I2.01 – Demand Planning / Forecasting

TEXAS STATE
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Polímeros Ópticos™

Problem Statement

- **Lack of Interactive Dashboard:** No existing dashboard for demand forecasting and comparison.
- **Absence of user-friendly manual:** No manual to guide new users in using the forecasting code and dashboard.
- **Overall Impact:** These issues hinder nontechnical users from making well-informed decisions in supply chain management and demand planning.

Project Deliverables

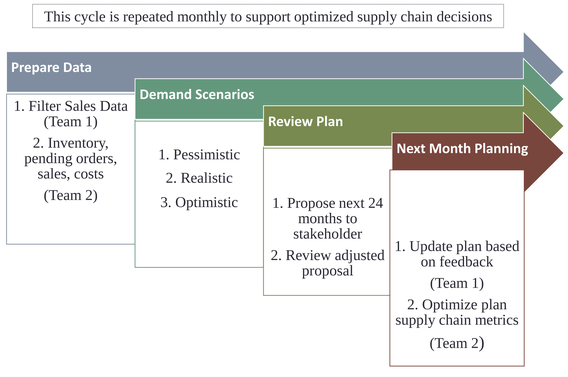
- **Dynamic Dashboard:** Create methodology to follow for supply chain optimization.
- **Forecast Model:** Establish monthly-updated demand scenarios over two-year planning horizon.
- **User Manual & Training:** Create a clear manual to guide nontechnical users in understanding and using the dashboard.

Project Benefits

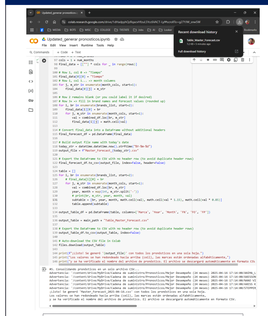
- **Better Decisions:** The dashboard and model help all users, even nontechnical ones, make timely, data-driven supply chain choices.
- **Easy to Use:** Manuals and training make the tools accessible for users of any background.
- **Smarter Planning:** Two-year forecasts help prevent stockouts or overstocking and improve supply chain flow.

Methodology Cycle

This cycle is repeated monthly to support optimized supply chain decisions



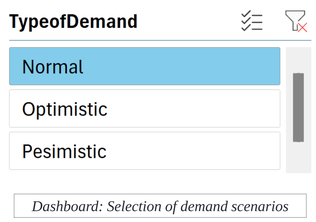
Project Methodology & Results



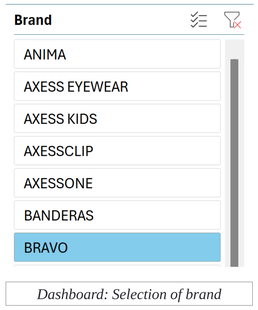
Generating Forecast in Collab

Marca	Year	Month	FN	FO	FP
ANIMA	2025	1	885	1018	753
ANIMA	2025	2	882	1014	750
ANIMA	2025	3	881	1013	749
ANIMA	2025	4	878	1010	746
ANIMA	2025	5	872	1003	742
ANIMA	2025	6	865	995	736
ANIMA	2025	7	863	992	734
ANIMA	2025	8	861	990	732
ANIMA	2025	9	861	990	732
ANIMA	2025	10	856	984	728
ANIMA	2025	11	848	975	721
ANIMA	2025	12	840	966	714
ANIMA	2026	1	841	967	715
ANIMA	2026	2	839	965	713
ANIMA	2026	3	836	962	711
ANIMA	2026	4	834	959	709
ANIMA	2026	5	832	956	707
ANIMA	2026	6	829	954	705

3 Forecast scenarios for each brand



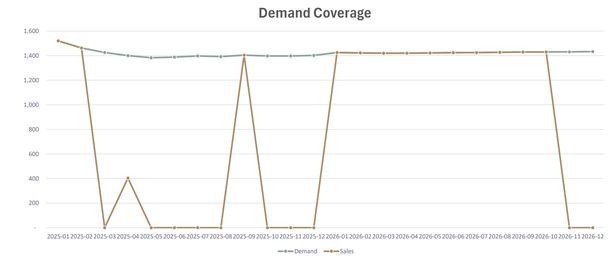
Dashboard: Selection of demand scenarios



