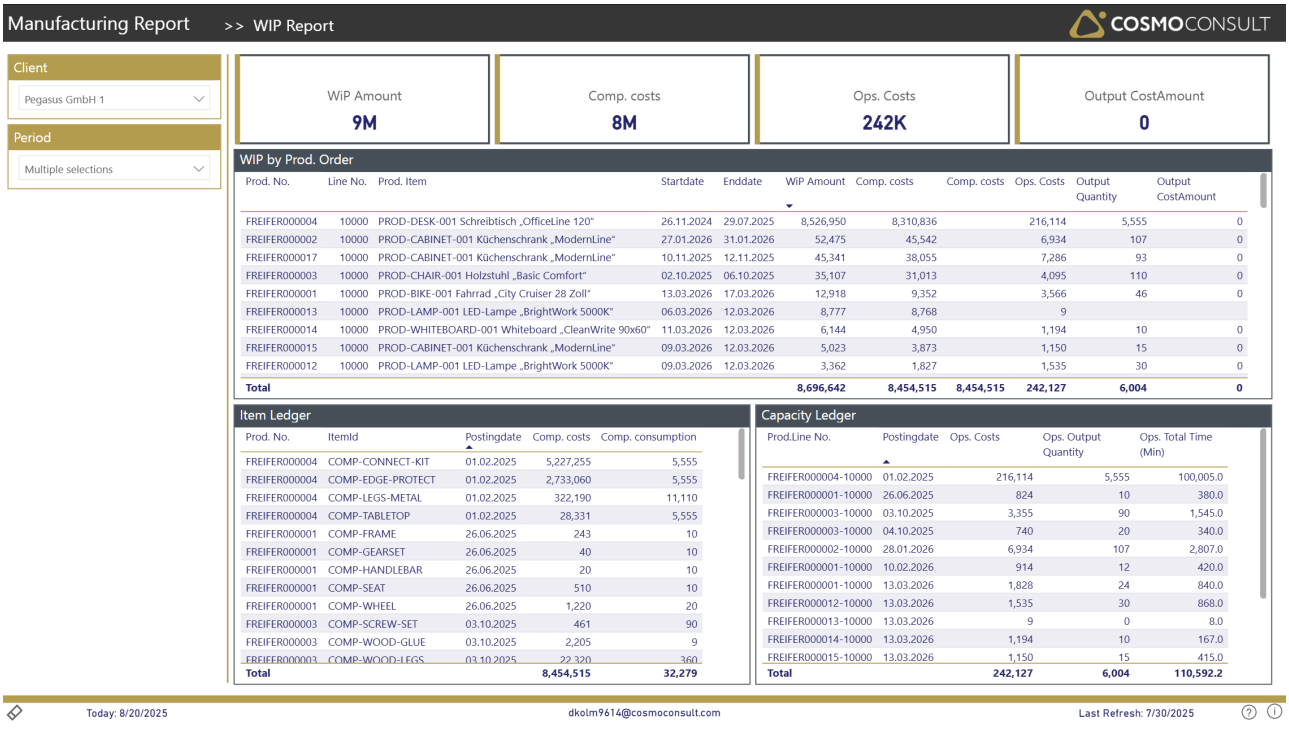
- component scrap costs: costs for discarded materials
- capacity scrap costs: costs for labor and/or machinery used to produce a certain product

Scrap Unit Costs increases by tasks, as each task adds value to the product. All details can be analyzed using interactive filtering to identify main drivers.



WiP (Work in Progress)

...is used to monitor "WiP Amount" of ongoing but not yet finished production orders (status released). WiP Amount is derived from posted component- and capacity costs by considering already posted output.



Know Your Customer (KYC)

Coming Soon!

Pre-Requisites

- Microsoft Fabric

Data Model

Typically, COSMO Analytics Quick Start 4 BC & Fabric data models follow Power BI best-practice standards and, thus, are using Star schema design. In general, we are talking about Fact Data (Transactions, such as Sales, Financial Postings, etc.) and Dimensions (Master data with attributes to analyze facts - such as, customers, items, etc.).

In the following sections, you find a comprehensive documentation of available data and driven KPIs:

- Facts
- Dimensions
- KPIs

Facts

This article provides information on the used facts within the Power BI semantic model.

coming soon

Dimensions

This section covers a brief description of the available dimensions within the Power BI semantic model:

Calendar

Customer

Dimension

Employee

Item

Unit

Calendar

This dimension provides a base-calendar including derived attributes from a selected period of time. By default, the calendar dimension will start on the 1st of January of the first posting of your fact-data and end on the 31st of December of either the current year or the year of the latest fact-transaction (posting) date.

Customer

This dimension uses selected attributes from the customer base table and enriches additional information related to your customers from other Business Central table objects.

Among others, address data, various group allocations and many more attributes are available.

Dimension

This dimension contains maintained financial dimensions of your Business Central system.

Employee

This dimension uses selected attributes from the employee base table and enriches additional information related to your employees from other Business Central table objects.

Among others, various group allocations and many more employee-related attributes are available.

Item

This dimension uses selected attributes from the item base table and enriches additional information related to your products from other Business Central table objects.

Among others, various group allocations and many more item-related attributes are available.

Unit

This dimension uses selected attributes from the unit of measure base table.

