Pilsner Urquell

LEGO

Loblaws

SHOPPERS DRUG MART

SPIN MASTER™

Wakefield

Rexall

BATH FITTER®

GIANT TIGER

ROGERS™

LCBO

LAURENTIAN BANK

BERLIN BRANDS GROUP®

ARTERRA WINES CANADA

WESTON FOODS

IKEA

CANADIAN TIRE

Retail Offers	
Clickstream Analytics	Analyze digital channel customer behavior, to better understand customer actions through ecommerce properties. What products are being searched / browsed? What is being carted but not purchased? Use insights to improve design and marketing, to improve customer experience and increase sales.
Theft Loss Prevention	Through analysis, detect patterns and quantifying internal theft. Through items-per-minute (IPM) analysis, discount card patterns, overrides / price reductions, detect theft patterns. Present patterns in intuitive and consumable reports for the retailer loss prevention team to be able to action.
Out of Stock Forecast	Dynamically and efficiently visualize the supply chain across their retail network. Using supply chain metrics, implement a predictive model to accurately predict out-of-stocks at the store level 1-2 days in advance. Trigger actions to proactively prevent out of stock states.
Scrap Prediction and Order Planning	Through models, provide insights to prevent product losses at stores. Determine the underlying factors contributing to higher scrap rates. Improve ordering strategies to mitigate scrap. Particularly relevant for perishable goods.
Enterprise Cost Harmonization	Consolidate cost structures across multiple business entities (different retail properties or with new acquisitions). Identify new distribution methods across entities that leverage available distribution channels, to simplify fulfillment processes and reduce costs.
Revenue / Payment Forecasting	Predict future revenue based on historical performance and insights collected from external data. Perform predictions at the customer level, rolled up to business entity. Predict future revenue more accurately, and for loyalty customers predict loyalty payment costs more accurately.
1Guard	Monitor shipments for real time analytics. Track location, shock / tilt, temperature, humidity, package opening, etc shipment telemetry, globally and in real-time, for high value product shipments.
OptiSuite	Leverage Adastra OptiPlan to optimize workforce efficiency. Leverage Adastra OptiFit to optimize shipping and storage space utilization. Leverage Adastra OptiRoute to optimize routing.
Aris	Uses Natural Language Processing and AI to manage incoming customer support requests, automatically handling and / or routing requests. Supports real time enterprise system integration, Reduces manual intervention for customer support by >50%, optimizing resources and lower support costs.
Virtual Store	Leverage Adastra's Virtuloc platform to create a compelling virtual store environment. Creates a Metaverse space through which customers can navigate a fully customizable 3D online store, with custom avatar's. Seamlessly integrates to ecommerce actions and live agent interactions.

KPI Report @ Supermarket Chain

Division	Sales Organization	Distribution Channel	Site Number	Regional VP	District Manager	CES Specialist	
All	All	All	All	All	All	Enter Full Screen Mode / All	Clear All

FILTERS

Select All	Baby	Bulk	Dairy	Frozen	Grocery	HBA	Natural Foods	OTC

Metric	Daily	Targets	WTD	LCW	PTD	QTD	YTD
Credits ($)	9,449.96	--	154,120.48	333,650.05	487,770.53	487,770.53	8,950,032.12
Cycle Count Compliance %	84.97	100.00	79.79	82.85	81.74	81.74	81.06
Manual Orders %	12.87	14.80	13.13	13.35	12.75	13.13	12.42
Promo Hole %	20.86	20.00	20.51	19.84	20.09	20.09	18.46
Reclamation (Unit)	8.55	9.75	3.06	7.88	23.61	0.49	142.89
Repeat Picklist (Count)	16,242.00	0.00	162,923.00	102,830.00	60,093.00	162,923.00	2,448,923.00
Scrapping - Stale Dated ($)	132,805.02	3,365.35	506,816.11	924,891.44	1,431,707.55	1,431,707.55	27,538,499.07
SFW Availability %	98.74	98.50	98.42	98.46	98.39	98.39	98.33

PD Variance to Target

Cycle Count Compliance %	Manual Orders %	Promo Hole %
-15.03	-1.93	0.86
Reclamation (Unit)	Repeat Picklist (Count)	Scrapping - Stale Dated ($)
-1.20	16,242.00	129,439.67
	SFW Availability %	
	0.24	

Top 25 Articles (PD):

Manual Orders %	Promo Hole %	Scrapping - Stale Dated ($)	Repeat Picklist (Count)

Credits ($)	Cycle Count Compliance %	Manual Orders %	Promo Hole %	Reclamation (Unit)	Repeat Picklist (Count)	Scrapping - Stale Dated ($)	SFW Availability %

