Procurement Analytics

Automotive Accessories Manufacturer

Partnered with the client to identify opportunities for savings and informed procurement decision making with the help of an automated dashboarding suite. As part of this, streamlined the process to centrally track the procurement contracts and spend across plants, analyze the spend, payment terms, POs, etc.

Procurement Analytics for an Automotive Accessories Manufacturer

Situation

- Given the widespread manufacturing footprint and plant-level sourcing, corporate procurement team had limited visibility into procurement processes. There was an opportunity at a company level to analyze the spend better, track pricing trends, and identify savings opportunities
- Partnered with the client to identify opportunities for savings in procurement spend and enable informed decision making with the help of an automated dashboarding suite. As part of this, process was streamlined to centrally track procurement contracts, spend across plants, analyze the spend, payment terms, etc.

Accordion Value Add

- Built automated data flows to consolidate and integrate purchase orders, supplier invoices and payments data from multiple ERP systems (Microsoft Dynamics GP, Infor Visual, Traverse, Sage 500, etc.) and legacy databases into a central data repository for further analysis
- Created a central contracts repository to streamline the process of tracking new contracts and setup automated reminders with respective contract owners for contract negotiation, renewals and pricing updates on a monthly basis using 'Power Automate'
- Built the spend cube to provide visibility into the spend by commodity, vendor, and plant. Analyzed the Purchase Price Variance (PPV) to quantify the impact of pricing changes and benchmarked the same against the commodity pricing trends to help the team identify savings opportunities, manage vendor performance and risks
- Analyzed the vendor payment terms to identify payment trends, gaps in leveraging current credit days or discount terms, and identified the potential saving opportunities by rationalizing payment terms across plants and suppliers

Impact

- Analyzing the spend cube highlighted that top 8% of the suppliers accounted for 80% of the total spend highlighting an opportunity to diversify the supplier base and have centralized contracts across plants enabling better negotiating power
- Reconciliation of contracts with the supplier invoices highlighted inconsistencies in the invoices of $500K either due to mismatch with contract price or payment terms agreed in the contract
- Sized a savings opportunity of $400K by rationalizing the payment terms by vendor and commodity by timely payments to vendors (against paying early)

Analytical Solutions – Procurement Analytics

SPEND CUBE

- Analyzed procurement spend by Plant, Commodity, and Vendor highlighting diversification
- Data driven commodity management
- Sustainable Procurement savings through strategic sourcing and optimization of supply base

PURCHASE PRICE VARIANCE

- Analyzed the purchase price trends at a commodity level and quantified the financial impact
- Benchmarked the pricing trends with the commodity indexes to validate the pricing changes

CONTRACTS PRICE AUDITS

- Audited the compliance between PO prices, invoiced prices, and contracted prices for accurate spend
- Ensured consistency across purchase managers, commodities, and suppliers

