



Metalsa

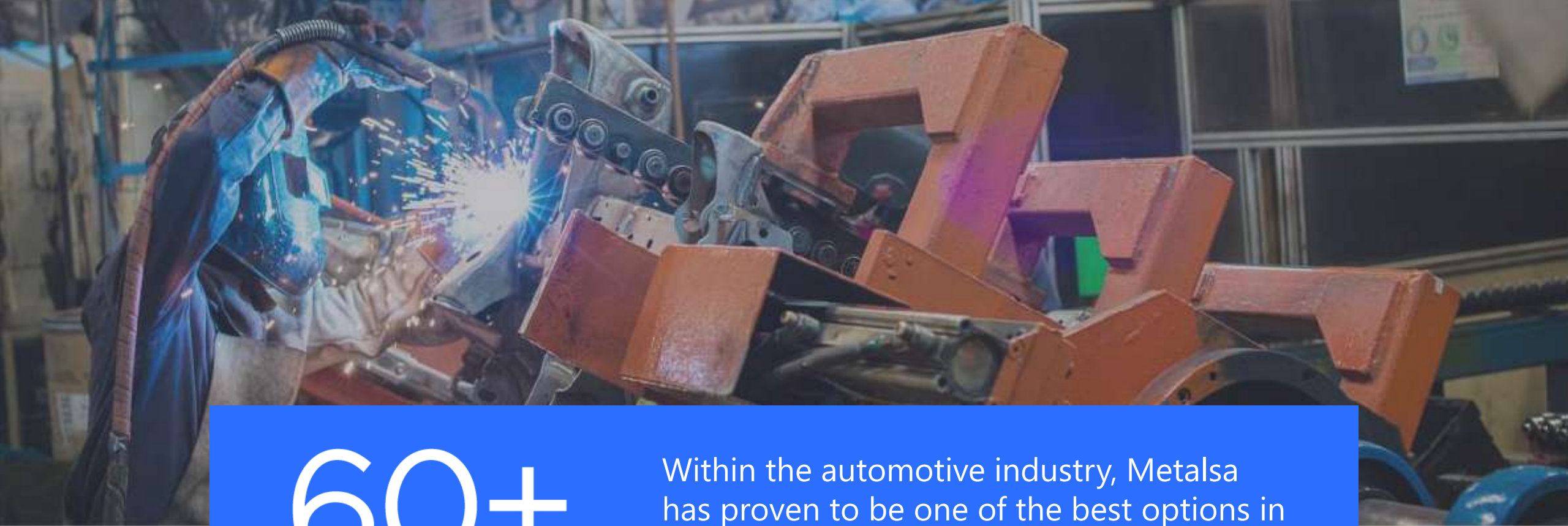


Metalsa Operating System & Industry 4.0

Congreso de Excelencia Empresarial 2021



ODIX

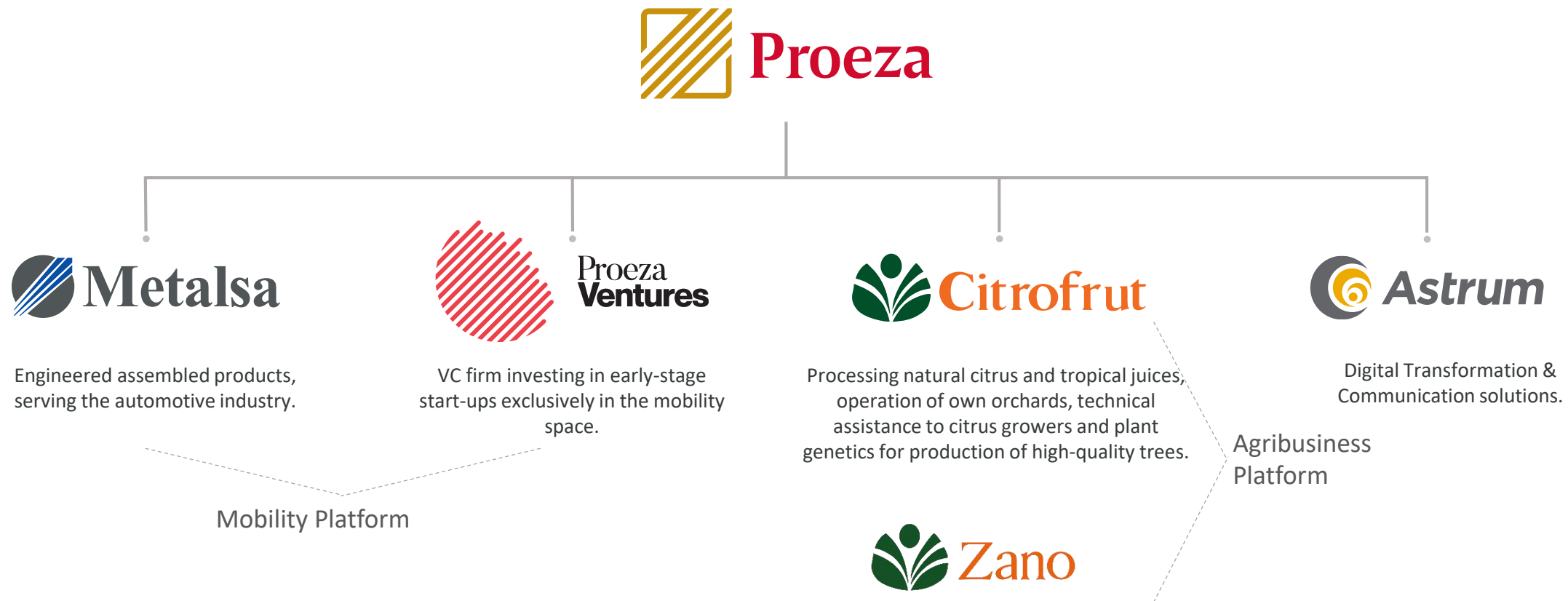


60+
YEARS OF EXPERIENCE

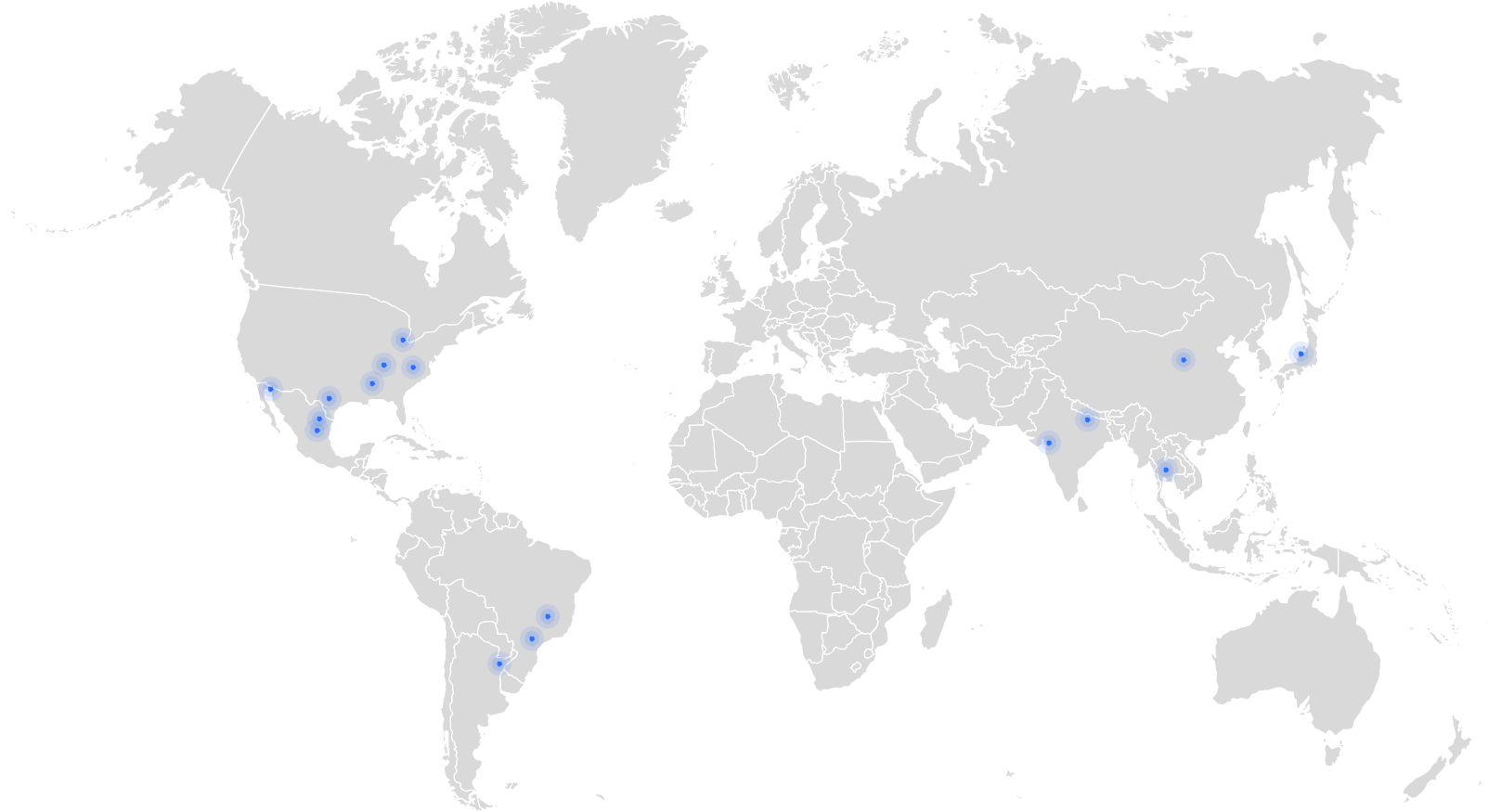
Within the automotive industry, Metalsa has proven to be one of the best options in structural component solutions for light and heavy vehicles.

Metalsa is proud to be part of Proeza Group

Founded in 1956 by Don Guillermo Zambrano, Jr. with headquarters in Monterrey, México and with approximately 13,000 collaborators.



TIER 1 SUPPLIER FOR LIGHT AND COMMERCIAL VEHICLES.