Total View	Credits ($)	Cycle Count Compliance %	Manual Orders %	Promo Hole %	Reclamation (Unit)	Repeat Picklist (Count)	Scrapping - Stale Dated ($)	SFW Availability %
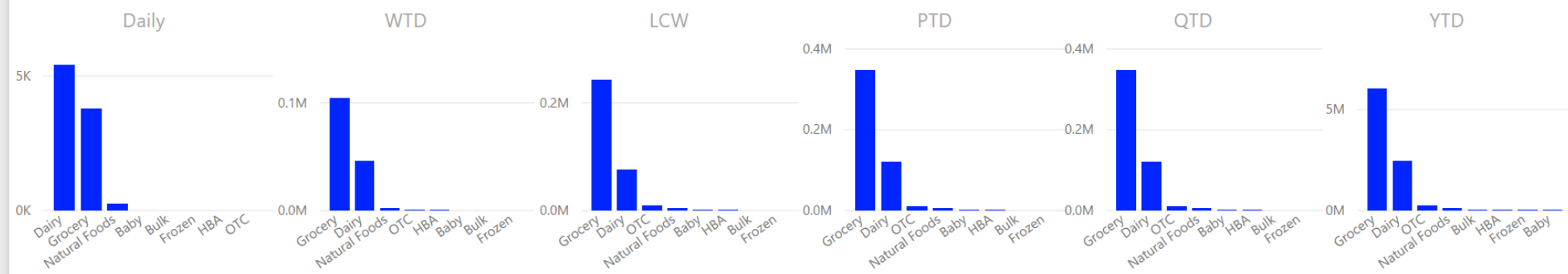
Product Analysis @ Supermarket Chain

Power BI Retail Report @ Canadian Retailer

Product Rankings (By Revenue)
Filtered : For Year(s): 2020 & For Month(s): CM

Region / TSM
- Select all
  - Central
  - Corporate Accounts
  - East
  - National Accounts
  - West

Customer Hierarchy
- Select all
  - Automotive
  - Commercial
  - Industrial
  - New Car Dealer
  - Retail
  - Tolling & Other

Product Hierarchy
- Select all
  - Lubes

2020	2019	2018		Jan	Feb	Mar	Apr	CM	Jun	Jul	Aug	Sep	Oct	Nov	Dec

Trailing 10 Products (by YoY Revenue Variance)

Product	YoY Rev. Var.	Revenue	Revenue LY	YoY Vol. Var.	Volume	Volume LY	YoY G.M. Var.	G.M.	G.M. LY
ACDelco Full Synthetic 5W30 dexos1Gen2 Bulk	-134,337	329,568.20	463,906	-55,883	126,757	182,640	-22,807	108,610.57	131,417
Castrol CRB Multi 15W40 CK-4, Bulk	-90,124	89,566.55	179,691	-36,640	29,855	66,495	-31,879	32,430.29	64,310
Castrol Edge 5W20 3x5 L	-178,036	153,023.52	331,059	-36,135	27,765	63,900	-93,344	73,015.60	166,360
Castrol Edge 5W30 3x5 L	-245,707	318,207.17	563,914	-52,455	59,220	111,675	-129,343	146,778.30	276,121
Castrol Edge 5W40 3x5 L	-79,561	182,818.74	262,379	-16,575	33,255	49,830	-44,955	76,645.76	121,601
Castrol GTX Ultraclean 5W20 Bulk	-90,944	480,788.63	571,732	-37,233	185,029	222,262	-44,718	194,065.63	238,783
USE-UP Castrol Edge Pro LL-03 5W30 6x946ml (1530...	-76,026		76,026	-9,598		9,598	-34,068		34,068
USE-UP Castrol Edge Pro OE 5W40 502.00 Bulk	-583,771		583,771	-119,353		119,353	-327,913		327,913
USE-UP Castrol Edge Professional LL IV FE 0W20 (15...	-92,662		92,662	-10,272		10,272	-31,702		31,702
USX Transmax ATF +4 6x1Qt (06810) (15A9FA)	-147,205		147,205	-34,328		34,328	-2,419		2,419

Growing 10 Products (by YoY Revenue Variance)

Product	YoY Rev. Var.	Revenue	Revenue LY	YoY Vol. Var.	Volume	Volume LY	YoY G.M. Var.	G.M.	G.M. LY
Castrol GTX Magnatec 0W20 Bulk	192,086	328,046.97	135,960	61,390	94,543	33,153	69,897	135,405.71	65,508
Castrol Edge 5W30 Costco DRP - 3 Layer	181,548	385,499.52	203,952	26,880	60,480	33,600	87,199	199,373.02	112,174
Castrol Edge 5W20 Costco DRP - 3 Layer	180,375	299,832.96	119,458	27,360	47,040	19,680	91,547	157,848.21	66,301
Castrol Edge 0W20 3X5L (153DC3)	64,683	251,902.07	187,219	11,130	46,485	35,355	86,954	107,052.49	20,099
Castrol GTX 5W30 Costco DRP - 3 Layer	60,736	104,296.32	43,560	15,360	27,360	12,000	29,488	49,170.72	19,683
Castrol GTX High Mileage 5W20 3X5 L	58,686	82,981.29	24,295	15,855	21,645	5,790	25,049	37,820.04	12,771
Castrol GTX High Mileage 5W30 3X5 L	57,926	77,205.95	19,280	15,630	20,130	4,500	24,689	34,917.57	10,229
Castrol GTX Magnatec 0W20, 1x205 L	55,303	55,303.15		13,325	13,325		21,111	21,111.24	
Castrol Edge Professional V 0W-20 Bulk	53,997	59,378.62	5,382	6,353	6,953	600	21,694	23,063.94	1,370
Castrol GO! 4T Motorcycle 10W40 12X1 L	49,313	83,950.95	34,638	11,052	19,224	8,172	11,636	23,571.16	11,936

