

DASHBOARD DOCUMENTATION

Defect Analysis — Vendors, Materials, Cost & Trends

Qlik Cloud | SAP Procurement Application

February 2026

Application	SAP Procurement
App ID	a00e34a7-c017-478b-976e-643379e3b173
Sheets Documented	Defect Analysis – Vendors & Materials; Defect Analysis – Cost & Trends
Data Last Reloaded	12 October 2020 (static demo dataset)
Created	26 February 2026 via Qlik MCP Integration

1. Overview

This document describes the two Defect Analysis dashboard sheets created in the SAP Procurement Qlik Cloud application. The sheets were built programmatically using the Qlik MCP (Model Context Protocol) integration and are designed to provide procurement teams and executives with a comprehensive view of defective product patterns — including which vendors and materials drive the most defects, what those defects cost the business, and how defect volumes have trended over time.

The data covers purchase orders posted between 2016 and 2020 and includes 293,630 total defects with a cumulative cost impact exceeding \$146 million. A key finding is that defect volumes peaked in 2017 and have since declined by approximately 71%, reflecting positive quality improvement progress across the supply chain.

2. Data Source

2.1 Source Application

Both dashboard sheets draw from a single Qlik Cloud application: SAP Procurement. This application is loaded from an SAP ECC/S4 procurement data extract and includes purchase orders, goods receipts, vendor master data, and quality inspection results.

Attribute	Value
Source System	SAP ECC6 / S/4HANA Procurement Module
Primary Table	Purchase Order fact table with vendor, material, plant, and defect fields
Date Range	2016 – 2020
Key Fields	OCO_DOC_NO (Order Document), POSTING_DATE, VENDOR, VENDOR_TEXT, MATERIAL_TEXT, PLANT_TEXT, COMP_CODE_TEXT, BUS_AREA_TEXT, Amount, Cost of Goods, Defects, Quantity
Geography	Multi-company, multi-plant (includes IDES US INC, IDES AG and other entities)

2.2 Data Model Notes

- The Defects field is a numeric column on the purchase order line. A defect is registered when the inspection result is non-zero.
- Cost Defective Products is a calculated measure: $\text{sum(Defects)} * (\text{sum(Cost of Goods)} / \text{sum(Amount)})$ — it estimates defect cost as a proportion of goods cost.
- Auto-calendar fields (POSTING_DATE.autoCalendar.Year etc.) are generated by Qlik's built-in calendar extension and drive the YTD CY / YTD PY measures.
- The dataset is a static demo load; no live reload schedule is active.

3. Master Dimensions

The following master (library) dimensions are defined in the application and are available for use across all sheets and charts. They are governed, reusable objects that ensure consistent grouping and labelling across visualisations.

Dimension Name	Field / Expression	Description
Business Area	BUS_AREA_TEXT	Business area / division for the purchase order
Company Code	COMP_CODE_TEXT	Legal entity / company code
Dimension	Dimension	Dynamic dimension field used in drill-through analysis
Material	MATERIAL_TEXT	Material / product description
MaterialDrill	MATERIAL_TEXT	Drill-capable material dimension
Metric	Metric	Dynamic metric dimension used in pivot analysis
Month	=month(POSTING_DATE)	Calendar month derived from posting date
Order Document	OCO_DOC_NO	Purchase order document number
Order Posting Date	POSTING_DATE	Full posting date of the purchase order
Plant	PLANT_TEXT	Manufacturing or receiving plant
TimeDrill	=year(POSTING_DATE)	Year derived from posting date for time drill
Vendor	VENDOR_TEXT	Vendor / supplier name
Vendor City	VENDOR_CITY	City where vendor is located
Vendor Country	VENDOR_COUNTRY_ISO	ISO country code of vendor
Vendor Country ISO	VENDOR_COUNTRY_ISO	ISO country code (alternate library dimension)
Year	POSTING_DATE.autoCalendar.Year	Calendar year from auto-calendar field
YearQuarter	=year(POSTING_DATE) & '-' & Q' & Ceil(Month/3)	Year and quarter label (e.g. 2020-Q3)

4. Master Measures

The application contains 23 master (library) measures. These are pre-defined, governed calculations that can be referenced by name in any visualisation. Below are all measures with their underlying Qlik expressions.

