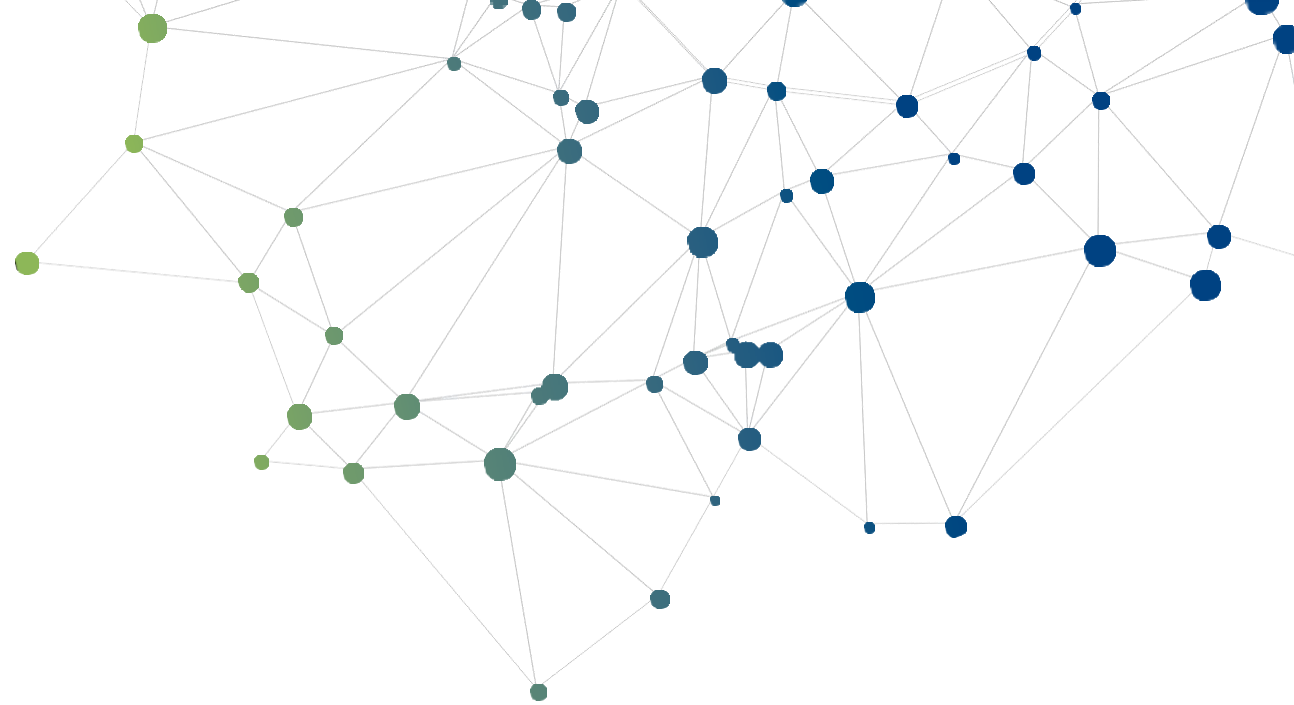




*The way to
Excellence*



Together, we Build
a Sustainable Future in
the Aluminium Industry.



Andrej Kolmanič

CEO, IMPOL group



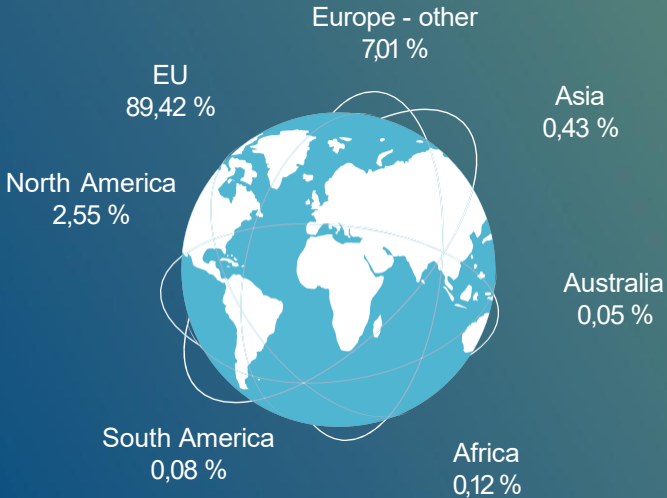
Urban Smolar

Lean Office Manager, IMPOL group



Our Position

Between innovation and flexibility



Impol Group,
Slovenia -
Headquarters
(Area - 221.520 m2)



Impol Seval,
Serbia
(Area - 147.398 m2)



Impol-TLM,
Croatia
(Area - 467.325 m2)

PRODUCTION SITES

- 1 Impol, Slovenia
- 2 Impol Seval, Serbia
- 3 Impol-TLM, Croatia

OFFICE

- 4 Impol Aluminum Corp., NY

We've been writing our Story since 1825



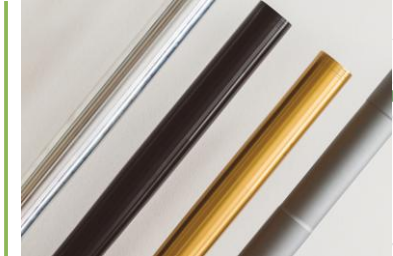
Founding of a company producing forged copper products.



Slovenia declares independence. The company becomes primarily oriented towards exports (80 %).



Impol buys 70 percent of share of Impol Seval a. d. in Serbia.



Expansion of activities to the field of finalized/ machined products.

1825

1950

1991

1998

2002

2016

2018

2022

Transformation from copper to aluminium.



Impol becomes a privately owned company.



Impol buys assets of former TLM in Croatia nad creates Impol-TLM.



Brand of products with low carbon InfiniAL.

