



5S and Kaizen project presentation Q3 2025



Reduce storage costs for packaging stored in the external Packaging Warehouse.

Leader: Ilian Petkov

Team members: Petar Kapitanski Kaloyan Ivanov

Project coach: Svetoslav Antonov

Champion: Atanas Apostolov

Field of activity: Automotive – Electromechanical Component Assembly

Location / Factory: Kostal / Pazardzhik

Completion date: 26.09.2025



5S and Kaizen project presentation Q3 2025



5S Presentation of the VW MQB SCM Area

Leader: Nikolay Spasov

Team members: Petar Bliznakov Stoyan Pepelov Boyana Tilova Setup Technician Coordinator Operator

Project coach: Rumen Lupov

Champion: Atanas Apostolov

Field of activity: Automotive – Electromechanical Component Assembly

Location / Factory: Kostal / Pazardzhik

Completion date: 26.09.2025

1. Problem selection

High level definition of the problem:

By contract, every pallet exceeding the defined maximum of 5,000 pallets incurs an additional storage charge, resulting in increased costs.

Problem:

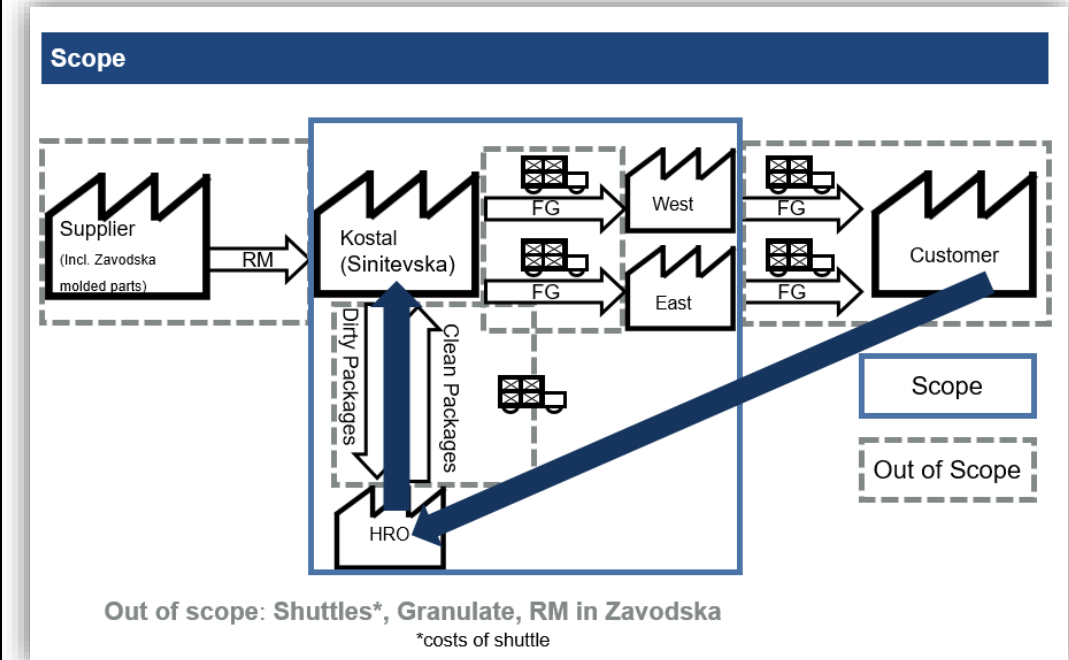
At the start of the project, the warehouse contained 8,500 pallets—3,500 above the contractual limit of 5,000 pallets—resulting in additional daily storage charges.

Conetion to the strategy plan:

Maintain and manage an inventory of up to 5,000 customer packaging pallets, covered by the agreed standard monthly storage fee.