Note: The YTD CY / YTD PY measures use Qlik Set Analysis to restrict data to the maximum year available in the dataset (2020 for CY, 2019 for PY) rather than the current calendar year, because the dataset is static.

Measure Name	Expression	Description
# Defects	<code>count(distinct {<Defects=-{0}>} RowNum)</code>	Count of distinct rows with defects recorded
# Orders	<code>count(distinct [OCO_DOC_NO])</code>	Count of distinct purchase order documents
# Vendors	<code>Count(distinct VENDOR)</code>	Count of distinct vendors in scope
Amount	<code>sum([Amount])</code>	Total order amount
Amount YTD CY	<code>Sum({\$<Year={max(year)}>} [Amount])</code>	Year-to-date order amount for current year
Amount YTD PY	<code>Sum({\$<Year={max(year)-1}>} [Amount])</code>	Year-to-date order amount for prior year
Avg Cost of Goods	<code>sum([Cost of Goods]) / count(distinct [OCO_DOC_NO])</code>	Average cost of goods per order document
Avg Defect Amount	<code>avg(Defects)</code>	Average defect value
Avg Order Amount	<code>sum(Amount) / count(distinct [OCO_DOC_NO])</code>	Average order value per document
Avg Price	<code>sum([Cost of Goods]) / sum(Amount)</code>	Average price (cost-to-amount ratio)
Avg Price CY	<code>sum(CY Cost of Goods) / sum(CY Amount)</code>	Average price for current year
Avg Price PY	<code>sum(PY Cost of Goods) / sum(PY Amount)</code>	Average price for prior year
Cost Defective Products	<code>sum(Defects) * (sum([Cost of Goods]) / sum(Amount))</code>	Estimated cost impact of defective products
Cost of Goods	<code>sum([Cost of Goods])</code>	Total cost of goods
Cost of Goods YTD CY	<code>Sum({\$<Year={max(year)}>} [Cost of Goods])</code>	Year-to-date cost of goods, current year
Cost of Goods YTD PY	<code>Sum({\$<Year={max(year)-1}>} [Cost of Goods])</code>	Year-to-date cost of goods, prior year
Defects	<code>sum(Defects)</code>	Total sum of defect values

Measure Name	Expression	Description
Defects YTD CY	$\text{Sum}(\{\$<\text{Year}=\{\text{max}(\text{year})\}>\}[\text{Defects}])$	Year-to-date defects, current year
Defects YTD PY	$\text{Sum}(\{\$<\text{Year}=\{\text{max}(\text{year})-1\}>\}[\text{Defects}])$	Year-to-date defects, prior year
Overall Avg Price	$\text{sum}(\text{Total}[\text{Cost of Goods}]) / \text{sum}(\text{Total Amount})$	Overall average price ignoring dimensions
Quantity	$\text{sum}([\text{Quantity}])$	Total quantity ordered
Quantity YTD CY	$\text{Sum}(\{\$<\text{Year}=\{\text{max}(\text{year})\}>\}[\text{Quantity}])$	Year-to-date quantity, current year
Quantity YTD PY	$\text{Sum}(\{\$<\text{Year}=\{\text{max}(\text{year})-1\}>\}[\text{Quantity}])$	Year-to-date quantity, prior year

5. Sheet: Defect Analysis – Vendors & Materials

Property	Value
Sheet ID	21416b3c-6624-409f-bc17-852f5645f32c
Title	Defect Analysis – Vendors & Materials
Description	Top vendors and materials driving defects, with cost impact
Published	No (draft sheet)
Created	26 February 2026

5.1 Purpose

This sheet answers the key procurement question: Which vendors and materials are responsible for the most defects, and what does that cost the business? It provides ranked views of the top 15 vendors and top 15 materials by both defect volume and defect cost, enabling procurement managers to target supplier quality improvement programs.

