

Improve spot margin performance vs. margin/volume forecast via analytics KPIs (analytics extension of CHEM-PS-3)

As a Pricing Analyst/Manager (primary) / Sales, Commercial, Finance leaders (secondary), I want to have the ability to analyse market conditions to adjust spot prices proactively, so I can:

- Improve spot business contribution margin.
- Eliminate manual errors and increase customer trust.
- Reduce margin compression due to out-of-date pricing

Business Objective: Spot pricing is typically updated on a frequent basis (weekly, monthly, quarterly), or ad-hoc as market, competitive, and internal annual business plans require. The goal is to improve short-term spot pricing (non-contract customers) based on specific monthly margin, revenue, and volume goals (per the annual operating plan / forecast). They will do this using real-time pricing tools that allow for frequent pricing changes due to regular cost and market index changes, margin expansion goals, and other competitive forces.

Complication:

- High frequency of underlying market cost changes
- Limited time to update data, complete models, review, and react
- Limited visibility into impact on margin and volume due to market cost changes
- Limited visibility into underperformance and recommendation for price improvements

Capability Needed:

- Detailed view of spot revenue, margin, volume performance over time by region/segment
- Trending detail on spot revenue, margin, volume performance against financial plan
- Force ranking by category of high/low performing customers and products

Benefit:

- Reduce possibility of margin compression by failing to pass on market cost changes
- Increase margin to stay in alignment with financial planning
- Increased alignment between pricing and sales teams

Functional Requirements

Build a dashboard containing the portlets shown below. It requires 2 sources of data: a standard transactions DM and a specific Chemicals Forecast Output datamart, see the Prerequisites below in the NFR section).

Portlet 1: Filters

Required filters:

- Customers and products, Start and End dates
- Advanced filters to allow further filtering on any dimension available in the DMs

Portlet 2: Spot Business Summary Total

Trends % on the left are based on the Chemicals Forecast Output datamart, the delta % is between the past 12 months (from sales history) vs the next 12 months from the forecast DM. Totals values on the right are the sum over the selected period.

Portlet 3: Spot Business Summary

Detailed version of portlet 2, grouped by on industry, region, product group.

Portlet 4: Margin time series

Histogram comparing previous 12 months (from sales history) vs next 12 months (from the forecast DM)

Portlet 5: Margin Pie Chart portlet

Margin, volume and revenue pie charts grouping customers in % of contribution bands (L-M-H) to the total. Clicking on 1 of the 3 bands opens a pie chart at individual customer level. When hovering over an individual customer pie share, detailed information is displayed.

Portlet 6: Month Guidelines By Region

Table grouped by customer segment and geography giving YTD volumes vs targets
Selecting a row on the left populates the next portlet.

Portlet 7: Customer Month Guidelines

Table grouped by individual customer and geography giving YTD volumes vs targets

Non-Functional Requirements

Prerequisites:

- Transactions data available in Pfx
- Cost data available in Pfx, to calculate margins
- Target revenues, volumes and margins available in Pfx
- Chemicals Forecast Output datamart available in Pfx: the data should be provided by the customer, it is typically based on a sales and operations planning process or an annual operating plan, prepared at a defined level of granularity. If this data is not available, this dashboard should not be built at all as it would serve no purpose.

Reporting and Dashboards

Not applicable

Measures, Calculation and Decision-Making Key Performance Indicators

Not applicable

Solution Design

- **Filters:**
 - Filters will be built based on the Transaction history datamart

Dashboard Settings

Select Dashboard

L.02. Chemicals Spot Price D... ▾

DATA FILTER

Customer(s)

Industry: Consumer ... 🔍

Product(s)

Industry: Chemicals 🔍

Start Date

01/05/2021 📅

End Date

28/02/2022 📅

- **Spot Business Summary Total** portlet
 - Total Revenue: Total Revenue from Start Date to End Date
 - Total Volume: Total Volume from Start Date to End Date
 - Total Margin: Total Margin from Start Date to End Date
 - Revenue Trend YTD: (YTD Current year – YTD Previous year) / YTD Previous year
 - Margin Trend YTD: (YTD Current year – YTD Previous year) / YTD Previous year

Spot Business Summary Total

Revenue Trend YTD: **-75.78%**
Margin Trend YTD: **-74.48%**
Volume Trend YTD: **-77.5%**

Total Revenue: **\$703,156,697.15**
Total Margin: **\$298,949,964.69**
Total Volume: **31,297,600**

- Volume Trend YTD: (YTD Current year – YTD Previous year) / YTD Previous year

- **Spot Business Summary** portlet: Detailed version, grouped by on industry, region, product group
 - Industry: Customer Industry
 - Region: Customer region
 - Product Group: Product group
 - Total Revenue: Total revenue from Start Date to End Date
 - Total Volume: Total Volume from Start Date to End Date
 - Total Margin: Total Margin from Start Date to End Date
 - Revenue Trend YTD: (YTD Current year – YTD Previous year) / YTD Previous year
 - Margin Trend YTD: (YTD Current year – YTD Previous year) / YTD Previous year
 - Volume Trend YTD: (YTD Current year – YTD Previous year) / YTD Previous year