Top 10 Products (by Revenue)

Product	Revenue	Revenue LY	YoY Rev. Var.	Volume	Volume LY	YoY Vol. Var.	G.M.	G.M. LY	YoY G.M. Var.
Castrol GTX Ultraclean 5W20 Bulk	480,788.63	571,732	-90,944	185,029	222,262	-37,233	194,065.63	238,783	-44,718
Castrol Edge 5W30 Costco DRP - 3 Layer	385,499.52	203,952	181,548	60,480	33,600	26,880	199,373.02	112,174	87,199
Castrol GTX Ultraclean 5W30 Bulk	336,265.50	405,813	-69,548	128,777	156,734	-27,957	133,648.08	174,000	-40,352
Castrol GTX Ultraclean 5W30 3X5 L	333,676.04	348,385	-14,709	109,470	122,205	-12,735	126,270.60	122,957	3,313
ACDelco Full Synthetic 5W30 dexos1Gen2 Bulk	329,568.20	463,906	-134,337	126,757	182,640	-55,883	108,610.57	131,417	-22,807
Castrol GTX Magnatec 0W20 Bulk	328,046.97	135,960	192,086	94,543	33,153	61,390	135,405.71	65,508	69,897
Castrol Edge 5W30 3x5 L	318,207.17	563,914	-245,707	59,220	111,675	-52,455	146,778.30	276,121	-129,343
ACDelco Full Synthetic 0W20 dexos1Gen2 Bulk	303,085.80	322,513	-19,427	112,254	122,164	-9,910	95,675.12	96,767	-1,092
Castrol Edge 5W20 Costco DRP - 3 Layer	299,832.96	119,458	180,375	47,040	19,680	27,360	157,848.21	66,301	91,547
Castrol GTX Ultraclean 5W20 3X5 L	275,259.39	249,477	25,782	89,835	87,240	2,595	107,085.25	90,867	16,218

Power BI Retail Report @ Canadian Retailer
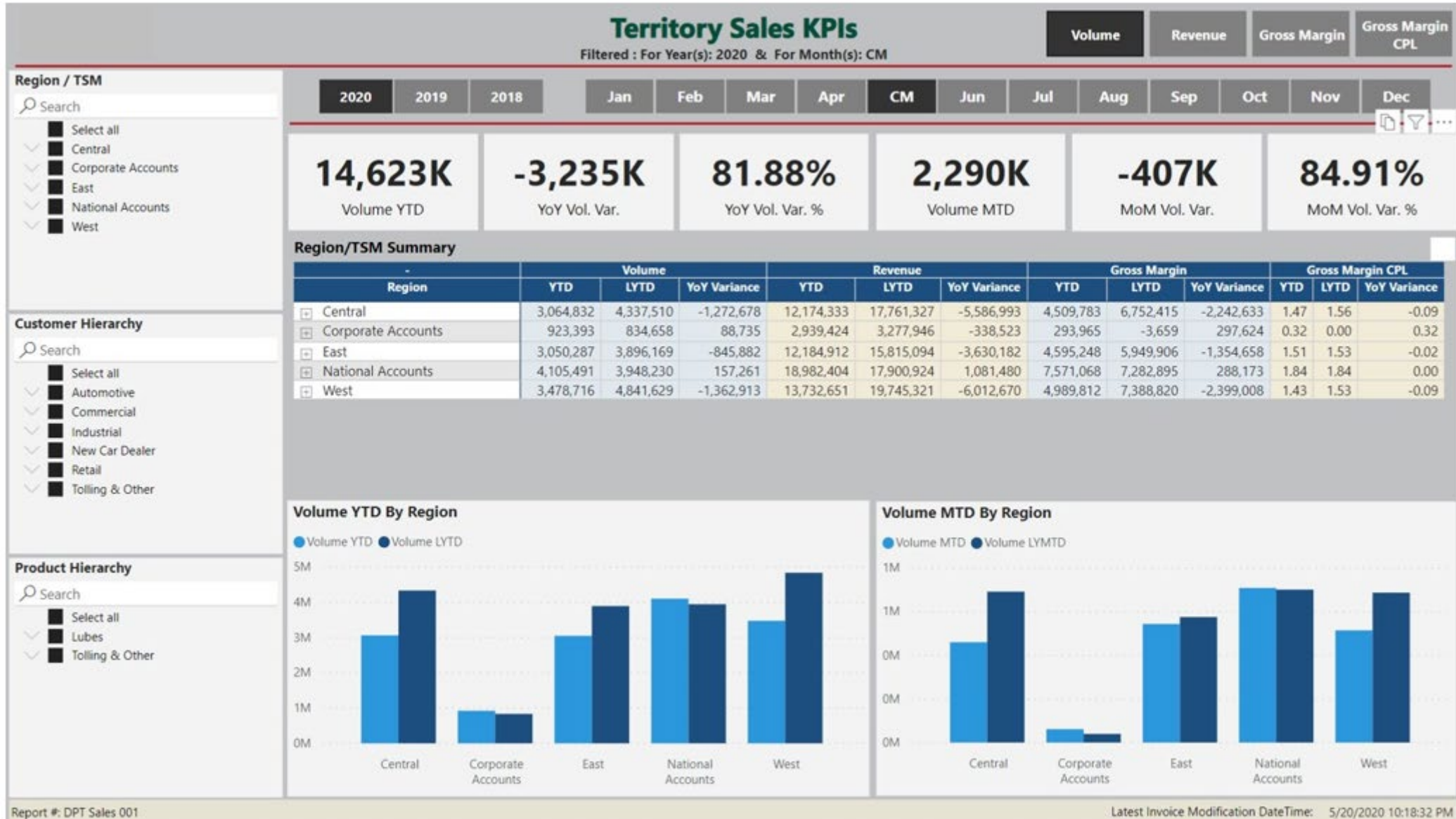
Azure Integrations / Analytics @ Toy Retailer

