

Digital Execution Management in Supply Chains

Dr. Christoph Kilger, aioneers

12. Netzwerkforum Mannheim

3. May 2021

aioneers - building high-performance supply chains



founded 2020



50 employees



offices in Mannheim & Pune

Co-Founders & Leadership Team



CEO Service Solutions
Dr. Christoph Kilger

- 25 years of experience in supply chain, production, logistics, PLM, strategy and IT at KPMG, J&M, EY and aioneers
- former head of Supply Chain & Operations in EMEA at EY



CEO Technology
Dr. Andreas Müller

- 22 years in strategy, organization and supply chain management
- former CEO and co-founder of J&M Management Consulting
- Various leadership roles at EY
- Investor & Business Angel



Chief Innovator & Evangelist
Dr. Boris Reuter

- 25 years of experience in supply chain, analytics, quantitative SCM and Operations Research at axentiv, softlab/BMW, J&M, EY and aioneers
- former global head of Supply Chain Analytics at EY

Services & solutions



supply chain segmentation



control tower



master data management



sustainability & compliance



working capital optimization



demand planning & machine-learning based forecasting



master planning and sales & operations planning



materials & production planning



production management and OEE optimization



inventory management and optimization



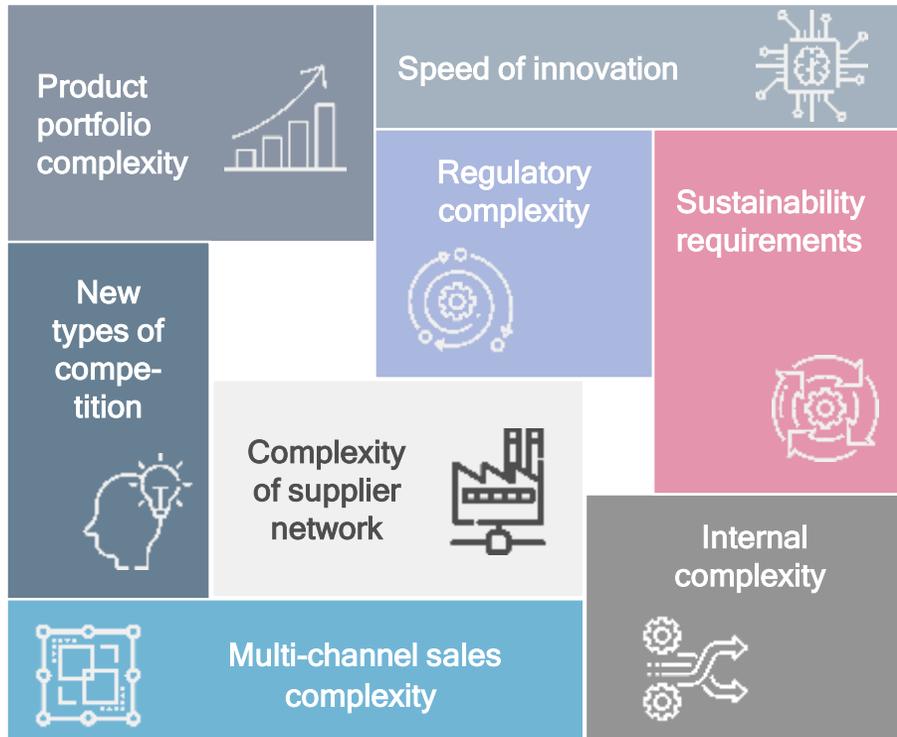
business transformation and change management

Corporate clients in various industry segments



All supply chains lag behind their optimal performance.

We call this **supply chain performance gap**.
There are **eight root causes** for the supply chain performance gap.



Closing the supply chain performance gap will release up to **\$50 million EBIT** per \$1 billion of sales