MEXICO (6) UNITED STATES (6) THAILAND (1) ARGENTINA (1) BRAZIL (2) JAPAN (1) CHINA (1) INDIA (2)

\$2.0 B USD
2020 revenues

+10,000

Collaborators

20

Facilities

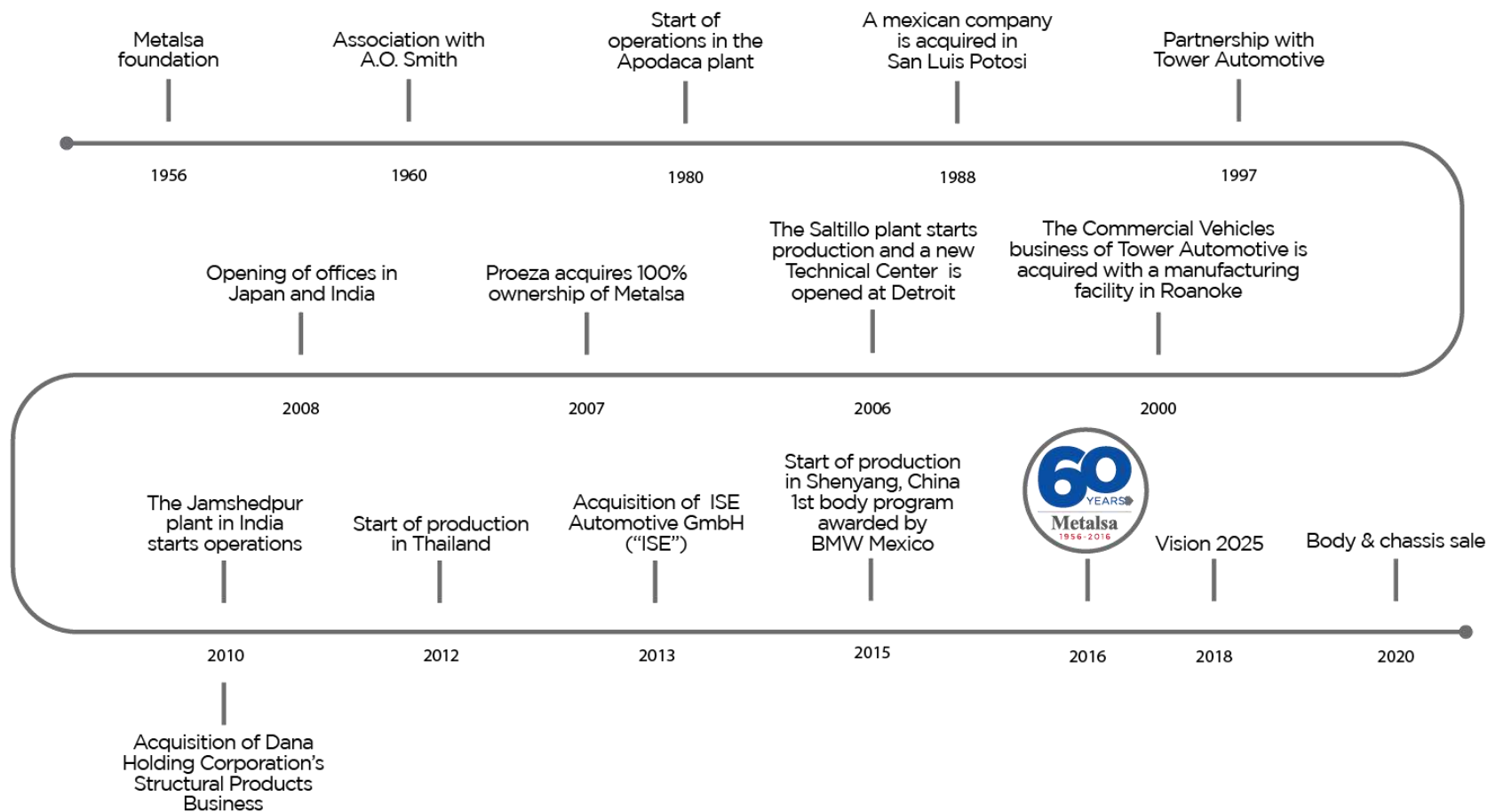
8

Countries

12

Manufacturing Plants

We are a Mexican private company, since 1956 we have been characterized by a constant and sustained growth supporting the global strategies of our customers.





Pick-Ups

Develop structural and safety components that surpass all engineering performance requirements leveraging on advanced material, lean and flexible processes, achieving successful program launches

INSIDE PICK-UPS

Chassis structures

Trailer Hitch

Main Customers



STELLANTIS



Trucks

Offer global tailored frame solutions that optimize weight and durability through balanced and scalable manufacturing processes for the local needs.

INSIDE TRUCK

Side Rail

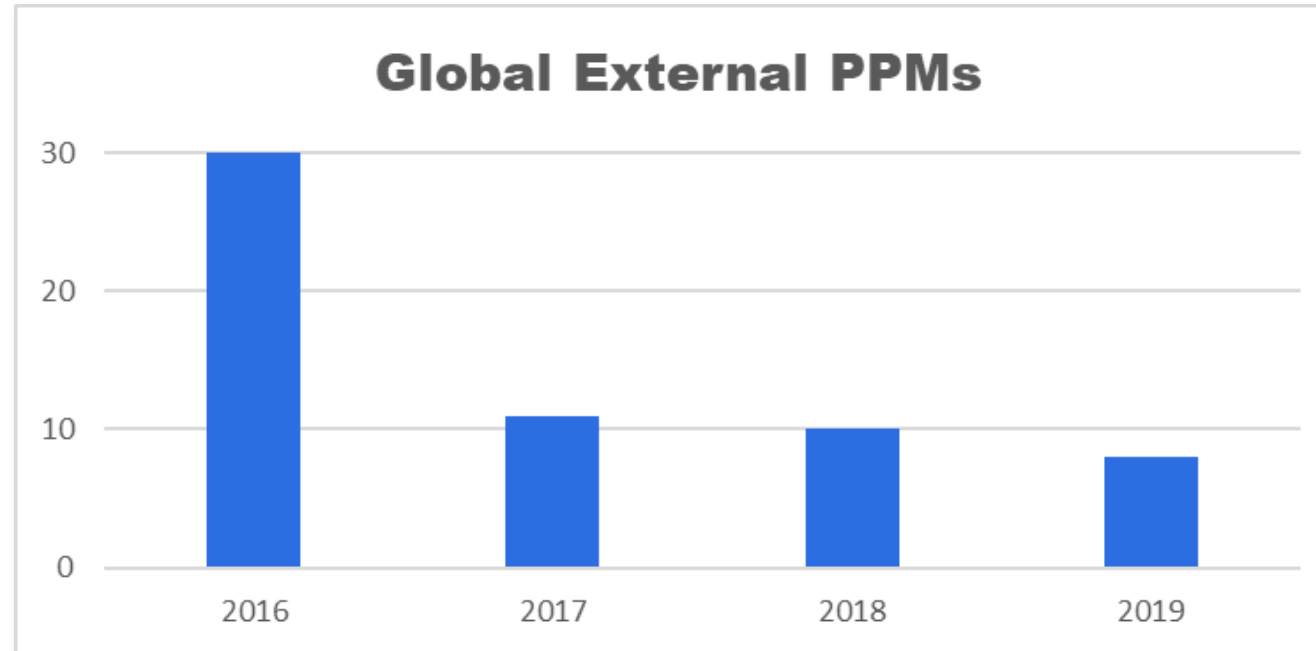
Main Customers



TRUSTED BY THE BEST.



We develop the *processes, capabilities* and *tools* required to create a Built In Quality culture throughout all our operations in order to deliver Best in Class quality to our customers.

