

Inventory optimization

Food contract manufacturer

Analyzed the client's supply chain to optimize inventory holding and developed a comprehensive roadmap to realize and scale the working capital optimization opportunity across 30,000+ SKUs

Food contract manufacturer needs to re-stock its working capital

Picture this...

You’re looking to optimize the inventory holding and develop a comprehensive roadmap to realize and scale the working capital optimization opportunity across 30,000+ SKUs. Due to high-growth period driven by acquisitions, the current inventory management process is resulting in ~\$230M+ of working capital tied in inventory.

You turn to Accordion.

We partner with your team to analyze the supply chain to optimize inventory holding and develop a comprehensive roadmap to realize and scale the working capital optimization opportunity, including:

- 1) Sizing the working capital optimization opportunity to identify the plants, product categories and nature of inventory to maximize ROI
- 2) Developing an optimized order cycle model to streamline purchase patterns based on historical demand patterns/volatility, lead time by SKU and vendor and current inventory holding
- 3) Estimating safety stock and re-order points bucketing SKUs based on volume-volatility matrix and building customized models to optimize inventory levels
- 4) Defining and operationalizing the updated inventory management process after accounting for operational challenges (data gaps, process bottlenecks etc.) by setting up the client’s ERP system (SAP ECC) to adhere to the new process and monitoring the improvement in inventory levels and calculate ROI

Your value is enhanced.

You have Identified opportunity to reduce inventory by \$20M through order cycle optimization by defining the key target and focus areas. You have implemented the optimized process for 400+ pilot SKUs to drive a \$12M run-rate opportunity and provided roadmap to realize the ~\$20M opportunity. You have also developed a playbook which defined sustainable process improvements and a refreshable SKU-level parameters optimization model to scale the pilot process across all SKUs and manufacturing plants.

INVENTORY OPTIMIZATION

KEY RESULT

- ~\$7M working capital gains
- ~20M of inventory reduction
- \$12M run-rate

VALUE LEVERS PULLED

- Networking Capital Analysis (Inventory)
- Reorder point and safety stock analysis

Inventory optimization for snack food contract manufacturer

Situation

- Client had a high-growth period driven by acquisitions but had not developed an efficient inventory management process which resulted in ~\$230M+ of working capital tied in inventory across raw materials, work in process, and finished goods
- Partnered to assess the client's supply chain with a primary goal to optimize inventory holding and develop a comprehensive roadmap to realize and scale the working capital optimization opportunity across 30,000+ SKUs

Accordion Value Add

- Sized the working capital optimization opportunity to identify the plants, product categories and nature of inventory to maximize ROI
- Developed an optimized order cycle model to streamline purchase patterns based on historical demand patterns/volatility, lead time by SKU and vendor and current inventory holding
- Estimated safety stock and re-order points bucketing SKUs based on volume-volatility matrix and building customized models to optimize inventory levels
- Defined and operationalized the updated inventory management process after accounting for operational challenges (data gaps, process bottlenecks etc.) by setting up the client's ERP system (SAP ECC) to adhere to the new process and monitored the improvement in inventory levels and calculate ROI

Impact

- Identified opportunity to reduce inventory by \$20M through order cycle optimization by defining the key target and focus areas
- Implemented the optimized process for 400+ pilot SKUs to drive a \$12M run-rate opportunity and provided roadmap to realize the ~\$20M opportunity
- Developed a playbook which defined sustainable process improvements and a refreshable SKU-level parameters optimization model to scale the pilot process across all SKUs and manufacturing plants

Methodology/ Approach



Size the Opportunity

- Sized the total opportunity that could be realized by streamlining order cycle management, assessing quality holds, reimagining the planning process, and optimizing the distribution network
 - Developed a model to estimate appropriate safety stock and reorder points to transform to a weekly order cycle process
 - Identified gaps in the values associated with Quality Holds/Processing time in the client's ERP system in comparison to the actual process
 - Assessed the current planning process to identify opportunities to streamline the reorder points and reorder quantity
 - Sized opportunity to reduce usage of third-party logistics warehouses by reducing inventory holding through optimal inventory management process



