

The background of the image is a deep purple with a network of glowing, intersecting lines in shades of cyan and magenta, creating a diamond-like pattern. The text is centered in the middle of the frame.

AVEVAWORLD

ACCELERATE INDUSTRIAL INTELLIGENCE

Life Sciences Community Workshop:

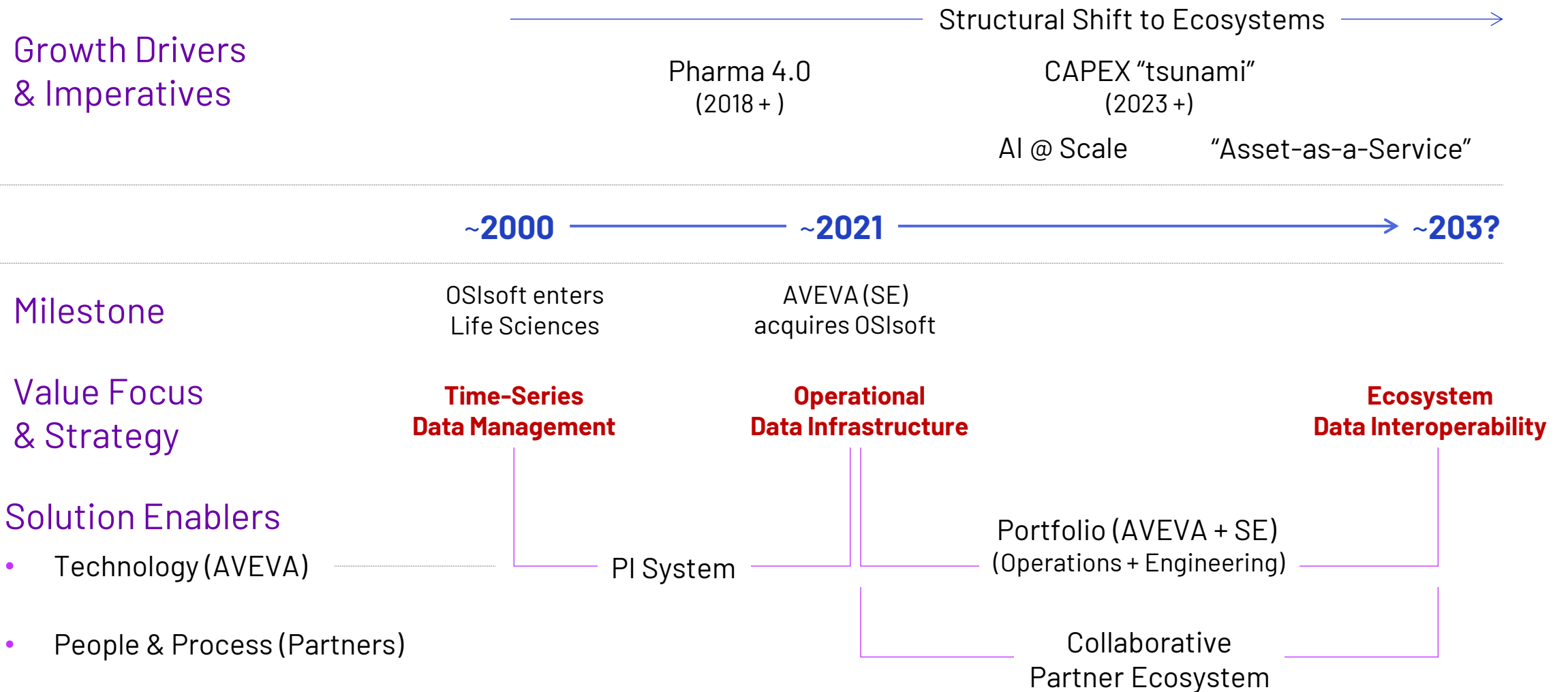
Pharma 4.0 & Digital Continuity across Design-Build-Operate-Maintain