InfiniAL

Growth and Performance Indicators



6th

largest Slovenian exporter



5X

increase in sales volume over the past 30 years



2.500

employees



210.400

tons of products produced in a year



879,9 mio

annual turnover



400 mio

investment in last 10 years

Specialised for Your Industry

Between innovation and flexibility



Automotive
Industry



Pharmaceutical
Industry



Packaging



Transport



Electrical Industry



Renewable
Resources



Consumer Goods



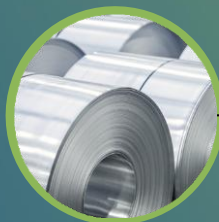
Construction



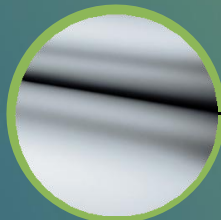
Aeronautical and
Aerospace Industry

Products of IMPOL

Strips and sheets
24,03 %



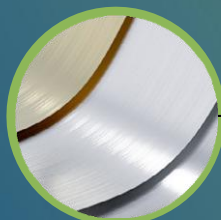
Foils and thin strips
22,17 %



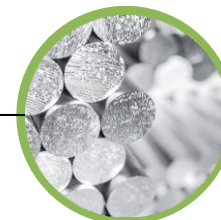
Slugs, discs, etc.
7,02 %



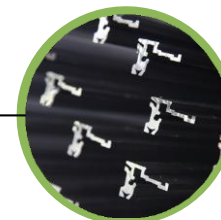
Painted strips
5,26 %



EXTRUDING
division
41,51 %



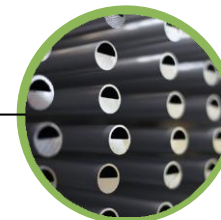
Rods,
Wrought billets
30,25 %



Profiles
7,07 %



Finalized products
2,61 %



Tubes
0,99 %

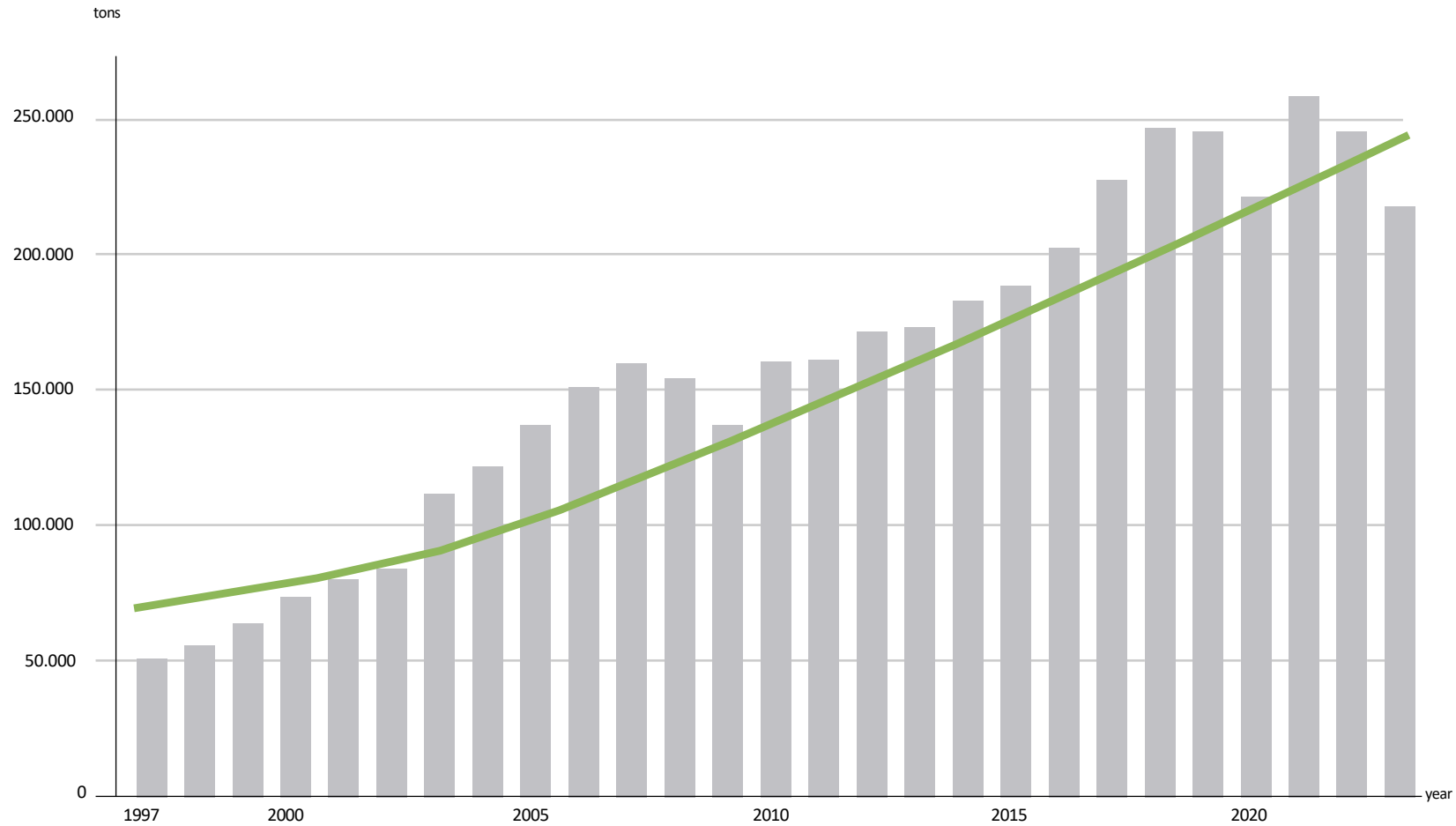


Forged blanks
0,60 %

ROLLING
division
58,49 %

Sales Growth

Quantity of Sales in Tons



Distribution 34,21 %

Transport 29,62 %

Food industry 15,22 %

Construction industry 10,17 %

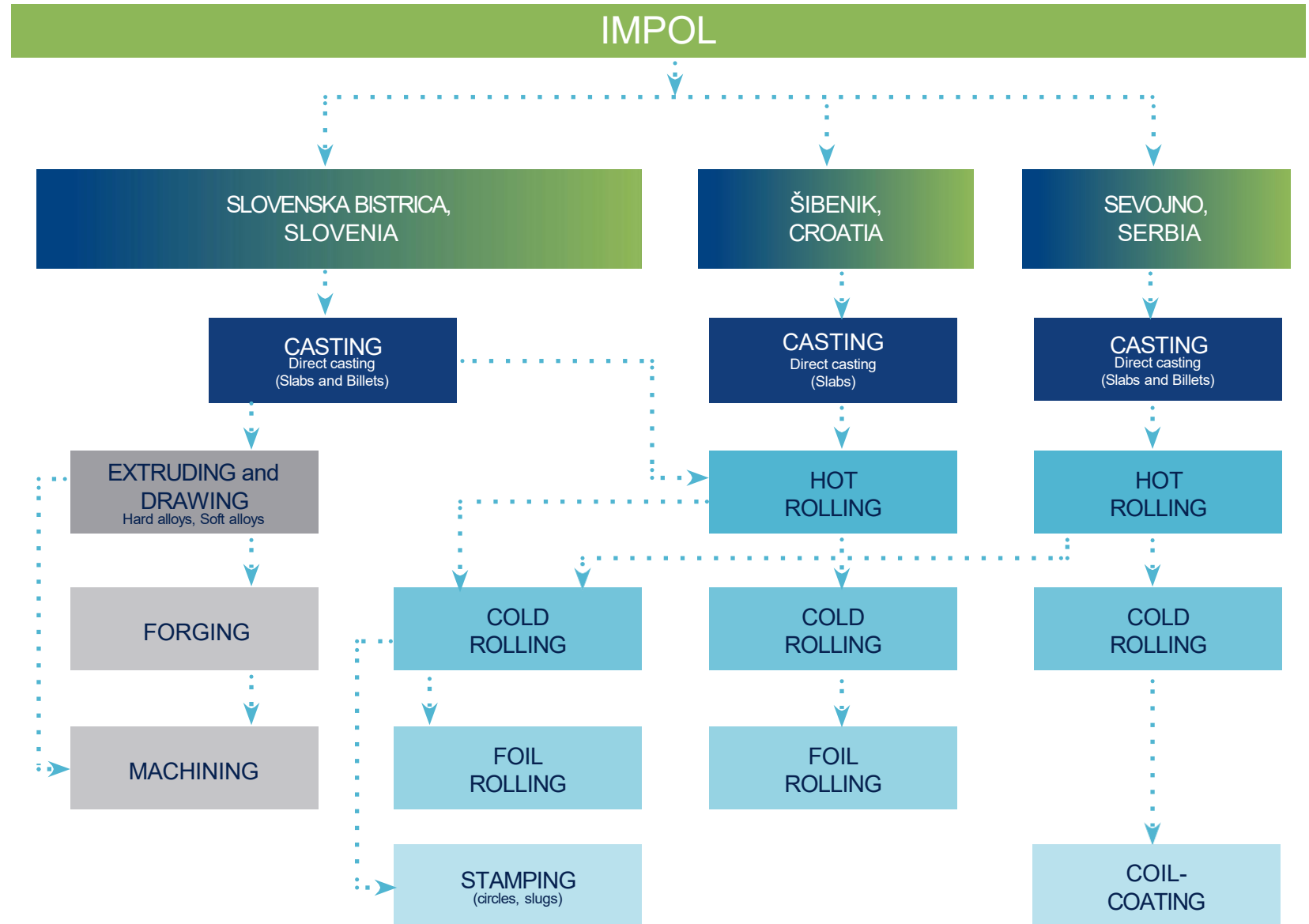
Pharmacy 3,05 %

Electrical industry 1,53 %

Consumer goods 2,06 %

Machines and equipment 0,65 %

Production Process



Beginning of the way

CEO REALITY AND EXPECTATIONS

CURRENT TRENDS:
-FINANCIALS
-TECHNOLOGY

EBIT DROP
- 57%

Claim Costs
2.6 mio €

YEALD
- 10%

SCRAP
+0,5 %

OEE
BELOW PLAN

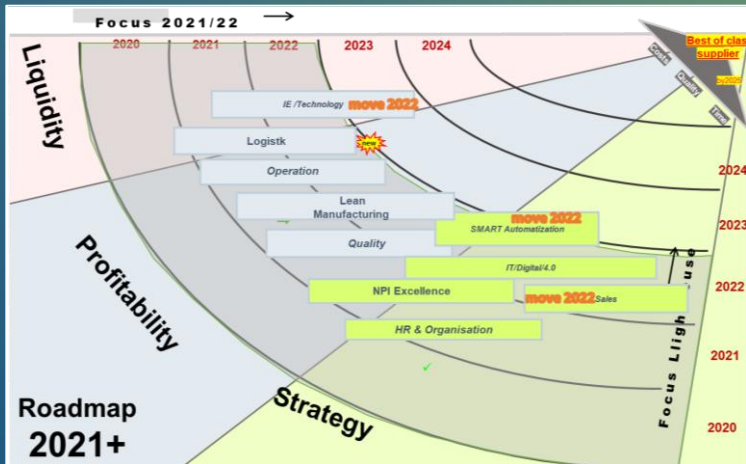
EXPECTATIONS:
-EXCELLENCE
-EBIT GROWTH

COMPETTIVENESS
WITH LEAN EXCELLENCE
IMPLEMENTATION

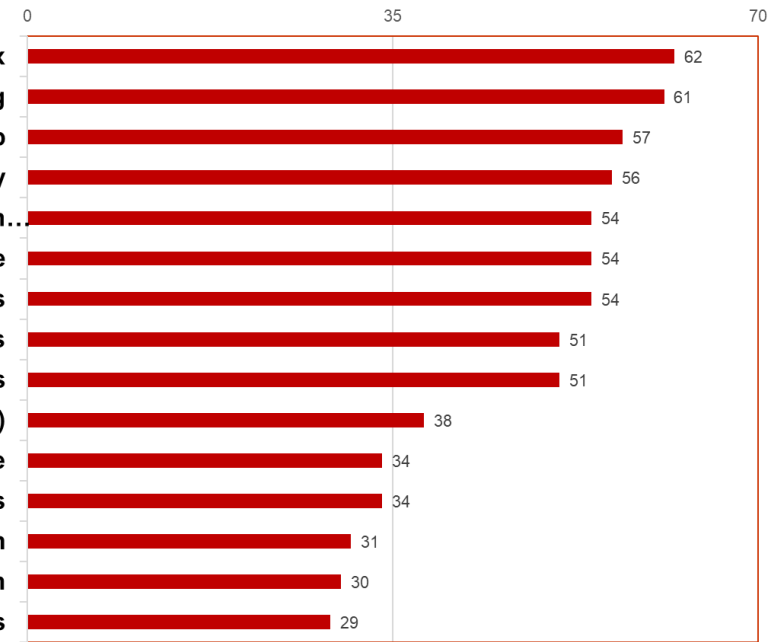
CIP GOAL OF TO:
+3% - +4%



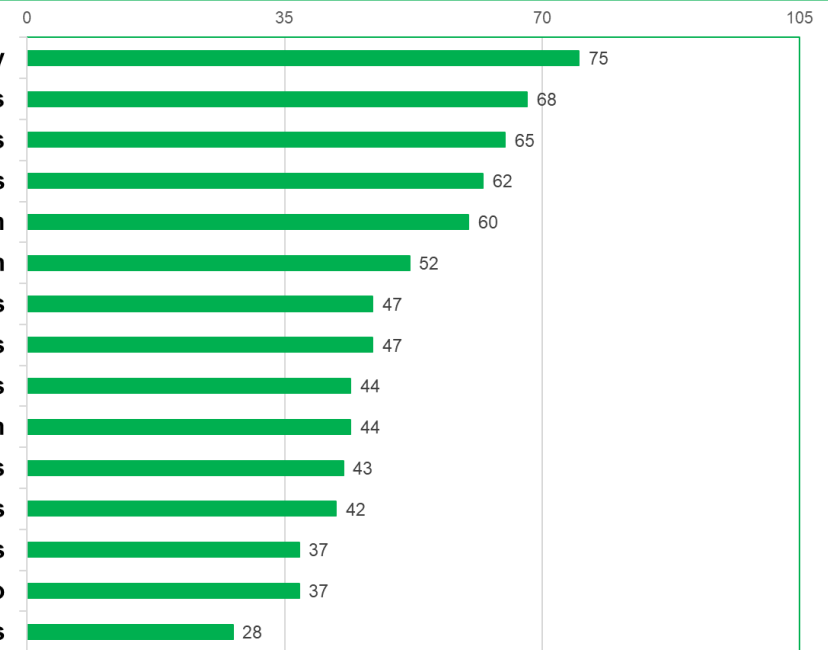
Results of the SWOT

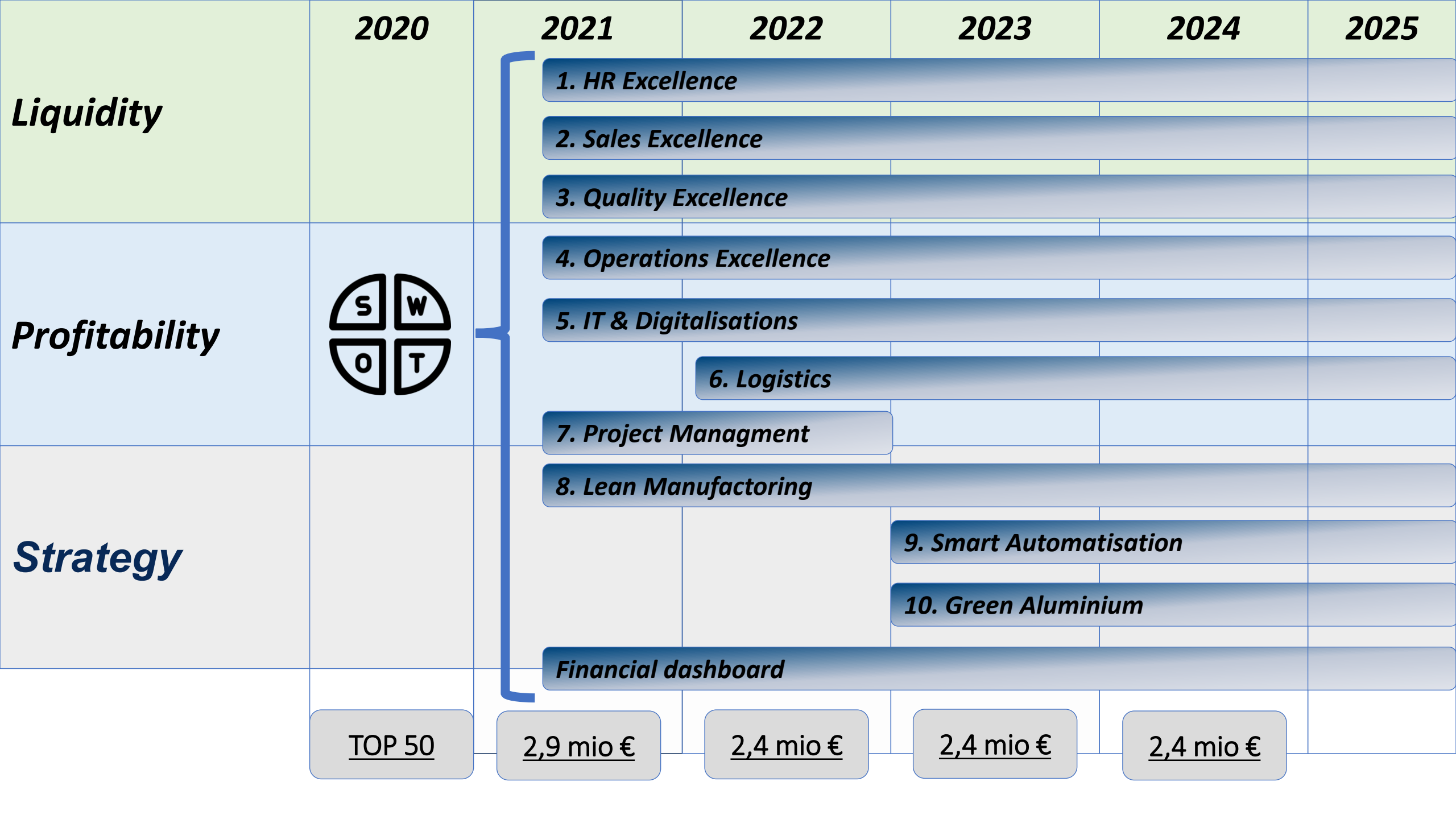


- Rules & Roles are Not Clear & Organisation too Complex
- Standardized Production System Missing
- Missing Transparency, Poor Feedback & Leadership
- Improvement in Operations Not Organized with Methodology
- Missing Planning and Production Scheduling Organisation..
- High Non-Quality Costs Inhouse
- Low Productivity of Employees
- High Non-Quality Costs from Customer Claims
- Missing Management by Objectives
- Time Management not Installed (OTD, Unbalanced work load)
- Weak Energy & Infrastructure
- Missing Talent for Specific Business Areas
- Low Level or Incorrect IT integration
- Small Buyer of Raw Aluminium
- Missing Standard KPIs



- Implement LEAN Tools & Methodology
- Implementation of New Technologies
- Growth in EU & WW Markets
- Implement Continious Improvement Events in Processes
- Implement Project Management in IMPOL Organisation
- Optimize Material Flow in IMPOL Value Stream
- Implement Quality Control Organisation and Tools