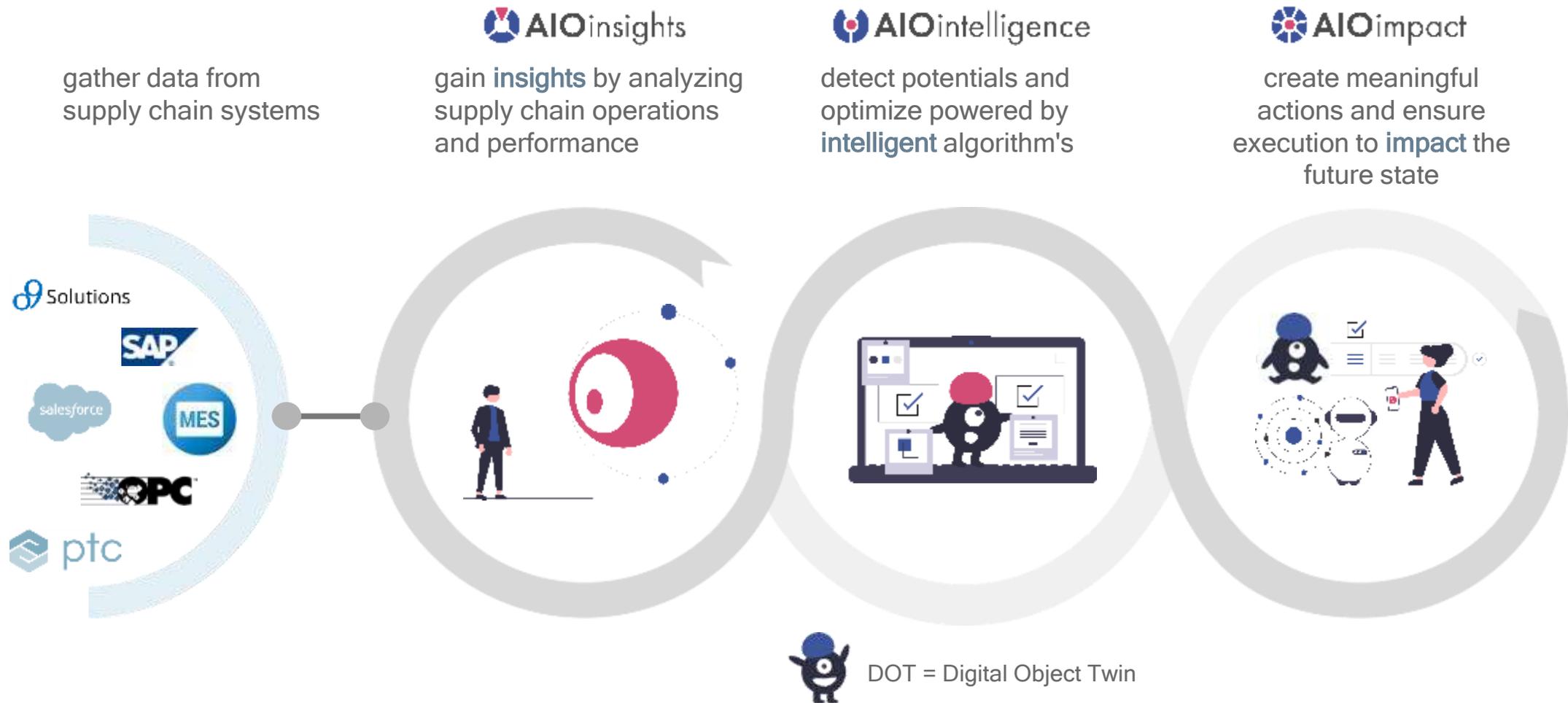
Financials	Symptoms	Value Range*
Costs	Excess manufacturing and service costs	0.5% - 1.5% reduction
	Excess logistics and transportation costs	1% - 2% reduction
	Inventory write-downs	10% - 40% reduction
	Premium material costs	0.5% - 1.5% reduction
	Low productivity and high personnel costs	5% - 60% reduction
	Working Capital	Excess inventory level
Revenue	Low accounts receivable turnover	1% - 3% increase
	High accounts payable turnover	0.5% - 5% reduction
	Low service levels	0.5% - 2% increase
	Insufficient effectiveness of sales & marketing	1% - 4% increase

In order to close the performance gap, a multitude of decisions must be made in supply chains and need to be executed

- Product portfolio
- Inventory optimization
- Product modularization
- Planning parameters
- Forecast improvement
- Continuous improvement
- Additional capacity
- OEE stabilization
- Quality improvement
- Supplier management
- Logistics optimization
- Sustainability & regulations



Closed-loop supply chain performance management integrates analytics, optimization and execution



AIO is the open platform for closed-loop supply chain performance management



AIO insights

end-to-end analytics with pre-defined analysis and dashboards for material, information and financial flows

AIO intelligence

machine-learning and simulation-based algorithms and methods to optimize planning and operations e.g., forecasting, inventory, production, cash flow

AIO impact

supports the execution of one-time improvement initiatives, decisions from recurring processes like sales-and-operations-planning, and reaction on operational incidents like machine break-downs and supply shortages.