5.2 Filters

Two filter panels are placed on the sheet to allow drill-down analysis:

- Filter Panel 1 — Year, Vendor, Material: enables time-period filtering and direct vendor or material selection.
- Filter Panel 2 — Company Code, Plant, Business Area: enables entity and geographic filtering to compare performance across legal entities or manufacturing plants.

5.3 Charts

Chart Title	Type	Dimension(s)	Measure(s)	Purpose
Filter Panel	Filter Pane	Year, Vendor, Material	—	Allows users to filter all charts on the sheet by Year, Vendor, and Material
Filter Panel	Filter Pane	Company Code, Plant, Business Area	—	Secondary filter panel for Company Code, Plant, and Business Area
Defect KPIs	KPI Tile	None	# Defects, Defects, Cost Defective Products	Headline KPI tile showing top-level defect counts and cost impact
Top 15 Vendors by Defects	Bar Chart	Vendor	Defects	Horizontal bar chart ranking the top 15 vendors by total defect

Chart Title	Type	Dimension(s)	Measure(s)	Purpose
				volume, sorted descending
Top 15 Vendors by Cost of Defects	Bar Chart	Vendor	Cost Defective Products	Horizontal bar chart ranking the top 15 vendors by estimated cost of defective products
Top 15 Materials by Defects	Bar Chart	Material	Defects	Horizontal bar chart ranking the top 15 materials by total defect volume
Top 15 Materials by Cost of Defects	Bar Chart	Material	Cost Defective Products	Horizontal bar chart ranking top 15 materials by estimated defect cost impact
Top 15 Vendors by Cost of Defective Products	Bar Chart	Vendor	Cost Defective Products	Alternate vendor ranking chart filtered to top 15 by defect cost (library measure variant)
Top 15 Materials by Cost of Defective Products	Bar Chart	Material	Cost Defective Products	Alternate material ranking chart filtered to top 15 by defect cost (library measure variant)

5.4 Key Insights Enabled

- Identify the worst-performing vendors by both volume and cost — two separate rankings to distinguish high-frequency vs high-cost defect suppliers.
- Pinpoint which materials (e.g., screws, nuts) are most defect-prone across the entire supply base.
- Support vendor quality review meetings with objective, ranked data.
- Filter by company code or plant to localise vendor/material risk to specific entities.

6. Sheet: Defect Analysis – Cost & Trends

Property	Value
Sheet ID	ee82fa6c-ee53-49f1-9e19-894164cdbcbf
Title	Defect Analysis – Cost & Trends
Description	Cost of defects over time with trend analysis
Published	No (draft sheet)
Created	26 February 2026

6.1 Purpose

This sheet answers the strategic question: Are defect costs improving over time, and where does the cost burden sit within the business? It combines KPI snapshots with time-series and business-area breakdowns so leadership can track the effectiveness of quality initiatives and identify which parts of the organisation carry the most defect risk.

6.2 Filters

- Filter Panel 1 — Year, Vendor, Material: allows narrowing trend analysis to specific years or suppliers.
- Filter Panel 2 — Company Code, Plant, Business Area: allows entity-level trend comparison.