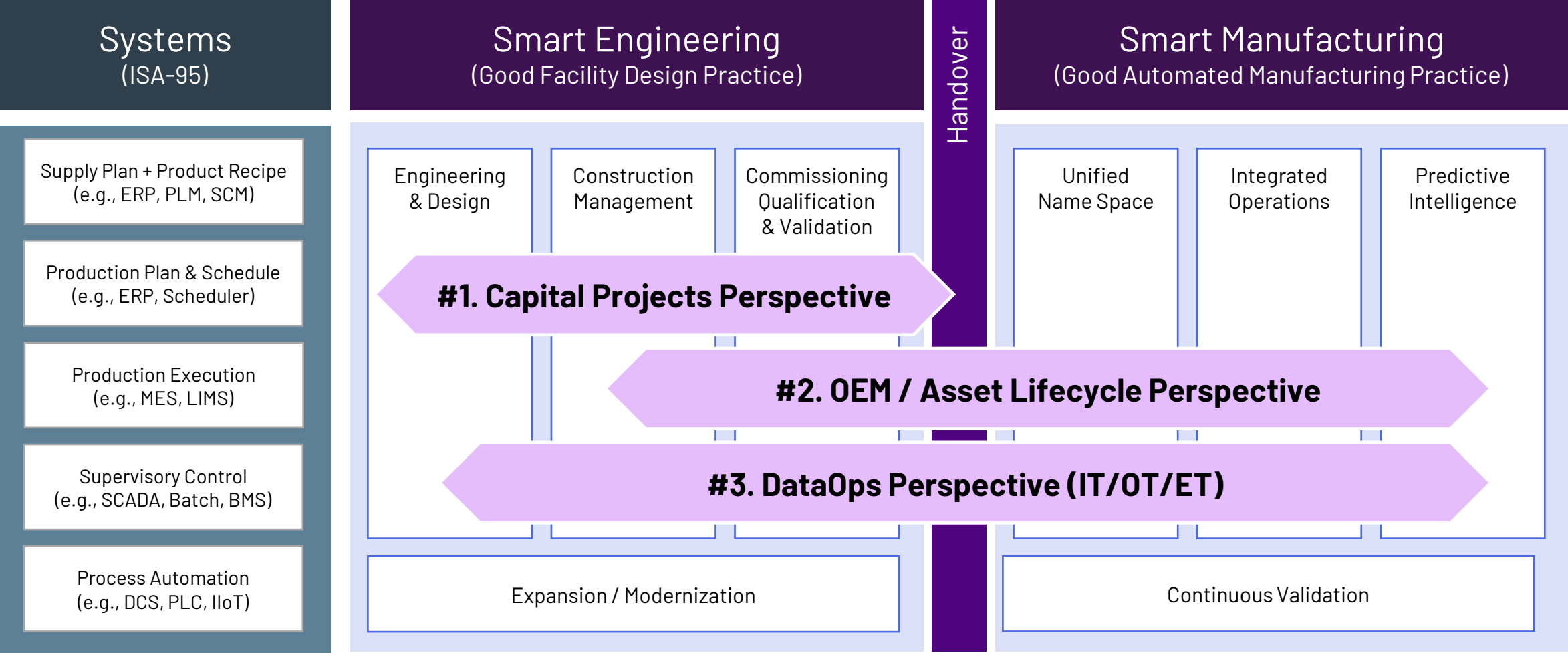
Workshop contributors

ZETA	Martin Mayer	Christoph Woltan	
Focaliti	Max Guillois		
ITCAN	Ahmad Farshoukh		
Bausch + Strobel	Sven Falk		
Bk Vibro	Christian Benk		
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	Cormac Ryan	Emily Li	Sree Hameed
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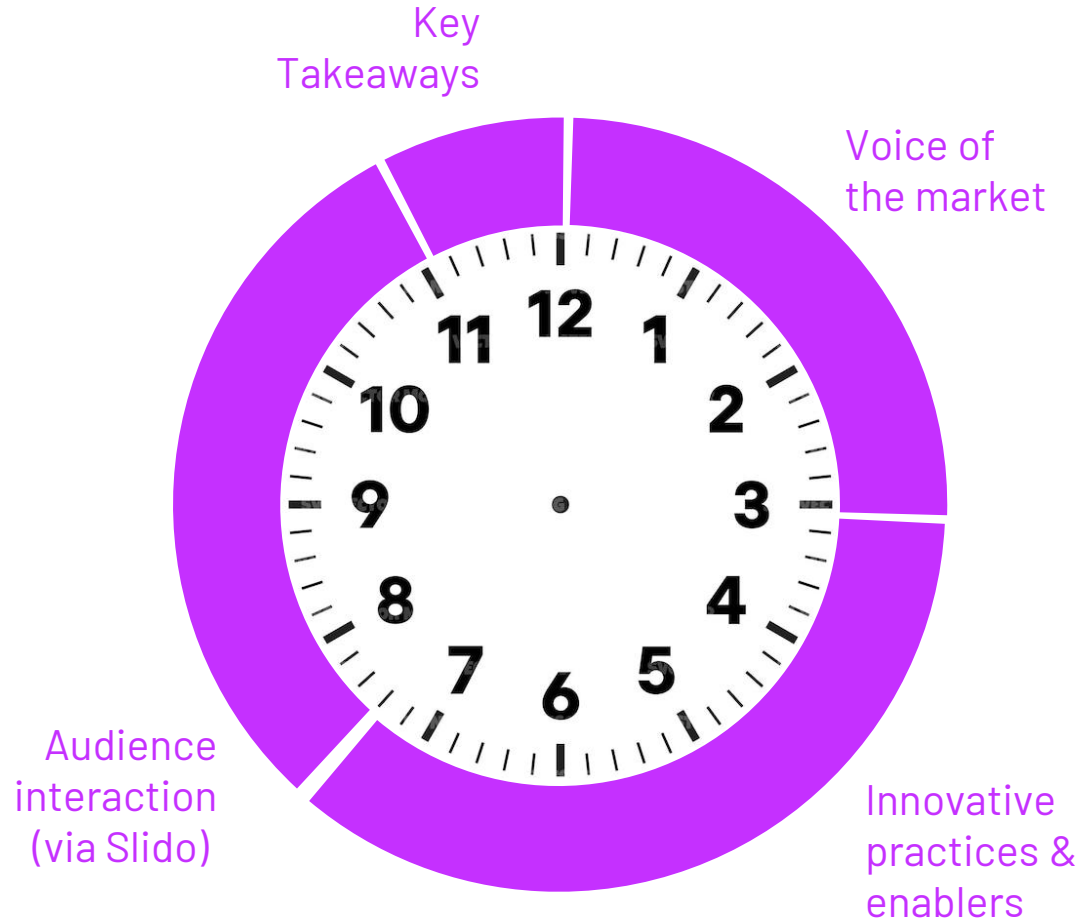
Our journey of growth, innovation – and adaptation