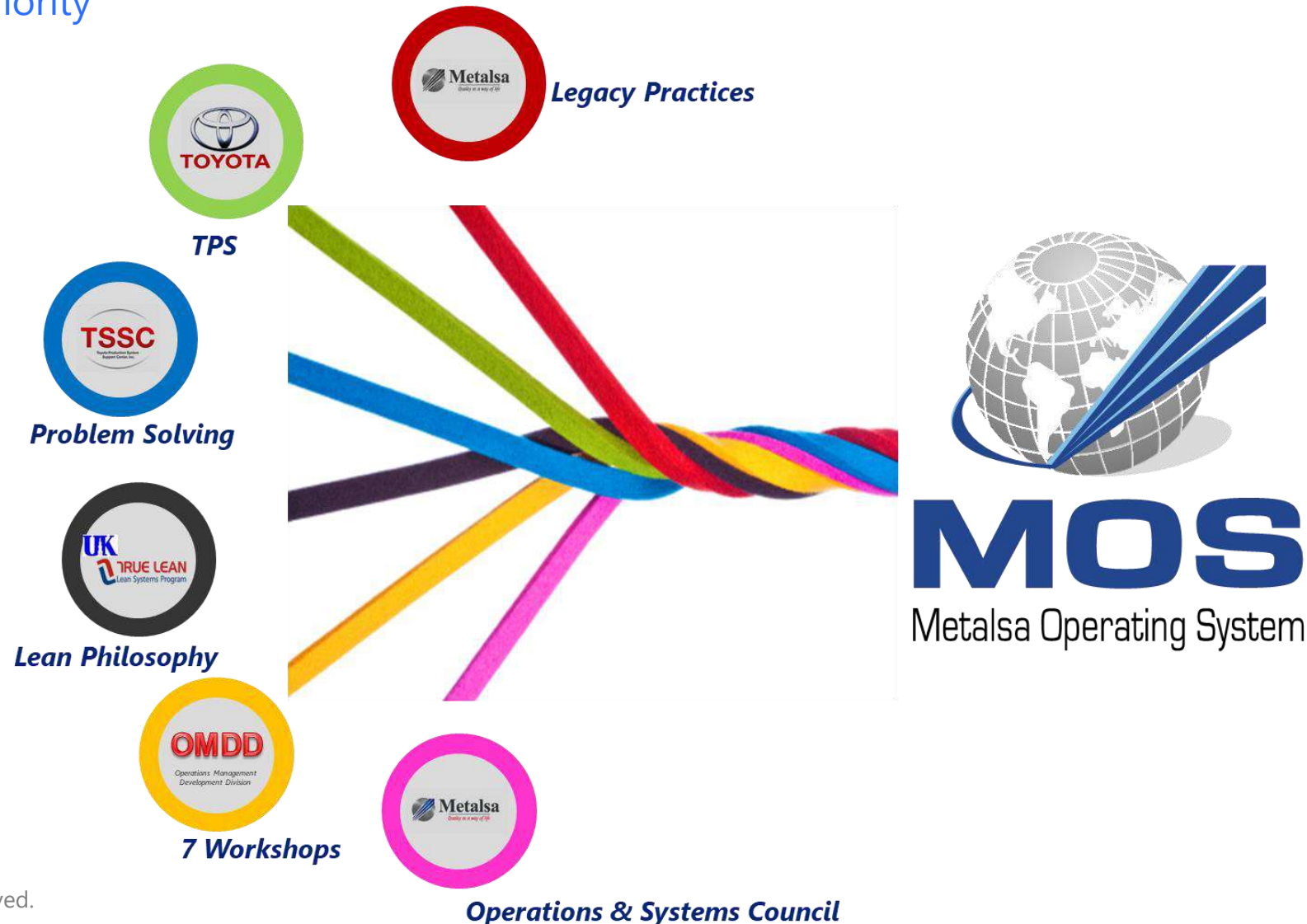


Our commitment to Quality has been recognized by our customers

Metalsa Operating System - System Design

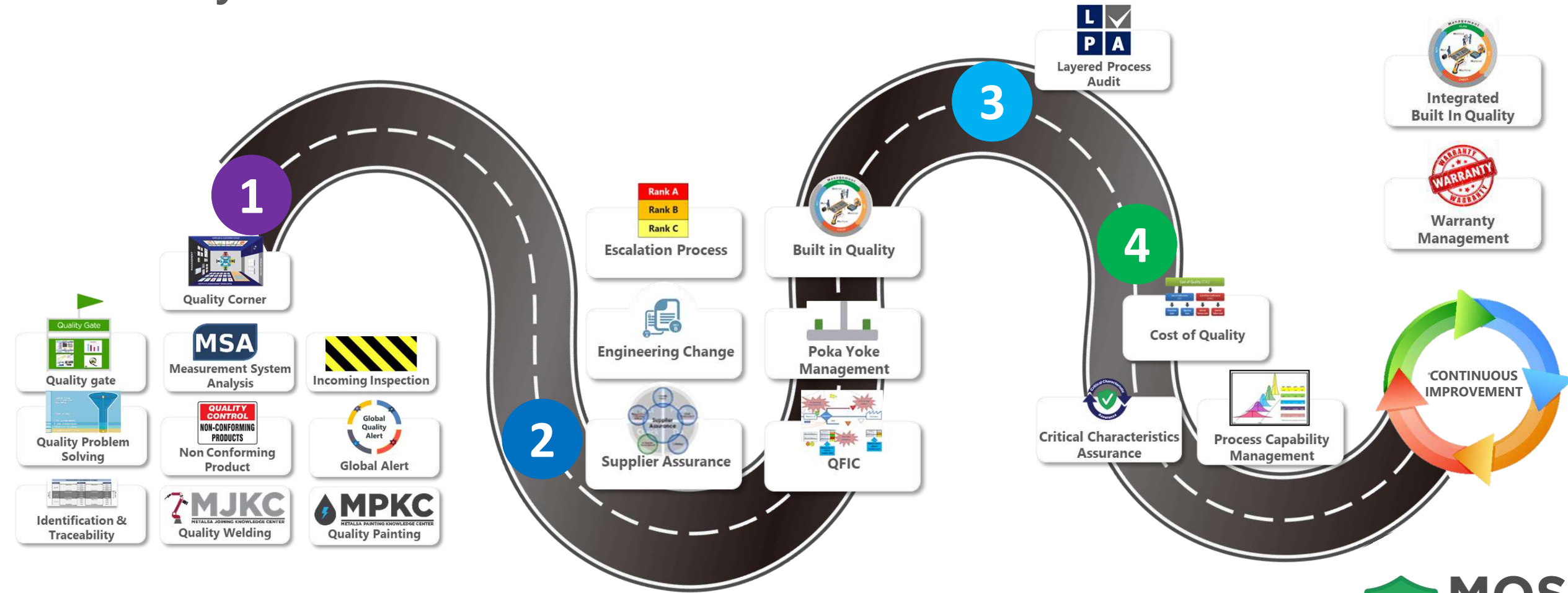


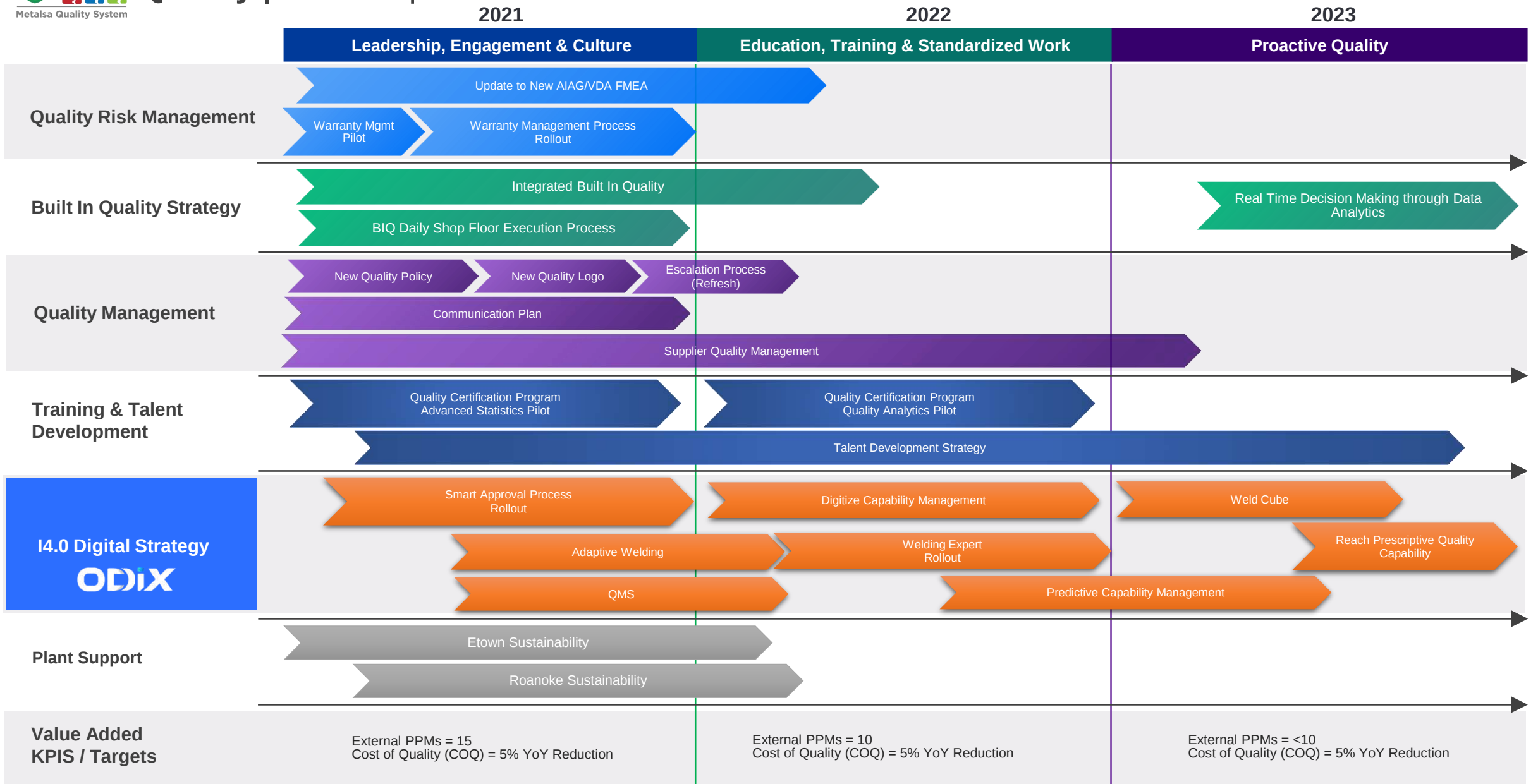
The **Metalsa Operating System** is the way in which Metalsa Business Processes are designed, managed, measured and improved. Its purpose is to maximize the levels of quality, profitability and customer satisfaction; having safety as a priority



► Metalsa Quality System: 2016-2020 Rollout

Maturity Level





Main Goal

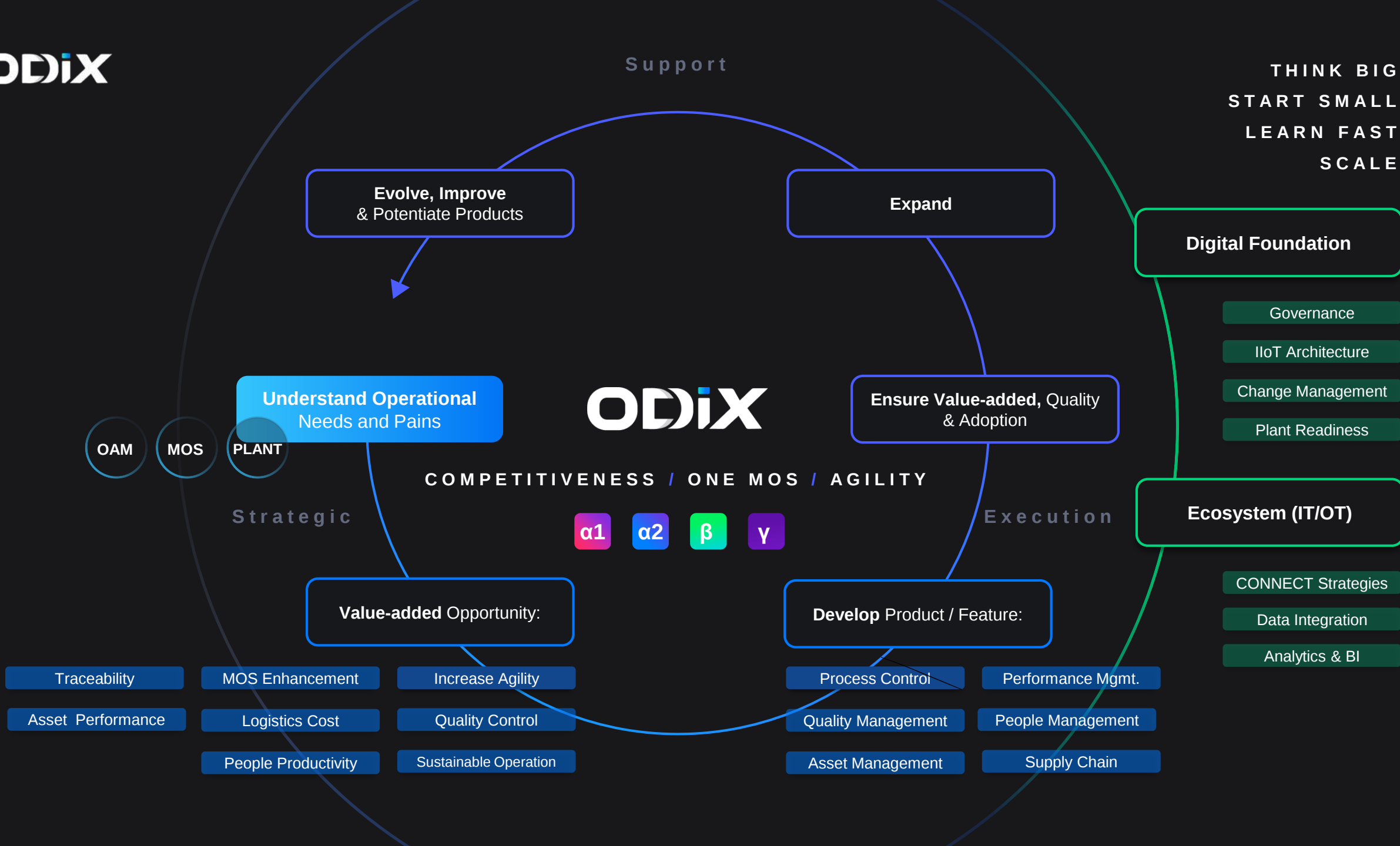
Base

To enable Metalsa's **competitiveness and agility** through a **Digital Transformation** to **connect** processes, assets, products and people, developing **key talents and capabilities**, enhancing a **One Metalsa Operating System**.