AIO connect



standardized connectors and adaptors to enterprise systems, data lakes, analytics systems, IoT systems and decision support systems

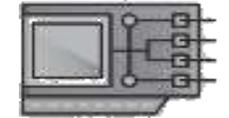
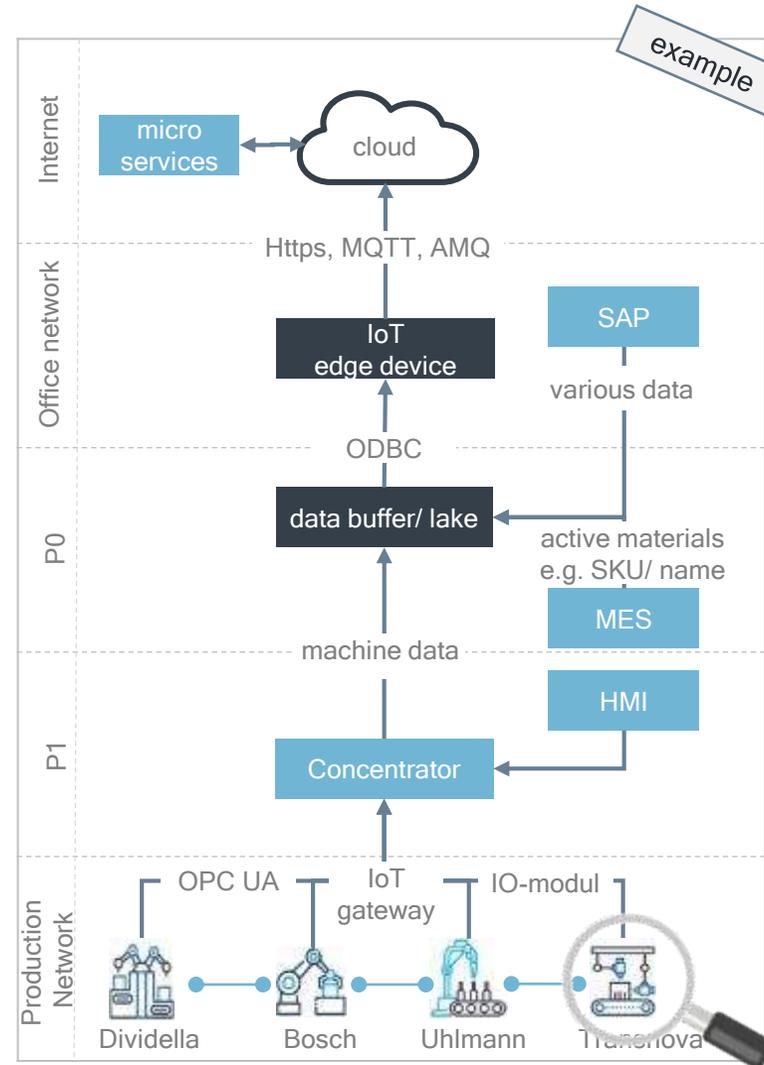
Supply chain data can be derived from operational and planning systems, in production mainly from MES and machine gateways



- OPC UA
- industrial communication standard
- installed on PLC



- IoT gateway
- external device with physical interfaces to the PLCs
- made to retrofit old machinery



- pick up analog and digital signals from machine sensors
- redirect inputs directly into the cloud