Project scope:

Analysis of Errors and Parameters in Customer Packaging Management Analysis of Customer Packaging Storage and Handling Processes Reduce the Number of Pallets Exceeding the 5,000-Pallet Limit in the Packaging Warehouse



2. Target setting

Target:

14 Snap-Shot Projects (Logistics)

Project Charter KOSTAL

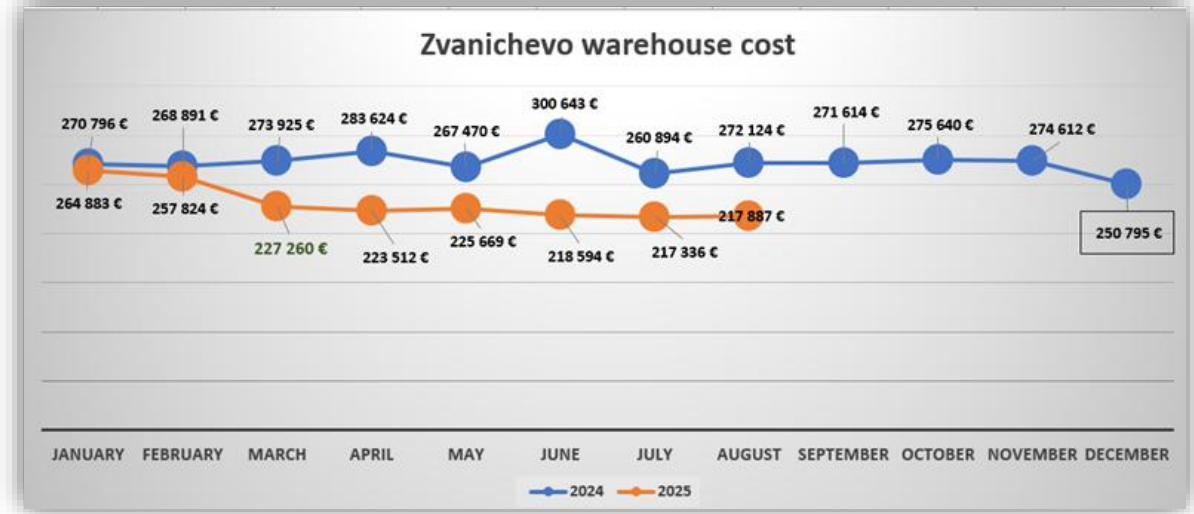
Plant	KOBU	Department	Assembly	Project Start	08.01.2025
Project lead	I. Petkov	Sponsor	A. Apostolov (Guido Herr)		
Team	S. Antonov (OPX Coach), P. Kapitanski (OPX trainee), K. Ivanov (APL3)			Project End	22.12.2025
Initial Situation and Challenge			Overall Project Goals		
- Monthly invoice for 270 000 € / month - Real monthly pallet quantity 8500 pcs			- Reduction of monthly invoice with 15% - Reduction of monthly pallet quantity with 40% - Maximum pallet quantity on stock 5000 pcs		
In Scope		Out of Scope		KPIs for impact measurement (including starting and target value)	
WH area Hronovski (Zvanichevo)		All other WH facilities		Monthly storage invoice, € Monthly pallet inventory, pcs	

	2025											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Snap-Shot Projects												
➤ Logistics	Kick Off 08.01.2025											

2. Target setting

Trend analysis:

	2024	2025	reduction	saved
January	270 796 €	264 883 €	2%	- 5 913 €
February	268 891 €	257 824 €	4%	- 11 067 €
March	273 925 €	227 260 €	17%	- 46 665 €
April	283 624 €	223 512 €	21%	- 60 112 €
May	267 470 €	225 669 €	15%	- 41 801 €
June	300 643 €	218 594 €	27%	- 82 049 €
July	260 894 €	217 336 €	17%	- 43 558 €
August	272 124 €	217 887 €	16%	- 54 237 €
September	271 614 €			
October	275 640 €			
November	274 612 €			
December	250 795 €			
	3 271 028 €	1 852 966 €		- 345 401 €



Target:

14 Snap-Shot Projects (Logistics)

Project Charter KOSTAL

Plant	KOBU	Department	Assembly	Project Start	08.01.2025
Project lead	I. Petkov	Sponsor	A. Apostolov (Guido Herr)	Project End	22.12.2025
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Initial Situation and Challenge	Overall Project Goals
- Monthly invoice for 270 000 € / month - Real monthly pallet quantity 8500 pcs	- Reduction of monthly invoice with 15% - Reduction of monthly pallet quantity with 40% - Maximum pallet quantity on stock 5000 pcs

In Scope	Out of Scope	KPIs for impact measurement (including starting and target value)
• WH area Hronovski (Zvanichevo)	• All other WH facilities	Monthly storage invoice, € Monthly pallet inventory, pcs