Tool

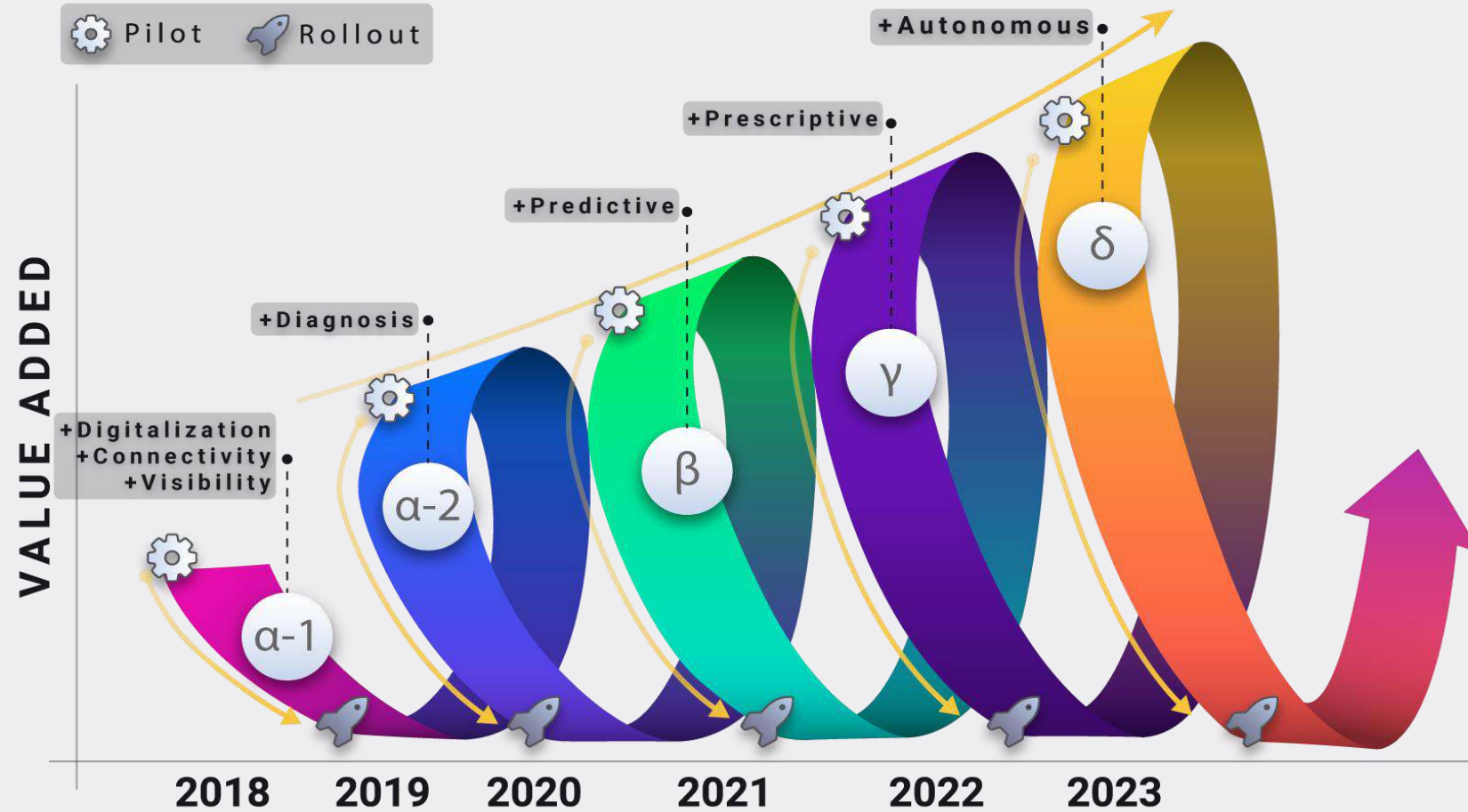
True
EnablerRequirement
for success

THINK BIG
START SMALL
LEARN FAST
SCALE





Digital Evolution



- Digital evolution and maturity Roadmap
- Focus on Pilot + Rollout





Value Added



People
Productivity



MOS
Enhancement



Increase
Agility



Asset
Performance



Quality
Control



Logistics
Cost



Traceability



Sustainable
Operation

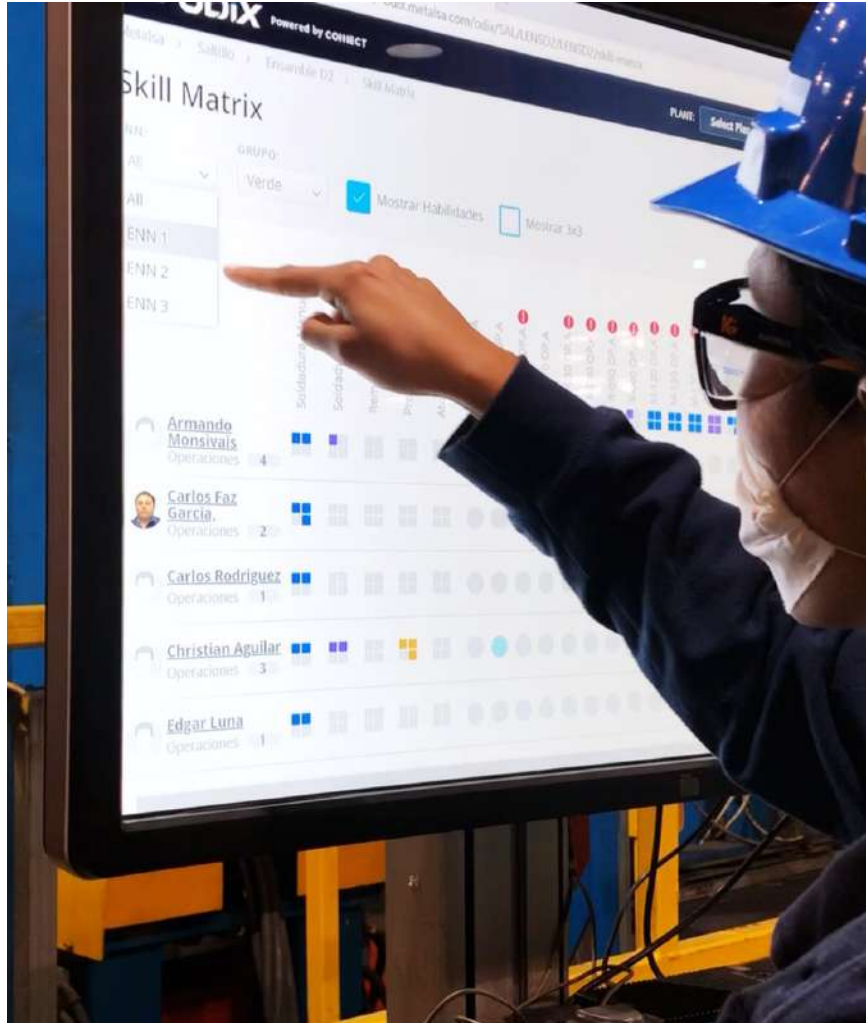
- Focus on Operational “pains”
- ↑ Competitiveness, ↑ Agility ↑ Operating System