Discussion flow: 3 perspectives in 3 sessions



Session format: Managing time & topics



- Voice of the customer / market (~**25%**)
- Innovative practices & enablers (~**40%**)
- Audience input & interaction (~**25 %**)
- Key takeaways (**10%**)

Join via Slido



Go to: slido.com

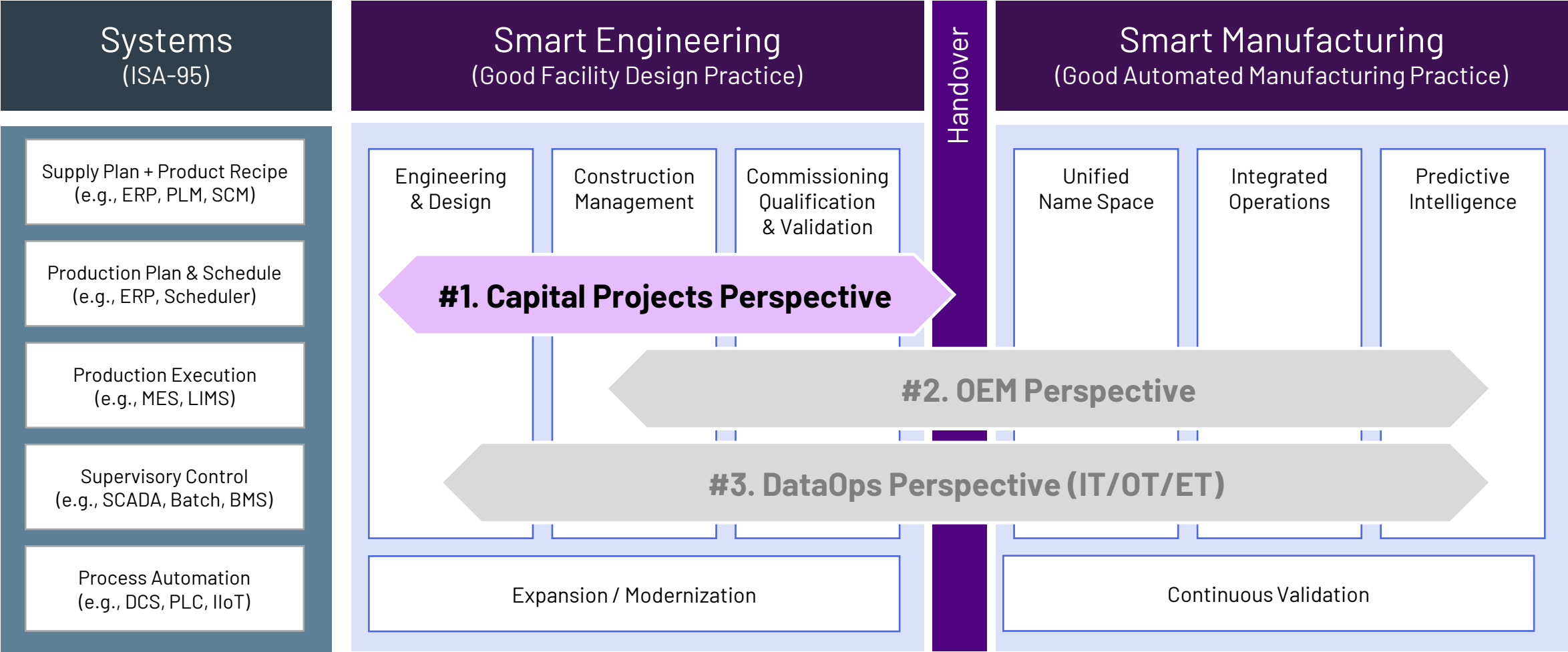
Joining as a participant?