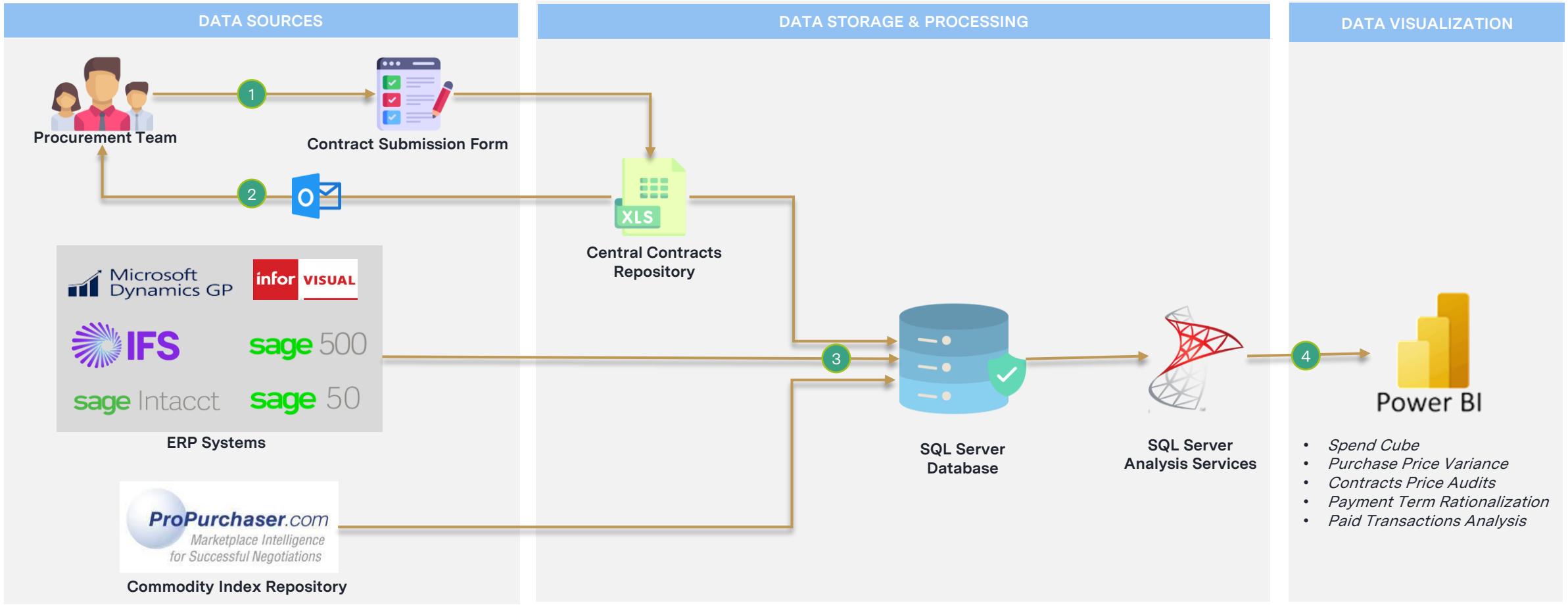
PAYMENT TERMS RATIONALIZATION

- Analyzed latest payment terms and identified opportunity for rationalization
- Provided visibility into best payment terms across vendors of same commodity or for same vendor across various plants to size the savings opportunity

PAID TRANSACTIONS ANALYSIS

- Analyzed payment trends to identify under-utilization of credit across plants, commodities, and suppliers as per payment terms
- Identified opportunities to maximize savings