2025

Jan

Feb

Mar

Apr

May

Jun

Jul

Aug

Sep

Oct

Nov

Dec

Snap-Shot Projects

Logistics

Kick Off

08.01.2025

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3. Team building

14 Snap-Shot Projects (Logistics)

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Project Organization

Steering Committee:
Plant Manager, HoD, Project Manager, LQ*-Office, Works Council

Project Team and required capacities

Function	Name, Department	Required Capacity*
Head of Department	D. Gouleva	2h/week
Project Leader	I. Petkov	1h/day*
Foremen		20%*
Employee (Operator)		5days/week*
Employee (Operator)		5days/week*
OPX-Facilitator (trainee)	P. Kapitanski, K. Ivanov	5days/week**
OPX-Facilitator (advanced)		5days/week**
OPX-Coach (KOBU)	S. Antonov	2days/Week**
Technical Service		2days/week*
Planning Department	I. Petkov	2h/day*
Maintenance		2h/day*
Local Program Office	R. Lupov	Per request***

Extended Project Team

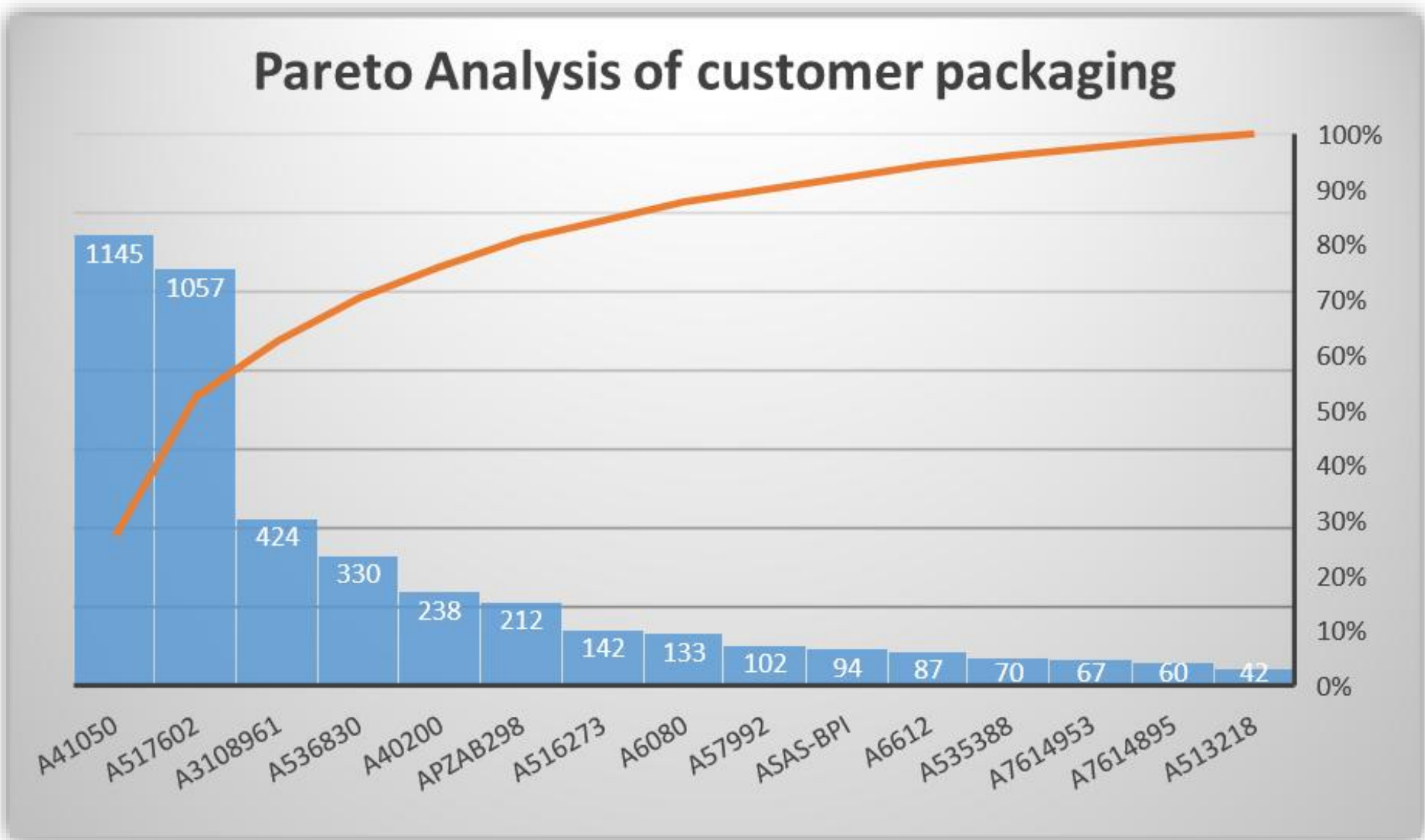
Name	Department

The Project Team will meet daily, the Extended Project Team weekly and the Steering Committee monthly.
 * = daily, ** = excl. Training days, *** = weekly update, if requested