KPIs

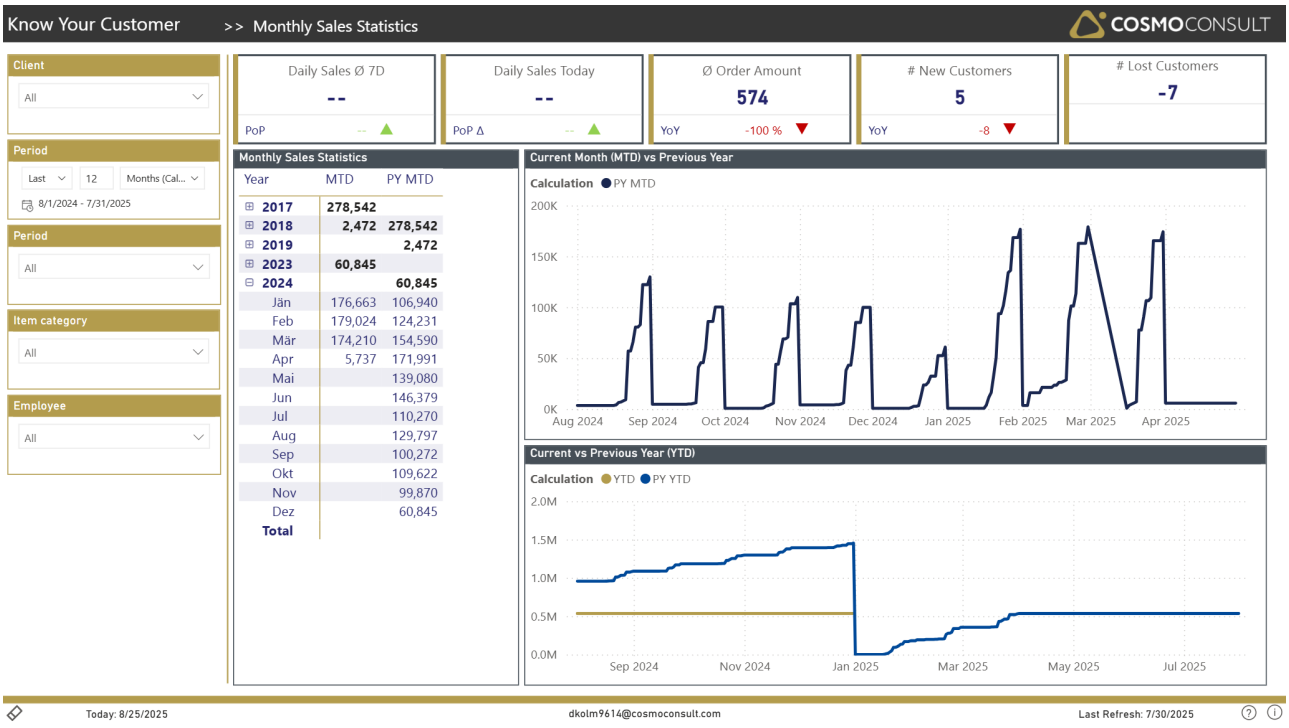
This article provides information on the available KPIs (Measures) within the Power BI semantic model.

Full List (todo)

Measure (EN)	Measure Description (EN)
TODO	

Monthly Sales

Analyze your monthly sales development and compare your month-to-date (MTD) curve to your "run-up curve" of previous year.



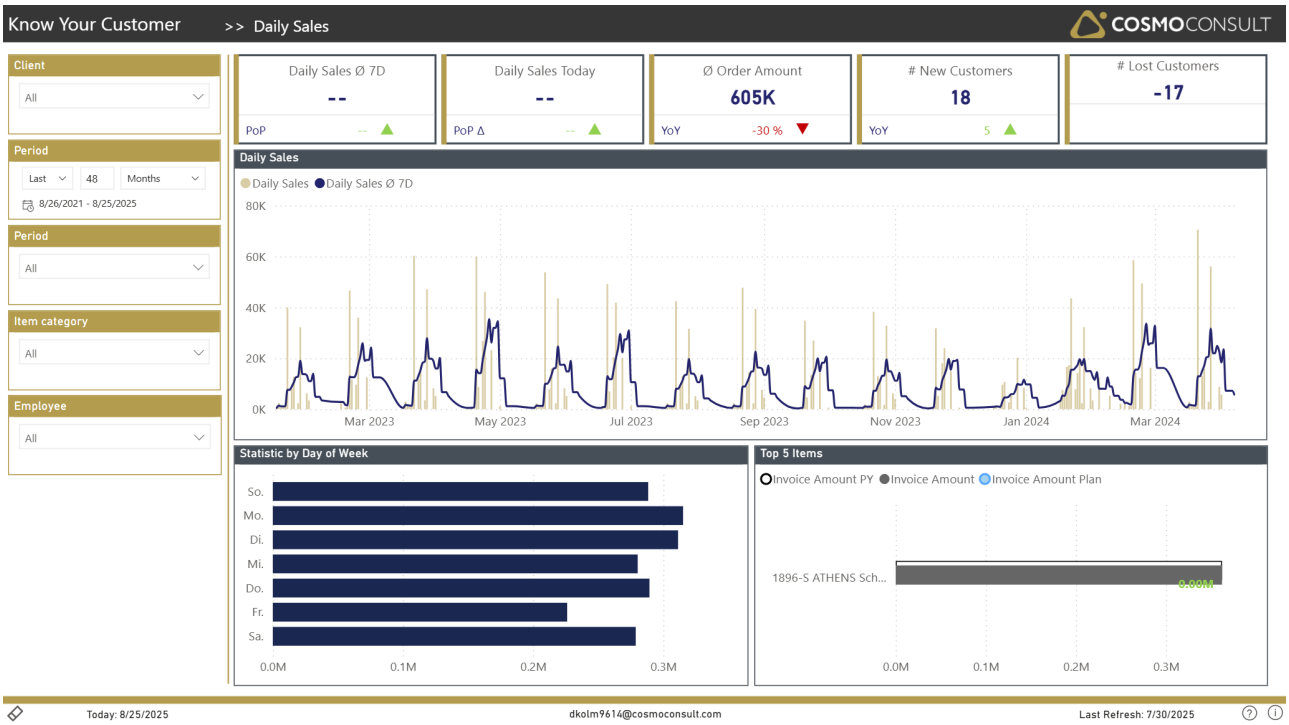
Daily Sales

COSMO Analytics Quick Start Standard Report pages are usually divided into five sections:

- the header (black area)
- the footer (white area at the bottom)
- the filter section on the left hand side
- the KPI area on top of the visualization area
- the visualization core area