Enter code here



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Session #1: The Capital Projects Perspective





THE CAPITAL PROJECTS PERSPECTIVE

AVEVAWORLD

May 2026, Milan, Italy

**Drug prices are
declining ...**



A map of the United States is formed by a large number of US coins, including pennies, nickels, dimes, and quarters, scattered across a light gray background. The coins are arranged to outline the continental United States, with a higher density of coins in the eastern half. A semi-transparent purple horizontal band is superimposed over the center of the map, containing white text.

... while US capital investments are rising sharply.

The industry must deliver multiple multi-billion-euro projects *in parallel*.

“We need to deliver a portfolio of projects in parallel - a significant challenge in terms of time, cost, and safety.”
Victor Cruz, Eli Lilly





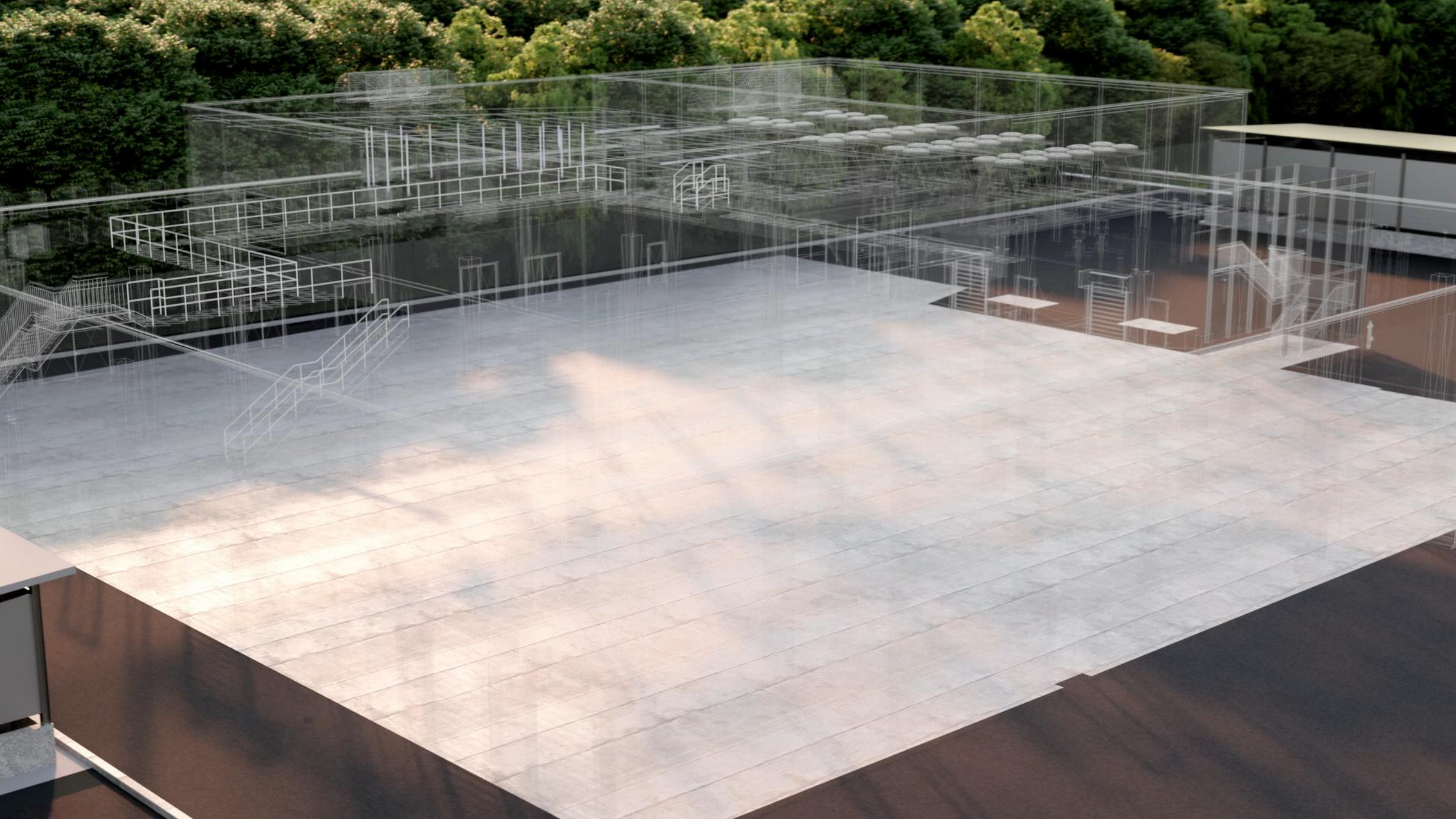
Maxime Guillois, FOCALITI



Q & A



SLIDO # 2948864



WHAT CHANGED IN THE LAST 20 YEARS?

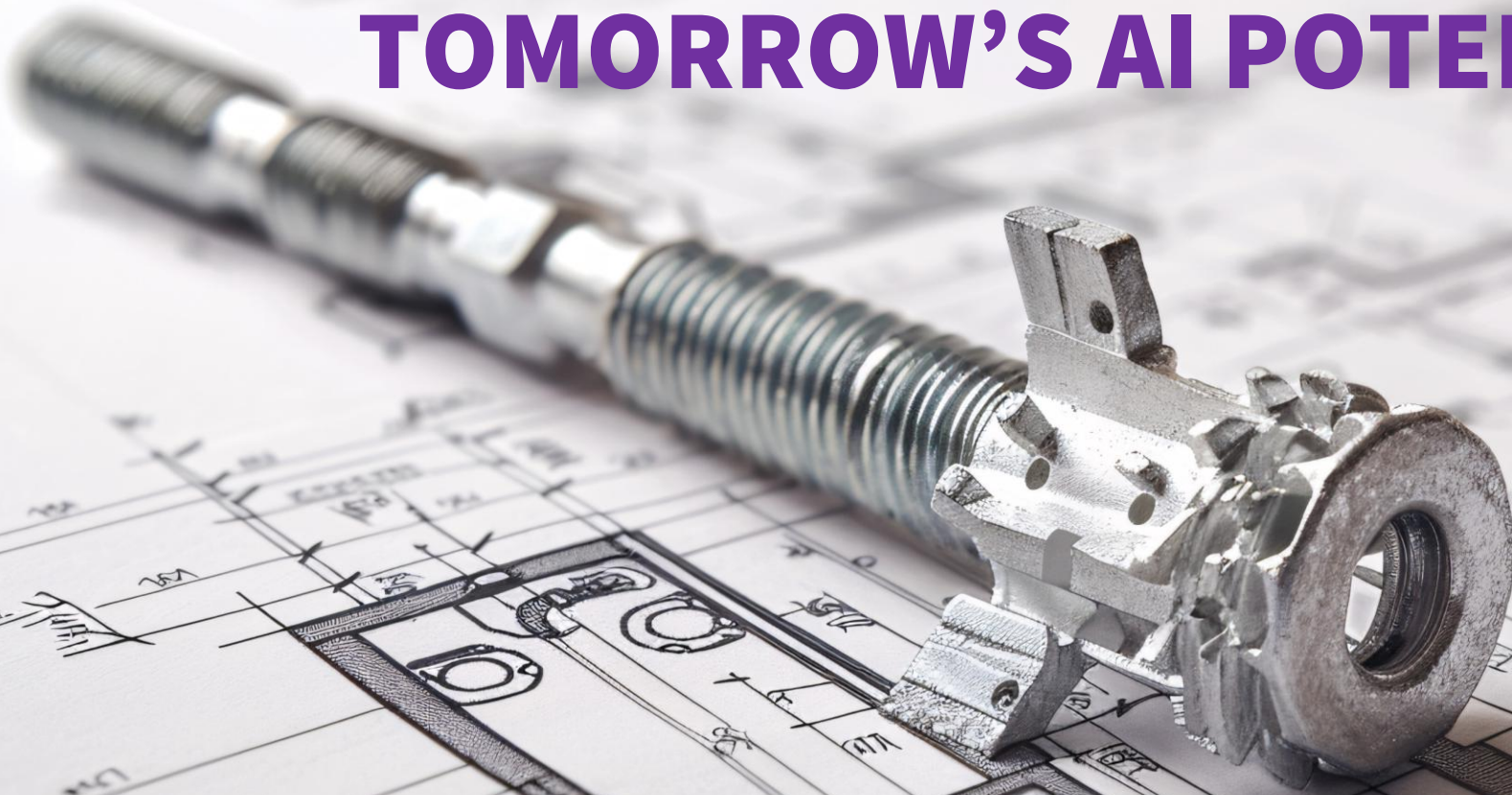


HOW WILL OUR WORKPLACE LOOK LIKE

IN THE
FUTURE?