Digital Solutions



Footprint



+30

Digital
Pilots

+75

Connected
Assets

+10 k

Data

+3500

Users

6

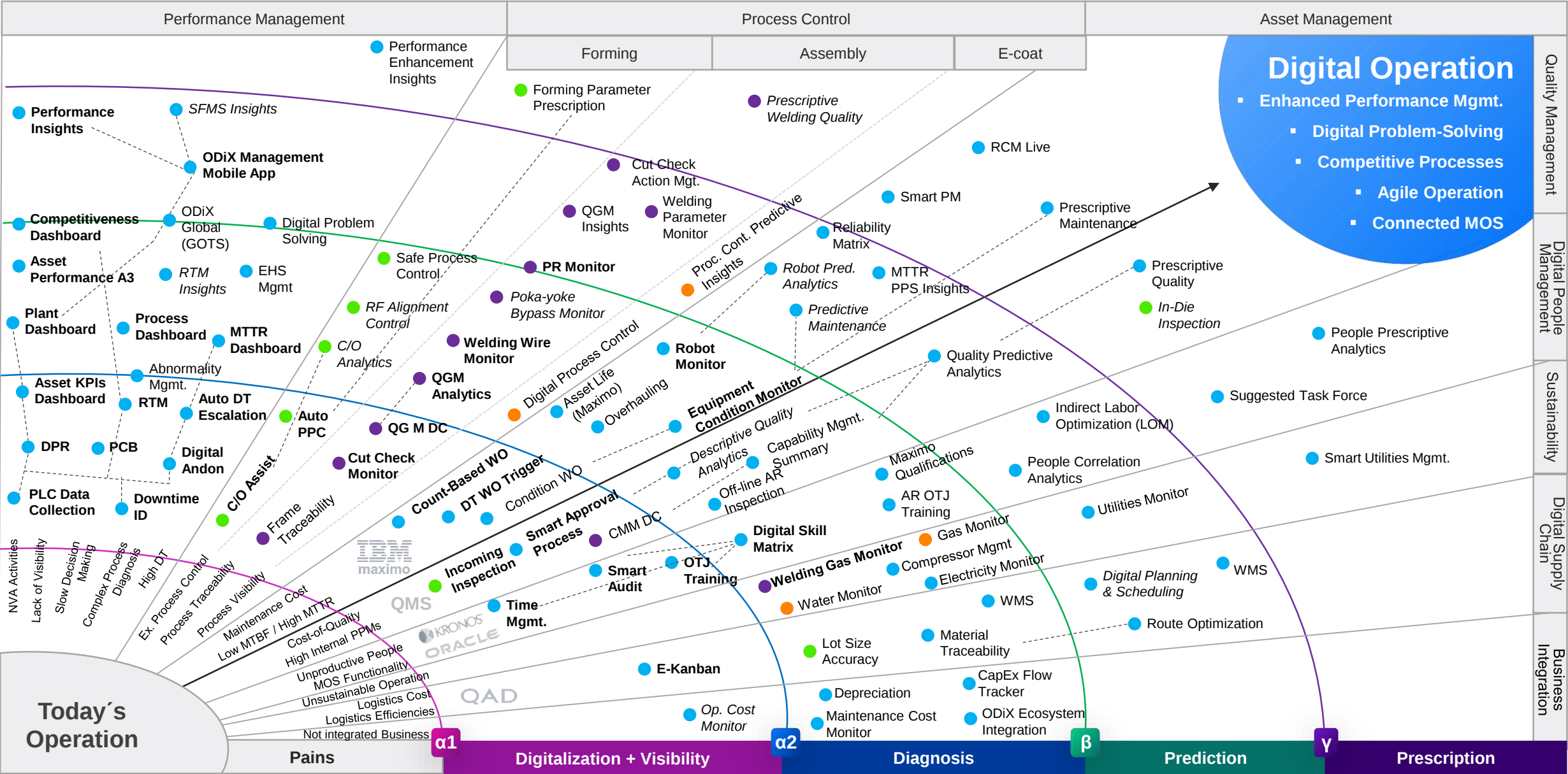
Plants

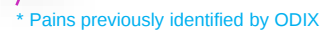
+5

Mfg
Processes

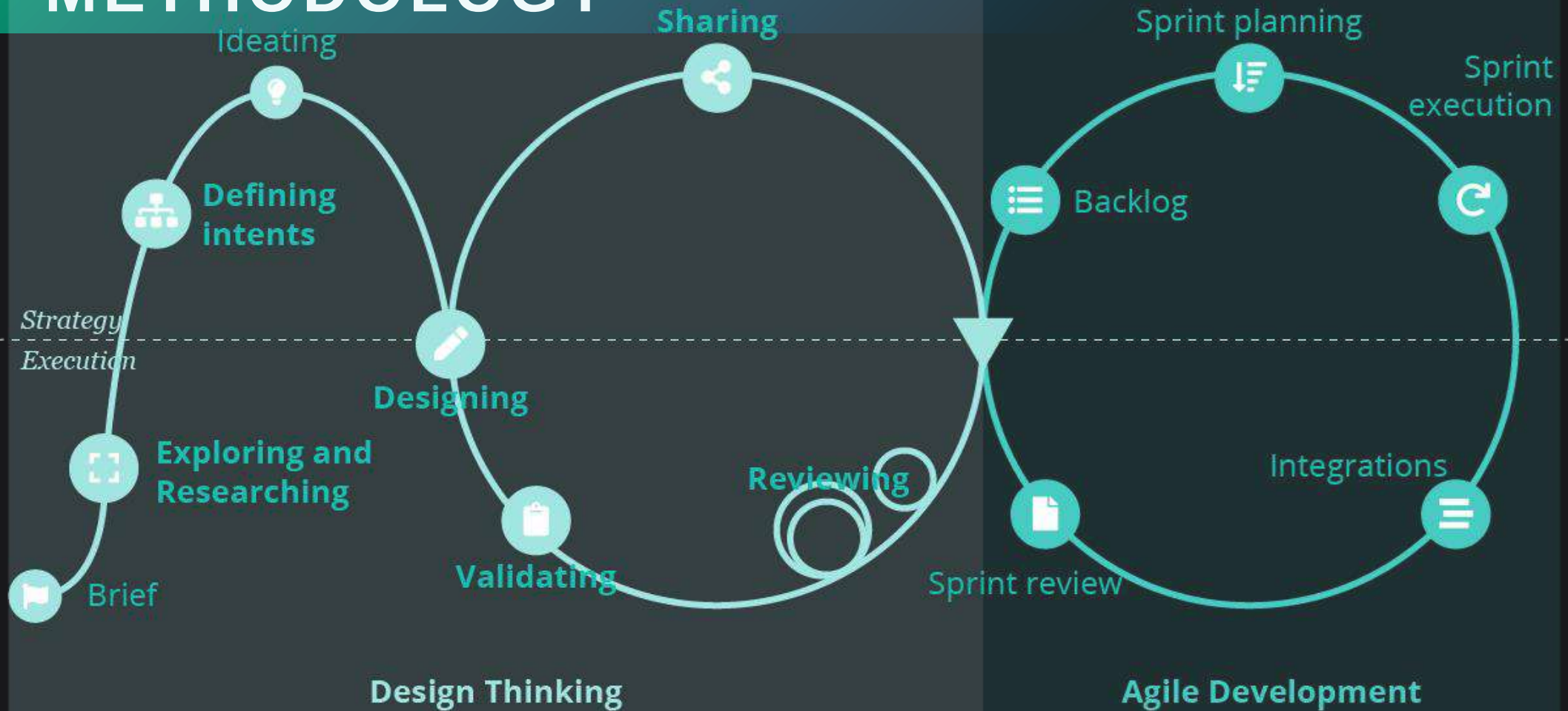


14.0 & Digital Transformation | Tactical Vision 2021



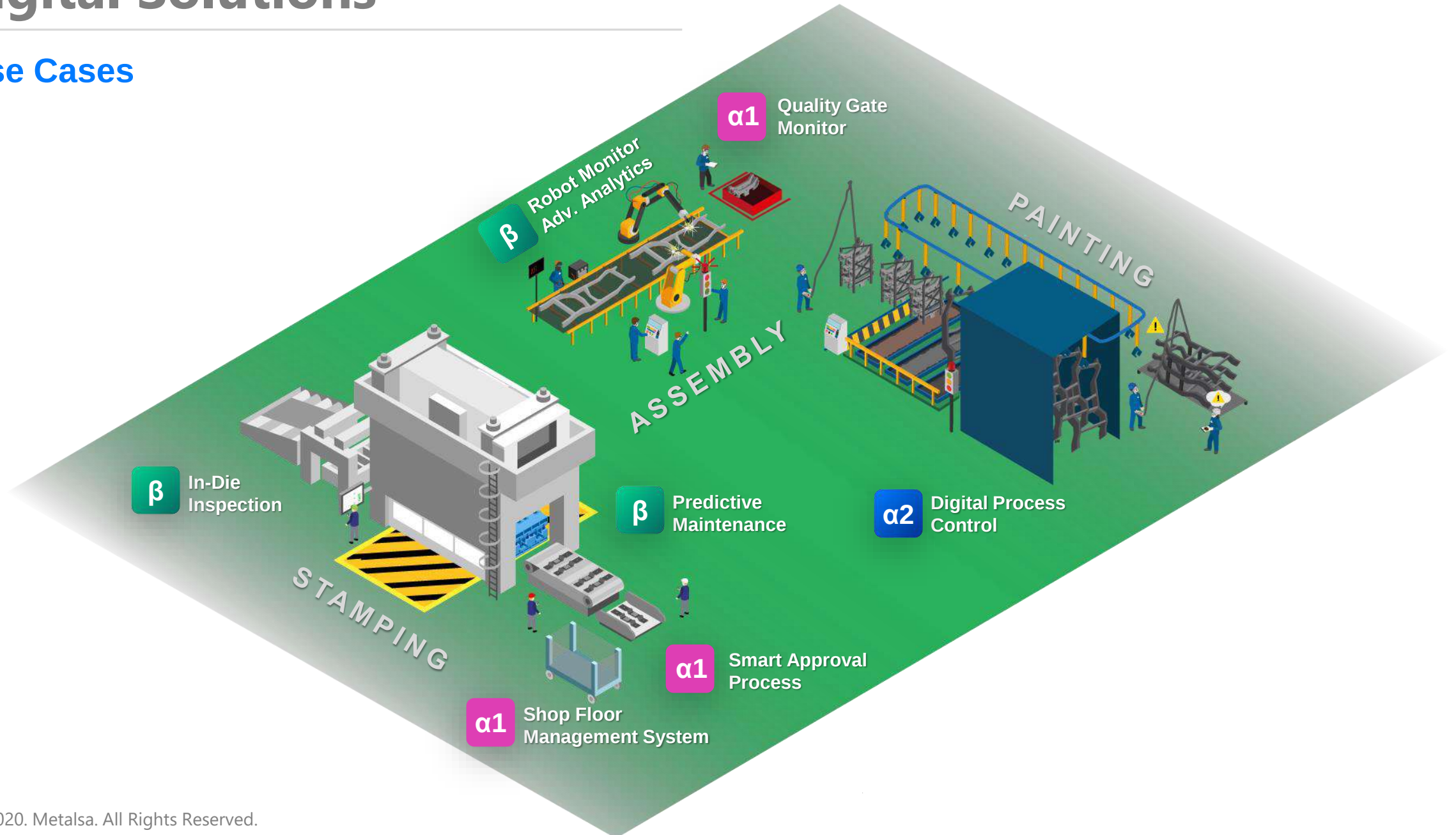


METHODOLOGY



Digital Solutions

Use Cases

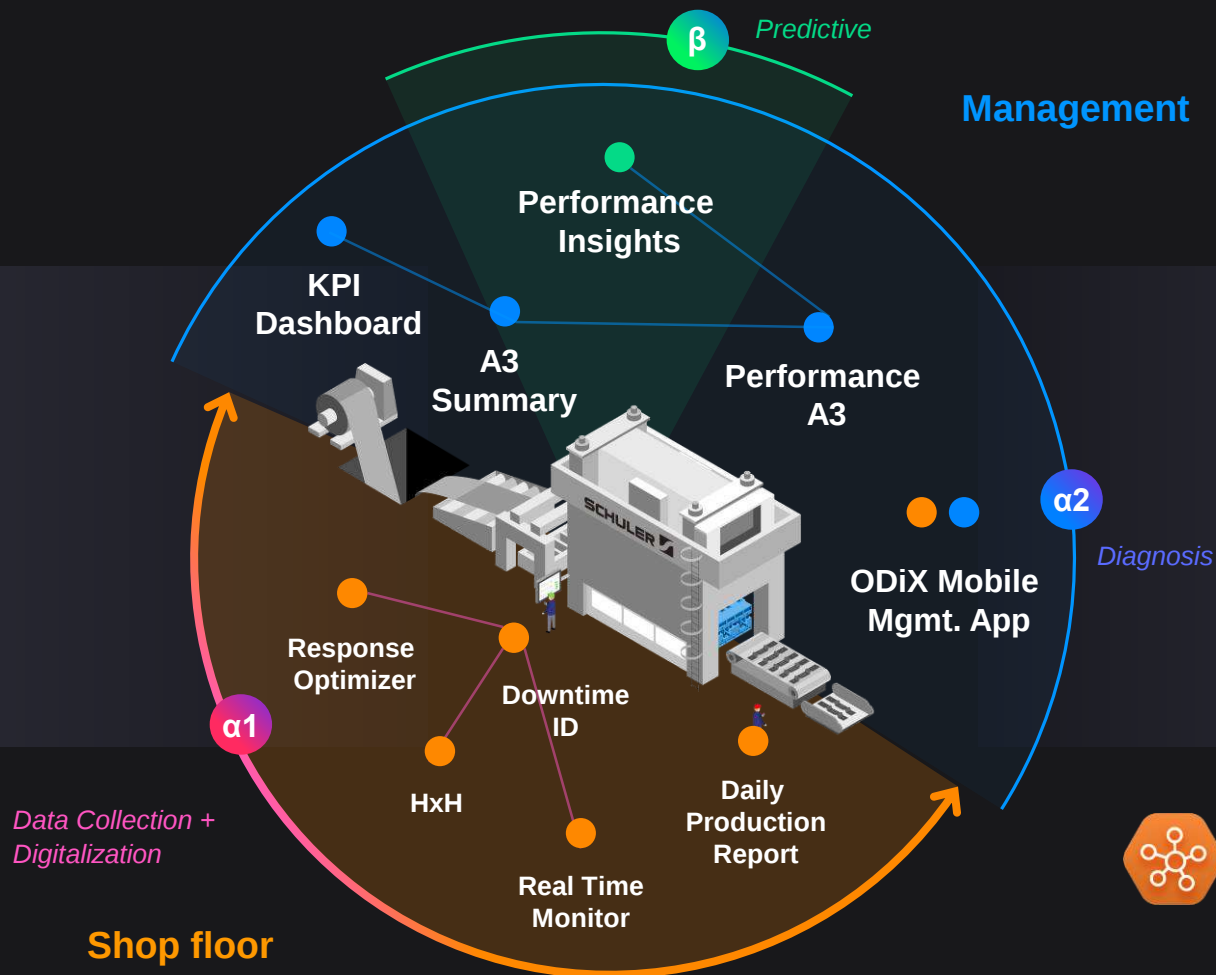


Increase Process Performance through Shop floor Mgmt digitalization

📍 Stamping

Pains:

- Non-Value-Added Activities (Manual Data collection)
- Lack of Visibility
- Delayed Decision-Making
- Data Inconsistency



Value Added:

- Eliminate NVA Activities,
- Increase Visibility
- Integrate Shop Floor & Management
- Improve Problem Diagnosis

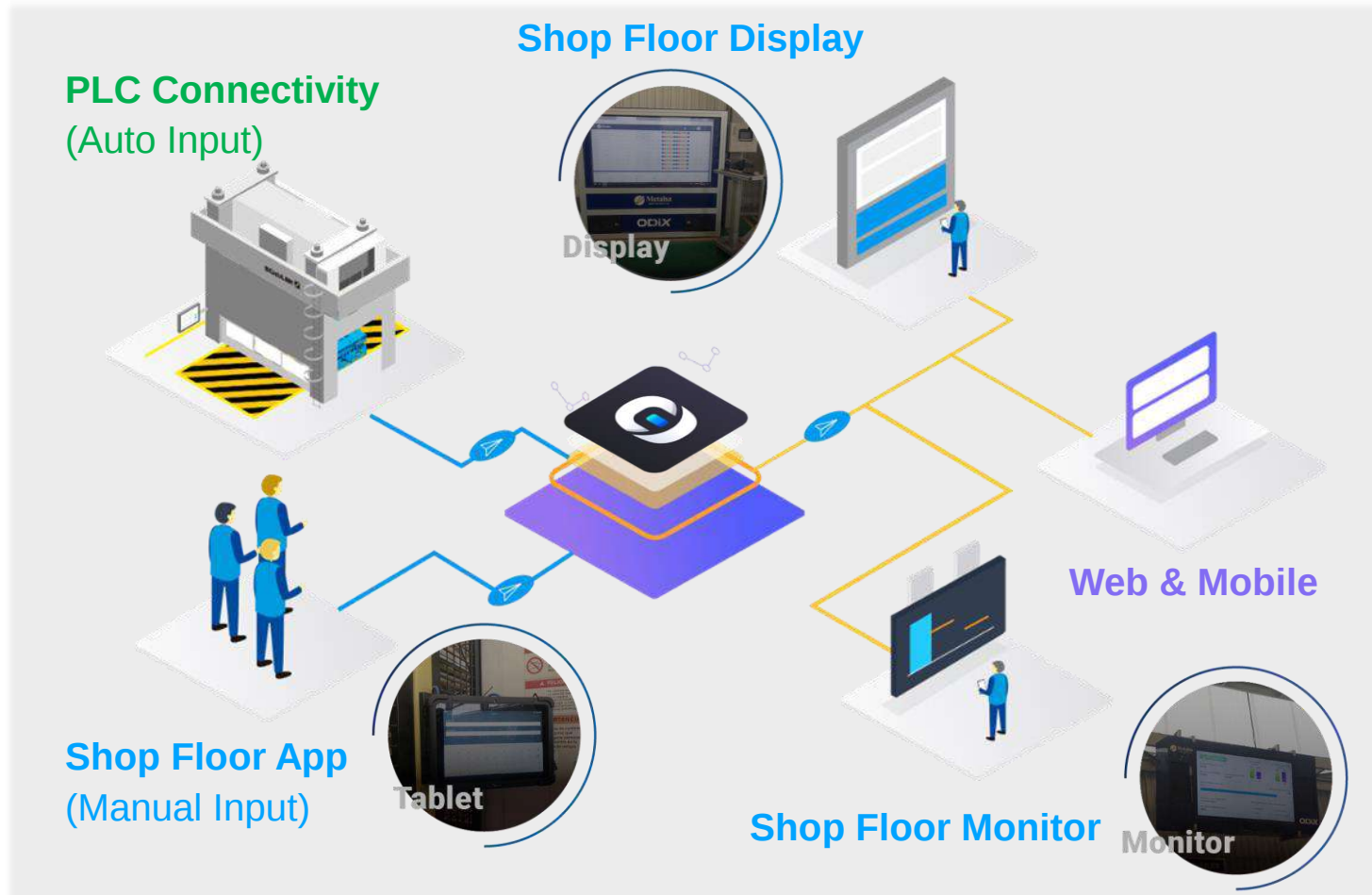


Digital Solutions / Stamping



α1 Shop Floor Management System

- Performance monitoring process digitalization



Smart Approval Process

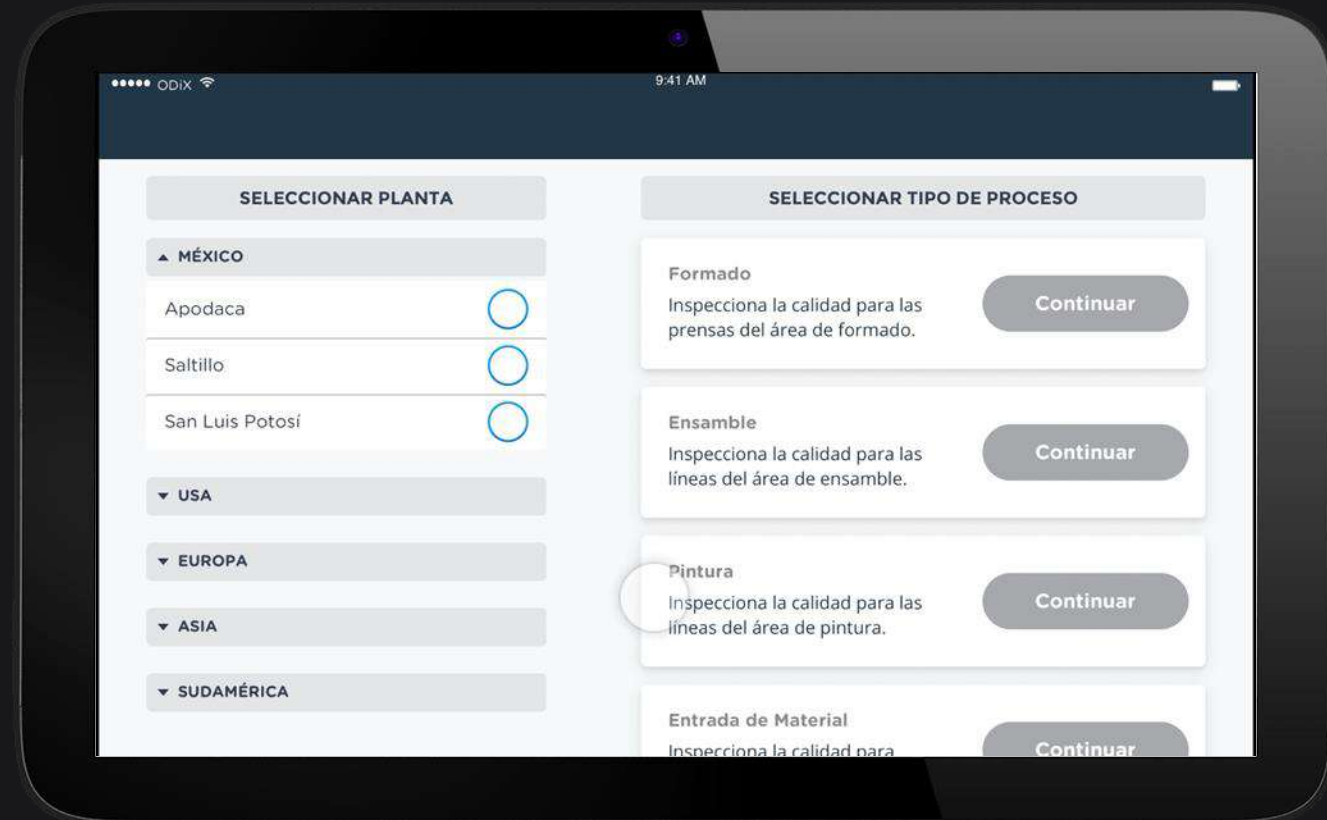
STAMPING

The Smart Approval Process is a digital tool for off-line quality inspection. It allows part approval time optimization, reducing the inspection cost.

Enables us to have traceability of the quality inspections.

Reengineered in Ecoat, Assembly & Incoming Inspection.

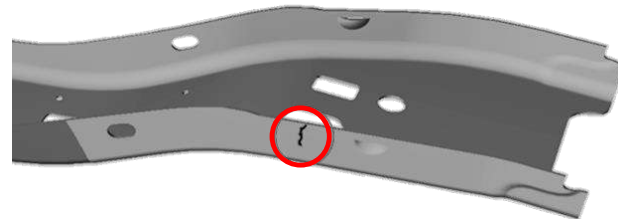
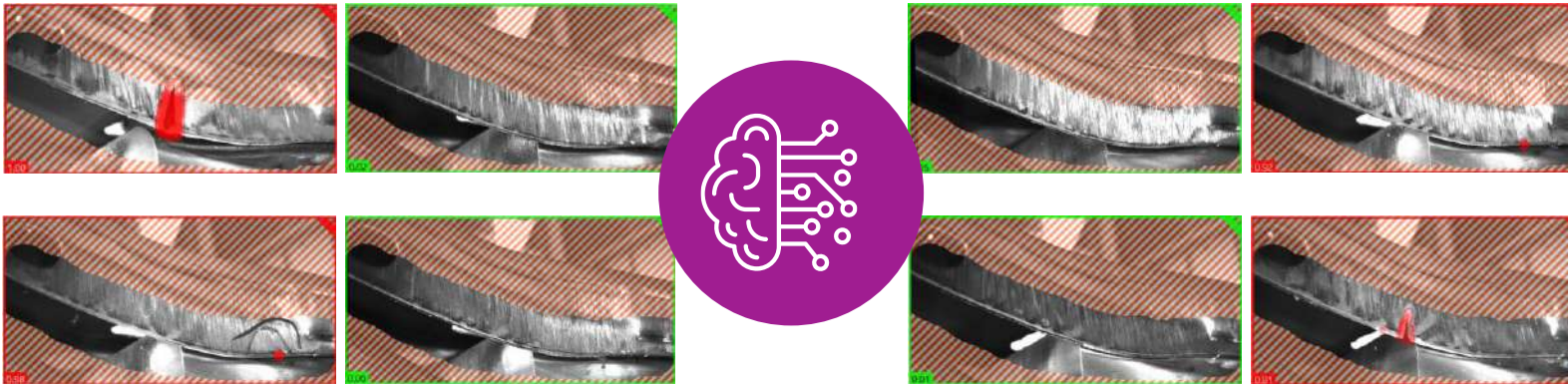
α1