Use the Daily Sales page, to analyze

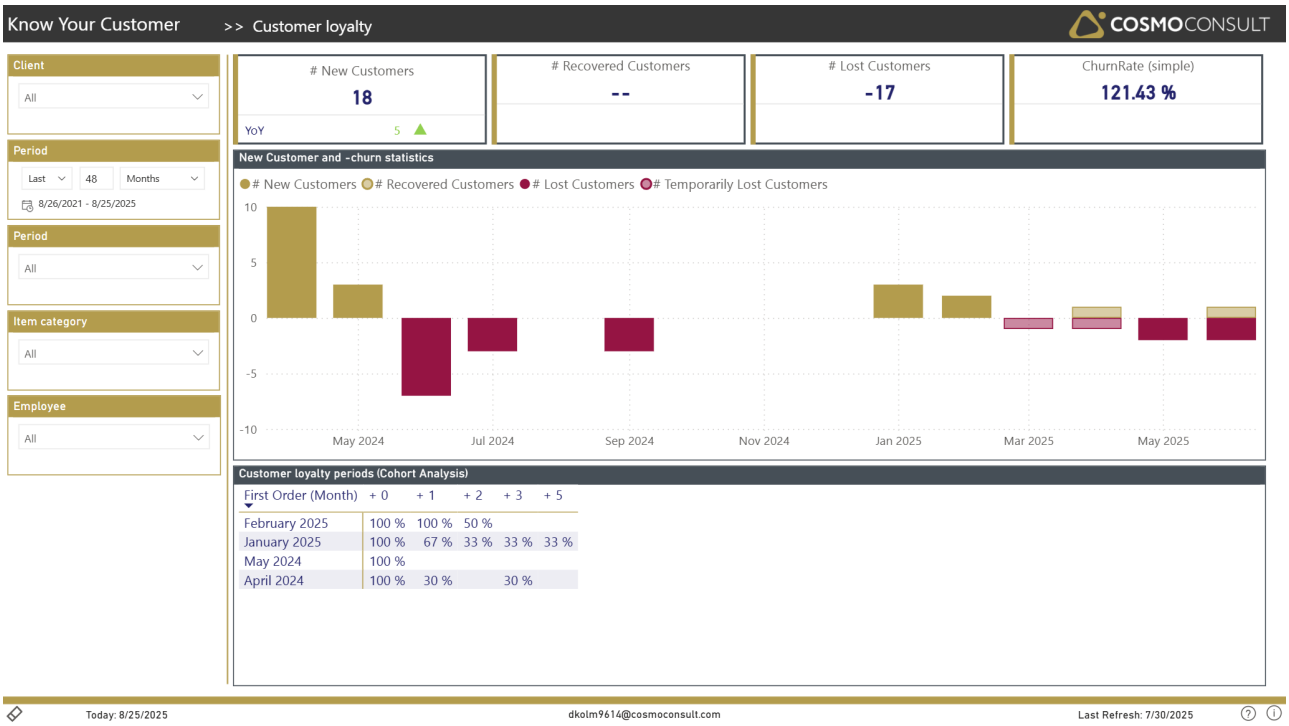
- most important KPIs
- daily sales figures including an average 7 day value
- short term trends
- a statistic by day of week and
- your most important items



Customer Loyalty

Identify periods of winning new or loosing existing customers and analyze loyalty factors of your customer base.

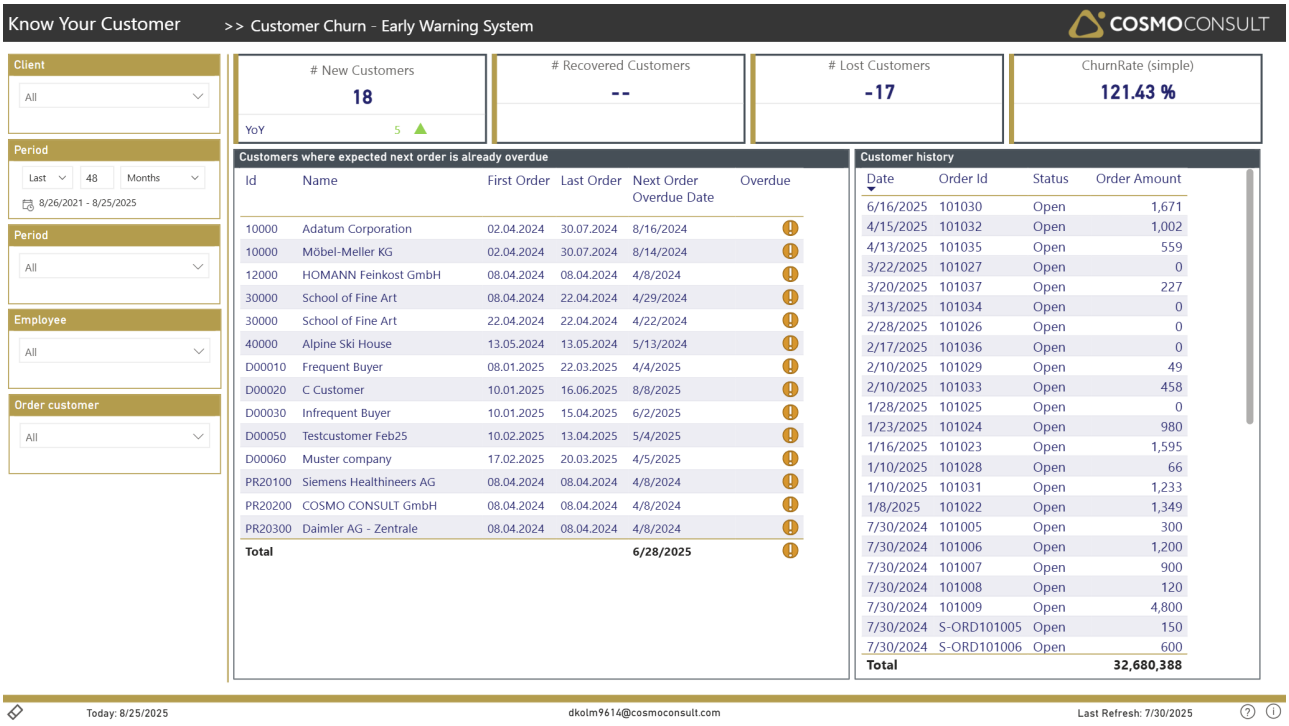
Each line of the cohort-chart (table below) contains customers, which had their first purchase in the shown month. The X-axis shows the months after the inital purchase and the rate, the amount of customers still loyal to your business. With the help of this, you can identify critcal periods (e.g. 6 months after you initially won a new customer) with high churn rates to define marketing or sales activities to prevent churn.