Purpose
Our client was looking to adopt a new approach to reporting on customer sales and inventory. SAP BW is their legacy method of reporting, but relies on a weekly, manual processes to ingest vendor POS (point of sale) data into their SAP BW environment.

This project leverages cloud technologies from Azure iPaaS and Azure Synapse to automate data ingestion and provide near-real time reporting.
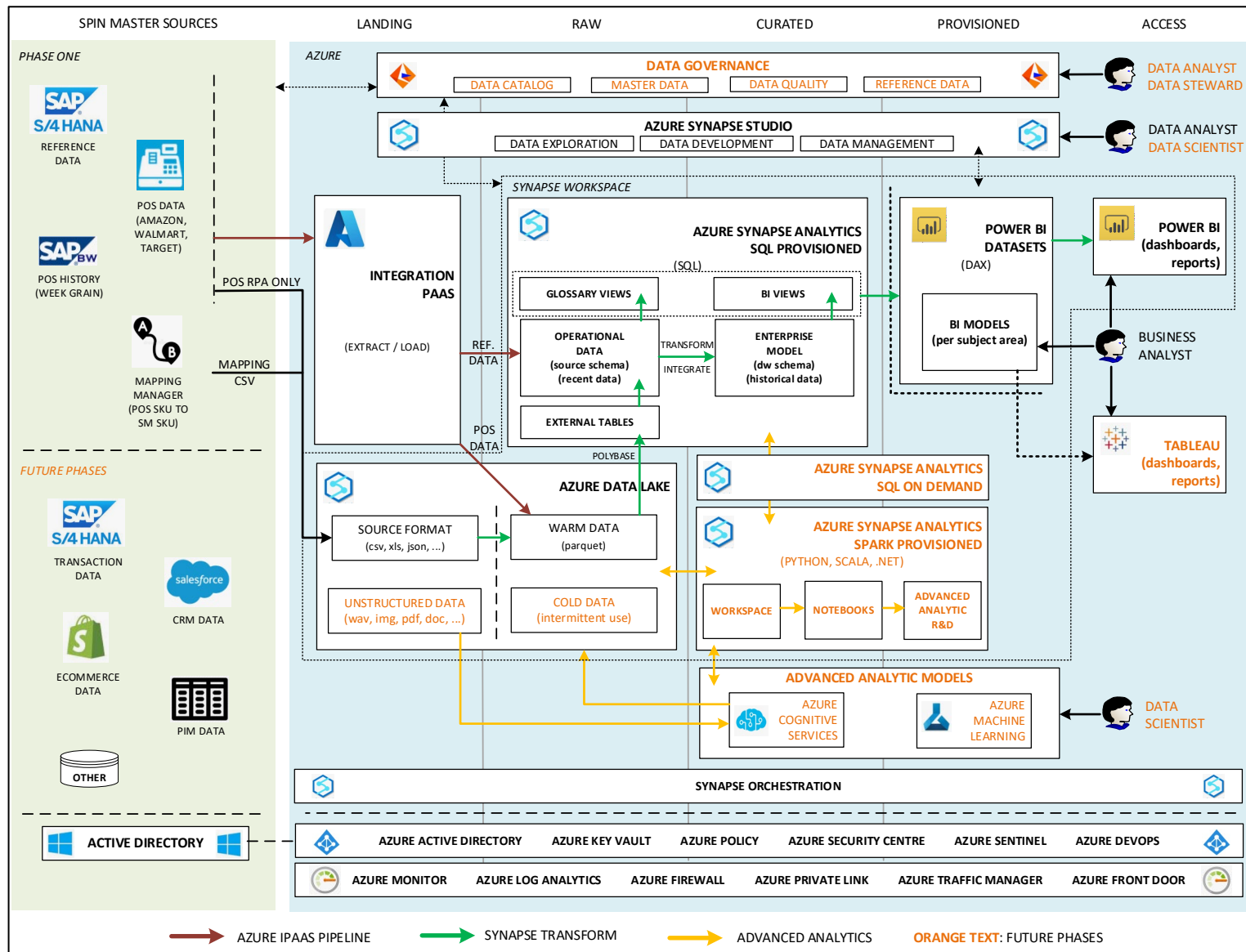
Approach
This project leverages Azure iPaaS to automate the POS data using the Vendor's APIs allowing for near real-time ingestion from vendors around the world throughout the day.
SAP HANA was used as the source of Master data to allow SAP to be used for transactional processes without any reliance on reporting needs.
Using the Azure Synapse cloud architecture, an enterprise data warehouse was utilized to allow for a governed, consistent, and near real-time reporting capabilities on a Power BI platform.
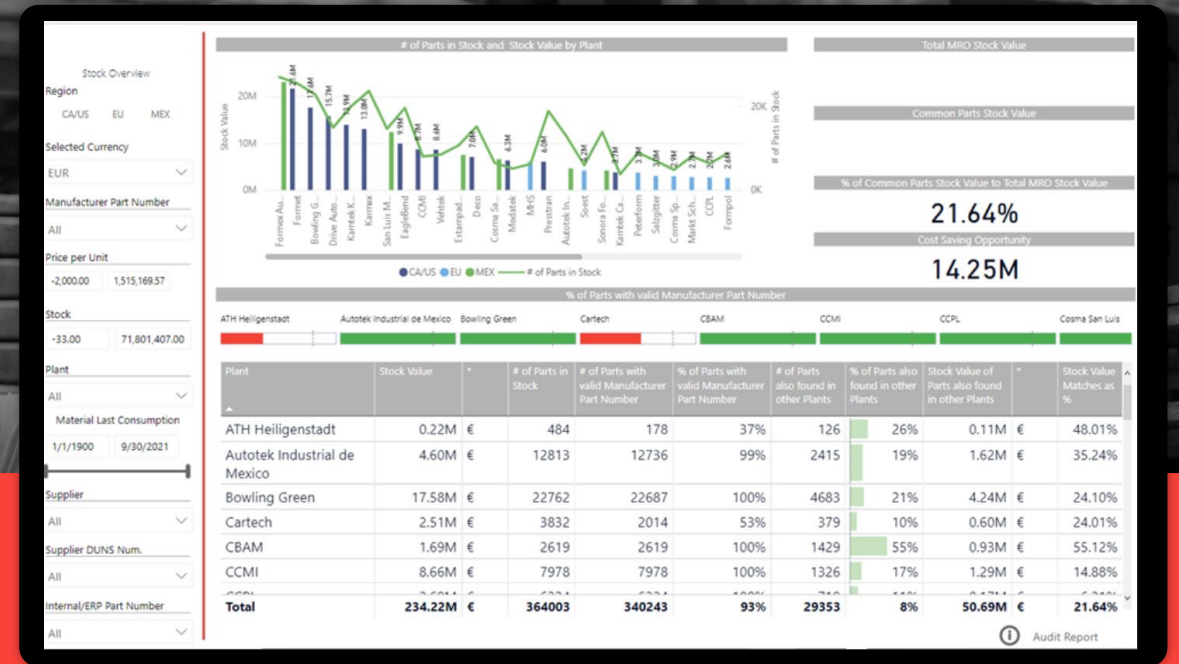
Realized Benefits
• POS feeds went from weekly to every 15 minutes, allowing the business to better manage inventory levels for vendors.
• Manual processes of ingesting data and the support associated with manual errors were eliminated.
• The process is also intended to ingest future Vendor POS feeds in a unified manner that will have minimal impact to the existing system. The goal is to ultimately have a holistic view of their vendor relationships and overall business.