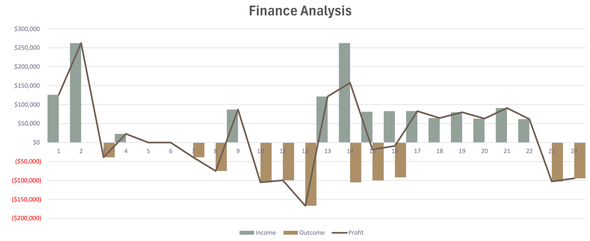
Dashboard: Selection of brand

Demand & Sales Analysis						
Period	Demand	Sales	Coverage	Income	Outcome	Profit
2025-01	1,520	1,520	100%	$126,084	$0	$126,084
2025-02	1,462	1,462	100%	$262,502	$0	$262,502
2025-03	1,426	-	0%	$0	($39,066)	($39,066)
2025-04	1,400	404	29%	$22,907	$0	$22,907
2025-05	1,383	-	0%	$0	$0	$0
2025-06	1,388	-	0%	$0	$0	$0
2025-07	1,397	-	0%	$0	($39,066)	($39,066)
2025-08	1,392	-	0%	$0	($75,090)	($75,090)
2025-09	1,404	1,404	100%	$86,978	$0	$86,978
2025-10	1,397	-	0%	$0	($105,000)	($105,000)
2025-11	1,397	-	0%	$0	($99,750)	($99,750)
2025-12	1,402	-	0%	$0	($166,954)	($166,954)
2026-01	1,425	1,425	100%	$121,581	($28)	$121,553
2026-02	1,422	1,422	100%	$262,615	($105,000)	$157,615
2026-03	1,420	1,420	100%	$81,281	($99,790)	($18,509)
2026-04	1,420	1,420	100%	$82,814	($91,915)	($9,101)
2026-05	1,422	1,422	100%	$82,931	($40)	$82,891
2026-06	1,424	1,424	100%	$64,593	$0	$64,593
2026-07	1,425	1,425	100%	$80,028	$0	$80,028
2026-08	1,427	1,427	100%	$63,188	$0	$63,188
2026-09	1,429	1,429	100%	$91,056	$0	$91,056
2026-10	1,430	1,430	100%	$61,776	$0	$61,776
2026-11	1,431	-	0%	$0	($102,600)	($102,600)
2026-12	1,433	-	0%	$0	($94,500)	($94,500)
Total	**34,076**	**19,034**	**56%**	**$1,490,333**	**($1,018,800)**	**$471,533**

Methodology of Demand planning for supply chain optimization by Team 2

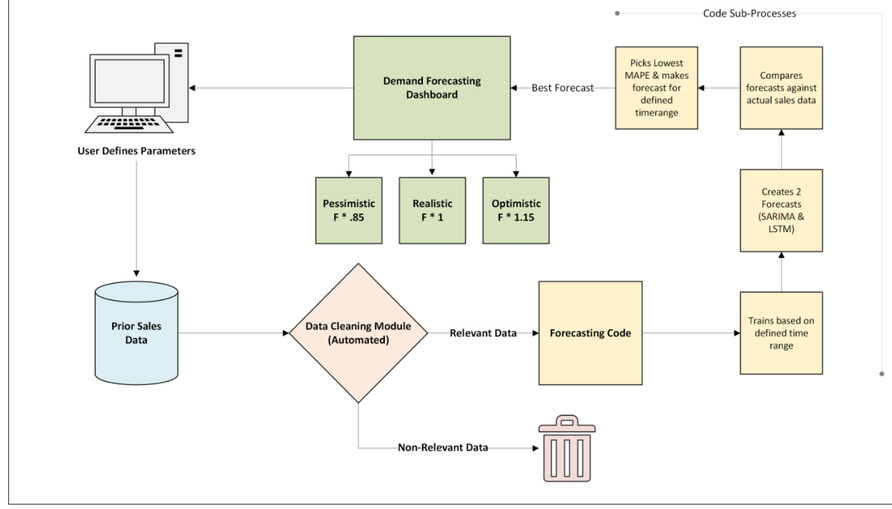


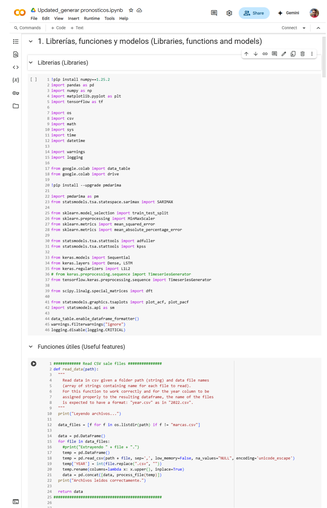
Demand coverage based on current inventory & planned order placements



Financial Analysis showing profit and outcomes (Lost sales)

Forecast Model & Code





Human Factors

- **Visual Clarity:** Clean design with clear fonts, good contrast, minimal clutter, and consistent colors for readability.
- **Interactive Navigation:** Slicers, dropdowns, and buttons for filtering with clear labels, tooltips and frozen rows/columns for easy exploration.
- **User Manual:** Provide clear, accessible instructions that enhance usability and reduce user errors.

Improvement Method

- **PLAN**
  Filters Sales Data
- **DO**
  Forecast 3 demand scenarios
- **CHECK**
  Share forecast results with stakeholders and gather feedback
- **ACT**
  Update the forecast quantity and send it to Team 2 for supply chain optimization

Future Works

- **Improve Data Integration:** Automate data extraction and integration with other supply chain systems.
- **Expand Training & Support:** Develop video tutorials or interactive training modules alongside the user manual.
- **User Feedback Integration:** Establish feedback loop to gather input from users for continuous improvement.

Project Team

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