Churn - Early Warning System

Monitoring the order frequency of your most loyal customers is essential. Imagine one of your top clients, usually placing an order every 4 weeks keeps silent for 6 or even 8 weeks without noticing that. Probability for Churn might be already high with a risk of loosing a loyal customer.

By monitoring the expected "next order date" and getting warnings when it's overdue you will not miss that point and can contact the customer or define any other activities.



Customer Clustering

to strategically manage accounts it's essential to prioritize your available sales-force in order to achive best-possible results. Cluster customers by Order Frequency & Monetary aspects and derive your "Diamonds" or "Poor Dogs" and set service levels accordingly.

Shopping Basket Analysis

You want to generate up- or cross-sell revenues by placing products in your shelf strategically? Then use the Shopping Basket Analysis to analyze the impact a product has on the sale of another product (uplift). Other KPIs indicate the confidence and support (share of total products sold).

With the network-chart it's easy to identify jointly sold products within a single shopping basket.

Quality Assurance

Provide Transparency. Increase Quality. Optimize Processes.

by using the COSMO Quality Control Dashboard you gain full transparency of your quality-related data in Microsoft Dynamics 365 Business Central. Analyze test-processes & -orders on item level and identify deviations easily. Optimize your decision-making process with interactive dashboards, directly in Power BI.

Are you suffering from following challenges?

- high backlog of test?
- low success-rate of your tests and no overview why?
- limited transparency on scattering of your property tests?

Then our app is the right solution for you!

With our app, you can:

- Improve: your quality process in order to achive better results and to reduce backlogs
- Analyze: qualitative & quantitative test results
- Identify: trends to derive action

Pre-Requisites

- COSMO Quality Assurance D365 BC Extension

Data Model

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coming soon

Dimensions

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Test Order

Unit

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Unit

This dimension uses selected attributes from the unit of measure base table.

Production Order

This dimension uses selected attributes from the Test Order base table of your Business Central System.

KPIs

This article provides information on the available KPIs (Measures) within the Power BI semantic model.

Full List (todo)

Measure (EN)	Measure Description (EN)
TODO	

Open Test Processes

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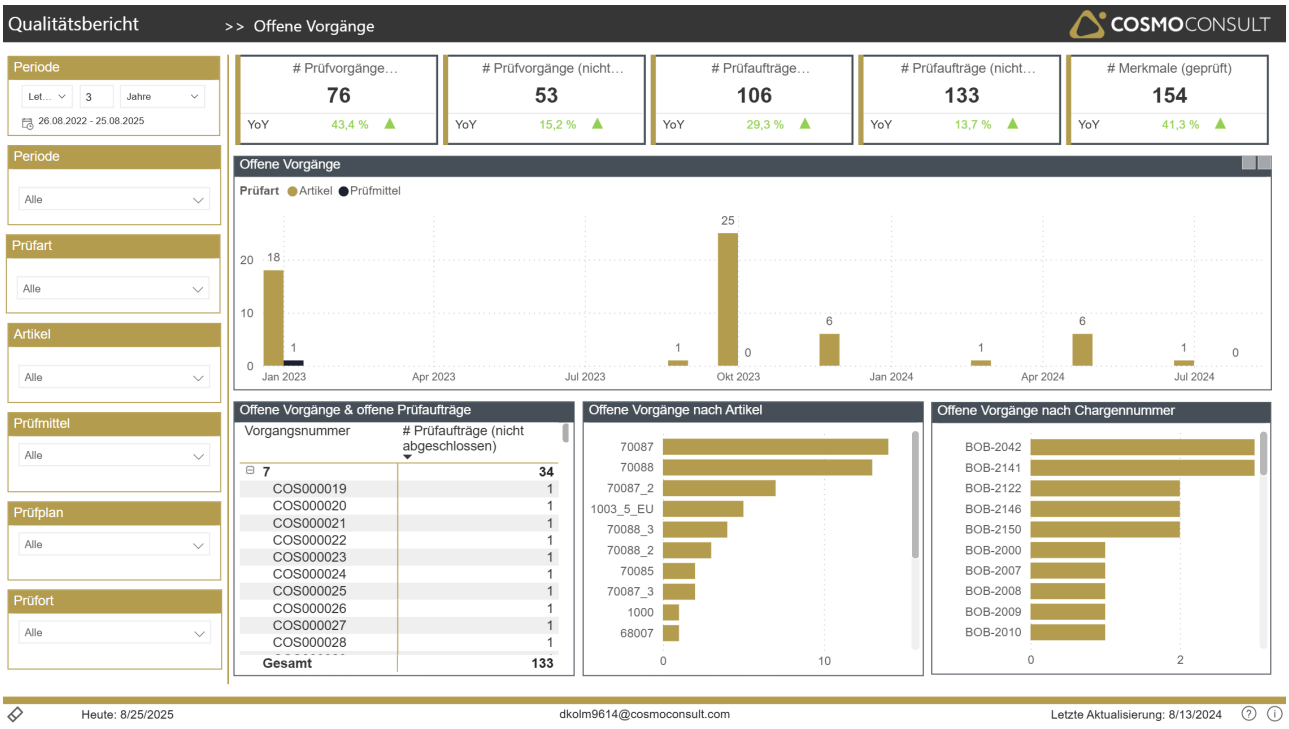
- the filter section on the left hand side
- the KPI area on top of the visualization area
- the visualization core area

On the Open Test Processes page, you see a general summary of

- most important KPIs
- an overview of open test-processes by test-type over time
- details on test-orders grouped by test-process
- open processes by item and LotNo for statistic- and selection purposes

Based on this, a drill-through on test-order details can be used to dig into details on order level.