*LQ=Lean Qualifikation

All information about capacities will be doublechecked in the Analysis Phase and updated if necessary

4. Current state analysis





4. Current state analysis

Starting date	15.1.2025				2200		
Today	25.9.2025			Potential Y saving	231667	22.1.2025	
Period of days	253			174 483,04 €	Total savings	246	
Rent per pallet per day	0,35 лв.	Total Target	Current Stock	Total delta target	160 580,36 €	23 419,20 лв.	272
		1526	4203	2677		CW4	

Customer	Cust.mat.number	Target Stock of pallets	cw03 Stock of Client pallets	Delta to Target	Action for optimization	Stock CW4	Delta
COM2020/COM2023	41050	450	1145	695	Send 500 to Dazhdino/KOBU1?	1145	0
MQB	517602	619	1057	438	Return 200 to customer	1057	
BMW	3108961	5	424	419	Return 419 to customer	334	90
MLBEVO	536830	200	330	130	Reduce 130 pallets	330	
COM 2016	40200	20	238	218	Scrap 150	238	0
COMevo	PZAB298	0	212	212	Return all 212 to customer	62	150
MLBEVO	516273	41	142	101	Ramp-down	142	
MLBEVO	6080	9	133	124	Stop ordering	133	
BR213	57992	31	102	71	Scrap 71	102	0
A Entry	SAS-BPI	22	94	72	Return 72 to customer	78	16
MLBEVO	6612	18	87	69	Loop delivery trying to reduce the loop	87	
MLBEVO	535388	21	70	49	Reduce 49 pallets	70	
A Entry	7614953	22	67	45	Return 45 to customer	51	16
MQB	7614895	55	60	5	to cut 5 pallets from the loop	60	
MLBEVO	513218	13	42	29	Ramp-down	42	

5. Project plan

14 Snap-Shot Projects (Logistics)

Project Status KOSTAL

DOI	Content	Timeline	Resources	Reasons for yellow / red traffic lights
1 1: Idea 2: Released 3: Impl. started 4: Implemented 5: Effective	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●	• ... • ...

#	Deliverables	DOI	Due Date	Estimated Finish
1	WH Hronovski (Zvanichevo)			
1.1	Analyze of number of Pallets (customer packaging)	1	08.01.2025	08.01.2025
1.2	Analyze of number of Pallets (wooden packaging)	1	08.01.2025	08.01.2025
1.3	Analyze of number of Pallets (empty boxes)	1	08.01.2025	08.01.2025
2	Reduction of Pallets (customer Packaging)	4	25.09.2025	25.09.2025
2.1	Pareto analysis of main obsolete contributors			
2.2	ABC analysis (demand related)			
2.3	Classification of main root causes			