- Clear Organisational Structure With Rules and Roles
- Implement Standardized KPIs
- Automatisation of Production
- Change Employee Structure to High Performers
- Improve and Integrate IT Solutions
- Reduction Of Non-Quality Expenses
- Widen Production Portfolio
- Implement Rules and Roles in Teamwork & Meetings





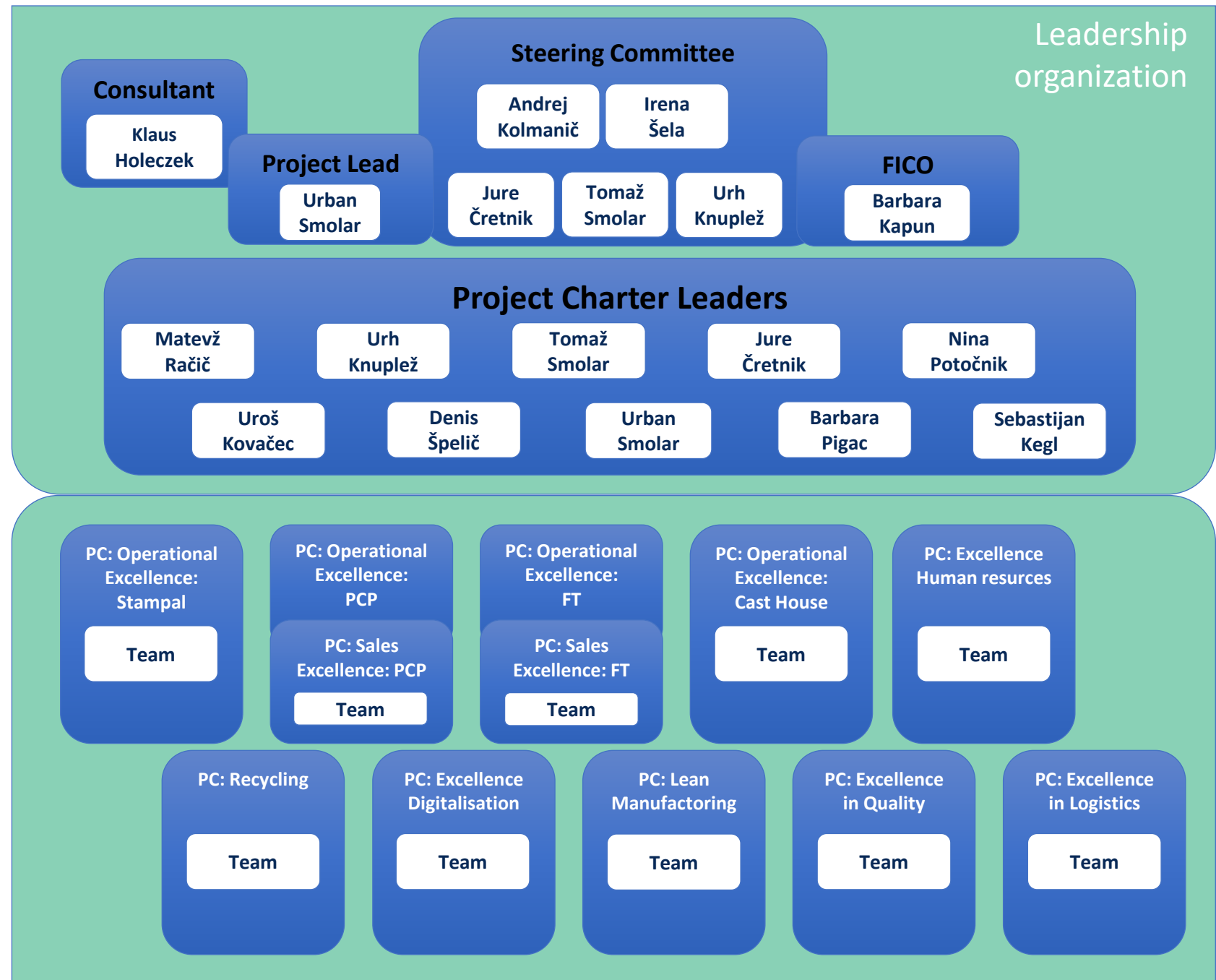
Organisation is key

The executive team (8)

The functional lead team (5)

The operational lead team (50)

The operational employees (163)



IMPOL's Heart CAST HOUSE

Slabs



Billets



Bars



Versatility:

1xxx, 2xxx, 3xxx, 4xxx, 5xxx, 6xxx, 7xxx, 8xxx

Flexibility:

Alloying per customer specification with 287 alloys

Recyclability:

70% of all material is recycled, secondary or tertiary

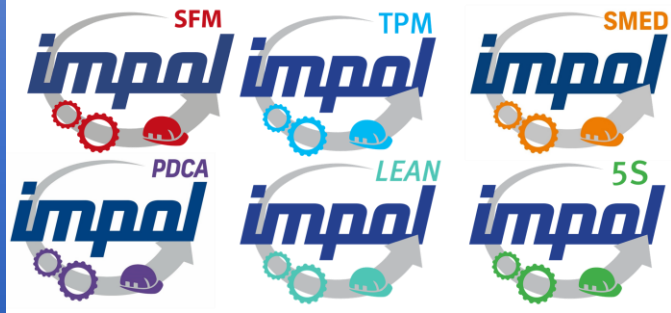
PC: Lean Manufacturing

Urban Smolar
Lean Office manager

Niko Zorko Rozman
Automatization

Sašo Planinc
SMED specialist

Lean Toolbox



Ime projekta: Operativna odličnost LLT Projekt ID: 4.3 **impol**

Projektni center: Operativna odličnost Livarna Status: 8.9.2025

Opis projekta: Izboljšava obkroženosti stanja

Projektna ekipa: **Štefci:** Jure Čretnik, **Štefci:** A. Kolman, **Mentor:** U. Smolar

Priloga: Prototipni proces: Simon Brglez, Vabljenavale: Andrej Leskovar, Matic Založnik, Dejan T.č, Matjaž Čučina, Niko Turšič, Survarnik: Uroš Kovarčič, Davor Bregelj, Boris Breščič, Tadej Želj, Procesni inženiring: Matjaž Staninčar, Jana Dolanovič, Marko Pavonič, Aleksandra Robič, Viljem Štamen, Boštjan Pila.

Učinek projekta: Dobrih osmestotnik, Ukupnost, Stranica (od 1 do 1)

Kategorija/komponenta stroškov	Investicijska	Prilagodljiva
Skupni stroški	270.000,00 €	471.400 €
Zmanjšanje materialnega smetila na drugih 12 23%	30.000,00 €	133.200 €
Upravljanje na vodilni meri (zmanjšanje porabe vgrabe na 3%)	170.000,00 €	122.200 €
Upravljanje sistema vrhunske kakovosti	170.000,00 €	180.000 €
Upravljanje sistema kakovosti na vseh delovnih mestih - zaveza strani IC	70.000,00 €	28.400 €

Skupni rezultat projekta: 201.400,00 € - 12 Meseci

Sl. Mejski	Glavne aktivnosti	Odgovorna oseba	Datum začetka delovanja	Risk do 31.12.2025	Status (od 1 do 5)
1.	Vodenje in prodaja	Jure Čretnik	1.09.2025	28.02.2026	★
2.	Optimizacija homogenizacijskega branjenja	Matjaž Staninčar	1.01.2025	31.12.2025	★
3.	Izboljšava opreme in uspešnost lizice brana po Wipacstaff tehnologiji na lizici 4	Aleksandra Robič	1.01.2025	31.05.2025	★
4.	Optimizacija obrabe brana	Aleksandra Robič	1.04.2025	31.12.2025	★

Holistic involvement

PC: Operational Excellence: Cast House Core Team

Jure Čretnik
Director LLT

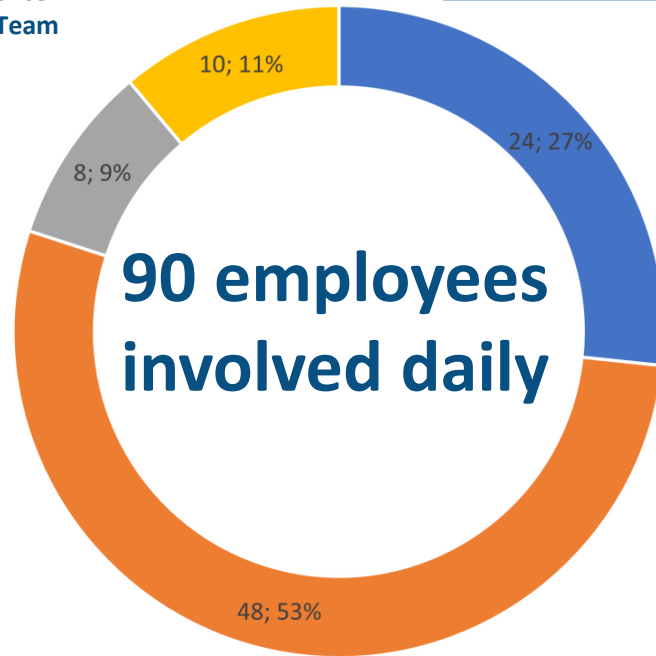
Simon Brglez
Production manager

Andrej Leskovar
Maintenance manager

Niko Turšič
TPM coordinator

Matic Založnik
Deputy coordinator

PC: Operational Excellence: Cast House Extended Team



PC: Casting house



IMPOL CAST HOUSE – TPM AS A WAY TO EXCELLENCE

Why TPM as a tool?

