Price Setting: Improve price realization by simulating impact of mass price change scenarios

User Role: Sales, Pricing, or Product Manager or Analyst

Business Objective:

Our business seeks to keep performance at or above the business plan for the current year. However, changes in business conditions, for example increases in costs for raw materials, transportation, or distribution, have created a gap between expected and projected earnings performance for the remainder of the year. An immediate need exists to evaluate and implement pricing actions across an entire product, market, and/or geographic sector to bring expected business performance back on or above target for the year.

Complication:

- Targeting price changes at a granular level can be challenging
- 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:

- Evaluate options for price changes quickly
- Mass price change simulation including product, market, geography
- Connection to ERP or other system to publish/execute updated customer contract pricing

Benefit:

- Improved margins due to frequent/smart revisions on price setting vs. forecast planning
- Reduced margin compression with reduction in manual errors and timely pricing updates
- Increased margin with decision support

Functional Requirements

Using the chemicals live price grid described in CHEM03, add scenario tables and goal seeking functionality to simulate mass price changes.
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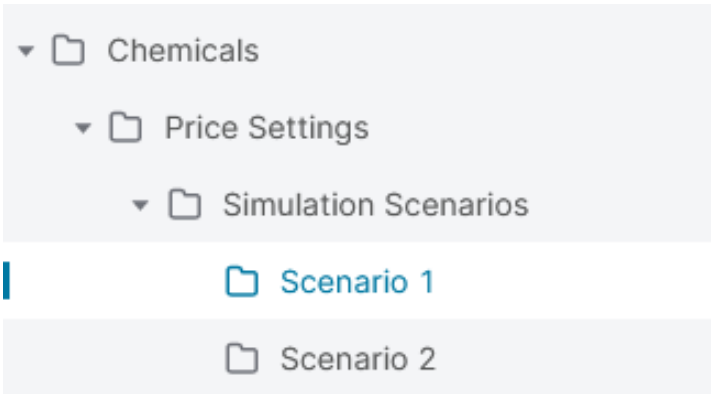
Scenario tables: add folders in the company parameter (CP) tables list, under the “Chemicals” header:



Each scenario contains the CP tables defined in CHEM03, with different values in scenario 1 vs scenario 2; example below for the Cost Plus Factor CP table:

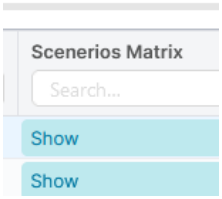
Company Parameter Values: Cost Plus Factor

Industry	Business Unit	Product Group	Plus %
Chemicals	Intermediates	Commodity	50.00%
Chemicals	Intermediates	Speciality	65.00%
Chemicals	Resin	Commodity	35.00%
Chemicals	Resin	Speciality	40.00%

Company Parameter Values: Cost Plus Factor

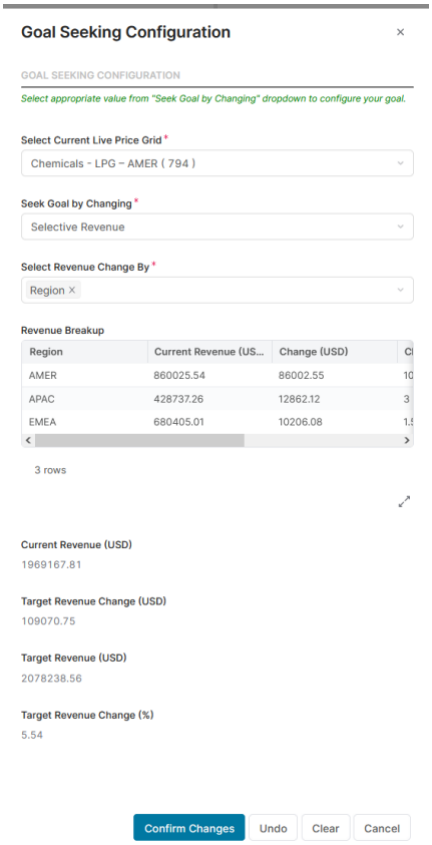
Industry	Business Unit	Product Group	Plus %
Chemicals	Intermediates	Commodity	20.00%
Chemicals	Intermediates	Speciality	15.00%
Chemicals	Resin	Commodity	25.00%
Chemicals	Resin	Speciality	30.00%

Scenarios can be compared within the LPG using the “Show” button located in the “Scenarios Matrix” field:

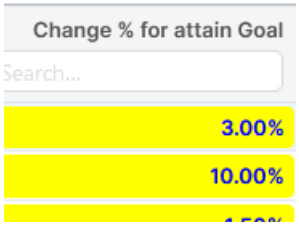


This brings up a table comparing all the scenarios.

Goal seeking: configure the LPG to handle goal seeking to the user sees the window below:



Once the user has entered all the changes in this window, the LPG should be recalculated to display the new change % by material:



Non-Functional Requirements

Reporting and Dashboards

Not applicable

Measures, Calculation and Decision-Making Key Performance Indicators

There are no new or additional calculations in this use case. Since this is price change simulation, all calculations exist already in other use cases

Solution Design

Pricefx's data structures allow for duplicate versions that can be modified and managed independently from others. Meaning that simulation versions can be created alongside the primary ones to enable this use case.