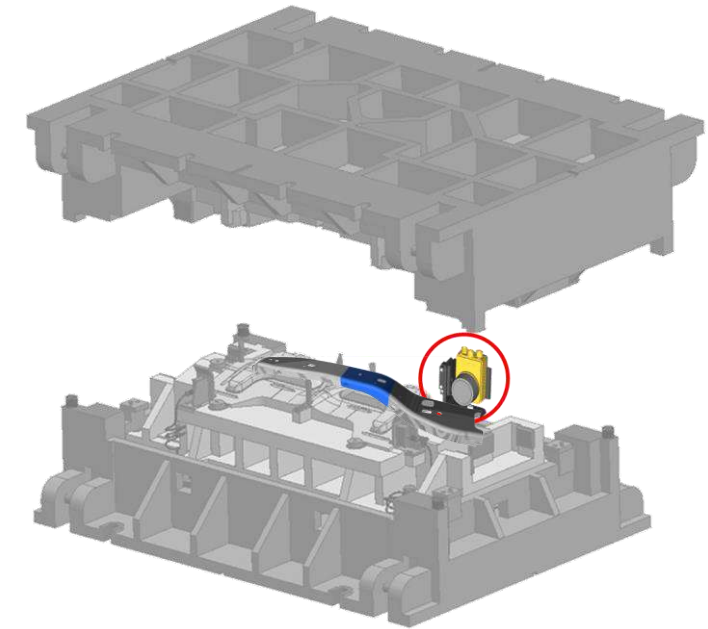


In-Die Inspection

- Defect Detection (cracks or burrs) through an automatic **optical** inspection with **IA** training



100% Defects Detection



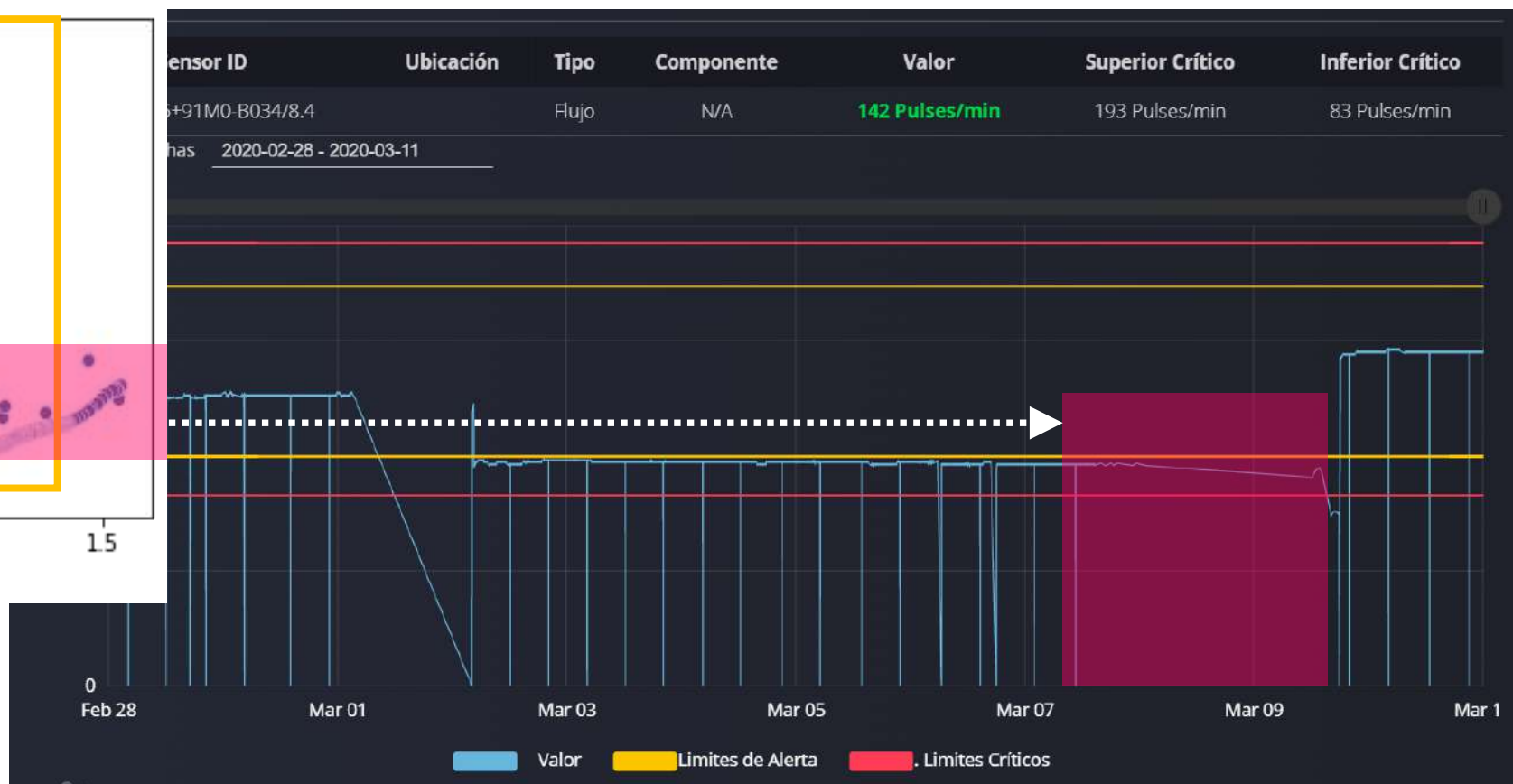
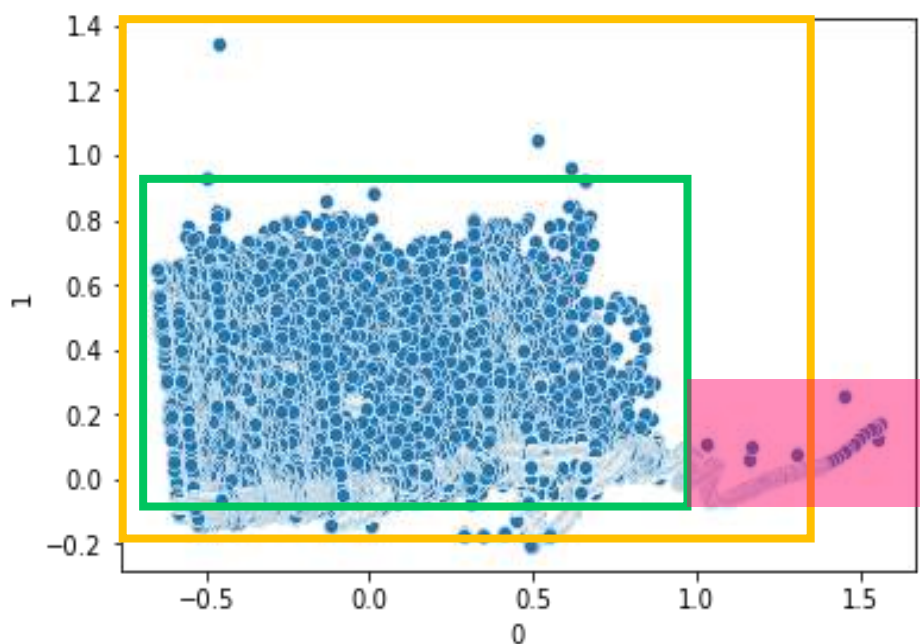
Vision system inside the Tool





Predictive Maintenance

- Equipment condition real-time **anomalies detection** through **Machine Learning (ML)**

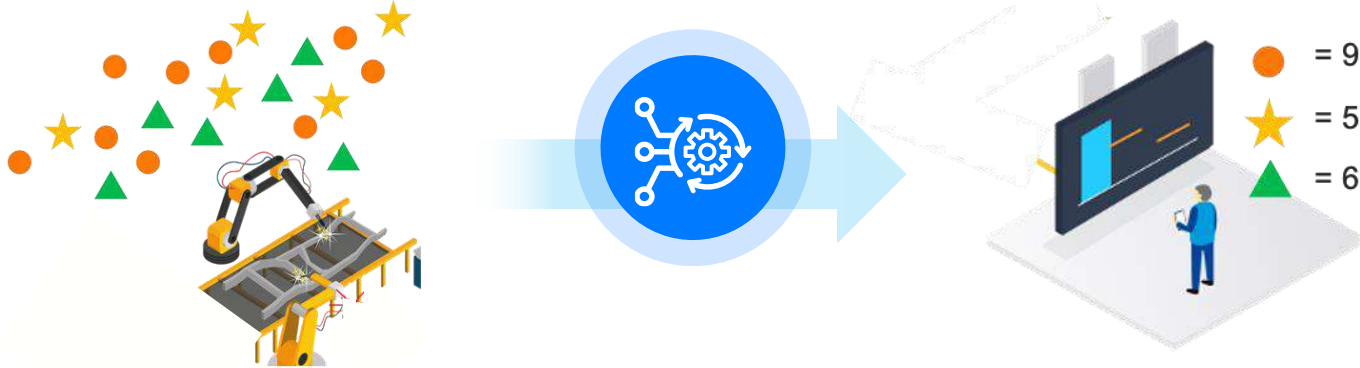




Robot Monitor Advanced Analytics

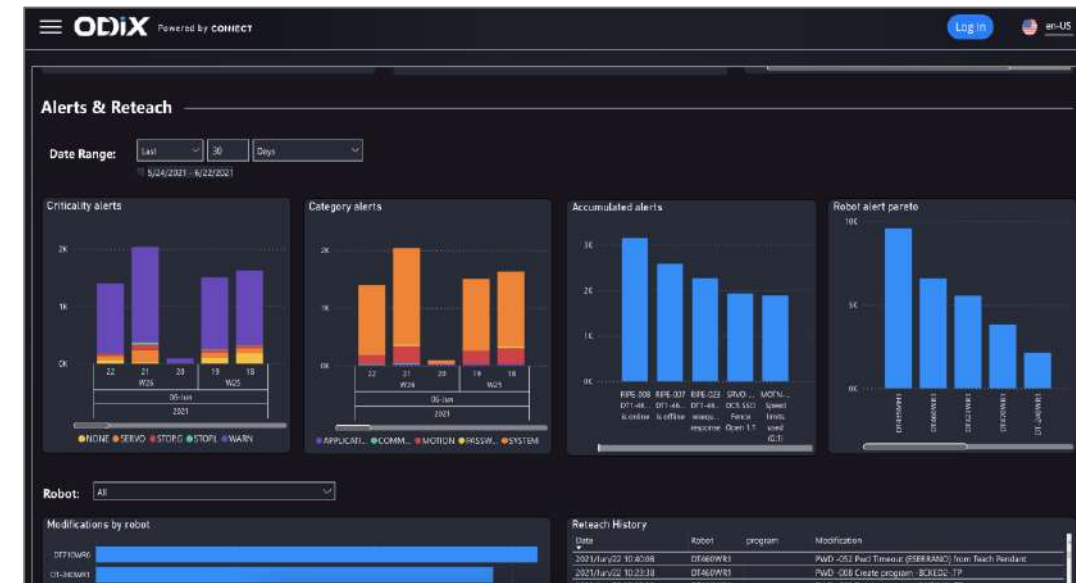
- Data extraction through **IIoT** architecture
- Weld robot health **diagnostics**
- **Insights** generation for maintenance through **ML**

1. Raw data → 2. Algorithm → 3. Automated insights



Value Added

- Available resources optimal usage.
- Decision making.
- Problem solving.