Test Order Overview

This report provides a statistical overview of test orders by completion-status and validity of test-results. So you can easily identify trends and potential issues in your quality assurance processes.

The bar chart on the left side on the bottom shows the number of test orders by source (e.g. purchase, inventory, production) which can be used for interactive filtering of the other charts.

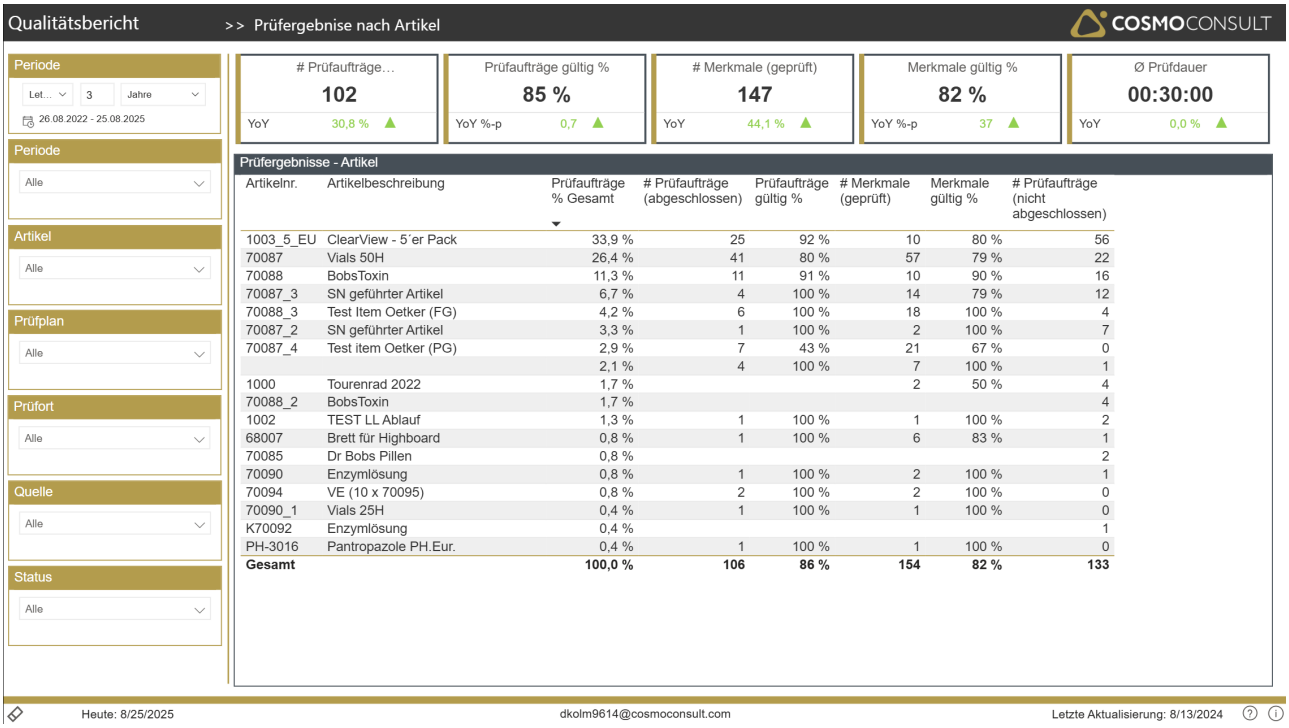
Filters like test-type, item, etc. can be applied to narrow down the data displayed in the charts.

Test Results by Item

Delivers insights into the number of tests performed on different items, categorized by the validity of the test results (valid/invalid). This report helps in identifying items that may require attention due to a high number of invalid test results or a relatively low number of tests conducted.

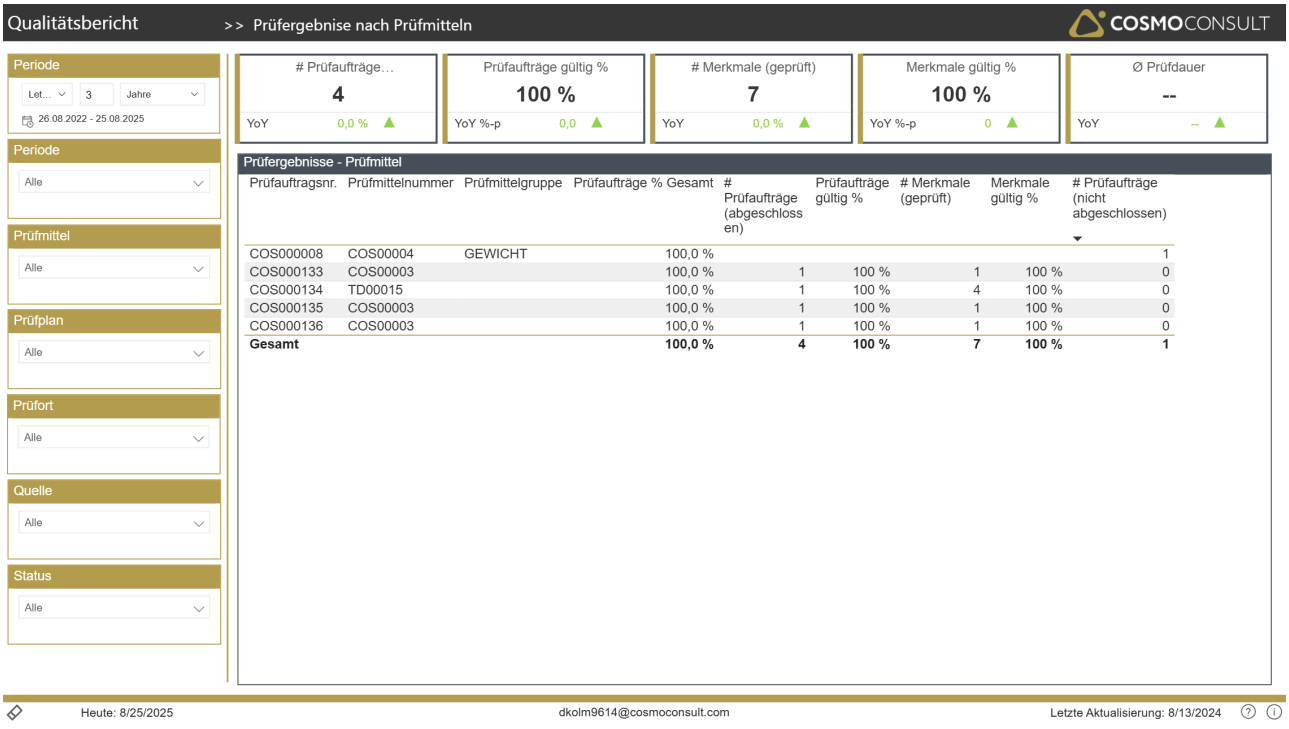
Furthermore, the tool-tip provides already a brief overview of result-variance of properties tested for the selected item.