SPIN MASTER SOURCES — LANDING — RAW — CURATED — PROVISIONED — ACCESS

PHASE ONE

SAP S/4 HANA — REFERENCE DATA
SAP BW — POS HISTORY (WEEK GRAIN)
POS DATA (AMAZON, WALMART, TARGET)
MAPPING MANAGER (POS SKU TO SM SKU)

AZURE

DATA GOVERNANCE — DATA CATALOG — MASTER DATA — DATA QUALITY — REFERENCE DATA — DATA ANALYST / DATA STEWARD

AZURE SYNAPSE STUDIO — DATA EXPLORATION — DATA DEVELOPMENT — DATA MANAGEMENT — DATA ANALYST / DATA SCIENTIST

SYNAPSE WORKSPACE

INTEGRATION PAAS (EXTRACT / LOAD)

POS RPA ONLY
MAPPING CSV
REF. DATA
POS DATA

AZURE SYNAPSE ANALYTICS SQL PROVISIONED (SQL)
GLOSSARY VIEWS — BI VIEWS
OPERATIONAL DATA (source schema) (recent data) — TRANSFORM INTEGRATE — ENTERPRISE MODEL (dw schema) (historical data)
EXTERNAL TABLES
POLYBASE

POWER BI DATASETS (DAX)
BI MODELS (per subject area)
POWER BI (dashboards, reports)
BUSINESS ANALYST

AZURE DATA LAKE
SOURCE FORMAT (csv, xls, json, ...) — WARM DATA (parquet)
UNSTRUCTURED DATA (wav, img, pdf, doc, ...) — COLD DATA (intermittent use)

AZURE SYNAPSE ANALYTICS SQL ON DEMAND
AZURE SYNAPSE ANALYTICS SPARK PROVISIONED (PYTHON, SCALA, .NET)
WORKSPACE — NOTEBOOKS — ADVANCED ANALYTIC R&D

TABLEAU (dashboards, reports)