Quality Gate Monitor

ASSEMBLY

The Quality Gate Monitor helps our Quality Techs log the defects in a friendly and easy to use interface, allowing also to segregate parts needing repair ensuring no defect flows-out.

It also gives key insights about the most repetitive issues repaired for the Fast Response Team to solve problems and adding visibility for the quality of our product.

α1

ODiX ● Soldadura ● Torque

ID: 2134786

CONCLUIR INSPECCIÓN

DEFECTOS ACTUALES

Selecciona los cordones para identificar defectos

VISTAS

PERFIL

Operador: Rafael Guevara

Estación: DT1-1780

Posición: 1

ASIGNAR DEFECTOS A:

REPROCESO LISTO

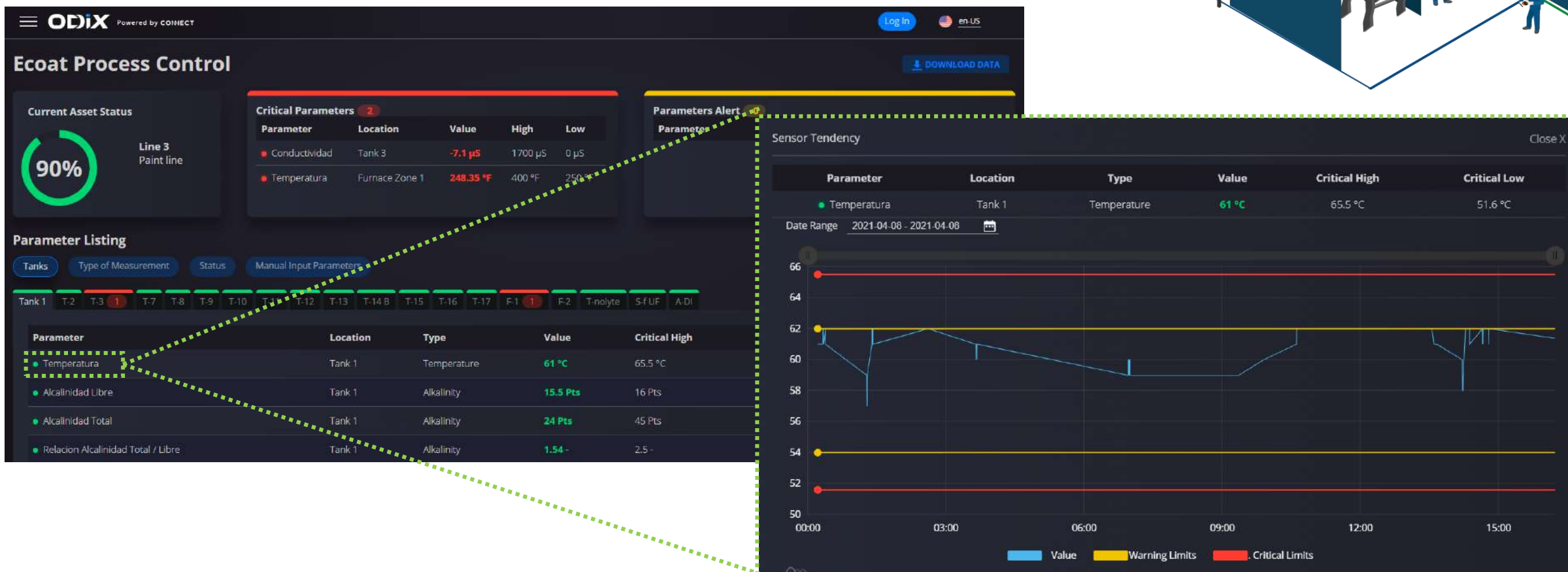
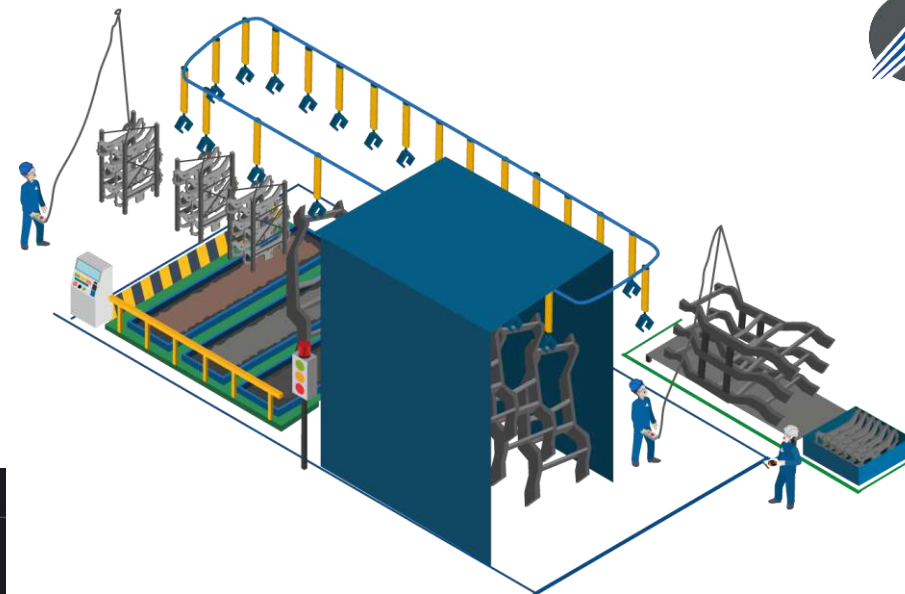
ENVIAR A CARPA

Digital Solutions / Painting



α2 Digital Process Control

- Monitoring and Control of process variables on E-coat painting





Challenges: _____

- Strategic Alignment
- Technology application
- Talent
- Adoption
- IT Operations integration

Benefits: _____

- “*Mindset*” Change
- Decision making *Agility*
- Accelerates *Problem Solving*
- Operating System enhancement

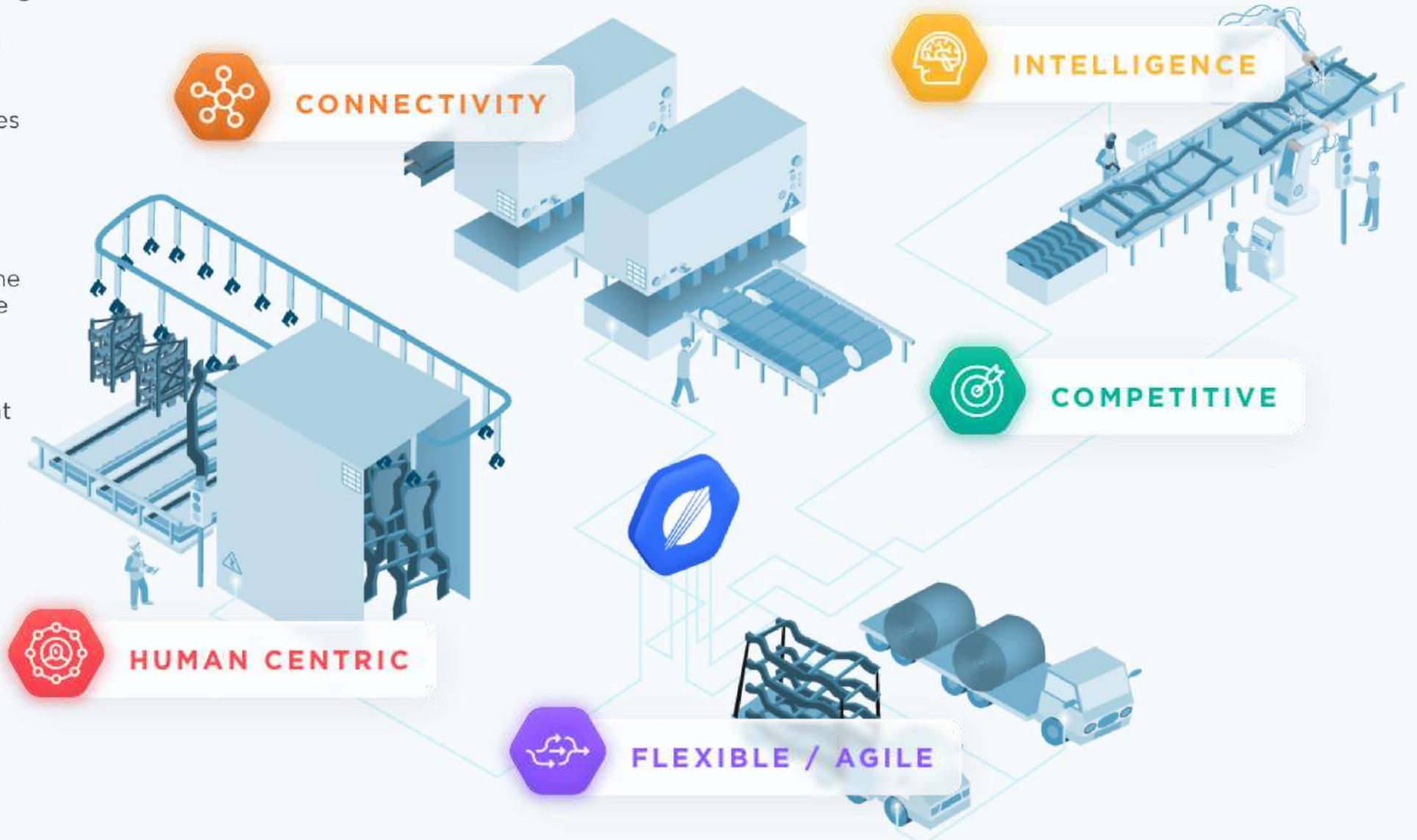


Metalsa's Smart Factory

Creating the **Plant of the Future** is part of our company's vision. One of its components is transforming into Smart Factories by following our Digital Transformation strategy and evolving Manufacturing Operations.

The **Smart Factory** will enable the digital layer that will connect the physical and digital worlds to monitor the full production process, creating an intelligent, flexible and connected plant that aims to increase our competitiveness.

This evolution to our operations has **5 key elements**:



THANK YOU!