By using the drill-through functionality, you can access detailed information about qualitative- & quantitative test results.



Test Equipment Overview

Delivers an overview of test eqiuipment master data including details like last test-date, next test-date, test-interval and status. Furthermore, the icon indicates if test orders exists for specific equipment items.

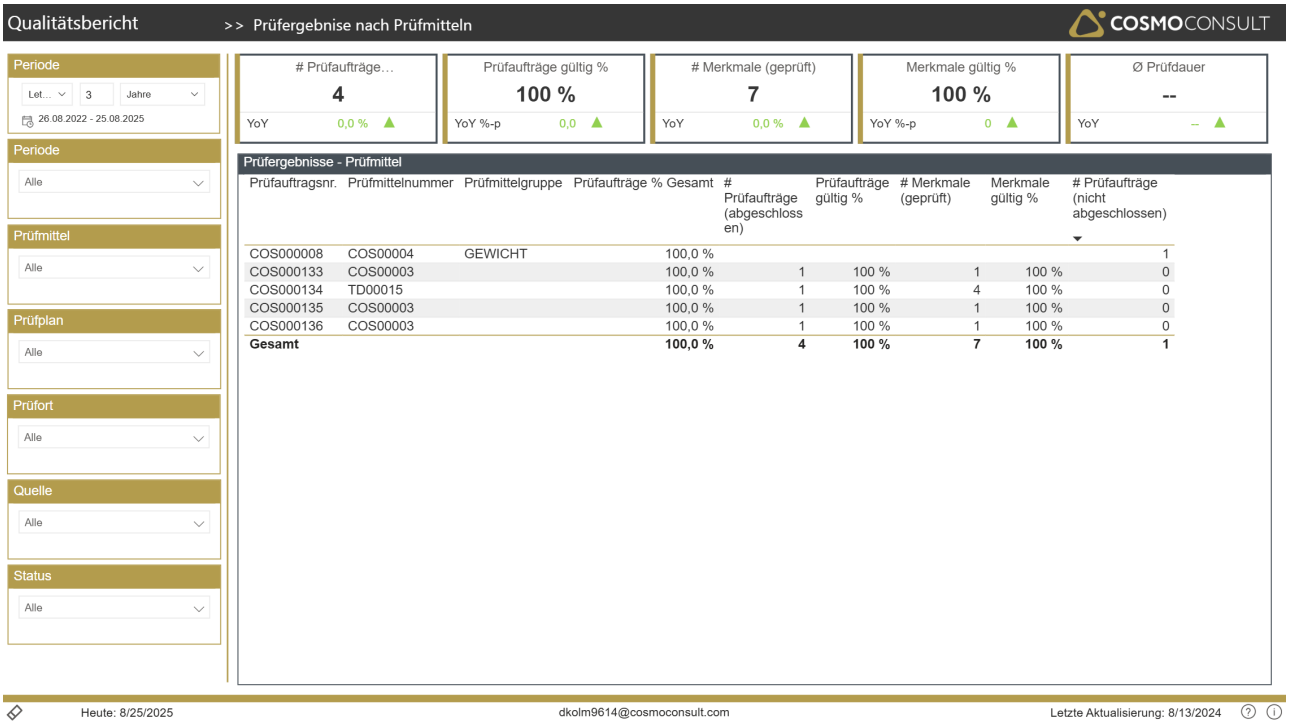


Test Results by Test Equipment

Delivers insights into the number of tests performed on different test equipments, categorized by the validity of the test results (valid/invalid).

The tool-tip provides a brief overview of result-variance of properties tested for the selected test-equipment.