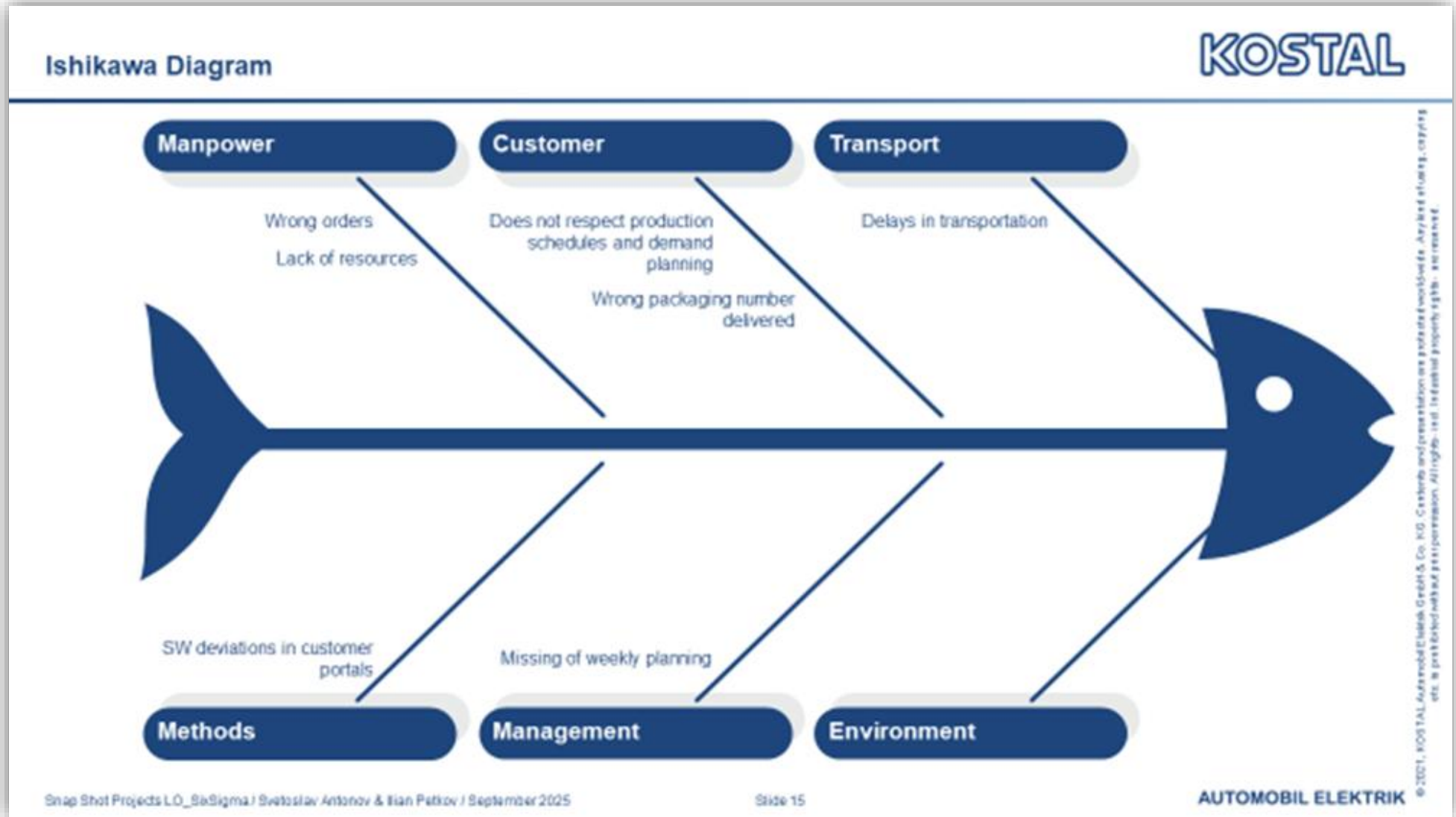
KPI	Target	YTD Target	YTD
KPI / measurable 1			

Savings [€]			

Current status / problems / risks
• Kick of Meeting – 08.01.2025 (DOI1)

Required decision
• ...

6. Root cause analysis



6. Root cause analysis

Hypothesis Analysis

KOSTAL

Probable Root Cause	Hypothesis	True / False	Proof
Does not respect production schedules and demand planning	Customers deliver packaging without ordering from our site	THRU	Delivery Note without packaging order
Wrong packaging number delivered	Wrong labeling	THRU	Delivery packaging number does not correspond to real one
Wrong orders	Wrong quantity	THRU	Delivery Note in over delivery
Missing of weekly planning and communication	Wrong ordering	THRU	Deviation in the real and planned quantities
SW deviations in customer portals	Wrong data management and SW delays	THRU	Deviation in the real and planned quantities
Lack of resources	Not enough focus on each project	THRU	Deviation in the real and planned quantities
Delays in transportation	Safety stocks to cover transportation issues	THRU	Overstock or underdelivery

7. Implementation of solution

Prioritisation Matrix

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Very low

Moderate

Very High



Solution Description	Time	Cost	Resources	Totals	To Implement
Returning of over packaging to customer	3	1	2	6	YES
Scraping of obsolete packaging	1	2	1	4	YES
Relocation of quantities in other WH	1	1	1	3	YES
Reducing delivery loops	2	1	2	5	YES