ADVANCED ANALYTIC MODELS
AZURE COGNITIVE SERVICES — AZURE MACHINE LEARNING
DATA SCIENTIST

SYNAPSE ORCHESTRATION

FUTURE PHASES
SAP S/4 HANA — TRANSACTION DATA
salesforce — CRM DATA
ECOMMERCE DATA
PIM DATA
OTHER

ACTIVE DIRECTORY

AZURE ACTIVE DIRECTORY — AZURE KEY VAULT — AZURE POLICY — AZURE SECURITY CENTRE — AZURE SENTINEL — AZURE DEVOPS
AZURE MONITOR — AZURE LOG ANALYTICS — AZURE FIREWALL — AZURE PRIVATE LINK — AZURE TRAFFIC MANAGER — AZURE FRONT DOOR

AZURE IPAAS PIPELINE — SYNAPSE TRANSFORM — ADVANCED ANALYTICS — ORANGE TEXT: FUTURE PHASES

Retail Supply Chain Optimization

Improved inventory control for operational efficiency and cost reduction

PROBLEM
Lacking visibility into plant-level inventory, manufacturers experience cost discrepancy of plant parts and miss on the opportunity to share surplus supplies between facilities.

SOLUTION
Centralized analytics platform to analyze data from multiple plants in near real-time, integrate and standardize parts, supplier and pricing details, to enable advanced analysis and identify opportunities for cost savings and efficiency improvement
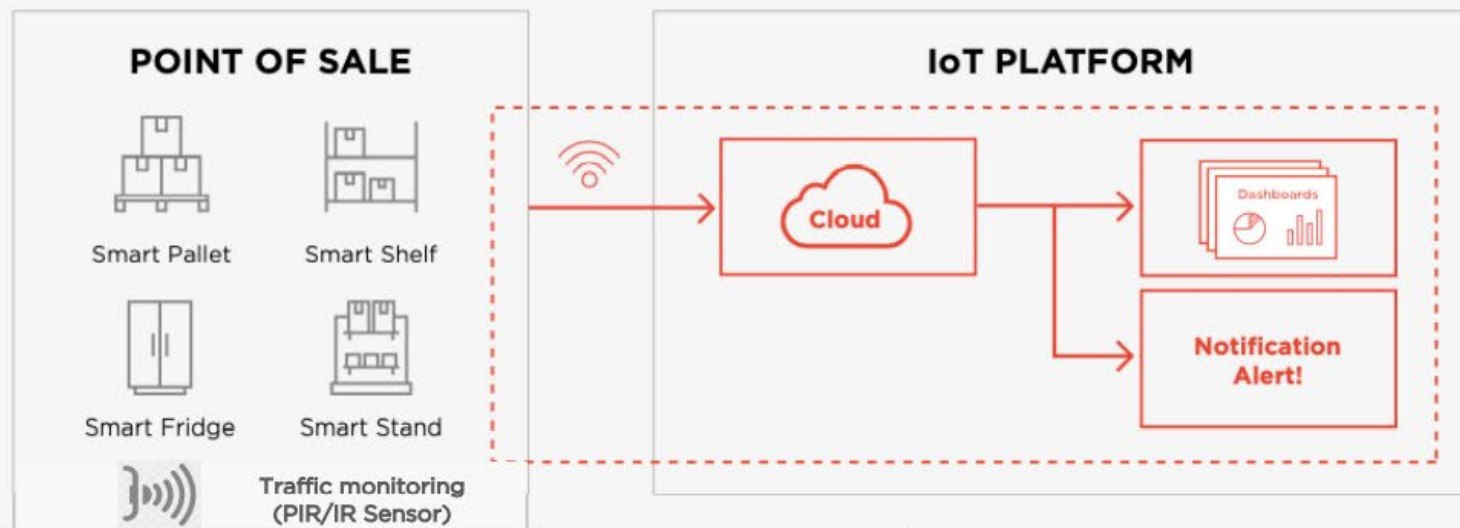
RESULTS
With end-to-end insights, the manufacturers can conduct real-time analysis to improve inventory control and reap economies of scale between plants through inter-plant spare parts transfer, **resulting in 20% sourcing cost savings**.

Scheme of Smart Retail Solutions by Adastra

POINT OF SALE

Smart Pallet   Smart Shelf

Smart Fridge   Smart Stand

Traffic monitoring (PIR/IR Sensor)

IoT PLATFORM

Cloud

Dashboards

Notification Alert!

Increase
sales by targeted campaigns and tailored product mix.

Eliminate
out-of-stock and missed sales.

Optimize
cost and resources for your POS management.

Rely on our Smart Retail Solutions

Track every purchase of your product from secondary placement display.

Target and validate your product campaigns across your retail channels

Plan and manage your merchandisers efficiently

Measure your POS performance continuously

Eliminate out-of-stock by real time alerts to responsible staff

Modify product mix based on your local customer behavior data

Evaluate secondary placement ROI

Automate your customer support and request processing

ARIS, our intelligent system based on the latest natural language processing (NLP) technologies, understands messages written in natural language, automatically processes them, and replies to them.

90%
The vast majority of incoming messages is automatically categorized.

70%
Almost three-quarters of incoming messages have automatically generated and ready-to-send answers for categorized messages.