- external sensors e.g. record the status of a machine

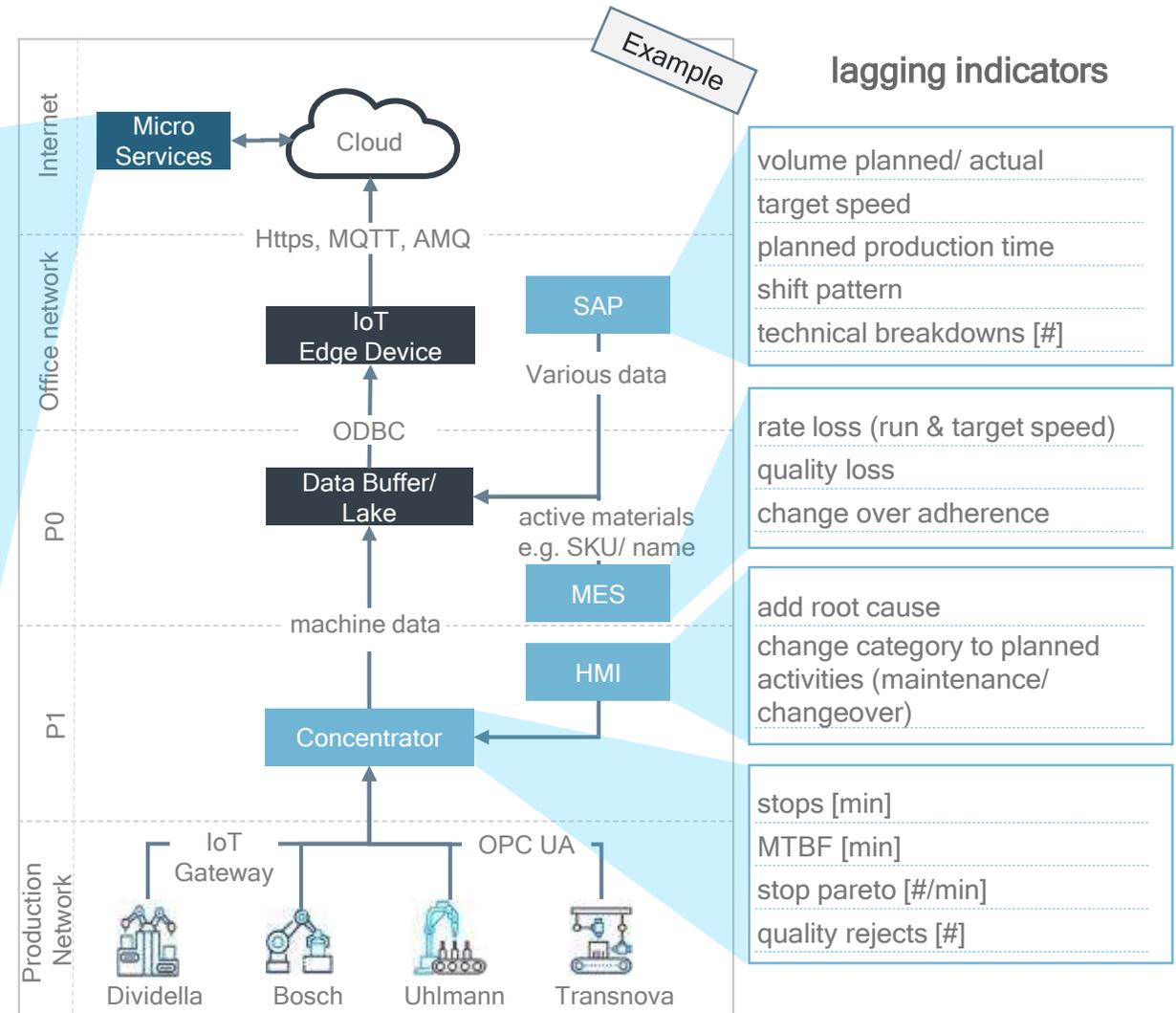
Understand the current situation of the supply chain and set a concrete baseline to measure improvements