8. Target- result control



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Change in performance metrics:

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A Entry	5A5-BP1	22	94	72	Return 72 to customer	78	16
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MOB	7614895	55	60	5	to cut 5 pallets from the loop	60	
MLBEVO	513218	13	42	29	Ramp-down	42	

Savings:
345 401 €



A		B		C		D		E		F		H		I		K		L		M		N		O		P		Q	
KOBU 2 Zavodska		25.09.2025																											
Total pallets				98		0		131		0		130		106		91		37		28		468		96		0		134	
Parts per container				6		12		12		12		6		6		8		6		10		10		12		12		8	
Containers per pallet				20		6		8		8		6		6		8		6		8		8		6		6		6	
Parts per pallet				120		72		96		96		36		36		64		36		80		80		72		72		48	
Total containers				1 960		0		1 048		0		780		636		728		222		224		3 744		576		0		804	
Total Parts				11 760		0		12 576		0		4 680		3 816		5 824		1 332		2 240		37 440		6 912		0		6 432	
Pallet unit dimensions (mm)		Length		1200		1200		1200		1200		1200		1200		1200		1200		1200		1200		1200		1200		1200	
		Width		1000		1000		1000		1000		1000		1000		1000		1000		1000		1000		1000		1000		1000	
		Height		1450		930		930		1000		930		930		1000		1100		1000		1000		1000		1000		850	
		Volume (m3)		1,74		1,12		1,12		1,20		1,12		1,12		1,20		1,32		1,20		1,20		1,20		1,20		1,02	
		Approx.weight FULL (kg)		163		111		110		153		97		97		103		95		117		117		116		116		72	
Project				A Entry						MEB + MEB Gen2				MEB Gen2															
Cust.mat.number				7614953 SAS-BS7 SAS-BPI 529863						BV29 790BV29				2933-8100 2650-8150 790BV90						537327		538476		539910					
Current stock (pallets)				91 0 124 0						85 76				68 23 22						63		0		111					
Max Weekly needs (pallets)				22 0 22 0						112 102				103 64 38						529		42		59					
Avg Weekly needs (pallets)				18 0 19 0						76 48				76 40 20						159		22		46					
Comment				Return 40 to customer Obsolete Obsolete																Customer to provide more frequently more pallets		Customer to provide more frequently more pallets							
Coverage (in weeks)				4 - 6 -						1 1				1 0 1						0		0		2					