TODAY'S TOOL LANDSCAPE AND TOMORROW'S AI POTENTIAL





CHRISTOPH WOLTAN, ZETA



Q & A

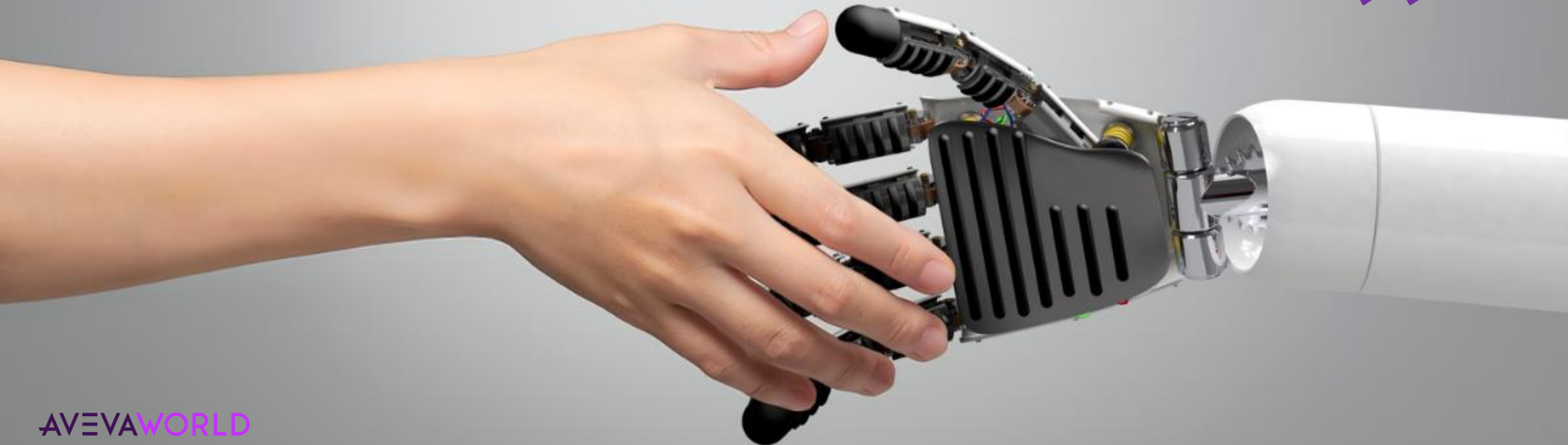


SLIDO # 2948864

“ **Digital journey starts at Engineering phase.** ”

“ **Digital collaboration / Single source of truth** ”

**“ We will not only build facilities - but cloud-based digital twins that enable real-time insights, AI agents and future technologies from day one!
Our Vision: If the data lives in the cloud and the facility is mirrored digitally, the factory becomes queryable - by people today, and by AI tomorrow. ”**





Over 66%

of Megaprojects fail to deliver expected outcomes on-time and on-budget.

Failed Megaprojects report

35% Schedule slippage

33% Cost growth

Source: Independent Project Analysis (IPA)

Pharmaceutical Megaprojects:
How To Properly Quantify Schedule Risk
(published 18th September 2025)