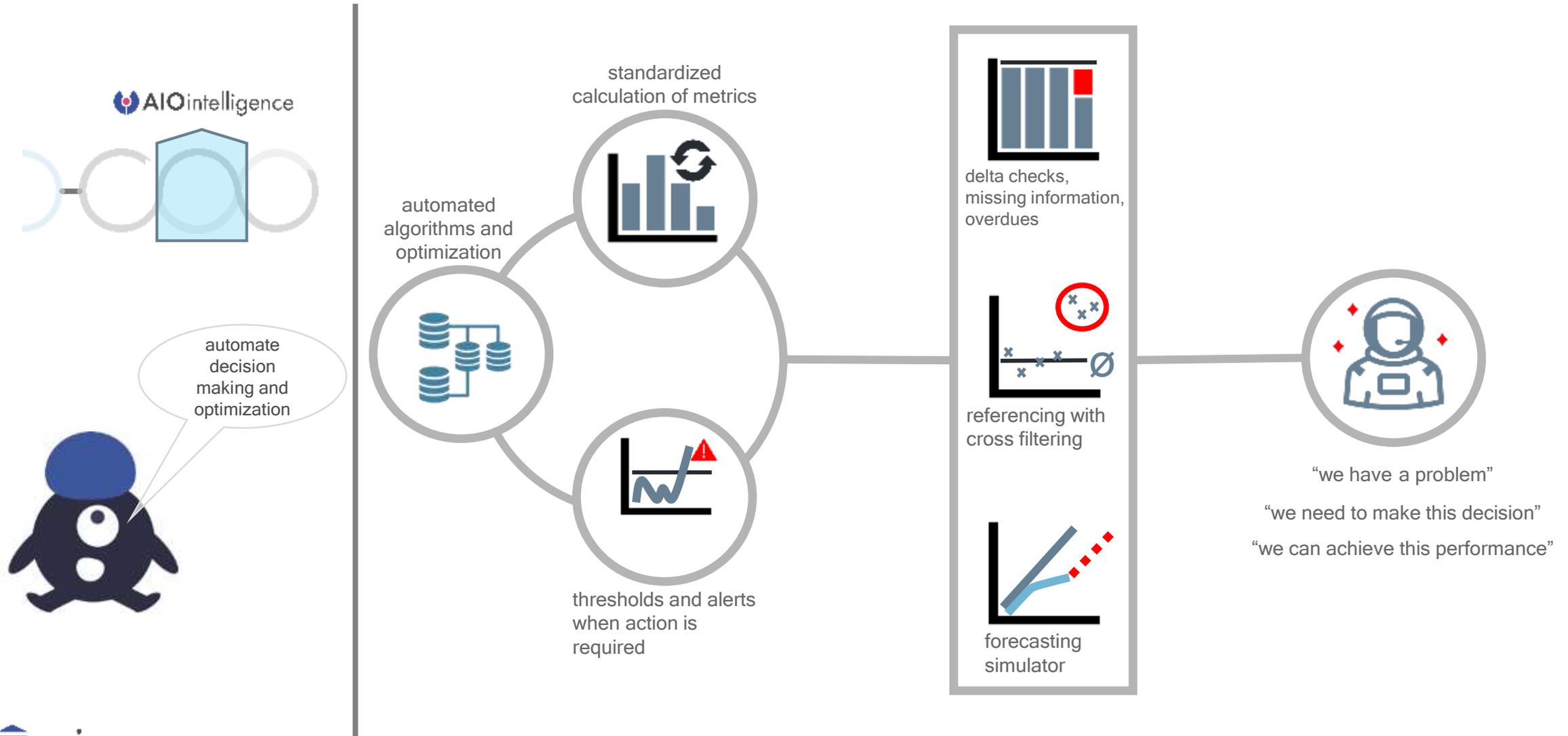
leading indicators

- safety walks (BOS) [#]
- near misses [#]
- new or edit maintenance standards [#]
- defects found and fixed [#]
- clean, inspect and lubricate activities completed [%]
- centerline/ machine parameter checked and out of limit [%/#]
- executed in process controls [#]
- conducted A3 problem solving for chronic issues [#]