10. Deployment

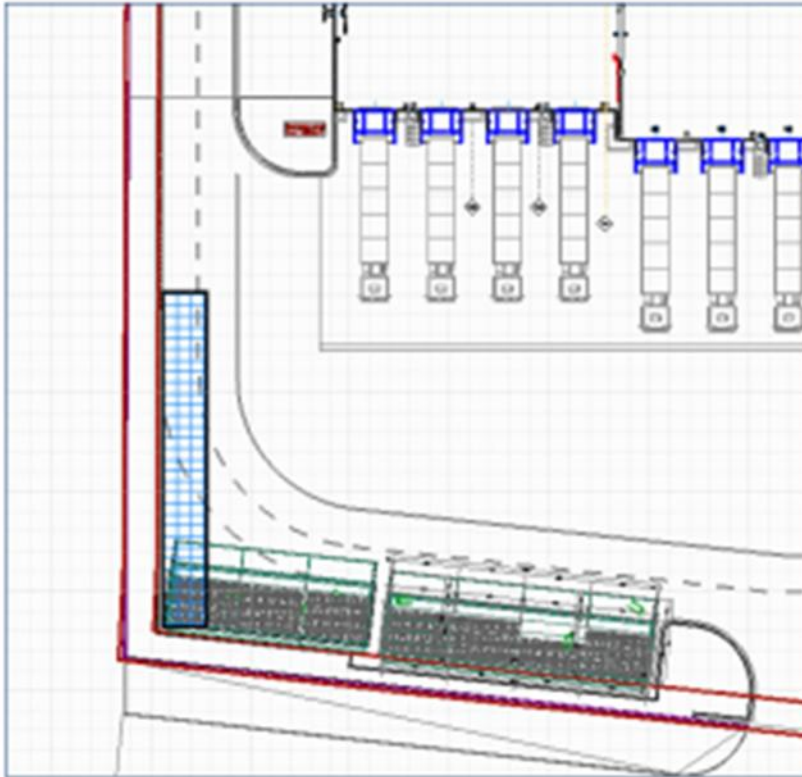
	2200																								
Potential Y saving	231667	22.1.2025		29.1.2025		5.2.2025		12.2.2025		19.2.2025		26.2.2025		5.3.2025		12.3.2025		19.3.2025		26.3.2025		2.4.2025		9.4.2025	
174 483,04 €	Total savings	246		7		7		7		7		7		7		7		7		7		7		7	
Total delta target	160 580,36 €	23 419,20 лв.	272	323,40 лв.	132	639,45 лв.	261	548,80 лв.	224	1 800,75 лв.	735	66,15 лв.	-27	205,80 лв.	84	132,30 лв.	54	521,85 лв.	213	61,25 лв.	25	671,30 лв.	274	-115,15 лв.	
2677		CW4		CW5		CW6		CW7		CW 8		CW 9		CW 10		CW 11		CW 12		CW 13		CW 14		CW 15	
Delta to Target	Action for optimization	Stock CW4	Delta	Stock CW5	Delta	Stock CW6	Delta	Stock CW7	Delta	Stock CW8	Delta	Stock CW9	Delta	Stock CW10	Delta	Stock CW11	Delta	Stock CW12	Delta	Stock CW13	Delta	Stock CW14	Delta	Stock CW15	
45	Return 45 to customer	51	16	51	0	55	-4	41	14	29	12	31	-2	42	-11	40	2	42	-2	72	-30	79	-7	90	
72	Return 72 to customer	78	16	78	0	74	4	73	1	39	34	39	0	23	16	8	15	1	7	54	-53	27	27	38	
438	Return 200 to customer	1057		1013	44	849	164	869	-20	726	143	675	51	675	0	639	36	481	158	386	95	273	113	260	
5	to cut 5 pallets from the loop	60		78	18	77	1	69	8	73	-4	78	-5	76	2	89	-13	81	8	101	-20	104	-3	107	
29	Ramp-down	42		55	-13	36	19	36	0	61	-25	61	0	51	10	61	-10	61	0	61	0	61	0	61	
101	Ramp-down	142		114	28	112	2	108	4	93	15	117	-24	117	0	109	8	112	-3	145	-33	126	19	123	
49	Reduce 49 pallets	70		71	-1	51	20	57	-6	44	13	68	-24	61	7	31	30	0	31	0	0	12	-12	30	
130	Reduce 130 pallets	330		310	20	296	14	304	-8	283	21	289	-6	290	-1	253	37	258	-5	234	24	233	1	188	
124	Stop ordering	133		125	8	115	10	115	0	115	0	113	2	105	8	107	-2	100	7	96	4	91	5	89	
69	Loop delivery trying to reduce the loop	87		119	-32	94	25	102	-8	92	10	100	-8	94	6	102	-8	84	18	100	-16	104	-4	104	
695	Send 500 to Dazhdino/KOBU1?	1145	0	1145	0	1122	23	1093	29	663	430	637	26	567	70	593	-26	643	-50	547	96	469	78	575	
212	Return all 212 to customer	62	150	62	0	62	0	62	0	0	62	0	0	0	0	0	0	0	0	0	0	0	0	0	
218	Scrap 150	238	0	238	0	242	-4	242	0	242	0	247	-5	275	-28	275	0	254	21	277	-23	228	49	186	
419	Return 419 to customer	334	90	238	96	246	-8	48	198	18	30	42	-24	42	0	47	-5	44	3	47	-3	45	2	44	
71	Scrap 71	102	0	102	0	107	-5	95	12	101	-6	109	-8	104	5	114	-10	94	20	110	-16	104	6	108	

10. Deployment

1. Reduction of customer packaging

Project Status **KOSTAL**

➤ Internal customer packaging (Kostal property), relocation of defined packaging to KOBU plant area



- ❖ Dedicated space of 120 m²
- ❖ 4 layers of EP
- ❖ Total capacity of 360 EP
- ❖ Customer packaging COM 2020 / COM 2023
- ❖ Savings potential 23464 €/year