20%
The other 20% of answers are ready to send with manually added information.

10%
Only 10% of messages require an individual approach and human input.

Addressable business needs

repetitive query and message processing

Human operators must manually respond to repetitive similar queries. ARIS classifies incoming messages, helps to keep all customer queries organized, and increases productivity.

request processing efficiency

Different business domains require different knowledge and skills. AI learns any domain based on the provided data. Therefore, people can focus on their field of expertise.

processing of messages incoming through different channels

All businesses receive a large number of messages from different channels and sources. ARIS analyzes message content and suggests an answer. That makes the process more efficient.

Case study

BASIC CUSTOMER QUERY PROCESSED WITHIN 10 SECONDS

EA European-based peer-to-peer lending platform provider needed a solution that would automate processes related to customer care and enable more efficient processing of messages incoming via different channels. We deployed ARIS into the client's customer service operations. Since day one, ARIS categorized correctly more than 80% of messages and provide a ready-to-send answer for 75% of those. More than 60% of messages are processed with minimal human input. Nowadays, a basic customer query is processed within 10 seconds.

1GUARD
Overview of sensors and functionalities

- Objectives:
  - Monitoring of goods delivery

- Typical use cases:
  - Localization and tracking
  - Temperature monitoring
  - Improper handling detection (shock, tilt)

- Typically used in:
  - Industry, Logistic, Retail, Supply chain

*Standard

LOCALIZATION
(outdoor)

Sigfox localization
Wifi localization
GPS localization

MOVE DETECTION

Accelerometer

TEMPERATURE

Thermometer

JOLT, SHOCK & TILT

Customized Accelerometer

**Extension

PACKAGE OPENING

Lighting sensor

UNAUTHORIZED MANIPULATION DETECTION

Contact switch

AIR HUMIDITY

Hygrometer

WAY-BILL UPLOAD

OCR Application

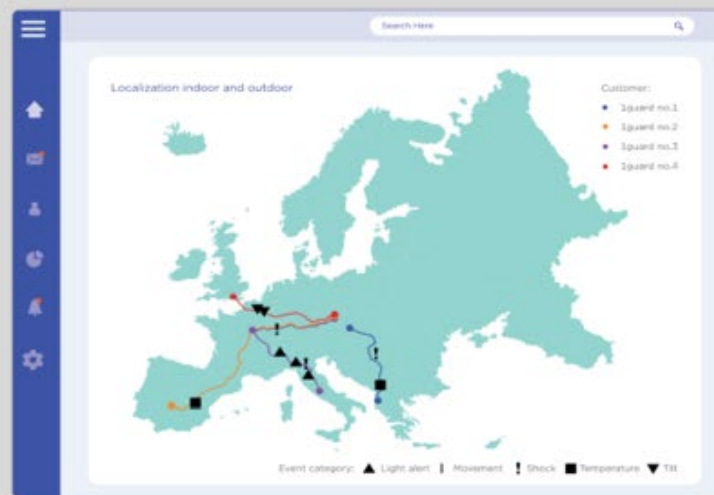**LOCALIZATION**
(indoor)

UWB
RFID

OBJECTS IDENTIFICATION

Seamless (Bar code, QR code)
UWB
RFID

100% shipment overview and visibility

up to **50%** reduction of future asset investment

10% loss rate reduction

Shipment monitoring solution provides full control over your goods and reusable packaging transport and manipulation. We can track circular pallets, boxes, cages, containers or the goods itself.

Shipment monitoring

Adastra 1Guard & IoT platform

Process optimization and cost savings

Key 1Guard functionalities:

- Localization and move detection
- Inappropriate handling and manipulation (tilt, shock, jolt etc.)
- Ambient temperature monitoring
- Light sensor (i.e. box opening notification)
- Wireless device
- Customizable design & functionality

Key IoT platform functionalities:

- Integration with existing tools and processes
- Customizations for individual use cases
- Cloud based platform
- Web app, dashboards, notifications for users

OPTIPLAN

SCHEDULES OPTIMIZED IN A MINUTE

Maximize your service levels and meet your production targets by allocating the right people to right tasks and shifts with an automatically created plan reflecting all possible limitations.

OptiPlan is a real-time optimized, flexible planning and scheduling system for workforce allocation. System creates an optimized schedule in a minute while removing spreadsheets and time-consuming manual work to create a schedule. Sudden changes to production targets are processed in minutes when the new optimized schedule is recalculated with Optimus 4.0 platform.

Addressable business needs

- **optimal shift and personnel planning** - OptiPlan will help you to compute optimal schedules for your employees combining the right skillsets and the right location and time and considers even the most specific business rules your operations require.

- **scheduling in complex production operations** - OptiPlan embraces all conditions and constraints that the schedule needs to reflect. Our library covers 100+ ready to use business rules to schedule employees in complex production operations.

- **sales representative visits and shop assistants planning** - Minimize your employees' travel time and cost, optimize your branches' visits through intelligent automatic planning. OptiPlan considers your CRM data, predictions about routes and the necessary time to optimize your business plans.

- **big operations planning (branches, employees)** - You can plan processes and shifts at the management level of the entire branch network as well as in the granularity of their individual departments and positions in a matter of seconds.