Build the inventory optimization model

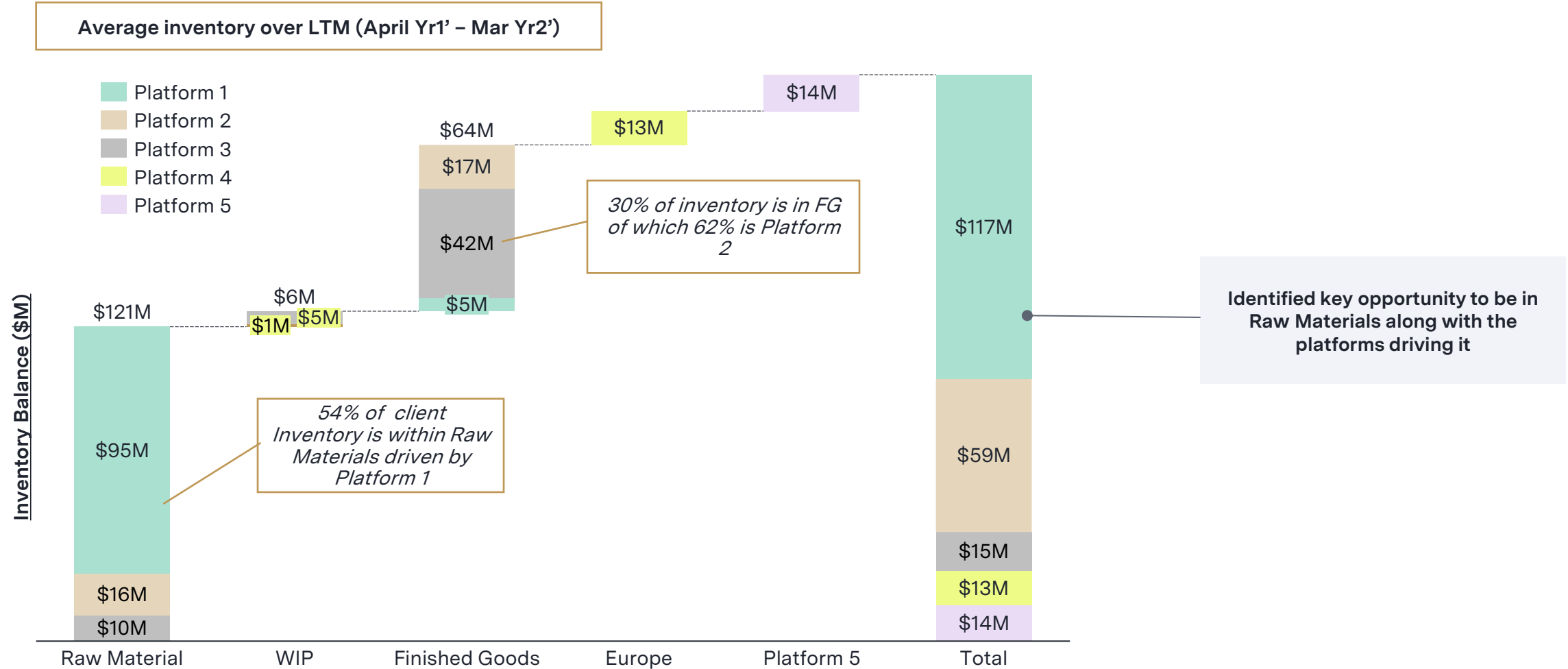
- Created a volume-volatility matrix and divided SKUs based high/low demand (based on average consumption/average inv.) and high/low volatility (based on standard deviation of MoM consumption)
- Optimized High demand SKUs for truck-load (MOQs) and high volatility items for higher safety stock
- Identified opportunity to club vendors or switch vendors for low demand SKUs to avoid less than truck load shipments
- Designed customized logics to define safety stock and reorder points across 400+ SKUs segmented into 4 SKU profiles