Methodology/ Approach – Procurement Data Flow

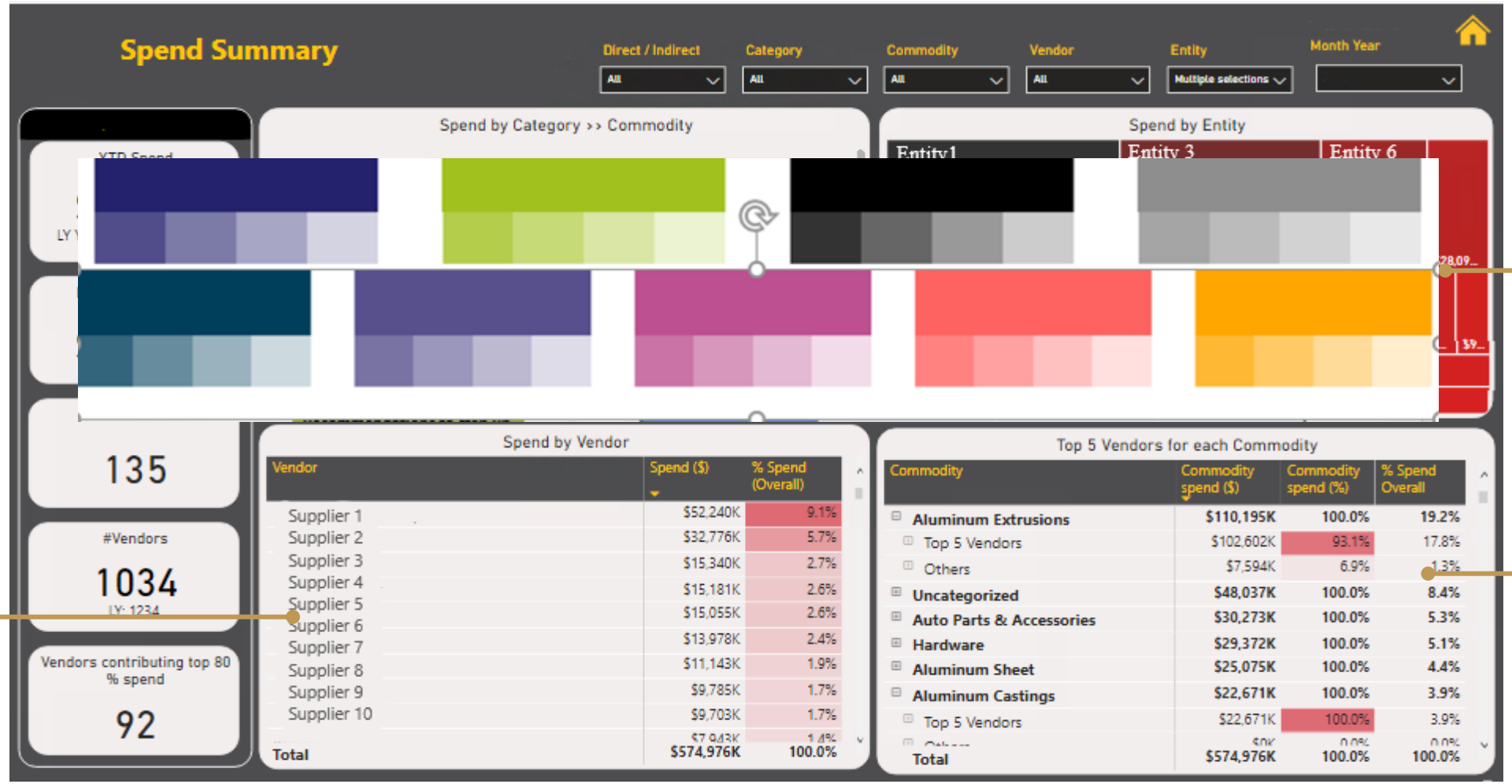


1. Ingested Purchase contracts/Price agreements from the Procurement team to the central contracts repository through a Microsoft form hosted on SharePoint
2. Setup automated reminders with respective contract owners for contract negotiation, renewals, and price revisions
3. Collated and ingested contracts, Purchase orders, Invoices, Payments, Commodity pricing data from multiple sources using SSIS and Python to SQL Server data repository
4. Built data models by leveraging Analysis Services (SSAS) to build Procurement metrics. Designed dashboards to automate and homogenize reporting, data analysis

Exhibit #1 – Spend Cube Dashboard

ILLUSTRATIVE

Analysis of historical spend across 3 dimensions – Commodity, Supplier and Plant. Spend Cube provides insights into category-level spend management, supplier relationship management, tail-end management and contracted spend-coverage.