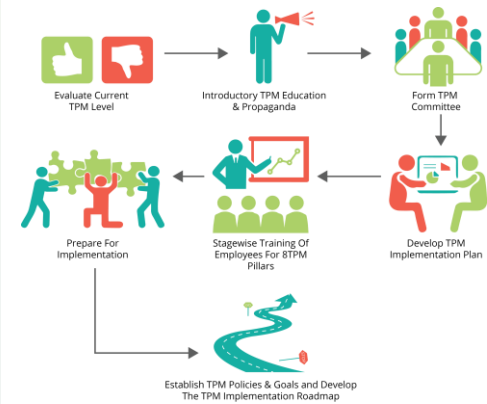
A Machine-driven company

Strong maintenance teams

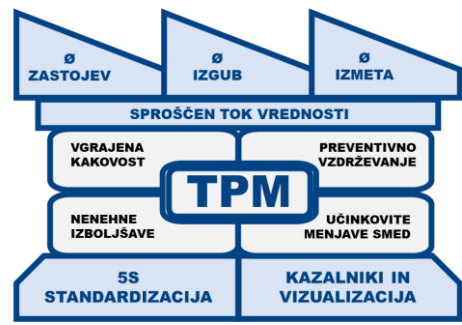
Focus on machine – human interaction

Substantial opportunities in KPI development, deployment & continuous improvement

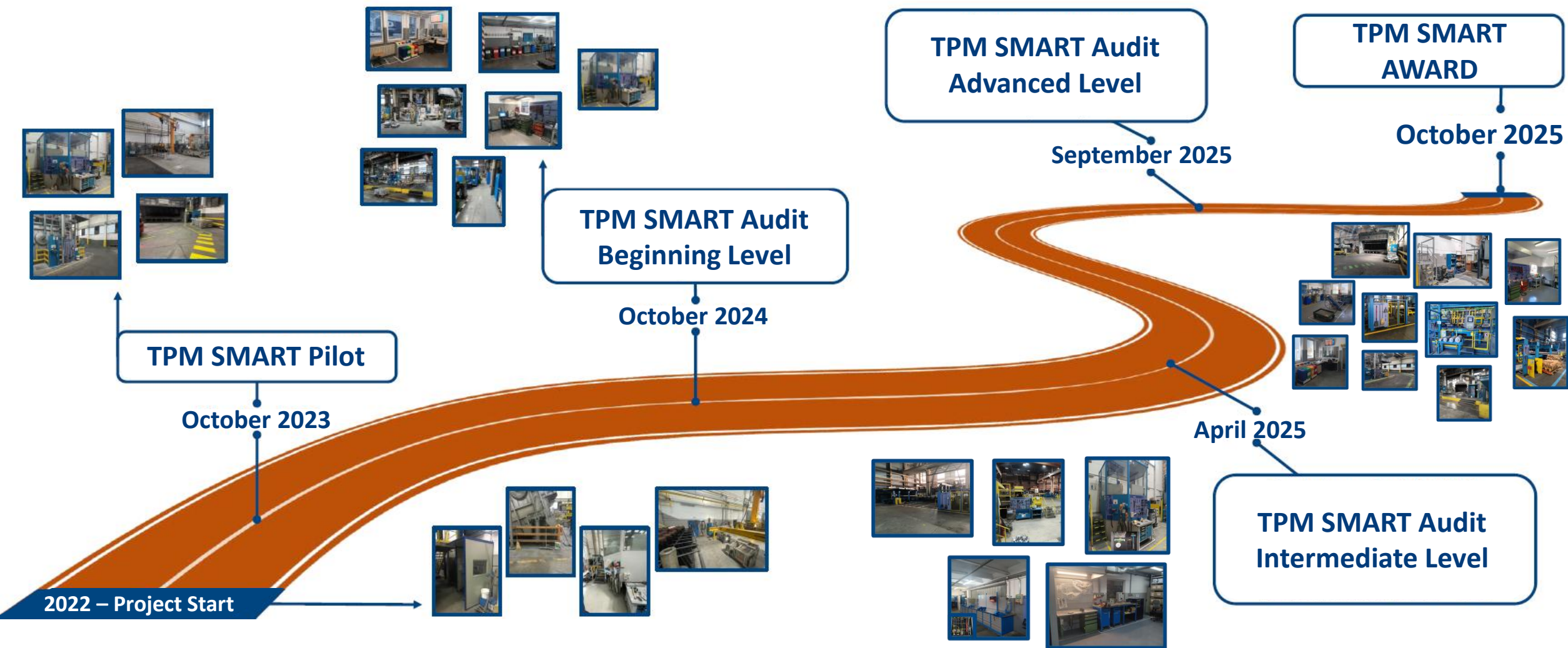
Leadership supported drive towards continuous increases of efficiency



TPM-Osnove	1. Faza	2. Faza	3. Faza	4. Prenos prakse na podružnice
Analiza potenciala	Pilotni projekt v vseh proizvodnih halah IMPOL	Ekipno delo Pravila in odgovornosti	Sistematične izboljšave OEE	Standardizacija
Beleženje izgub	TPM Timi	Preventivno vzdrževanje	Standardizacija	Dnevno proizvodno poročanje DMS
Stanje tovarne	Lighthouse projekt	Dnevno proizvodno poročanje DMS	Autonoma Mehanizacija	Metodologija SMED Razpoložljivost
Izobraževanje	Dan delavnic z vrhovnim vodstvom	Metodologija SMED Razpoložljivost	Prediktivno vzdrževanje	Metodologija PDCA Kakovost
Vzdrževanje	5S	Metodologija PDCA Kakovost	Vzdrževanje celotnega toka vrednosti	Sistematične izboljšave OEE
Kultura	Vizualizacija na delovnih mestih	Metodologija: KPI Nenehne izboljšave		
Urejenost in čistoča				

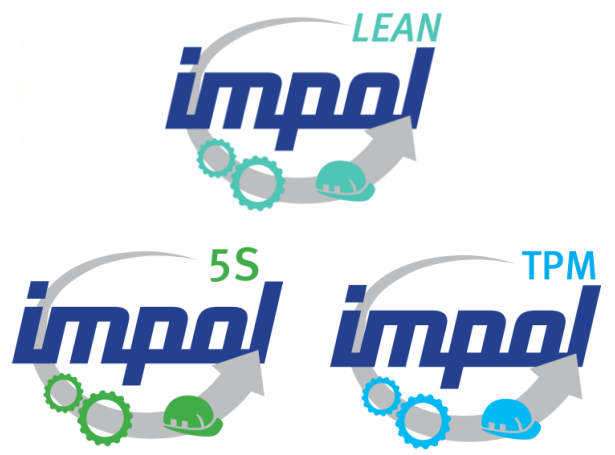


IMPOL CAST HOUSE – THE WAY TO EXCELLENCE



IMPOL CAST HOUSE – THE WAY TO EXCELLENCE

3 YEAR DIGITALISATION PROJECT



October 2024

September 2025

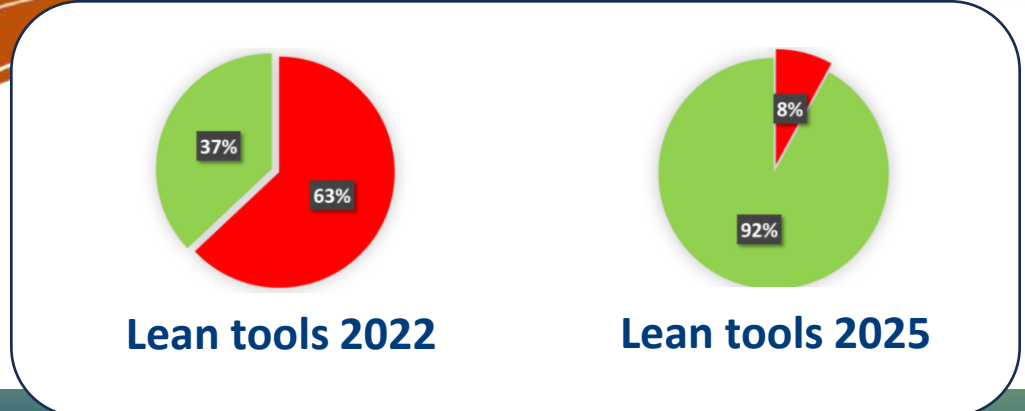
October 2025

October 2023

April 2025

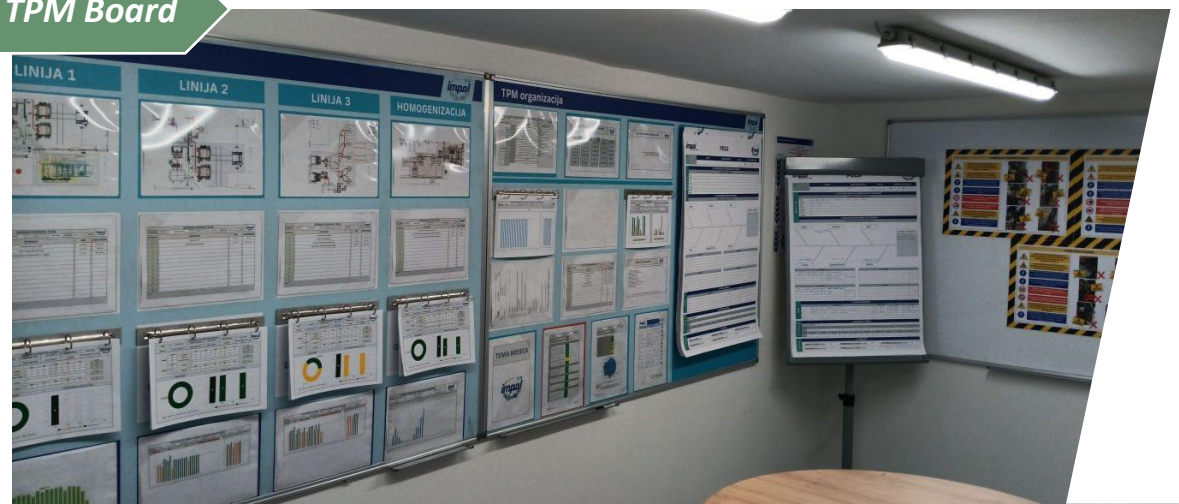


2022 – Project Start



IMPOL CAST HOUSE – TPM AS A WAY TO EXCELLENCE

TPM Board



Autonomous maintenance



Regular TPM meet

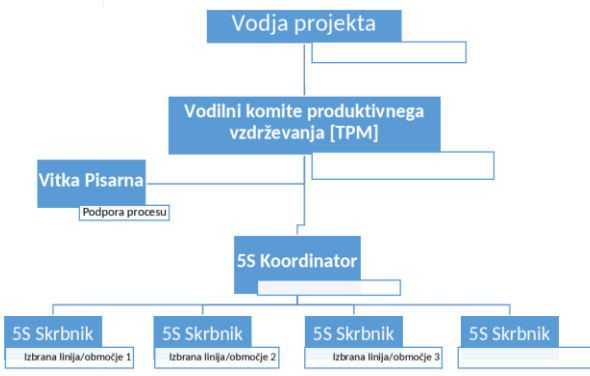
Tracking OEE

IMPOL CAST HOUSE – 5S HOW WAS IT POSSIBLE?