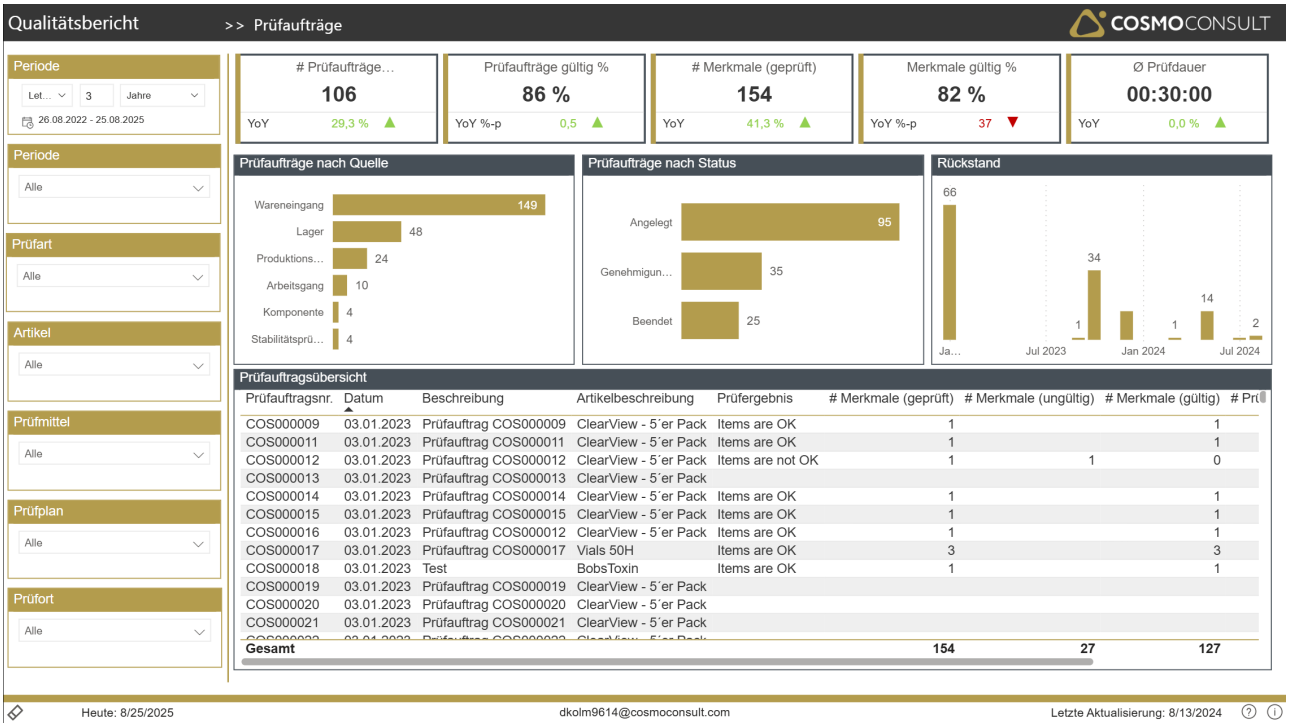
By using the drill-through functionality, you can access detailed information about qualitative- & quantitative test results.



Test Order Details

...provide you with an aggregated overview of test-results by test-order. Identify properties tested and success-/error rate by test order. Use the bar-charts by source & status or any slicer to filter the details table and get an overview about your backlog in the upper-right chart.

By using drill-throughs you can easily dig into detailed results e.g. for qualitative- or quantitative properties tested.



Quantitative Results

Use this report to analyze results of your test for all quantitative properties. Select e.g. an Item to get all properties tested. You can further narrow down specific properties or get an overview about all of them.

By using the golden-arrows in the upper-left section of the box-plot chart you can adjust the scaling of the Y-axis to see enough details if not by default.

The box-plot chart delivers following values:

Blue Marker: Actual Results

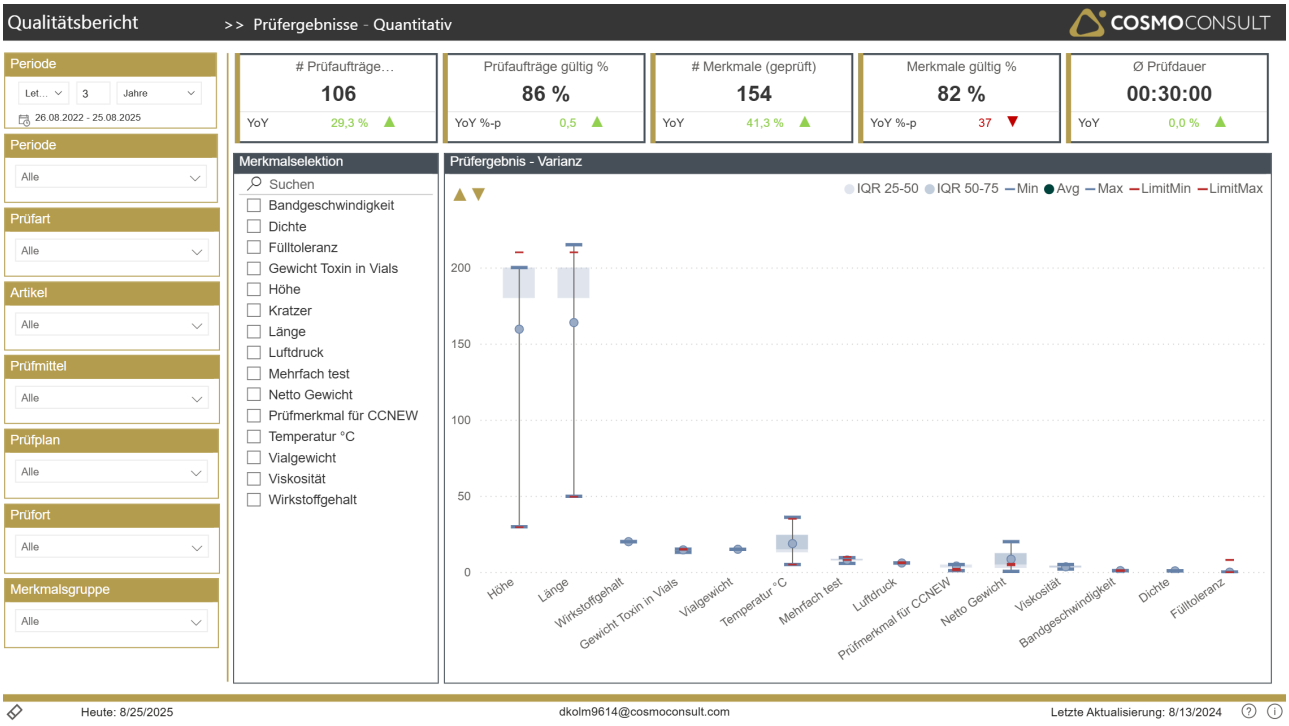
- Min: Minimum value by property within selected period
- Max: Maximum value
- Avg: Average result