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11. 5 S

First Audit. Points 99

Проверочен лист по 5S						
Завод:	Костал	зона:	MOB SCM L2		дата	26.08.2025
Одитор:	С. Нешевски	1S	2S	3S	4S	5S
Общо точки		20	20	20	20	99
Бр. Въпроси		5	5	5	5	25
Средно точки		4.0	4.0	4.0	4.0	3.8
Дейности по 1S - СОРТИРАНЕ						
1,01	На работното място се намират само нужните материали , НзП, и др. Материали, които не са нужни за текущата работа са отстранени от работното място.	4	0	1	2	3
1,02	На работното място се намират само нужните инструменти, приспособления и др.п. Инструменти, които не са нужни за текущата работа са отстранени от работното място.	4				x
1,03	На работното място се намира само необходимото оборудване . Машини, стелажки, шкафове, маси и др. които са излезли от употреба или ненужни за текущото производство са отстранени от работното пространство.	4				x
1,04	На работното място се намира само необходимата документация (вкл. информация по таблата). Остарели или ненужни доклади, бележки, обяви, афиши и др. са отстранени.	4				x
1,05	В стандарта по 5S (раб. инструкции/схема и пр.) за работното място са дефинирани всички нужни предмети за мястото	4				x
Дейности по 2S - СИСТЕМНО ПОДРЕЖДАНЕ						
2,01	Проходите са ясно идентифицирани и незапречени. Изходите са ясно дефинирани и незапречени.	4	0	1	2	3
2,02	Местата за всички предмети - е ясно дефинирано, очертано и маркирано по разбираем начин. (предмети по пода - кутии, НзП, материали, колички, почистващи средства, палети за стружки и др.; <i>предмети по други места</i> - инструменти, стелажки и пр.)	4				x
2,03	Количествата за материали, консумативи и НзП са ясно дефинирани, очертани и надписани.	4				x
2,04	Поставени са етикети и надписи за материали, НзП, машини, участъци, лавици и пр.	4				x
2,05	Документите (вкл. информация по таблата) са четливо надписани и имат ясно дефинирано място.	4				x
Дейности по 3S - СИЯЙНА ЧИСТОТА						
3,01	Подововете са чисти от мръсотия, прах, отпадъци, компоненти, опаковъчен материал и др. Маркировките по пода са в добро състояние. Стените, преградите, колоните , са чисти.	4	0	1	2	3
3,02	Машините са чисти от прах, масло, мръсотия и пр. (работни плотове, капаци, стойки с материали и др.)	4				x
3,03	Всички предмети - работни маси, кутии, кутии, кофи, инструменти, и др. са чисти, не са разкъсани или повредени. Те са подредени по местата си.	4				x
3,04	Документите са чисти, не са повредени, и се съхраняват на местата си.	4				x
3,05	Материалите и консумативите за почистване се съхраняват на точно определено място с подходяща маркировка и са лесно достъпни при нужда.	4				x
Дейности по 4S - СТАНДАРТИЗИРАНЕ						
4,01	Има график , който показва време, честота и отговорности за почистването на машините, стелажки, работното пространство и др.	4	0	1	2	3
4,02	Има график , който показва време, честота и отговорности за отстраняване на отпадъците от производството.	4				x
4,03	Въведени са превантивни мерки за спазване на 5S изискванията (напр. Системи за събиране и отстраняване на отпадъци - контейнери, кутии и др.,)	4				x
4,04	Резултатите от предходния одит са поставени на видно за целия екип място.	4				x
4,05	Точките за подобрене набелязани на предходния одит са изпълнени.	4				x
Дейности по 5S - САМОДИСЦИПЛИНА						
5,01	Представител на Мениджмънта е участвал в дейностите по 5S като одитор, или в други дейности през последния 1 месец.	4	0	1	2	3
5,02	Екипите (смените) с най-голям принос в дейностите по 5S се отличават.	4				x
5,03	За дейностите по 5S се отделят достатъчно време и ресурси (напр. Определено дневно/седмично време за почистване, 5S лидер и др.)	4				x
5,04	Всички оператори, лидери и началници имат задачи за изпълнение по 5S в рамките на 1 седмица.	4				x
5,05	Екипа стартира инициативи за подобрения на работното място, които не са определени в 5S одита.	3				x
						A

Second Audit. Points 100 – Target is keeping on with these results

ПЛАН ЗА ПОДОБРЕНИЕ			
Заб.	Задача	Отг.	Срок
A	Операторите знаят как да използват системата за управление на идеите за подобрене, но няма такива идеи	APF	26.9.2025