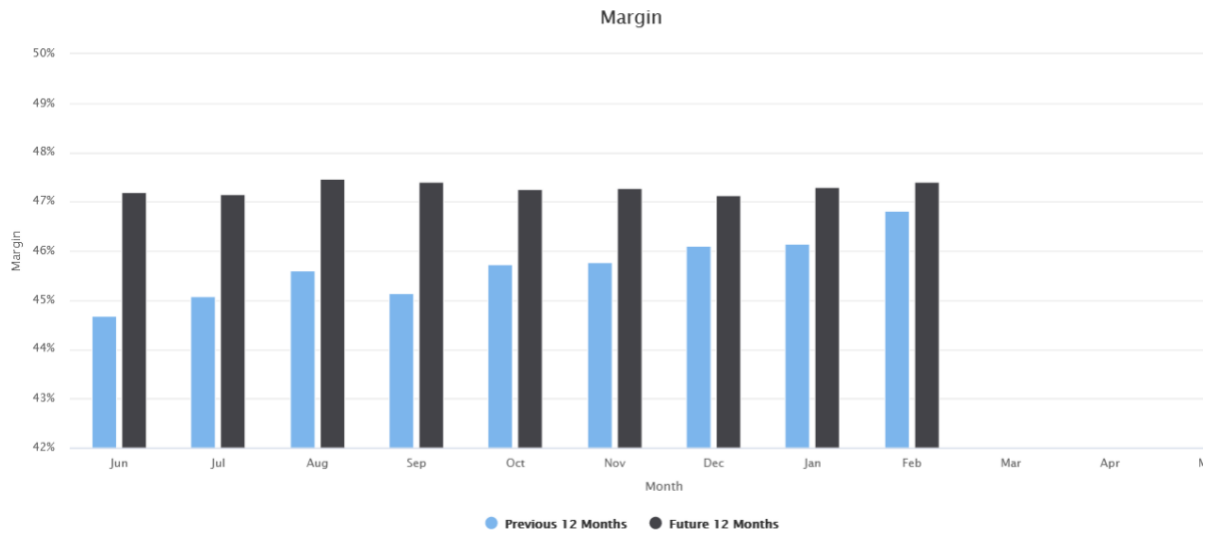
Spot Business Summary

Industry	Region	ProductGroup	Revenue Trend YTD	Margin Trend YTD	Volume Trend YTD	Total Revenue	Total Margin	Total Volume
Consumer & Industrial	EMEA	Speciality	▼ -78.08%	▼ -77.54%	▼ -80.02%	16,637,334.94	10,337,742.29	1,603,025
Consumer & Industrial	APAC	Commodity	▼ -75.42%	▼ -74.71%	▼ -78.98%	31,035,631.44	14,242,889.31	1,048,075
Consumer & Industrial	AMER	Commodity	▼ -75.88%	▼ -74.6%	▼ -77.88%	362,575,218.42	157,271,206.70	12,711,150
Consumer & Industrial	EMEA	Commodity	▼ -76.1%	▼ -74.5%	▼ -77.04%	147,344,128.52	65,134,775.31	5,432,375
Consumer & Industrial	AMER	Speciality	▼ -73.85%	▼ -73.32%	▼ -76.23%	42,698,341.87	26,330,464.85	4,213,925
Consumer & Industrial	APAC	Speciality	▼ -61.47%	▼ -60.05%	▼ -66.38%	3,789,904.74	2,416,905.24	350,000

- **Margin time series portlet:** Histogram comparing previous 12 months (from sales history) vs next 12 months (from the forecast DM)

- Use Highcharts to build the histogram
- Data are taken from Start Date to End Date from Sales History datamart and Forecast datamart
- Margin is calculated by month
- $\text{cost} = \text{revenue} - \text{Margin}$
- $\text{Margin \%} = (\text{revenue} - \text{cost}) / \text{revenue}$

Margin Time Series

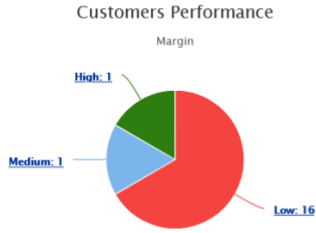


- **Margin Pie Chart portlet**

- Use Highcharts to build the histogram
- Data are taken from Sales History datamart
- The calculations are the same for Revenue, Margin and Volume. Below is an example for revenue
 - Group data by customer Id
 - Get max Revenue across customers
 - Get min Revenue across customers
 - $\text{high} = \text{max} - ((\text{max} - \text{min}) / 3)$
 - $\text{low} = \text{min} + ((\text{max} - \text{min}) / 3)$
 - Categorize the customers into the buckets