Identified top suppliers and their spend distribution

Spend distribution by Plant

Key suppliers for each Commodity and the level of consolidation in supplier base

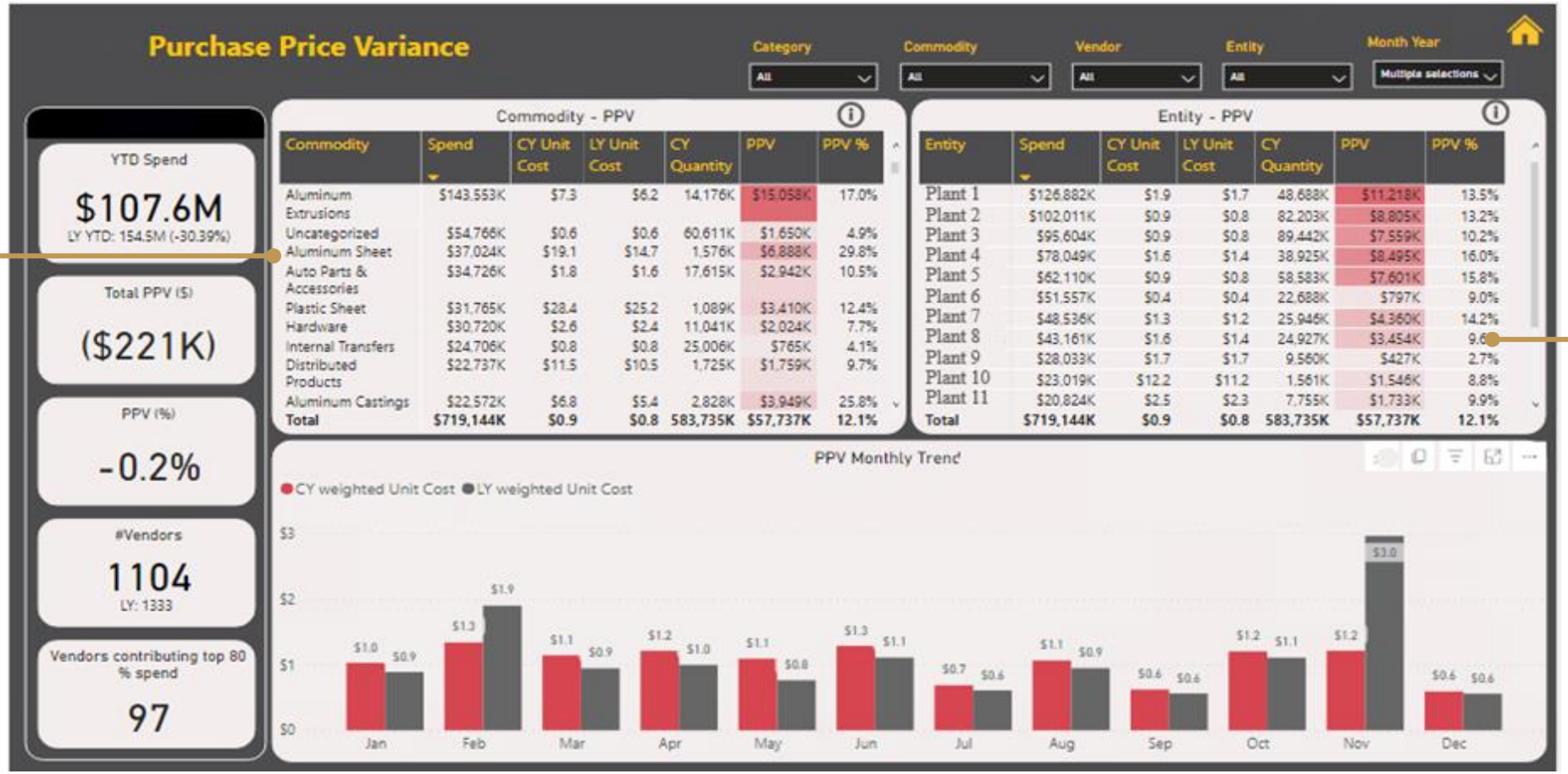
Exhibit #2 – Purchase Price Variance

ILLUSTRATIVE

Purchase price variance (PPV), calculated as the difference between the current cost on an item and the baseline cost (previous period actual amount paid to procure item). **Provides visibility into the impact of price change on overall procurement spend.**

$$\text{Purchase Price Variance} = \frac{\sum_{All\ Items}(Price_t - Price_{t-1}).Quantity_t}{Total\ Spend_t}$$

PPV by commodity and its key driver – ΔPrice, Quantity



PPV by Plant

Exhibit #3 – Contracts Price Audits

ILLUSTRATIVE

3-step price compliance check to identify any price variances between **negotiated contracts, purchase orders raised by plants and invoices created by vendors**. Price audits help identify transactions that are not in compliance with the expected item costs and benchmarks compliance among plants, contract owners and suppliers to identify trends.

Invoice vs. contract price comparison to check if suppliers are honouring the negotiated prices

PO vs Contract price comparison to check if purchase managers are leveraging the negotiated prices