Ahmad Farshoukh, ITCAN Solutions

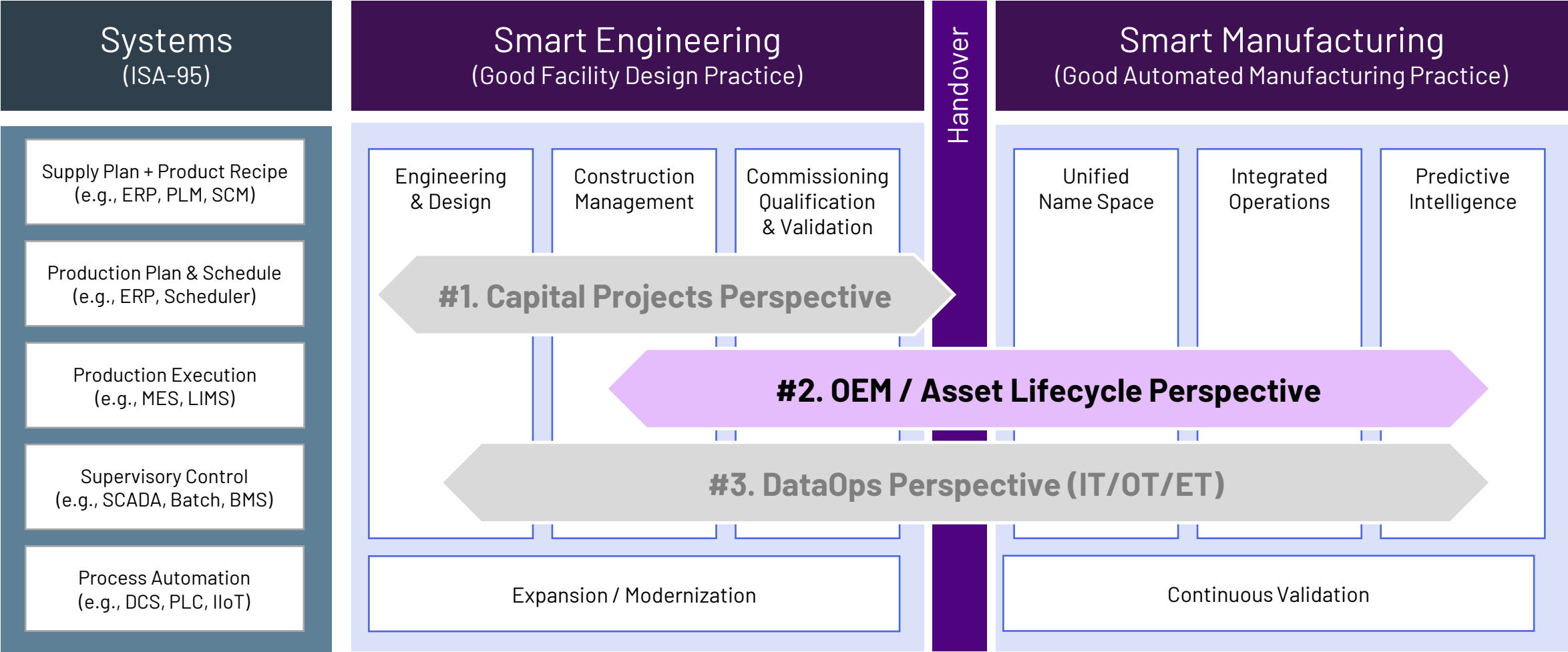


Q & A



SLIDO # 2948864

Session #2: The OEM Perspective





OEM WORKSHOP SESSION 2 — DIGITAL HANDOFF REALITY AND MATURITY

Tim Wortley, Senior Product Manager, Cytiva Lifesciences

TODAY'S REALITY AT EQUIPMENT HANDOFF



Data Availability vs. Usability

Operational data is available at equipment delivery but often remains local and hard to access effectively.

Integration into Plant Systems

Customers expect baseline integration with plant systems like MES and historians to centralize data storage.

Challenges in Extending to Enterprise

Few customers extend data to enterprise or cloud platforms due to readiness, security, and ownership concerns.

Manual Data Preparation Effort

Significant manual effort is needed to clean, label, and interpret data before it supports decision making.

WHERE DIGITAL HANDOFFS BREAK



Specification Phase Failures

Broad digital requirements lack enforceable deliverables, causing unclear data models and ownership boundaries.

FAT and SAT Limitations

Acceptance tests focus on mechanical and control functions, neglecting data usability and integration readiness.

Commissioning and Early Use Issues

Manual data exports and proprietary systems hinder seamless integration and analytics in early operations.

Late IT and Security Constraints

Unresolved IT, cybersecurity, and legal issues block connectivity and scalable digital readiness.

WHAT IS WORKING TODAY

Customer-Built Integration Layers

Customers create integration layers to bridge gaps at handoff, normalizing data into plant historians and operational systems.

Baseline System Integration

Plant-level integration and historian connectivity are baseline expectations [for manufacturing], especially where data integrity matters.

Supported Connectors & Clear Interfaces

Use of standardized connectors and predictable data exchange reduces custom programming and reconciliation time.

Collaborative Project Ownership

Clear ownership across mechanical, automation, and data domains minimizes finger-pointing during commissioning and support.



WHAT CUSTOMERS WANT NEXT



Simplified Integration

Customers want easier equipment connection and deployment with minimal custom engineering and manual workarounds.

Usable and Secure Data

Data must be usable and well-documented, with clear naming, consistent units, and practical secure sharing methods.

Meaningful Alarms

Alarms should relate to process and quality context, enabling faster investigations and confident decision-making.

Cautious Automation

Progression toward automation should start with insights and operator approval, minimizing risk and complexity.

CLOSING — WHAT THIS LOOKS LIKE IN PRACTICE



Cytiva is responding to customer demand with open, standard interfaces

Open, Standard Interfaces

Adoption of open standards such as OPC UA and Sparkplug-B enables predictable, interoperable data exchange.

Plug-and-Play Data Connectivity

Simplified connectivity models reduce custom engineering and accelerate access to historian and analytics environments.