- Calculate total revenue

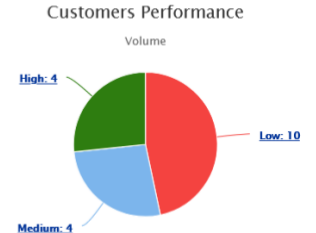
Margin Pie Chart



Revenue Pie Chart



Volume Pie Chart



- Calculate revenue contribution

- Month Guidelines By Region and Customer Month Guidelines**

- Customer Month Guidelines is an embedded portlet will be triggered by Month Guidelines By Region
- When user select a Segment on Month Guidelines By Region, Customer Month Guidelines will show data for the selected segment
- Data are taken from Sales History and Forecast datamart
- The Guidelines are calculated for the most recent full month
- Calculation details
 - Volume: Volume of the calculated month
 - Target CVM: (margin – rebates) / volume
 - Actual Margin: margin of the calculated month
 - Forecast margin: forecast margin of the calculated month

Month Guidelines By Region

Segment	Product Line	Region	February Vol	February Tgt CVM	February Target	February Act
<input type="radio"/> Cable ties & fasteners	Compounding Feedstock	North America	2,475	US\$3.93	US\$361,742.70	US\$11,019.05
<input type="radio"/> Cable ties & fasteners	Extrusion Grade	North America	11,225	US\$3.54	US\$848,777.60	US\$44,179.55
<input type="radio"/> Cable ties & fasteners	Injection Molding	North America	6,600	US\$5.81	US\$1,413,464.80	US\$41,740.32
<input type="radio"/> Cable ties & fasteners	Intermediates	North America	2,950	US\$177.71	US\$5,835,190.90	US\$603,478.98
<input type="radio"/> Cable ties & fasteners T...			23,250	US\$26.33	US\$8,459,176.00	US\$700,417.90
<input type="radio"/> Consumer goods	Extrusion Grade	North America	9,650	US\$3.52	US\$619,456.20	US\$38,542.76
<input type="radio"/> Consumer goods	Extrusion Grade	Europe	9,025	US\$4.01	US\$636,692.10	US\$41,296.15
<input type="radio"/> Consumer goods	Injection Molding	North America	2,825	US\$3.61	US\$926,823.70	US\$11,629.15
<input type="radio"/> Consumer goods	Injection Molding	Europe	750	US\$7.00	US\$1,168,882.00	US\$5,898.52

Customer Month Guidelines

Segment	Customer Id	Product Line	Region	February Vol	February Tgt CVM	February Target	February Act
Cable ties & fasteners	CH-0029	Compounding Feedstock	North America	1,775	US\$3.14	US\$80,609.10	US\$6,808.04
Cable ties & fasteners	CH-0031	Compounding Feedstock	North America	700	US\$5.91	US\$98,202.50	US\$4,211.01
Cable ties & fasteners	CH-0029	Extrusion Grade	North America	2,850	US\$3.31	US\$161,335.90	US\$10,368.62
Cable ties & fasteners	CH-0030	Extrusion Grade	North America	7,100	US\$3.50	US\$241,781.10	US\$27,763.04
Cable ties & fasteners	CH-0031	Extrusion Grade	North America	600	US\$3.29	US\$256,505.70	US\$2,115.05
Cable ties & fasteners	CH-0032	Extrusion Grade	North America	675	US\$5.18	US\$189,154.90	US\$3,932.84
Cable ties & fasteners	CH-0029	Injection Molding	North America	2,150	US\$7.85	US\$356,229.50	US\$17,957.76
Cable ties & fasteners	CH-0030	Injection Molding	North America	1,650	US\$3.74	US\$312,048.00	US\$6,772.40
Cable ties & fasteners	CH-0031	Injection Molding	North America	875	US\$5.19	US\$388,374.80	US\$4,892.03

Input Design

Out-of-scope business functions and features (Can be configured, but not included in the Chemical Industry Catalog)

Any metrics not described above

Implementation Level of Effort

2 sprints/1FTE CE

Prescribed User Stories

Use Story Name	I want to...	so I can ...	Acceptance criteria
Cost data	Load the existing cost data into a DM	Use it in the dashboard to compare against actuals	The cost data is available at the appropriate level of granularity to be used against history.
Forecast data	Load the existing forecast data into a DM	Use it in the dashboard to calculate margins	The forecast data is available at the appropriate level of granularity to be used against history. NB: If this data is not available, this dashboard should not be built at all as it would serve no purpose.
Filters	Define filters based on the dimensions available in the transaction history DM	Use them to drill up and own into detail as needed	All appropriate dimensions of the transaction DM are set as filters
Margin calculation	Calculate margins according to my standards, using the available cost data	See in the dashboard margins which are consistent with my organisation's definitions	The dashboard margin totals reconcile to the other reports in my organisation
YTD trends	Confirm the standard formulas to calculate trends are appropriate	See meaningful trends and take action as needed	Standard formula: $(YTD \text{ Current year} - YTD \text{ Previous year}) / YTD \text{ Previous year}$ To be applied to revenue, volume, margin