focus on leading, not just lagging indicators



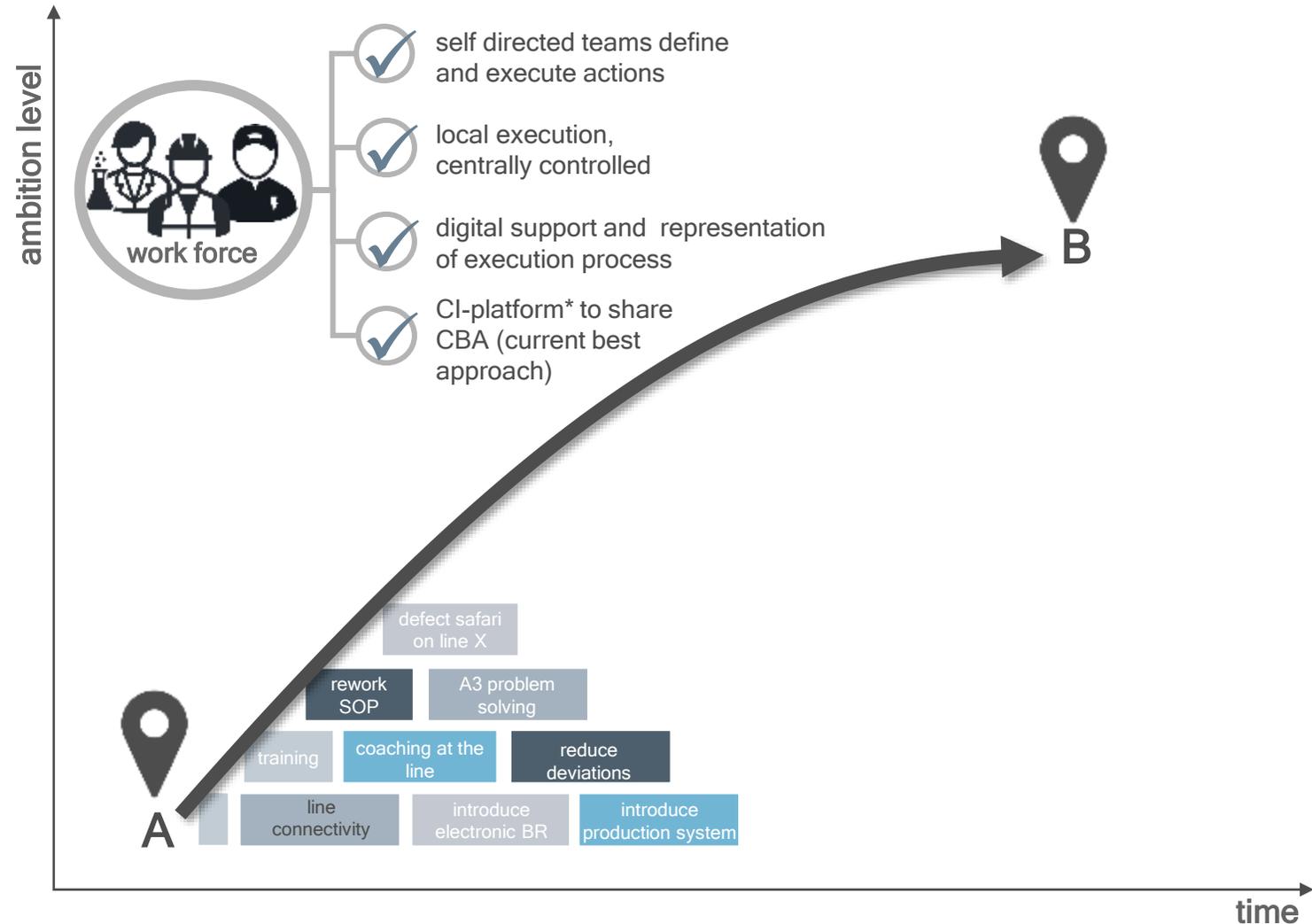
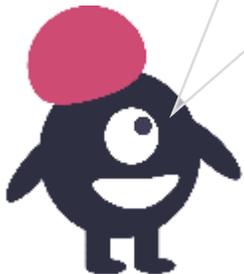
Assess the current state, derive optimized improvement measures and set the future state of the supply chain



Make decisions and execute resulting actions by autonomous teams in the supply chain



relate decisions to digital object twins (DOTs) to automatically track the impact of execution



Summary: Closed-loop supply chain performance management



What is going on in my supply chain?



End-to-end transparency of the supply chain: Understand the **current situation** and identify **improvement areas**



Deep-dive into supply chain improvement areas and **automated generation of findings** (= symptoms of the supply chain performance gap)



How to improve my supply chain?

3



Generate **recommendations** to improve the supply chain, based on rule-based engine, machine-learning based forecasting, inventory simulation, and further **intelligent algorithms**



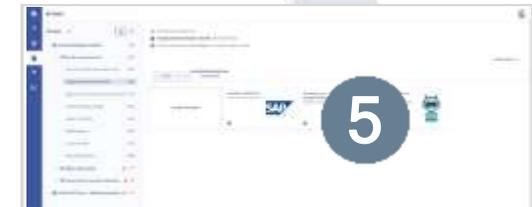
How do I ensure execution?

6



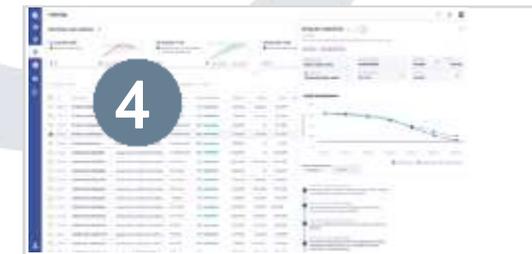
Measure the impact and benefits from the execution and drive **continuous improvement**

5



Automatically update the state of DOTs, metrics and actions from the analytics system

4



Connect recommendations and decisions with individual DOTs (inventories, machines, suppliers, ...) and **track execution**

Building high-performing supply chains



AIO Platform

www.aioneers.com

info@aioneers.com

www.linkedin.com/company/aioneers



Dr. Christoph Kilger

christoph.kilger@aioneers.com

+49 170 74 74 663

<https://www.linkedin.com/in/christophkilger>