6.3 Charts

Chart Title	Type	Dimension(s)	Measure(s)	Purpose
Filter Panel	Filter Pane	Year, Vendor, Material	—	Allows users to filter all charts by Year, Vendor, and Material
Filter Panel	Filter Pane	Company Code, Plant, Business Area	—	Secondary filter panel for Company Code, Plant, and Business Area
Cost of Defects vs Cost of Goods YTD	KPI Tile	None	Cost Defective Products, Cost of Goods YTD CY	KPI comparing year-to-date cost of defects against total cost of goods
Defects YTD CY vs PY	KPI Tile	None	Defects YTD CY, Defects YTD PY	KPI comparing current year defects to prior year — shows improvement trend

Chart Title	Type	Dimension(s)	Measure(s)	Purpose
Cost of Defective Products & Total Defects	KPI Tile	None	Cost Defective Products, Defects	Combined KPI tile for absolute cost and volume of defects
Monthly Defects & Cost of Defects Trend	Combo Chart	Month	Defects (bar), Cost Defective Products (line)	Dual-axis combo chart showing monthly defect volume as bars and cost as a line overlay
Cost of Defects by Quarter	Line Chart	YearQuarter	Cost Defective Products	Line chart plotting cost of defective products by quarter for trend analysis
Defects CY vs PY by Year	Combo Chart	Year	Defects YTD CY (bar), Defects YTD PY (line)	Year-over-year comparison of defect counts — current vs prior year
Cost of Defects by Business Area	Bar Chart	Business Area	Cost Defective Products	Horizontal bar chart showing defect cost broken down by business area
Monthly Cost of Defects vs # Defects	Combo Chart	Month	Cost Defective Products (bar), # Defects (line)	Monthly cost vs count view enabling correlation analysis
Defect Trend by Quarter	Line Chart	YearQuarter	Defects	Quarterly defect count trend line for long-range pattern identification
Defects CY vs PY by Year	Combo Chart	Year	Defects YTD CY, Defects YTD PY	Second year-on-year comparison variant using library measure YTD expressions
Cost of Defects by Business Area	Bar Chart	Business Area	Cost Defective Products	Second business area cost breakdown (library measure variant)

6.4 Key Insights Enabled

- Track whether defect volumes and costs are on a sustained downward trajectory (positive trend confirmed: 71% reduction from 2017 peak to 2020).
- Compare current-year vs prior-year defect levels directly via YTD KPIs.
- Understand the quarterly and monthly rhythm of defects to identify seasonal or operational patterns.
- Break defect cost down by Business Area to inform budget allocation for quality programs.
- Use the Defects CY vs PY combo chart in board or executive presentations to demonstrate year-on-year improvement.

7. Usage Notes & Recommendations

7.1 Interactivity

All charts on both sheets are associatively linked via Qlik's in-memory engine. Selecting a value in any filter panel or clicking on a bar in any chart will immediately propagate the selection across all other charts on the sheet. To reset, click the eraser icon in the Qlik toolbar or use the Selections bar at the top of the sheet.

7.2 Publishing

Both sheets are currently in draft (unpublished) state. To make them available to other users in the app, a user with Manager or Owner rights must publish the sheets from the app overview. Published sheets are accessible to all users with access to the app.

7.3 Data Refresh

The SAP Procurement app was last reloaded on 12 October 2020. The data is a static demo dataset. To connect to live SAP data, a reload schedule and Direct Access Gateway or ODBC connection to the source system would need to be configured by an administrator.

7.4 Access

The sheets can be accessed directly using the following URLs:

Sheet	URL
Vendors & Materials	https://xxx.yy.qlikcloud.com/sense/app/a00e34a7-c017-478b-976e-643379e3b173/sheet/21416b3c-6624-409f-bc17-852f5645f32c/state/analysis
Cost & Trends	https://xxx.yy.qlikcloud.com/sense/app/a00e34a7-c017-478b-976e-643379e3b173/sheet/ee82fa6c-ee53-49f1-9e19-894164cdbcbf/state/analysis

7.5 Extending the Dashboard

- Additional dimensions such as Purchase Group or Material Group can be added to charts by referencing the relevant field names from the data model.
- New measures such as Defect Rate (# Defects / # Orders) or Cost per Defect (Cost Defective Products / # Defects) can be added as library measures and reused across both sheets.
- A third sheet focused on geographic analysis (vendor country / plant location mapping) would complement these two sheets for a full defect analysis suite.