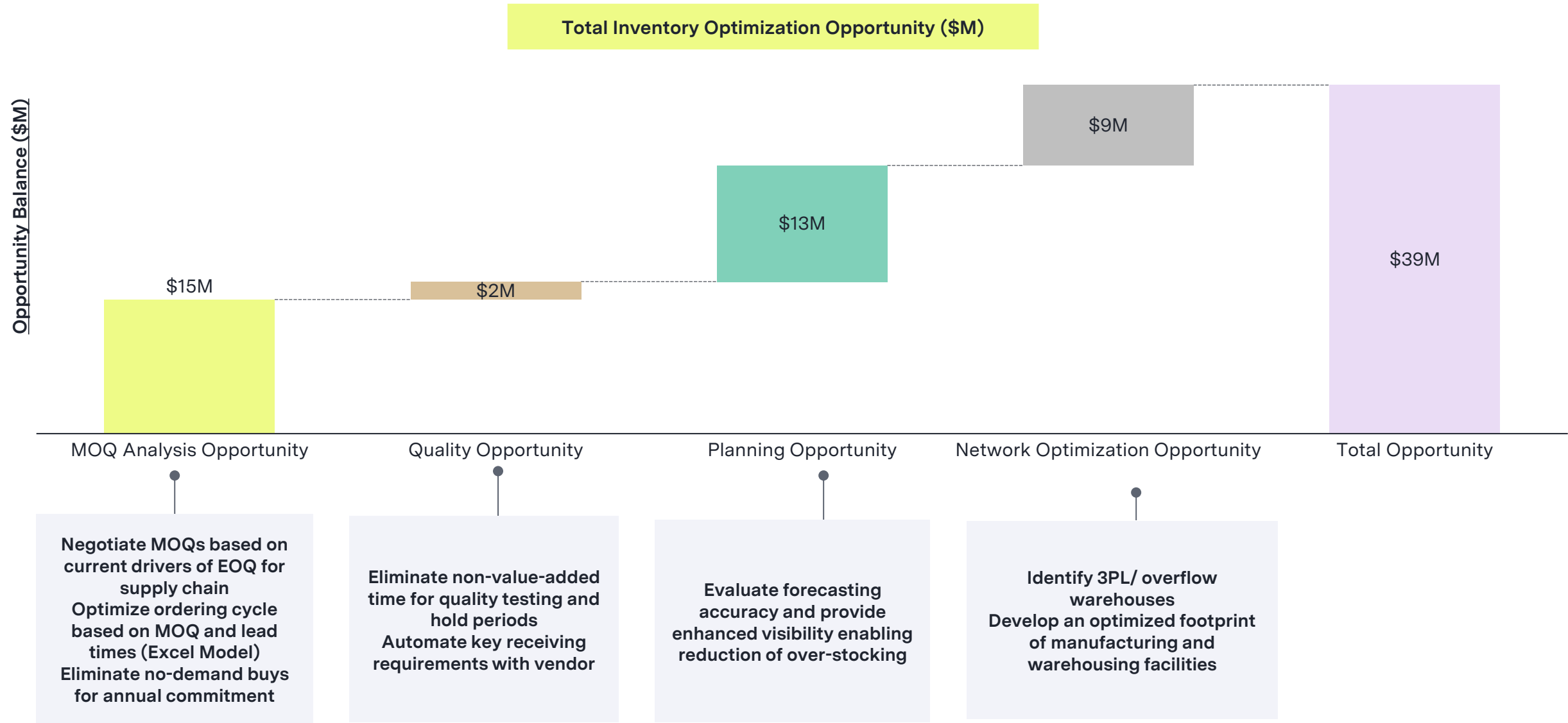
Scale the process

- Evaluate the current order cycle process by conducting interviews with the IT and procurement teams
- Identified opportunity to improve accuracy of their ERP system's purchase requisition enabling the client to cut down on manual intervention from the buyers
- Enabled the client to validate critical parameters at a SKU-level (such as MOQ, Safety stock, lot size, processing time, and 'rounding value') by designing a model that captures the parameters in the ERP system and flags parameters with potential issues based on customized business logics

Inventory overview



Opportunity sizing



Inventory optimization model

Summary

Notes: 1. Below Fact Pack analysis corresponds to the original scenario calculations resulting in \$20.3M opportunity across 4 platforms => 2 week of \$5, MOQ from purchase data, one order per week
2. Below data includes only those SKUs where purchase data was available
3. The numbers in the col. 'Calculated opportunity with 50% reduction (\$)' reflects the SKUs with potential positive savings only
4. Lead Time and MOQ for SKUs has been sourced from the purchase data

Overall summary of the Platform

Platform	# Companies	# of SKUs	# SKUs (w/o Savings)	# Vendor	Avg MOQ (\$)	Avg Lead Time (Weeks)	Average Beginning Inventory (\$M)	Average Ending Inventory (\$M)	Avg Inventory (\$M)	Avg Purchases (\$M)	Avg Consumption (\$M)	Avg Safety Stock (\$M)	Calc Opportunity with 50% reduction (\$)
8	1,529	990	54	409	\$10,223	7.5	\$13,816,529	\$13,399,525	\$13,608,027	\$14,274,287	\$14,010,678	\$108,809	\$4,962,577
7	1,151	976	438	394	\$4,713	6.1	\$28,972,315	\$28,359,057	\$28,665,686	\$31,059,909	\$30,172	\$1,254,270	\$7,254,270
7	1,403	827	399	444	\$5,822	6.9	\$15,393,670	\$14,996,293	\$15,194,982	\$17,559,130	\$17,346,904	\$227,301	\$2,976,261
4	1,277	996	588	192	\$5,125	4.2	\$21,122,358	\$22,816,389	\$22,979,364	\$26,576,122	\$24,875,168	\$1,422,719	\$3,685,408