Invoice vs. PO price comparison to identify inconsistencies in transactions

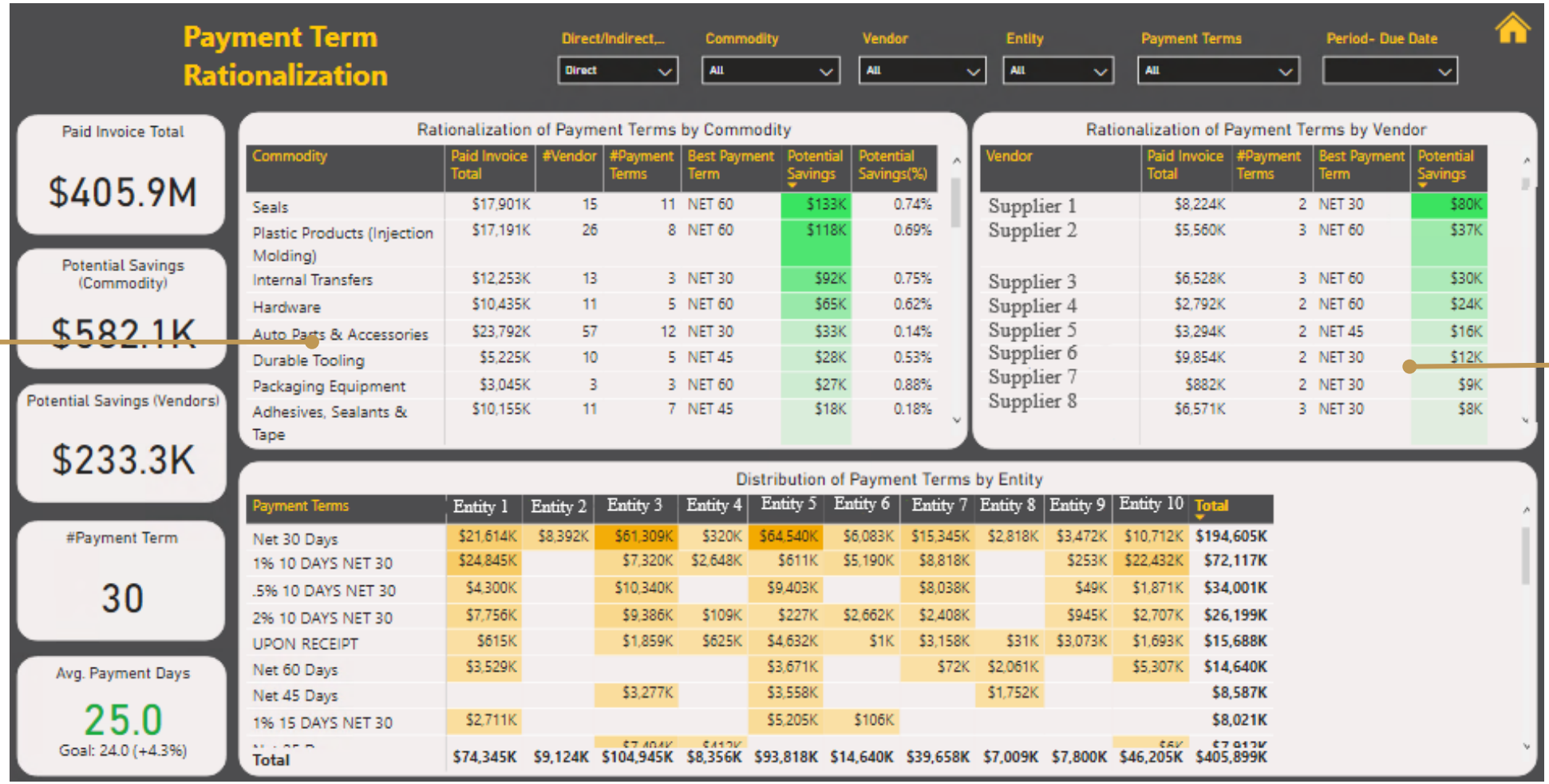
Summary by Vendors			Invoice vs Contract as of (Invoice Date) Comparison					PO vs Contract Price (as of PO Date) Comparison					Invoice vs PO Comparison			
Vendor Name	Entity	Month	Total Amount ($)	Actual Amount - Contracted Items ($)	Expected Amount as per Contract	Variance ($)	Variance (%)	Total Amount ($)	Actual Amount - Contracted Items ($)	Expected Amount as per Contract	Variance ($)	Variance (%)	Invoice Total Amount ($)	PO Total Amount ($)	Variance ($)	Variance (%)
Supplier 1			$150,172	$150,172	$150,172	$0	0.0%	$150,172	$135,192	$135,192	$0	0.0%	$135,192	$135,192	$0	0.0%
Supplier 2			$338,920	$313,489	$310,307	-$3,182	-1.0%	$358,250	$329,191	$306,279	-$22,912	-7.5%	$309,399	$329,191	$19,792	6.0%
Supplier 3			$1,167,319	$437,804	$438,497	$693	0.2%	$1,166,245	$247,684	$248,514	$830	0.3%	$247,688	$247,684	-$4	0.0%
Supplier 4			$106,436	$45,193	$45,195	$2	0.0%	$106,436	$35,788	$35,610	-$178	-0.5%	$35,788	$35,788	$0	0.0%
Supplier 5			$327,797	$205,247	$200,618	-$4,629	-2.3%	$327,476	$205,043	$200,618	-$4,425	-2.2%	$205,247	$205,043	-$204	-0.1%
Supplier 6			$236,675	$235,978	$234,198	-$1,780	-0.8%	$236,675	$202,225	$202,225	$0	0.0%	$202,225	$202,225	$0	0.0%
Supplier 7			$115,315	$9,632	$10,776	$1,144	10.6%	$91,235	$0		$0		$0	$0	$0	
Supplier 8			$7,581,505	$7,364,102	$7,299,229	-$64,873	-0.9%	$7,309,178	$7,089,027	$7,221,949	$132,921	1.8%	$7,357,629	$7,089,027	-$268,602	-3.8%