- **prevention of the spread of diseases -** Minimize unnecessary contacts among employees to mitigate the risk of spread of covid-19 or other deseases. We understand that one size doesn't fit all, and we are ready to create a specific list of rules tailored to your operations.
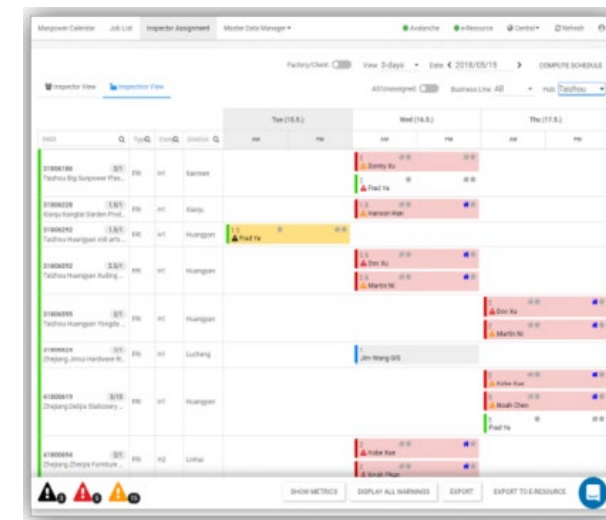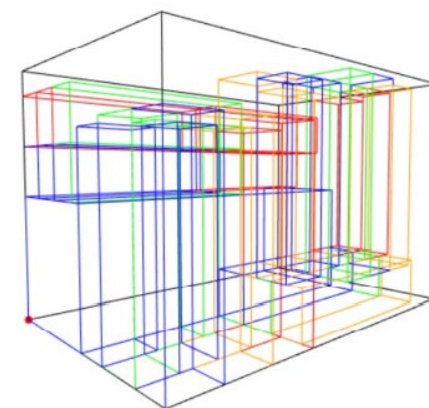
OPTIFIT

OPTIMIZED AND MAXIMIZED LOADINGS, DESCREASED COSTS

Optimize cargo handling so that space in your trucks, containers and parcels is utilized in the best possible way. Minimize shameful boxes.

OptiFit is an intelligent software solution built on top of the Optimus 4.0 platform and searching through millions of loading plans. OptiFit maximizes loaded volume while considering cargo weight and dimensions, respecting legal safety constraints like longitudinal and vertical stability, and considering your business's specific needs.

Addressable business needs

- **shamefull boxes reduction** - Utilize every inch of the space in boxes and packages. Fill every inch, so you save costs on the box sizes and the filling material and use every inch of space. OptiFit calculates the optimal combination of stacking items.

- **better parcel fill rate** - OptiFit optimizes the sizes of parcel types you use to minimize the parcel's void space and save the filling material and reduces so-called shamefull boxes. It also optimizes how larger orders are split into multiple parcels with the goal of minimal resulting parcel volume.

- **truck and container load maximization** - The system optimizes how to load items from your warehouse into a truck or a shipping container. OptiFit also ensures that the load will not get damaged during the transport by intelligent loading sequence.

OPTIROUTE
GREENER AND OPTIMIZED LOGISTICS IN A MINUTE

Maximize the efficiency of your logistics through state-of-the-art algorithms. OptiRoute can handle standard transport optimization and beyond.

OptiRoute real-time optimized, flexible planning and scheduling system for logistics processes and routes. The system creates an optimized schedule in a minute while removing spreadsheets and time-consuming manual work to create a schedule. Sudden changes are processed in minutes when the new optimized schedule is recalculated with the Optimus 4.0 platform.

Addressable business needs

- **saving shipments and delivery costs** - OptiRoute saves your shipment costs by using optimal routes of your vehicles regarding where they stop for loading and unloading and how the goods are organized on the cargo space.

- **optimization of inter-warehouse transportation** - OptiRoute enables to minimize the inter-warehouse transports required to collect all ordered items
 of a particular order dispatching. Distribution algorithms suggest where to store to decrease the future need for inter-warehouse transportation.

- **better truck or container loading** - The system optimizes how to load items from your warehouse into a truck or a shipping container. OptiRoute also ensures that the load will not get damaged during the transport by intelligent loading sequence.

- **milk runs optimization** - Utilizing the-state-of-the-art algorithms, OptiRoute calculates optimal routes of pick-ups and deliveries. The system enables to deliver small lots in a
very short leadtimes efficiently and thus lower average inventory levels.

//ADASTRA

Azure Analytics Assessment Proposal

Assessment Scope / Cost

Evaluate current analytics state and propose a modern analytics cloud architecture and roadmap.

- Perform analytics current state discovery and determine future analytics goals

- Define future state Azure service architecture

- Define future state Azure network architecture

- Estimate Azure run cost for future state architecture

- Identify technical governance approach for security, dlp, bc/dr, recovery, monitoring, and devops

- Define roadmap to achieve future state analytic goals aligned to business priorities

- Define plan / resources / cost to achieve future state

- Pilot Solution

Adastra will provide one senior Azure analytics architect for 5
weeks (25 days) to execute the assessment / small pilot.
Assessment Cost: $35k

//ADASTRA

For Questions contact:

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647-990-2101