

# Distribution Master Plan for Automotive Parts Distributor

A leading automotive parts distributor, generating \$25 million in annual revenue, faced significant operational challenges in its warehouse operations. With a vast inventory of 15,000 unique SKUs across two key warehouse locations, inefficiencies in core activities—picking, packing, shipping, and receiving—led to increased fulfillment times, higher labor costs, and order inaccuracies. Additionally, multiple initiatives were underway simultaneously, causing implementation misalignment and operational disruptions.

*Optimize storage capacity, warehouse activities (picking, packing, shipping, replenishment, receiving etc.) at 2 warehouse locations for future state in alignment with defined capital strategy*

## Data Analysis & Process Review:

- Analyzed order, inventory & SKU data to fully evaluate and validate current operations and create order profile, SKU assortments by business channel & product categories.
- Reviewed current DC processes (receiving, put away, replenishment, picking & shipping etc.) and current systems (WMS, TMS, ERP etc.) to identify quick wins and/or automation opportunities.
- Worked with the team to align on future state parameters and develop list of options for evaluation.

## Option Development:

- Determined estimated budget costs, storage capacity, FTEs etc. under each option.
- Explored automation technologies (ship sorter, AMR etc.) to improve order picking and packing processes and minimize manual labor dependency.
- Suggested improvements to existing SKU slotting based on ABC segmentation, SKU Types, and by business channel.
- Brainstormed & refined options to develop a go forward distribution master plan with a planned roadmap for execution.

## Business Outcomes

- Total Est. Savings: \$6.0 MM
- Total Capital Investment: \$10.7 MM
- Payback Period: 1.8 years
- Faster order fulfillment & error free deliveries
- Reduced labor costs & improved productivity

		Savings [Annual]	Investment	Payback [Years]
Option 1: 2-Facility (Right Sized)	Operate in HK1 and BP HK - WD & Performance BP – Rock & Drop Ship	\$2.0 M	\$3.8M	1.9
Option 2: 1-Facility (Pick-up & Move)	Shutter BP Occupy HK2 for distribution Single Consolidated Facility [assumes caliper divestment]	\$5.9 M	\$10.7M	1.8
Option 3: 1-Facility (Best in Class)	Option 2 (1-Facility) + Best in Class Improvements VNA Pallet Racking Mezzanine GTP	\$8.1 M	\$20.3M	2.5



# Distribution Master Plan for Automotive Parts Distributor (cont'd)

	Option 1: 2-Facility (Right Sized)	Option 2: 1- Facility (P/U & Move)	Option 3: 1-Facility (Best In Class)	Notes
<b>Cost Savings</b>				
<b>Short Term Improvements</b>				
WMS Implementation	\$736,573	\$736,573	\$736,573	Overhead labor & replenishment
HK Automation	\$958,394	\$958,394	\$958,394	Picking & packing labor (HK Only)
HK Slotting	\$138,383	\$138,383	\$138,383	Picking & replen labor (HK Only)
Rock Paper Pick Conv.	\$212,309	\$212,309	\$212,309	Picking & packing labor (Rock Only)
<b>Facility Consolidation</b>				
Fixed Facility	-	\$1,608,332	\$1,608,332	BP rent, utilities, insurance
Fixed Labor	-	\$1,655,312	\$1,655,312	Redundant dept labor (leads, supervisors)
Transfers	-	\$553,717	\$553,717	Picking transfers, driver + truck
<b>Best in Class</b>	-	-	-	-
Goods to Person Picking	-	-	\$2,273,314	Picking & replen labor
<b>Total Savings</b>	<b>\$2,045,659</b>	<b>\$5,863,019</b>	<b>\$8,136,333</b>	
<b>Budget</b>				
<b>Short Term Improvements</b>				
WMS Implementation	\$450,000	\$400,000	\$400,000	Est. all in cost (Opt. 1 Multi site +\$50K)
HK Automation	\$2,530,000	\$2,530,000	\$2,530,000	Numina budget (original)
HK Slotting	\$51,676	\$51,676	\$51,676	Est. re-slot labor required
Rock Paper Pick Conv.	\$150,000	-	-	Est. hardware + integration BP Only
HK1 Build Out (WD)	\$658,682	-	-	Addl. racking for WD transfer from BP
<b>Facility Consolidation</b>				
HK2 Prep / Caliper Divest	-	\$400,000	\$400,000	Est. HK2 preparation / equip divestment
HK 1&2 Build Out	-	\$3,242,368	\$3,242,368	Racking and office space build out
Parcel Automation	-	\$2,725,000	\$2,725,000	Replicate parcel automation HK
Inv Relo / Contingency	-	\$1,378,166	\$1,378,166	Est. relocation expense + contingency
<b>Best in Class</b>	-	-	-	-
Goods to Person Picking	-	-	\$9,553,658	GTP picking, mezzanine, VNA racking
<b>Total Budget</b>	<b>\$3,840,358</b>	<b>\$10,727,211</b>	<b>\$20,280,869</b>	
<b>Payback Period (Years)</b>	<b>1.9</b>	<b>1.8</b>	<b>2.5</b>	