Exhibit #4 – Payment Term Rationalization

ILLUSTRATIVE

Analysis of latest payment terms to identify opportunities to streamline **and harmonize the terms among suppliers.** This provides visibility into best term across vendors of same commodity or for same vendor across plants to identify suppliers **where negotiating better terms would have the largest impact.**

Spread of payment terms within each commodity and the financial impact of rationalizing to the best term



Rationalization of Payment Terms by Commodity

Commodity	Paid Invoice Total	#Vendor	#Payment Terms	Best Payment Term	Potential Savings	Potential Savings(%)
Seals	$17,901K	15	11	NET 60	$133K	0.74%
Plastic Products (Injection Molding)	$17,191K	26	8	NET 60	$118K	0.69%
Internal Transfers	$12,253K	13	3	NET 30	$92K	0.75%
Hardware	$10,435K	11	5	NET 60	$65K	0.62%
Auto Parts & Accessories	$23,792K	57	12	NET 30	$33K	0.14%
Durable Tooling	$5,225K	10	5	NET 45	$28K	0.53%
Packaging Equipment	$3,045K	3	3	NET 60	$27K	0.88%
Adhesives, Sealants & Tape	$10,155K	11	7	NET 45	$18K	0.18%

Rationalization of Payment Terms by Vendor

Vendor	Paid Invoice Total	#Payment Terms	Best Payment Term	Potential Savings
Supplier 1	$8,224K	2	NET 30	$80K
Supplier 2	$5,560K	3	NET 60	$37K
Supplier 3	$6,528K	3	NET 60	$30K
Supplier 4	$2,792K	2	NET 60	$24K
Supplier 5	$3,294K	2	NET 45	$16K
Supplier 6	$9,854K	2	NET 30	$12K
Supplier 7	$882K	2	NET 30	$9K
Supplier 8	$6,571K	3	NET 30	$8K

Distribution of Payment Terms by Entity

Payment Terms	Entity 1	Entity 2	Entity 3	Entity 4	Entity 5	Entity 6	Entity 7	Entity 8	Entity 9	Entity 10	Total
Net 30 Days	$21,614K	$8,392K	$61,309K	$320K	$64,540K	$6,083K	$15,345K	$2,818K	$3,472K	$10,712K	$194,605K
1% 10 DAYS NET 30	$24,845K		$7,320K	$2,648K	$611K	$5,190K	$8,818K		$253K	$22,432K	$72,117K
.5% 10 DAYS NET 30	$4,300K		$10,340K		$9,403K		$8,038K		$49K	$1,871K	$34,001K
2% 10 DAYS NET 30	$7,756K		$9,386K	$109K	$227K	$2,662K	$2,408K		$945K	$2,707K	$26,199K
UPON RECEIPT	$615K		$1,859K	$625K	$4,632K	$1K	$3,158K	$31K	$3,073K	$1,693K	$15,688K
Net 60 Days	$3,529K				$3,671K		$72K	$2,061K		$5,307K	$14,640K
Net 45 Days			$3,277K		$3,558K			$1,752K			$8,587K
1% 15 DAYS NET 30	$2,711K				$5,205K	$106K					$8,021K
Total	$74,345K	$9,124K	$104,945K	$8,356K	$93,818K	$14,640K	$39,658K	$7,009K	$7,800K	$46,205K	$405,899K

Identifying gaps in terms offered by the suppliers to the sourcing units