PILOT PROJECT



DIVISION OF RESPONSIBILITY



ENGAGEMENT

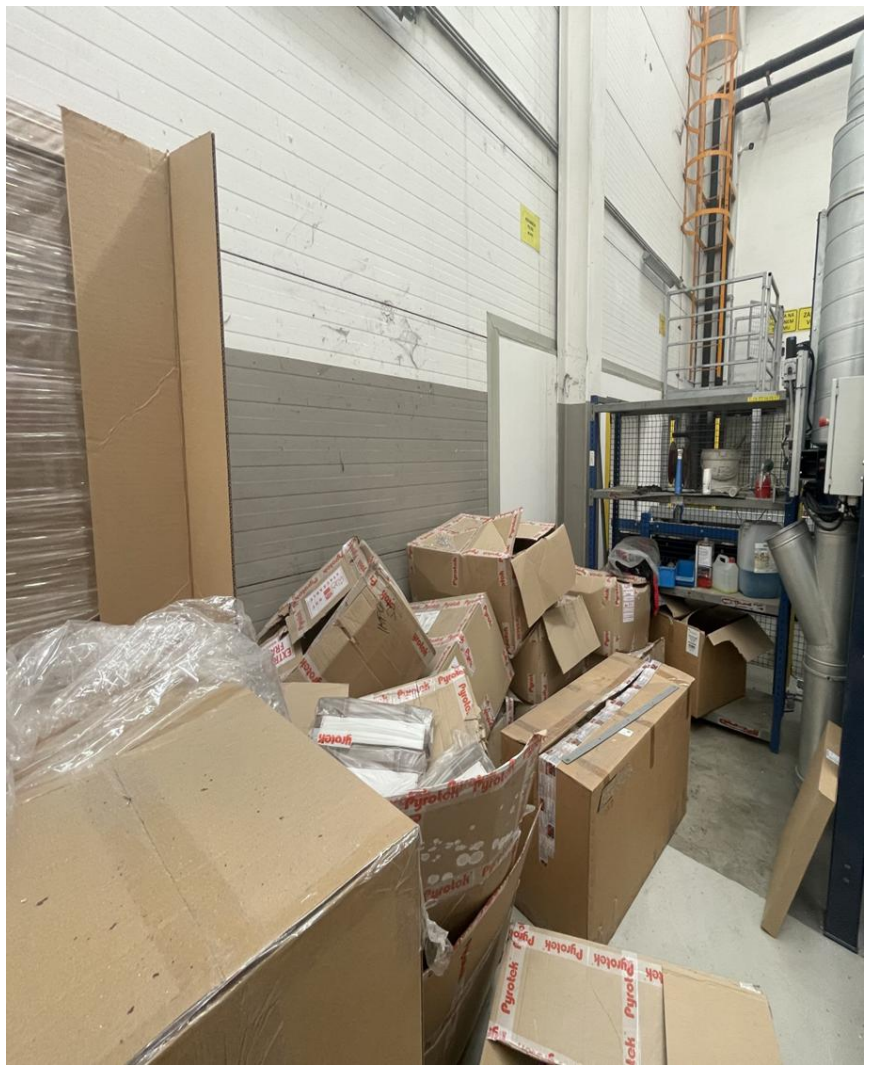


647 POINTS OF 5S IMPROVEMENT

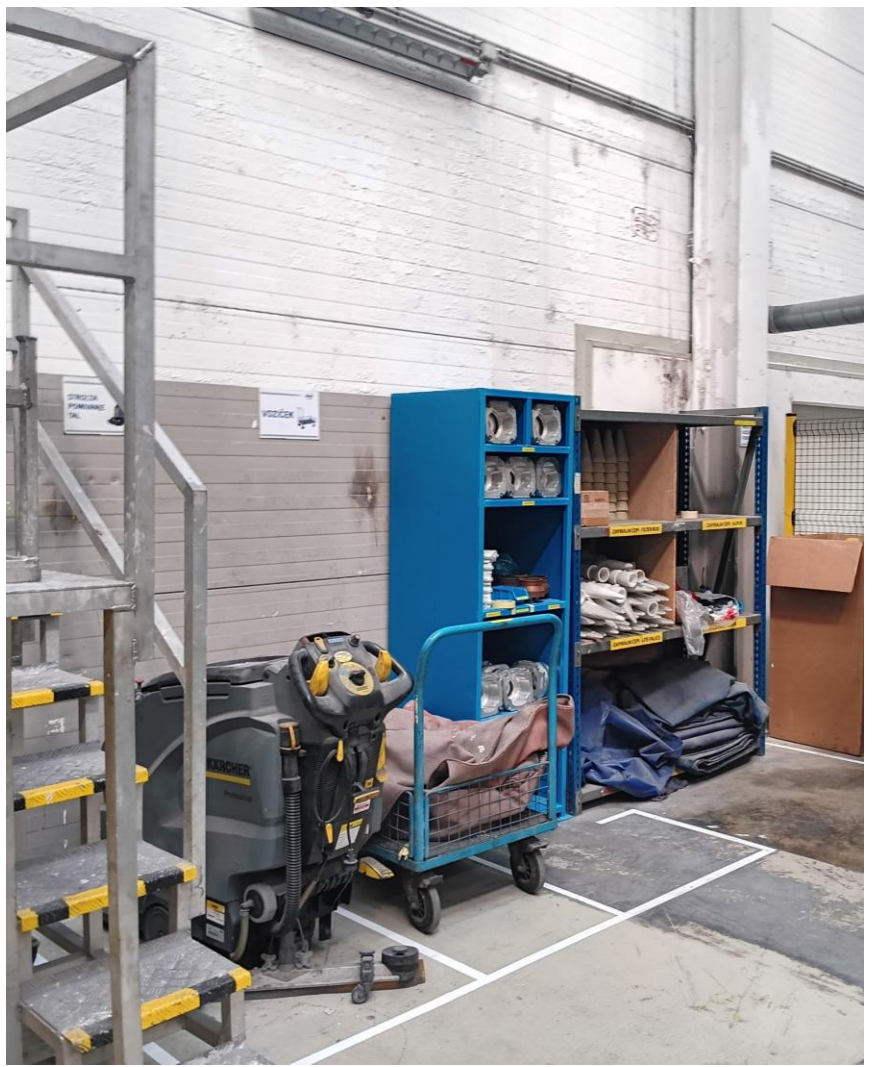
EMPLOYEE TRAINING



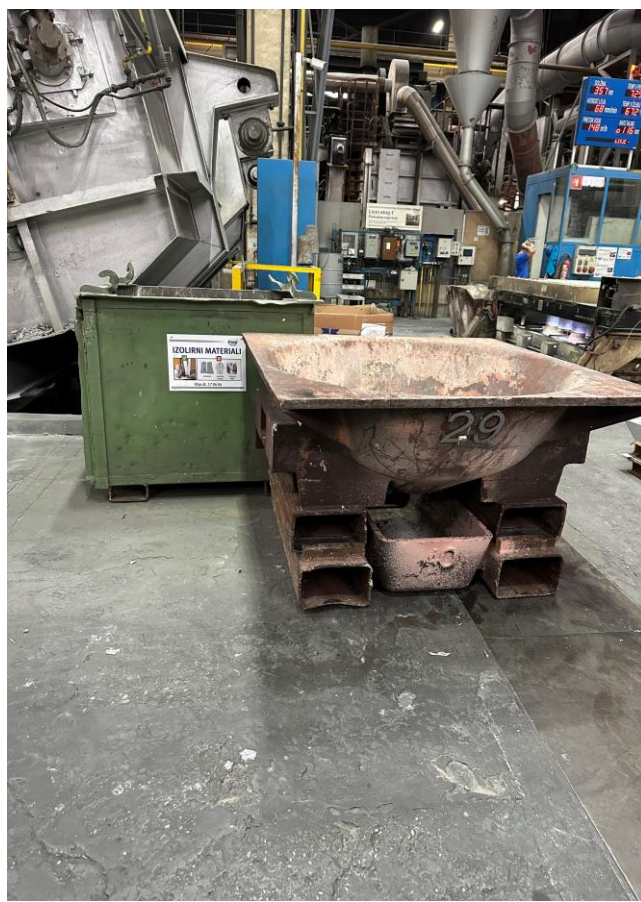
IMPOL CAST HOUSE – 5S BEFORE



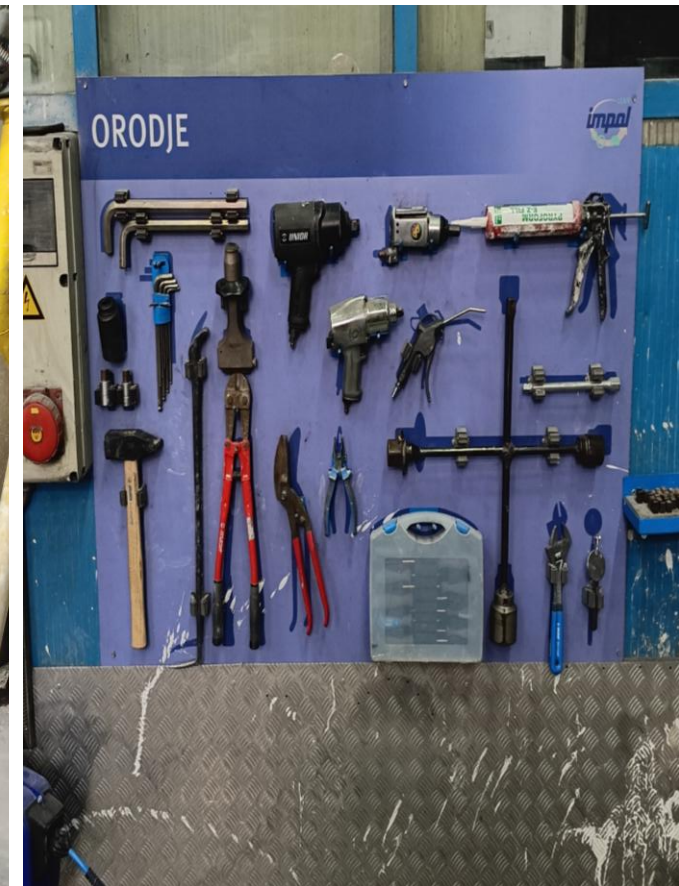
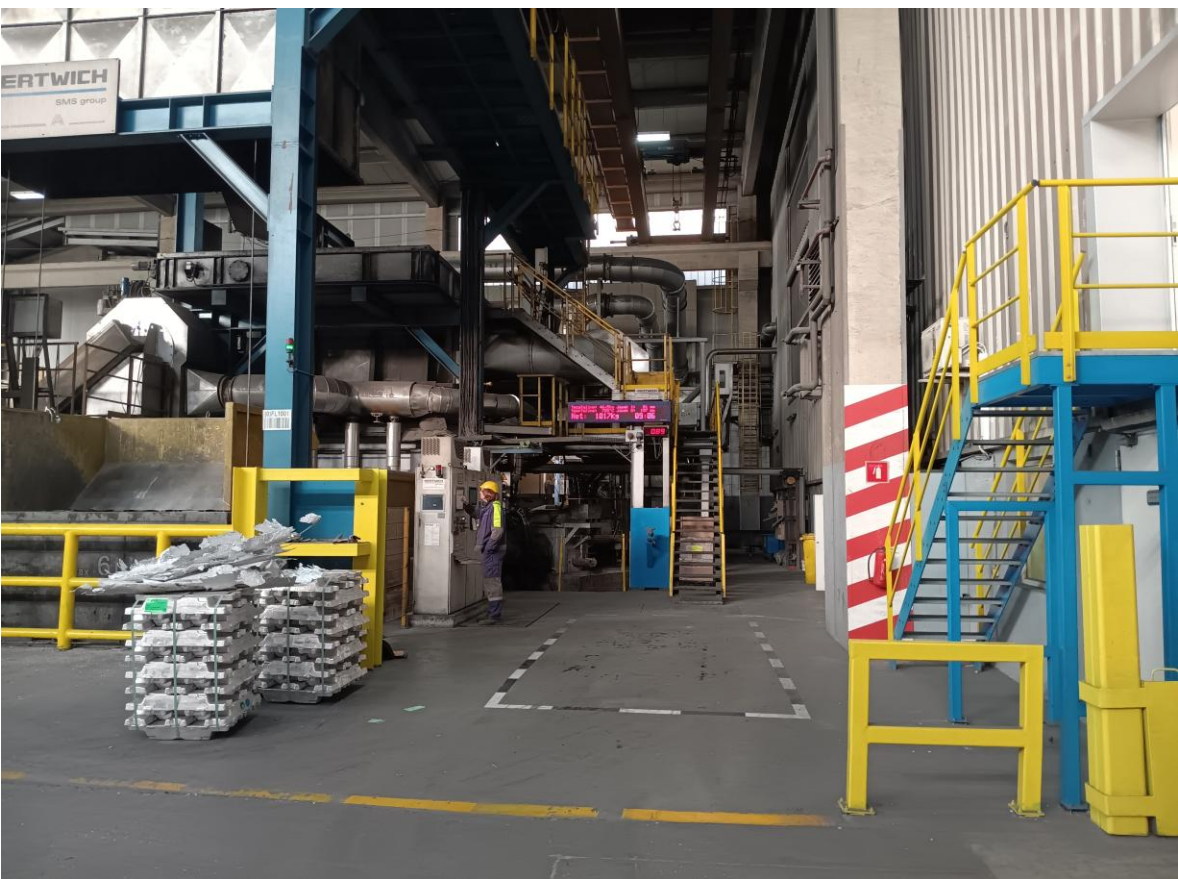
IMPOL CAST HOUSE – 5S AFTER



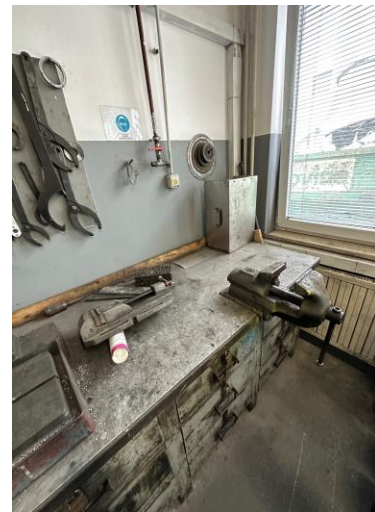
IMPOL CAST HOUSE – 5S BEFORE



IMPOL CAST HOUSE – 5S AFTER



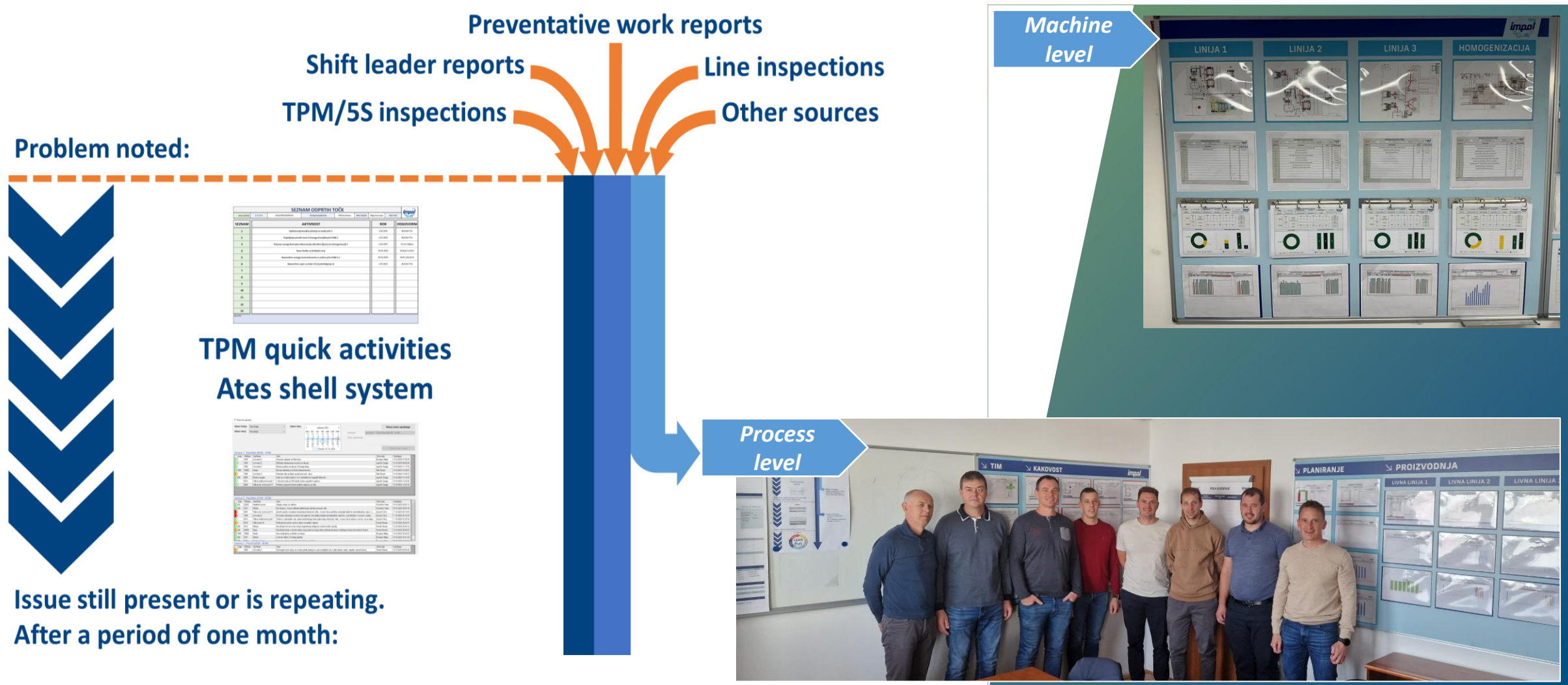
IMPOL CAST HOUSE – 5S BEFORE



IMPOL CAST HOUSE – 5S AFTER



IMPOL CAST HOUSE – CONTINUOUS IMPROVEMENT HERARCHY



IMPOL CAST HOUSE – PDCA