Short-term improvements apply to all options. See next slide for details.

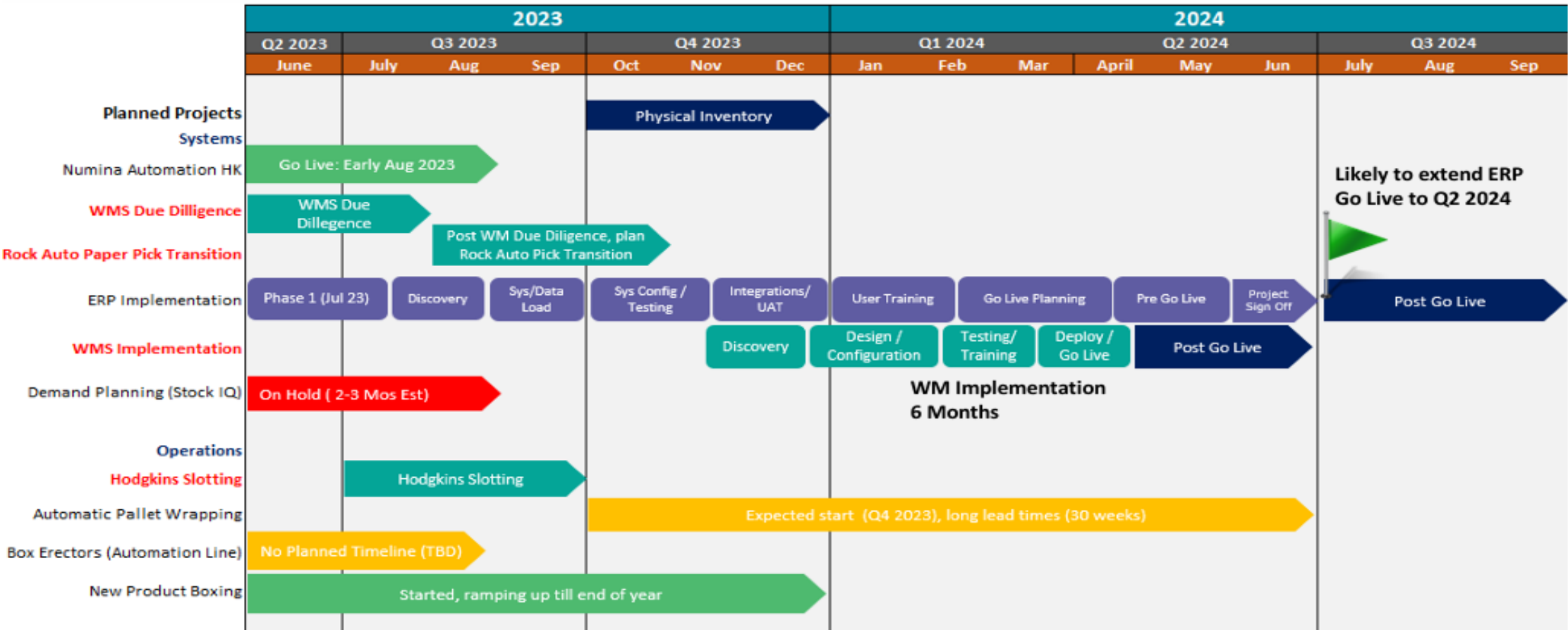
Facility consolidation savings driven by BP exit.