Red Marker: Limits

- Min & Max: according to property limits to pass a test

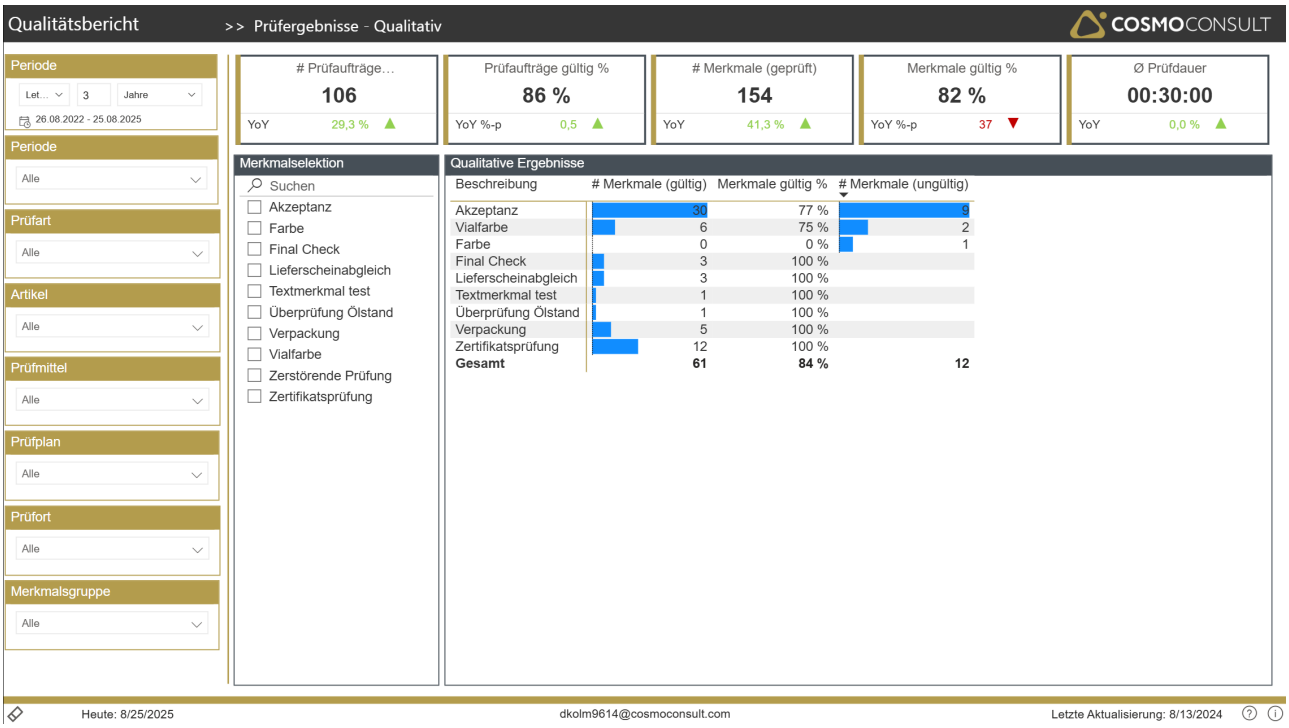
"Whisker": IQR = Inter Quartile Range

- IQR 0-25: area of the lowest 25% of test-results (white area at the bottom)
- IQR 25-50: area of the "next-higher" 25% of test-results
- IQR 50-75: area of the "next-higher" 25% of test-results
- IQR 75-100: area of the highest 25% of test-results (white area at the top)
- The Median is exactly on the upper line of the IQR 25-50 whisker


Qualitätsbericht
>> Prüfergebnisse - Quantitativ
COSMOCONSULT
Periode
Let...
3
Jahre
26.08.2022 - 25.08.2025
Periode
Alle
Prüfart
Alle
Artikel
Alle
Prüfmittel
Alle
Prüfplan
Alle
Prüfort
Alle
Merkmalsgruppe
Alle
Prüfaufträge...
106
YoY 29,3 %
Prüfaufträge gültig %
86 %
YoY %-p 0,5
Merkmale (geprüft)
154
YoY 41,3 %
Merkmale gültig %
82 %
YoY %-p 37
Ø Prüfdauer
00:30:00
YoY 0,0 %
Merkmalselektion
Suchen
Bandgeschwindigkeit
Dichte
Fülltoleranz
Gewicht Toxin in Vials
Höhe
Kratzer
Länge
Luftdruck
Mehrfach test
Netto Gewicht
Prüfmerkmal für CCNEW
Temperatur °C
Vialgewicht
Viskosität
Wirkstoffgehalt
Prüfergebnis - Varianz
IQR 25-50
IQR 50-75
Min
Avg
Max
LimitMin
LimitMax
200
150
100
50
0
Höhe
Länge
Wirkstoffgehalt
Gewicht Toxin in Vials
Vialgewicht
Temperatur °C
Mehrfach test
Luftdruck
Prüfmerkmal für CCNEW
Netto Gewicht
Viskosität
Bandgeschwindigkeit
Dichte
Fülltoleranz
Heute: 8/25/2025
dkolm9614@cosmoconsult.com
Letzte Aktualisierung: 8/13/2024

Qualitative Results

Use this report to analyze success-rates of qualitative results (e.g. by item). Use the tool-tip to identify invalid test-orders including reason for invalidation.



Quantitative Results by Month

The Variance-Chart (Box-Plot) in this report provides the same details as Qualitative Results, however, should be used to analyze trends over time of one specific property. Hence, the option-slicer requires the selection of a single property for which the analysis should be made.

Use further slices on the left to narrow down your chart (e.g. by item).