PDCA



Issue resolved:

- Finalizing the PDCA with last comments
- PDCA form for the issue and its resolution is archived

Systemic issue present for longer:



Installed 2024

Problem level

PDCA PROJECTS COMPLETED	18
PDCA PROJECTS MEETINGS	182
EMPLOYEES ENGAGED WEEKLY	22

IMPOL CAST HOUSE – SMED

Workshop Organisation

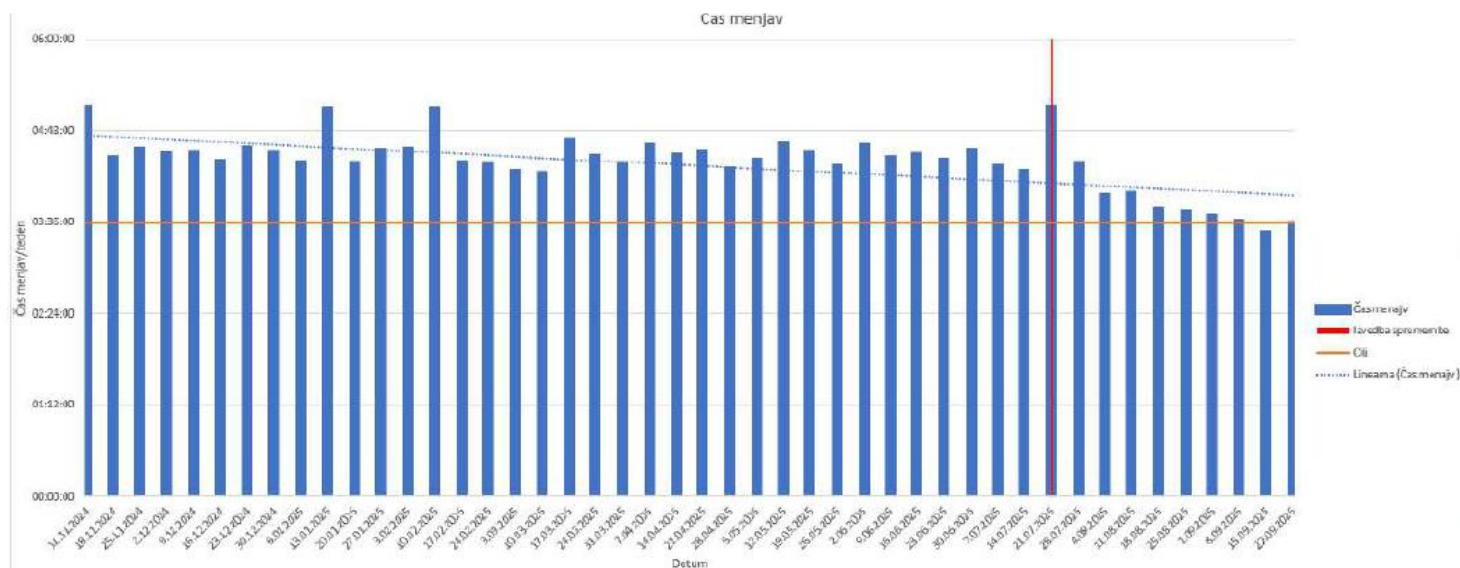
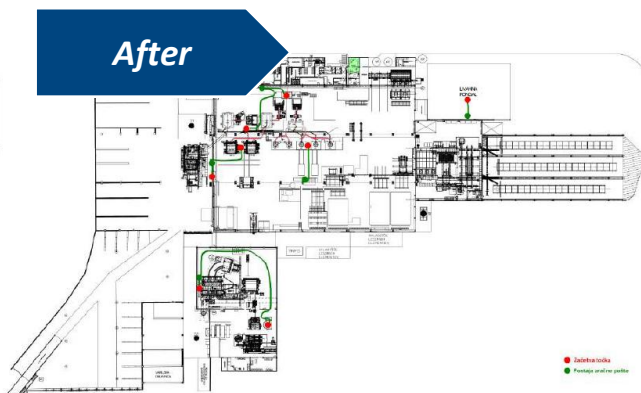
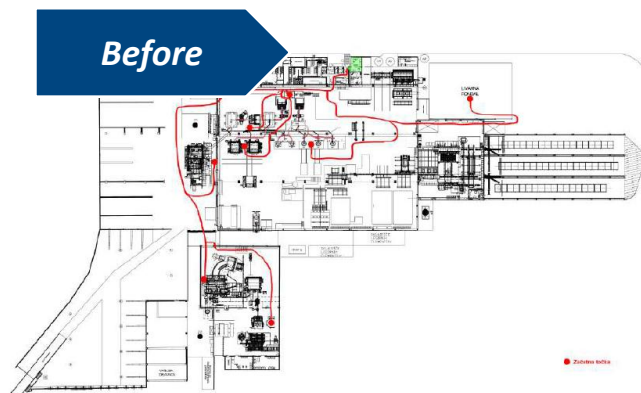
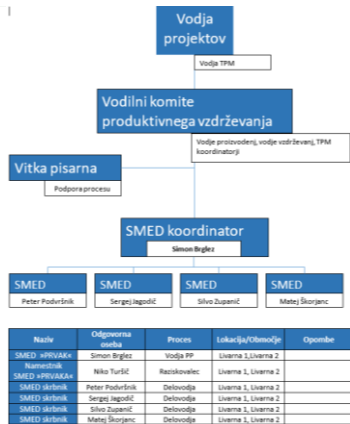
Already high availability

1 SMED project every quarter

Difficult to define SMED times in casting & melting process

Innovation through SMED as an industry standard.