Addl. direct labor savings.

2-Facility option higher short-term cost, 1-Facility costs for Rock & rack build captured below.

Includes HK2 space preparation cost, business impact of caliper divestment NIC.

Best in class picking tech



Bays	J	K	L	M	N	P	Q	R	S	T
57-98	18	1,310	1,344	905	328	444	161	87		
95-96	1,371	2,386	1,274	1,201	1,532		568	2,138	15,993	5,268
99-94	1,900	3,003	1,225	960	3,031		15,959	1,713	14,330	8,999
91-92	1,332	2,000		3,148	2,687		1,059	1,587	11,800	8,529
89-90	1,220	2,500		1,723	3,066		887	933	9,992	12,712
87-88	1,445	5,387		426	3,906		5,253	2,681	11,344	9,538
85-86	1,595	2,412		396	3,837		1,262	1,341	12,261	7,950
83-84				1,860	3,684		1,403			
81-82				3,610			1,846			
79-80				9,655			2,476			
77-78	5,381	2,588		758			9,878	2,499	10,418	15,185
75-76	2,106	2,793		786			2,317	2,339	13,562	7,151
73-74	2,955	3,421		1,371			1,336	823	1,802	8,626
71-72	333	2,878	798	2,933			29,522	2,477	13,515	10,172
69-70	847	2,201	791	2,108			1,685	2,640	13,221	9,488
67-68	1,168	4,290	915	2,760	5,372		1,753	3,809	6,669	10,641
65-66	548	3,560	734	4,334	3,934		1,919	3,554	5,944	15,200
63-64	964	3,094	837	6,930	5,012		3,221	2,788	6,183	11,242
61-62	2,791	4,599	398	2,243	1,161	3,392	5,322	2,866	10,719	13,820
59-54	45	9,011	1,325	4,002	912	2,791	4,598	308	2,243	1,161
51-52	52	16,306	6,016	3,172	971	1,315	5,537	3,033	3,318	3,087
49-50	112	14,508	2,509	3,580	1,862	16,794	7,274	4,667	6,045	8,896
47-48	38	15,839	3,650	5,607	1,868	3,481	7,8	33	3,247	5,606
45-46	77	17,329	3,681	3,120	5,160	2,629	6,4	34	3,383	9,316
43-44	26	17,180	3,694	6,110	3,411	20,238	10,1	11	3,322	7,144
41-42	55	11,630		10,042	3,398	2,97	8,1	11	4,056	15,521
39-40	45	19,718		4,185	1,412	4,879	6,1	34	5,211	
37-38	65			3,906	5,730	20,516	8,8	30	6,239	
35-36	57			4,462			6,4	30	10,696	
33-34	117			5,753			10,013	1,340	5,391	12
31-32	132			7,801			10,846	4,774	4,165	16
29-30	141			7,015	2,538	9,630	9,924	4,475	3,889	5,831
27-28	127			13,716	3,118	10,808	7,727	11,109	6,433	18,398
25-26	59			7,536	4,355	5,697	14,419	1,010	10,619	10,879
23-24	47	13,576		4,169	4,478	8,573	10,307	629	6,223	1,808
21-22	139	9,180	6,126	5,289	3,950	3,078	9,279	771	3,313	13,004
19-20	101	4,602	3,353	1,738	3,618	6,141	10,795	7,905	12,527	13,412
17-18	76	11,604	470	1,841	4,163	6,355	10,595	385	3,773	2,819
15-16		8,528	1,150	11,824	1,597	11,626	11,747	13,548	16,059	2,409
13-14	162	2,847	3,245	3,825	3,043	4,410	11,374	399	6,842	6,002
11-12	169	7,798	1,723	2	2,274	5,189	370	4,415	1,299	18,594

- Slotting by Category
  - Segregation by business channel
  - WD / Performance
  - Performance – Ideally slotted closer to Numina
- High Moving SKUs
  - Use ABC segmentation (units) to identify high movers
  - Slotted towards the ends of the aisles
- Hardware SKUs
  - Fast moving hardware slotted end of aisles
  - Identify frequently picked hardware for kits
  - Group frequently paired items together
  - Hardware ideally closer to Numina automation