Overall summary of the companies

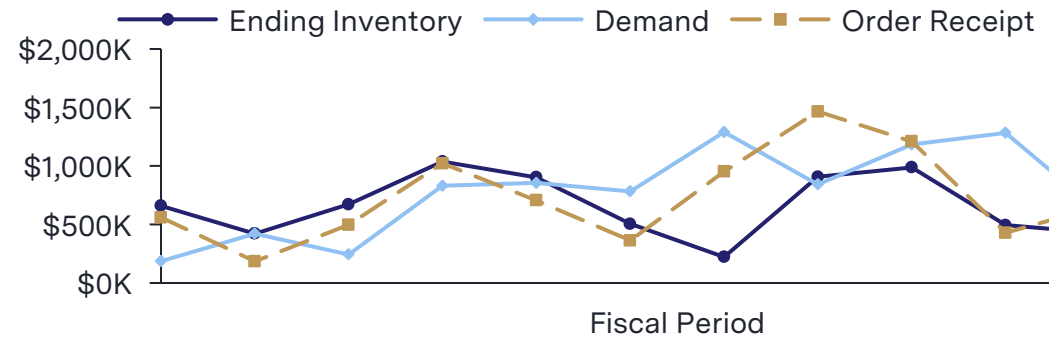
Company	Platform	# of SKUs	# SKUs (w/o Savings)	# Vendor	Avg MOQ (\$)	Avg Lead Time (Weeks)	Average Beginning Inventory (\$M)	Average Ending Inventory (\$M)	Avg Inventory (\$M)	Avg Purchases (\$M)	Avg Consumption (\$M)	Avg Safety Stock (\$M)	Calc Opportunity with 50% reduction (\$)
733	426	177	258	26	\$6,194	8.9	\$1,250,472	\$1,253,115	\$1,251,793	\$15,714,421	\$15,184,378	\$208,498	\$1,424,144
425	329	146	183	9	\$9,877	7.5	\$9,124,549	\$9,179,163	\$9,146,856	\$5,718,872	\$107,903	\$2,494,808	
292	229	61	111	7	\$7,996	7.3	\$8,431,185	\$8,145,185	\$8,289,185	\$5,798,190	\$5,815,087	\$209,719	\$2,633,790
342	206	135	71	7	\$14,624	8.7	\$8,678,906	\$8,667,238	\$8,673,073	\$6,613,942	\$7,367,427	\$134,362	\$2,189,407
652	138	314	223	7	\$5,294	7.6	\$5,981,079	\$5,838,298	\$5,909,688	\$5,281,203	\$5,296,538	\$99,935	\$1,321,104
380	389	181	189	6	\$5,875	6.1	\$6,494,185	\$6,552,333	\$6,573,344	\$11,641,421	\$12,371,386	\$233,422	\$1,211,109
203	39	62	5	5	\$1,385	5.9	\$4,536,196	\$4,414,303	\$4,475,240	\$4,980,422	\$5,490,253	\$102,227	\$1,316,272
305	204	301	121	3	\$4,552,566	5.2	\$4,510,734	\$4,521,650	\$4,768,129	\$4,896,125	\$91,625	\$1,343,423	
485	353	132	148	6	\$7,752	6.7	\$5,495,220	\$5,114,575	\$5,305,898	\$4,797,142	\$4,808,155	\$91,663	\$1,211,763
242	177	94	101	6	\$4,888	6.8	\$3,987,075	\$3,924,442	\$3,955,758	\$4,162,208	\$4,493,447	\$364,762	\$949,589
458	257	201	72	7	\$4,861	4.6	\$10,76,389	\$10,549,334	\$10,642,357	\$10,642,357	\$10,642,357	\$10,642,357	\$10,642,357
420	185	227	49	3	\$7,691,205	3.8	\$7,533,403	\$7,612,304	\$20,933,890	\$20,842,638	\$20,933,890	\$20,933,890	
244	113	129	48	6	\$9,262	6.2	\$3,242,610	\$3,208,573	\$3,225,591	\$6,943,937	\$6,906,903	\$128,433	\$421,181
138	94	46	48	4	\$5,172	4.6	\$1,269,206	\$1,460,344	\$1,377,125	\$1,429,633	\$1,461,937	\$49,867	\$208,877
308	167	139	25	2	\$2,264	4.4	\$3,050,468	\$3,068,367	\$3,059,433	\$15,795,723	\$15,795,723	\$15,795,723	
44	14	30	16	1	\$1,106	3.3	\$618,198	\$668,814	\$643,506	\$481,649	\$481,649	\$481,649	
51	39	14	25	1	\$1,140	3.8	\$462,811	\$429,034	\$445,923	\$194,004	\$194,004	\$194,004	

Output >>> Fact Pack Top SKUs, Plot Campus, Scenario 1 Inv Savings, Campus-SKU LTM Questions Saw tooth Examples >>> Saw tooth graph Dynamic (JC 1) Saw tooth Current State >>>

Excel model for Order cycle optimization considering the LTM inventory, consumption, purchase, LT and MOQ data

Visualization of the LTM purchase and consumption pattern of a SKU, along with the 'what-if' optimized purchase patten – opportunity to reduce ~\$195k worth of inventory

Current State - Order Cycle LTM (April 22' - March 23')



Optimized State - Order Cycle LTM (April 22' - March 23')