Involvement of the workers yielded biggest results



IMPOL CAST HOUSE – SMED

Workshop Organisation

Already high availability

1 SMED project every quarter

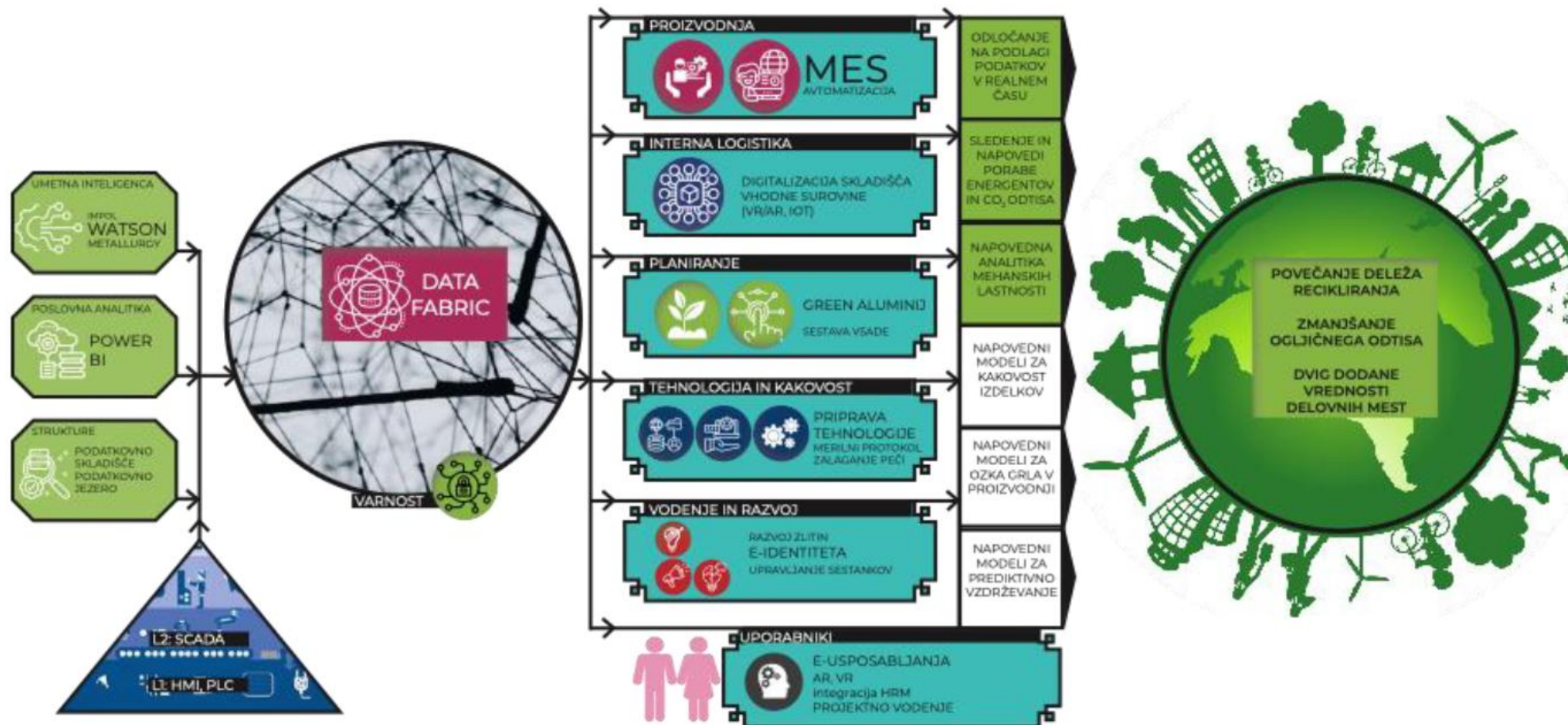
Difficult to define SMED times in casting & melting process

Innovation through SMED as an industry standard.

Involvement of the workers yielded biggest results



IMPOL CAST HOUSE – DIGITALISATION MODERNISATION



IMPOL CAST HOUSE – DIGITALISATION MODERNISATION



Planning

2022

- Planning of the new CMMS system
- Communicating specifications/wishes with the developer
- Coordinating on the group level



System development

2023

- Preparing and testing planned functionality
- Establishing required links to our databases
- Beta testing at technologist level and fixing issues



Introduction to production

2024

- Training employees
- Preventative/reactive work logging
- Digitised 5S/TPM control lists
- Spare part inventory



Standard practice

2025

- All work is logged on time and accurate
- Introducing predictive/automatic work orders
- Expanding reporting with analytics dashboards



Analytics and optimisation

2026

- Analytics systematically used for the optimisation of costs, spare part use, amount of reactive work,...
- Expanded predictive maintenance



Full oversight of all maintenance

2027

- Real time insight into all aspects of maintenance
- Deviations in maintenance KPIs reported automatically
- Introduction of AI tools



Preparing infrastructure

2023

- Setting up local and group level servers/gateways
- Establishing connections to PLCs



Live and historical data recording

2024

- Connection to selected PLC data
- Set up historian
- Ad hoc trend interface



Status dashboards

2025

- Preparing web-based clients
- Displaying machine status and certain key parameters



Dashboards for all relevant machine data

2026

- Preparing web-based client on Ignition Edge server
- Displaying trends and values relevant for maintenance work



Full SCADA

2027

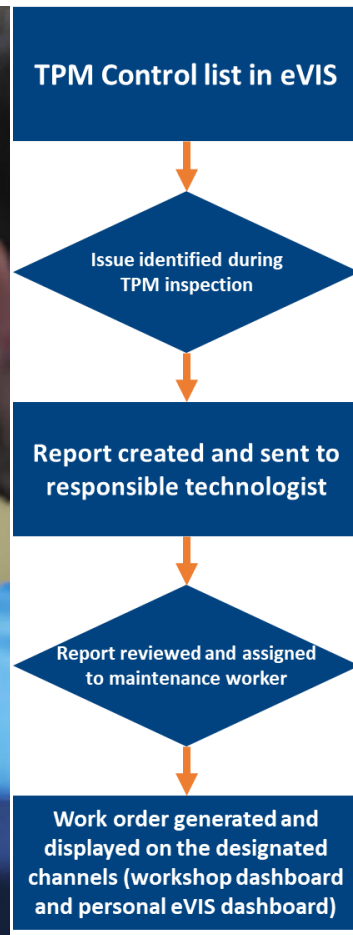
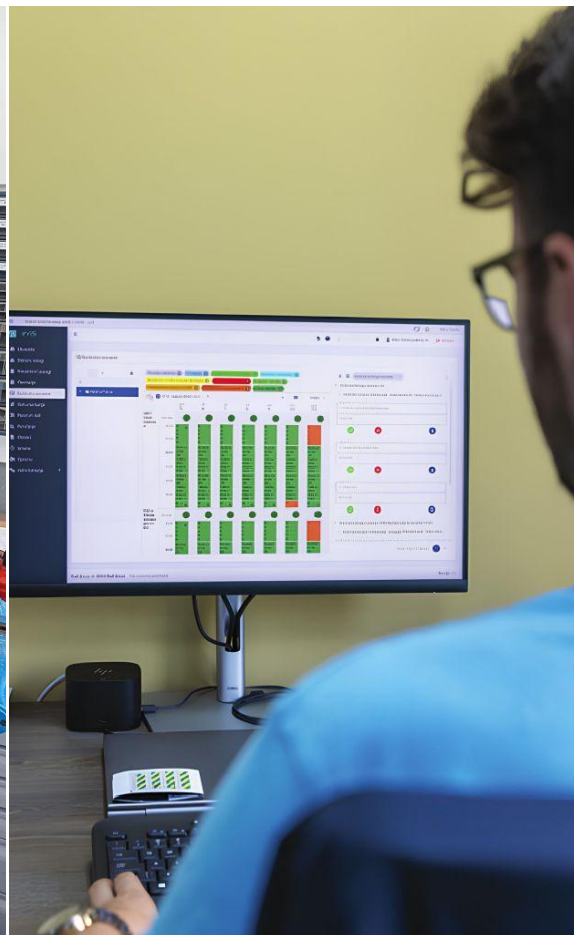
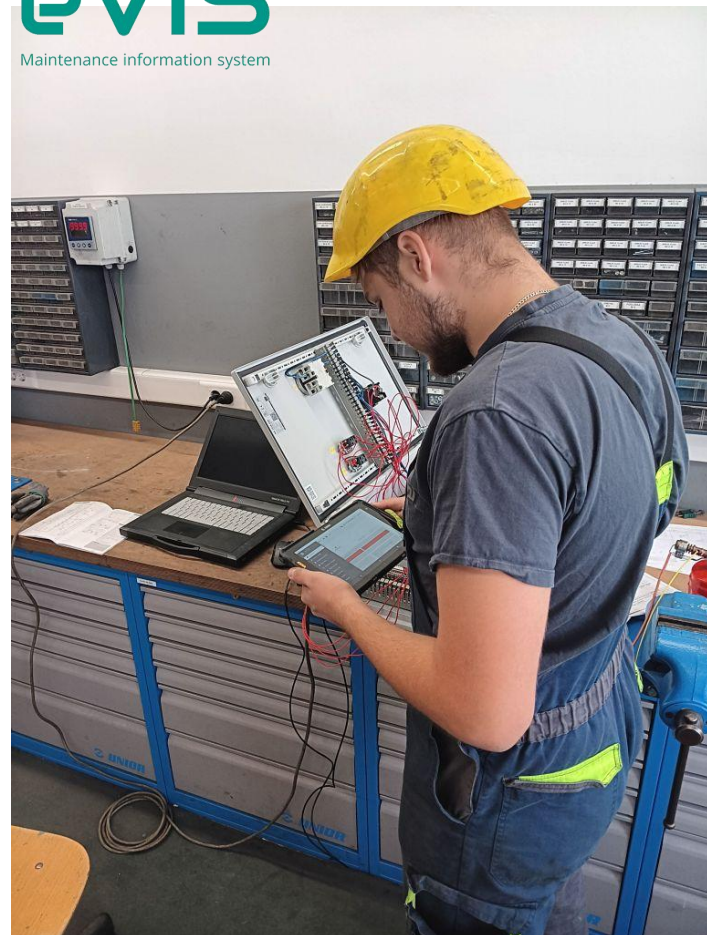
- Web based SCADA for all machines.
- Ability to change process values through the Ignition interface