1. Create the scenario simulation data structures

To do this, create a new set of folders, as highlighted in the requirements. The names of the folders don't matter. Create one folder for each simulation scenario that you want to enable. A realistic limit here is about 3 – more than that and performance will degrade and the UI will get chaotic. All that needs to be done here is to replicate any existing Company Parameter tables that impact pricing – preferably limited to those with simulation factors – into these new folders. Certain tables will make sense to be part of a simulation scenario and others will not. More static elements like costs or <something> won't necessarily make sense to be part of a simulation since they're not under the user's control. Elements like percent mark ups or surcharges will make sense since those are the types of elements that might be adjusted to help hit targets.

Cost to serve elements could also be included here, though those are not often variable for in major price changes.

2. In the price setting logic, create the scenario outputs

Create a new logic element(s) in the LPG / price list logic for the simulation results. The approach in the demo uses a single element with an expandable matrix. The matrix shows data from the simulation, including Cost, Base Price (original / current price), amount of the price change, % delta in price, and other waterfall element contributions to the price calculation. The minimum set here would be current price, new price and a delta field, but the user will be able to define what information is useful to visualize in the output matrix.

This output could also be shown in individual elements within the price setting object, but keep in mind that price setting objects only allow 100 columns in each object, so use them wisely.

3. Variability points – places where requirements might differ

First and foremost for this use case is when the scenarios are run. Scenarios can be run on every price setting calculation, but that will have a toll on performance. More likely, a selector that determines whether to use the scenario data at all should exist. This might exist in an LPG / PL header (a checkbox or a scenario selector, see below) or in a company parameter table – again either a Yes / No selector for simulations and/or a scenario selection option. These selections would need to be recognized in the logic (pulled from the header or the table) and then the simulation "behavior" would execute when they're used. The primary price calculations could even be skipped when in "simulation mode."

One of the main distinctions for this use case will be in the metrics that are used to evaluate each simulation and potentially the use of goal seeking (below). Most of the metrics for the simulation are likely already being calculated for the prices, so no additional logic is needed, just a reflection of these elements in the scenario outputs matrix (above). The elements in that matrix could vary greatly depending on what's valuable to the user.

A second variability point is around the number of scenarios. Users may want to select one of several available scenarios (table sets) or compare scenarios against one another in the scenario outputs matrix. Selecting scenarios is somewhat more complicated – a selector would need to be created, either in an LPG / PL header or in a company parameter table that allowed the user to select the scenario to be run.

Also, if the price setting object has a header, particularly if there's a way to select a "simulation mode" of the object, the calculation outputs may want to display the impacts to revenue, margin or any other KPI of the simulation. In a "simulation mode" set, the metrics shown for the object overall could be set to show the simulation KPIs rather than the standard ones based on price calculations.

4. Goal seeking and attainment

The primary use case here displays a target metric for the price change simulation. This is pulled from the price setting object configuration (created via a user entry input) or from a table (more likely) and shown in the object. More likely this will be pair with a calculated metric and perhaps a delta field so that the user can see the current state of the target metric and how far it is from achievement.

Input Data

No additional input data is needed for this use case other than the simulation scenario tables covered in the requirements and design.

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

Implementation Level of Effort

.5 sprints dev time for the "base case" – no variability points

Prescribed User Stories

Use Story Name	I want to…	so I can …	Acceptance criteria
Epic: As a Pricing Manager/Pricing Administrator, I want to set up several scenarios covering several price, volume, revenue or cost hypotheses, so I can compare them to help decide which prices to increase and by how much.			
Metric definition	Define the appropriate metrics for my business	Adjust them in each scenario to see their impact on costs, volumes, revenues, prices etc	The chosen metrics are relevant to the business context under consideration
Metric tables	Have a table for each metric and scenario to store values I want to work with	Use them in the calculation of costs, volumes, revenues, prices etc.	Each metric has its own table with appropriate fields for each scenario, e.g. - Dimensions: dates, geographies, product or customer groupings… - Values: absolute, % variation, factors…
Epic: : As a Pricing Manager/Pricing Administrator, I want to see KPIs in the LPG I use to compare scenarios			
LPG Header KPIs	Define the appropriate header level KPIs for my business	Use them to validate the overall LPG	Examples: current and future revenues, margins, margin %…
LPG Line KPIs	Define the appropriate line level KPIs for my business	Use them to validate each line of the LPG	KPIs to be displayed in columns Examples: current and future revenues, margins, margin %, detailed cost, price, volume values…
Epic: As a Pricing Manager/Pricing Administrator, I want to see KPIs in the scenario comparison window of the LPG I use to compare scenarios			
Scenario comparison KPIs definition	Define the appropriate KPIs to compare scenarios with	Use them to choose the best scenario	KPIs will be displayed in columns/fields Examples: current and future revenues, margins, margin %, detailed cost, price, volume values… Describe how they are calculated/sourced
Epic: As a Pricing Manager/Pricing Administrator, I want to use the goal seeking functionality in my LPG			
Configure the “Revenue Change By” setting for goal seeking	Define the appropriate dimension in my goal seeking settings	Use the goal seeking functionality in a relevant way	Any LPG output field can be used and will show in the drop down list for the user to choose from