CMMS

SMART SCADA

IMPOL CAST HOUSE – DIGITALISATION MODERNISATION



The screenshots illustrate the digital workflow:

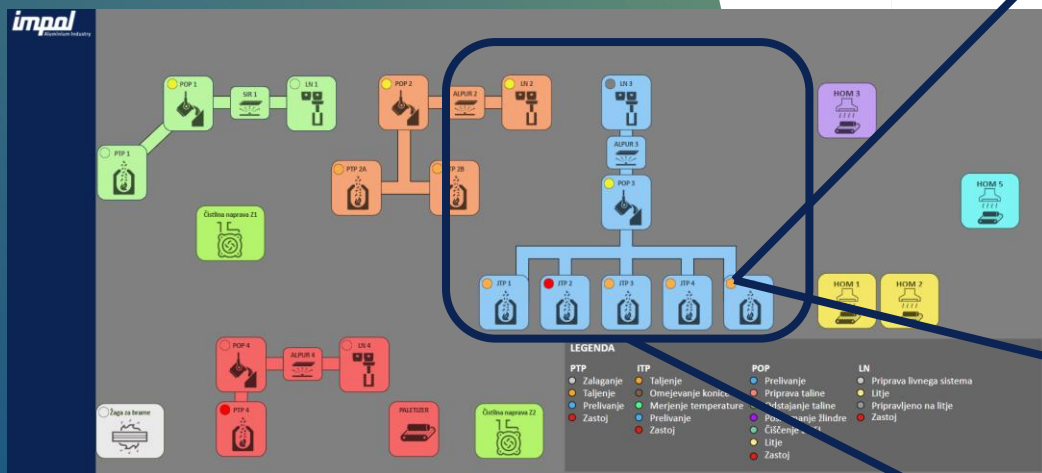
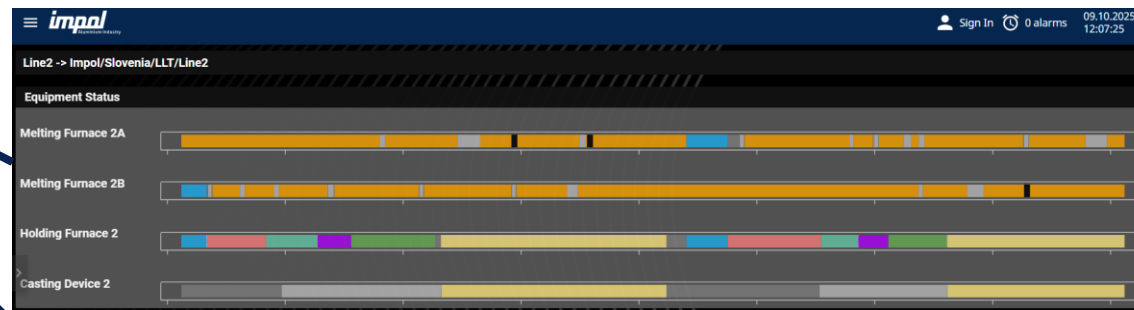
- Dashboard:** Shows a grid of colored indicators (green, yellow, red) representing different equipment or tasks.
- Checklist Form:** A form titled "Checklist type: TPM" with a specific checklist for "Plinska talina peč 2A + saržirni voz - Izvajanje TPM aktivnosti - Taline...". It includes an activity description and a comment field.
- Notification Email:** A blue header email from eVIS stating "Pozdravljeni Niko Turšič, na eVIS ste prejeli obvestilo." (Hello Niko Turšič, you have received a notification on eVIS).
- Work Order Table:** A detailed table with columns for equipment ID, name, location, and status, listing specific work orders.

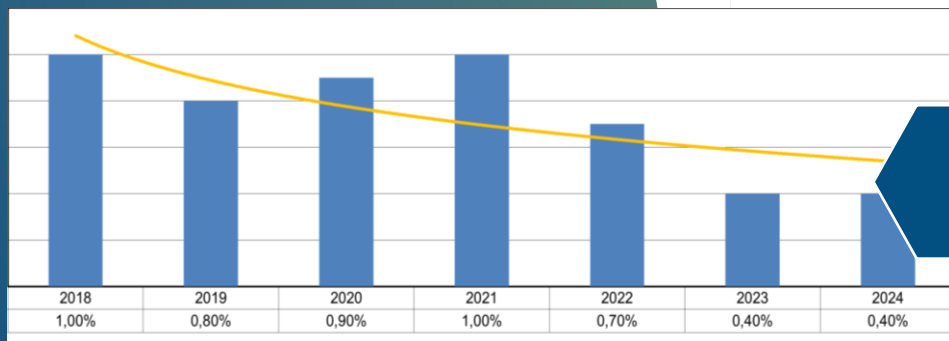
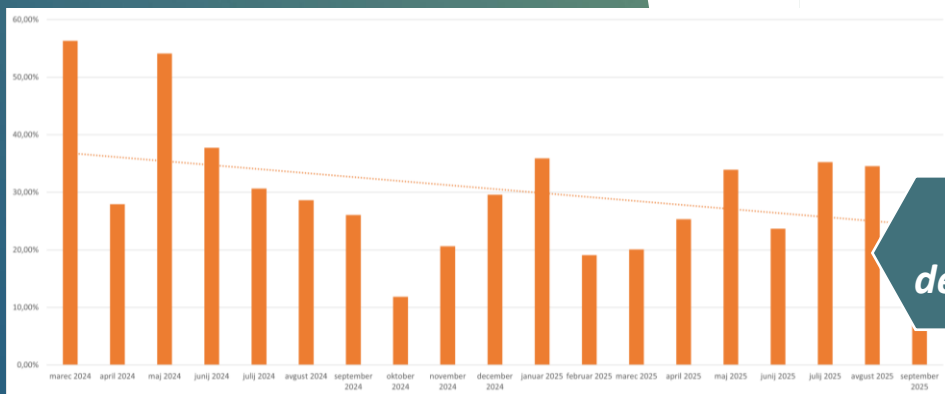
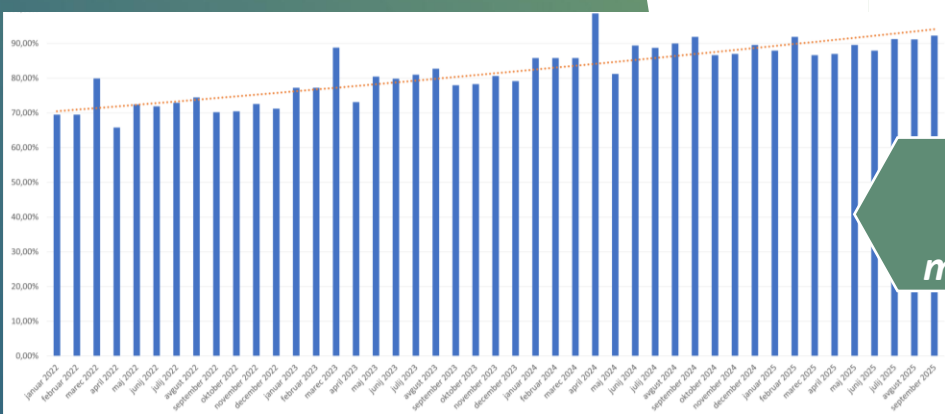
IMPOL CAST HOUSE – DIGITALISATION MODERNISATION

Machine level



Process level





Yielded results

Increased OEE for 3% points overall

Increased alloy portfolio by 80 new alloys

Introduced a new product family casted bars



Process & Capacity

- Increase casting capacity inhouse for 30%
- Decrease process and quality scrap by 40%
- Eliminate dead cycle times in the process by 30%



IOT Infrastructure

- Install an overarching SMART SCADA system for remote setting
- Upgrade smart sensors to accurately diagnose deviations
- Utilize a data lake system to continually analyze process data



IT & AI

- Roll-out pilot IT projects to the whole process
- Finalize MES applications for remote process control & dashboards
- Utilize AI in predictive maintenance & alloy optimization

Future Aims

Ime projekta: Operativna odličnost LLT Projekt ID: 4.3 **impal**

Projektni čarter: Operativna odličnost Ljavarna Status: 6.9.2025

Uvod projekta: **Uvodna delovna lista**
 Predvidena je izboljšava procesa kovanja in livanja pri pod nadzorstvom. Zaposleni so primeroma usposobljeni, prav tako nametniki in vodje. Vgrajen je sistem stalnih izboljšav. V proizvodnem procesu obstajajo možnosti, ki so primerne za izvedbo in pomenjajo dodatne koristi ter odstopanje načrtov, velik vpliv na stroške ima prevelik vpliv Dostavljene Metrike na določena dela v proizvodnem procesu.

Projektna ekipa: **Ekipe:**
 - Proizvodni proces: Simon Bogič
 - Varnost: Andrej Lelovšek, Alad Stary, Dejan TID, Matjaž Cvrtič, Nino Turčič
 - Servise: Uroš Križevac, Člavo Bregar, Boris Bradic, Tadej Želj
 - Procesni inženiring: Mitja Staninšek, Jaka Čučarčič, Marko Polovinc, Aleksandra Robič, Viljam Brnad, Božidar Fila

Člani projekta: Dobrošernost Ljubeznost Stranica (imaš ti?)

Poslovni izračun		
Kategorija izboljšave	Investicija	Prilivniki
Strojni pribor	276.000,00 €	47.400,00 €
Proizvodna materialna stroška na strojih za 25%	91.000,00 €	122.800,00 €
Usporedba na strojih (izboljšanje porabe energije za 5%)		122.800,00 €
Usporedba strojne stroške	170.000,00 €	180.000,00 €
Usporedba strojne stroške na strojih (strojna stroška)	70.000,00 €	28.400,00 €
Skupaj pozitivni učinki		330.000,00 €
Skupaj negativni učinki		303.600,00 €
Neto pozitivni učinki		26.400,00 €

Planirani izdatki projekta: 303.600 € / 12 Meseci

Št.	Meseci	Glavne aktivnosti	Odgovorna oseba	Datum začetka	Risk	Status
1.	Vodeno in prodaja	Reorganizacija procesa pritrjevanja	Jure Črnič	1.09.2025	28.03.2026	★
2.		Optimiziranje homogenizacijskega berjanja	Matjaž Staninšek	1.01.2025	31.12.2025	★
3.		Upravljanje spremem in ovojilav liva bram po Wipacraft tehnologiji na liniji 4	Aleksandra Robič	1.01.2025	31.05.2025	★
4.		Optimiziranje obreza bram	Aleksandra Robič	1.04.2025	31.12.2025	★
		Komercializacija homogenizacijske dinamične kompozit				★

PC: Casting house



The way to Excellence

Honorable mentions:

Sponsor:

Andrej Kolmanič, CEO

Division Casting leader:

Jure Čretnik & Team

Lean Manufacturing Impol:

Urban Smolar & team

Consulting:

IPL Klaus Holeczek & team



Together, we Build
a Sustainable Future in
the Aluminum Industry.