Pre-Designed, Pre-Verified Models

Use of pre-verified automation and data models reduces project risk, rework, and validation effort.

Designed for Existing Ecosystems

Solutions are built to fit into customer automation and data infrastructures, not require new stacks.



Brüel & Kjær Vibro

A member of the NSK Group



BAUSCH+STRÖBEL

Enabling Lifecycle Value in Pharma

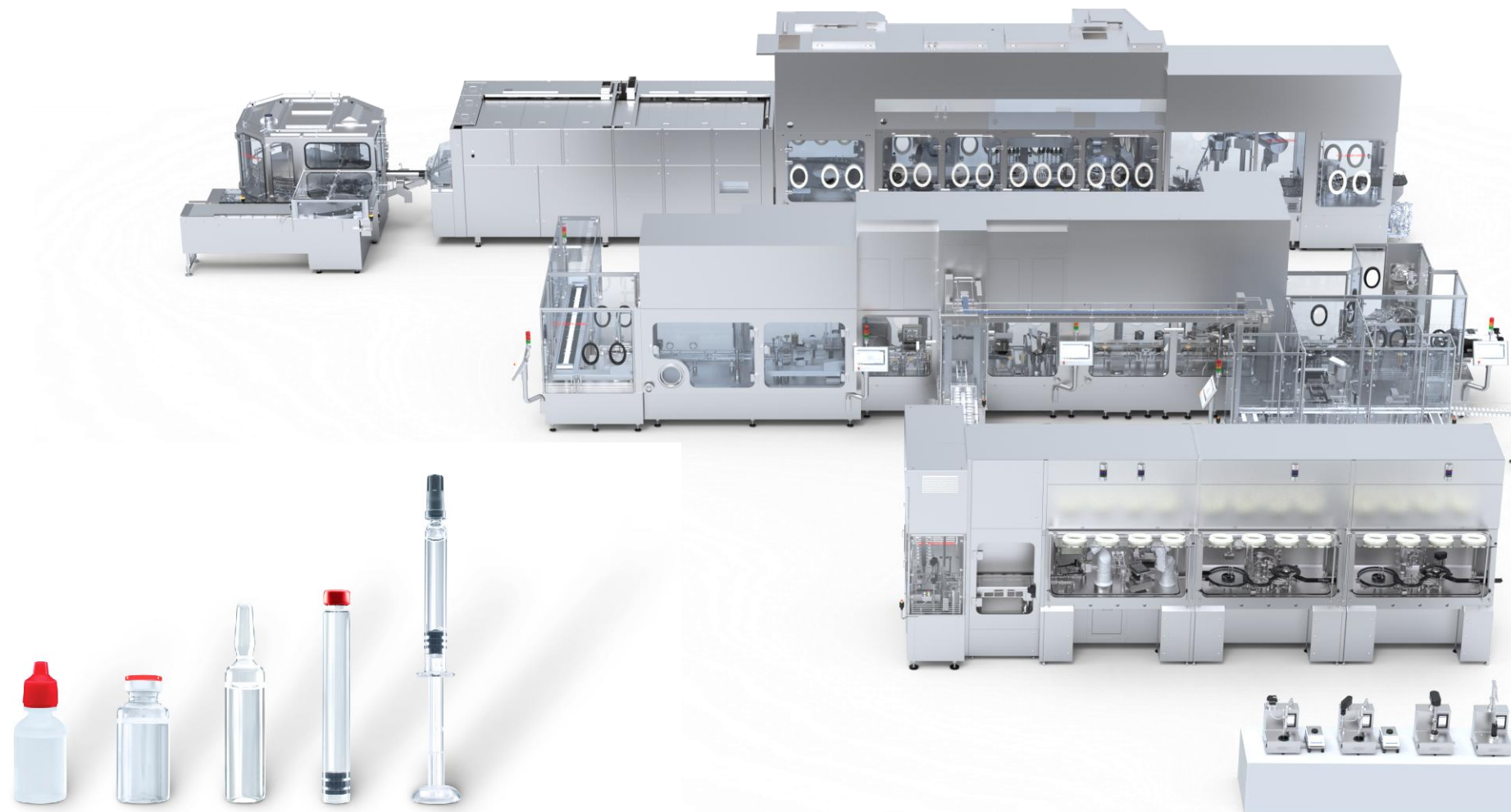
Lessons from a joint Lighthouse Project



AGENDA

1. Context Setting
2. Where The Value is Shifting
3. Where We Are Today
4. A Blueprint For Radical Collaboration
5. Systematic Integration
6. The Strategic Pillars

Machine portfolio: From lab-scale machines to high-speed production lines

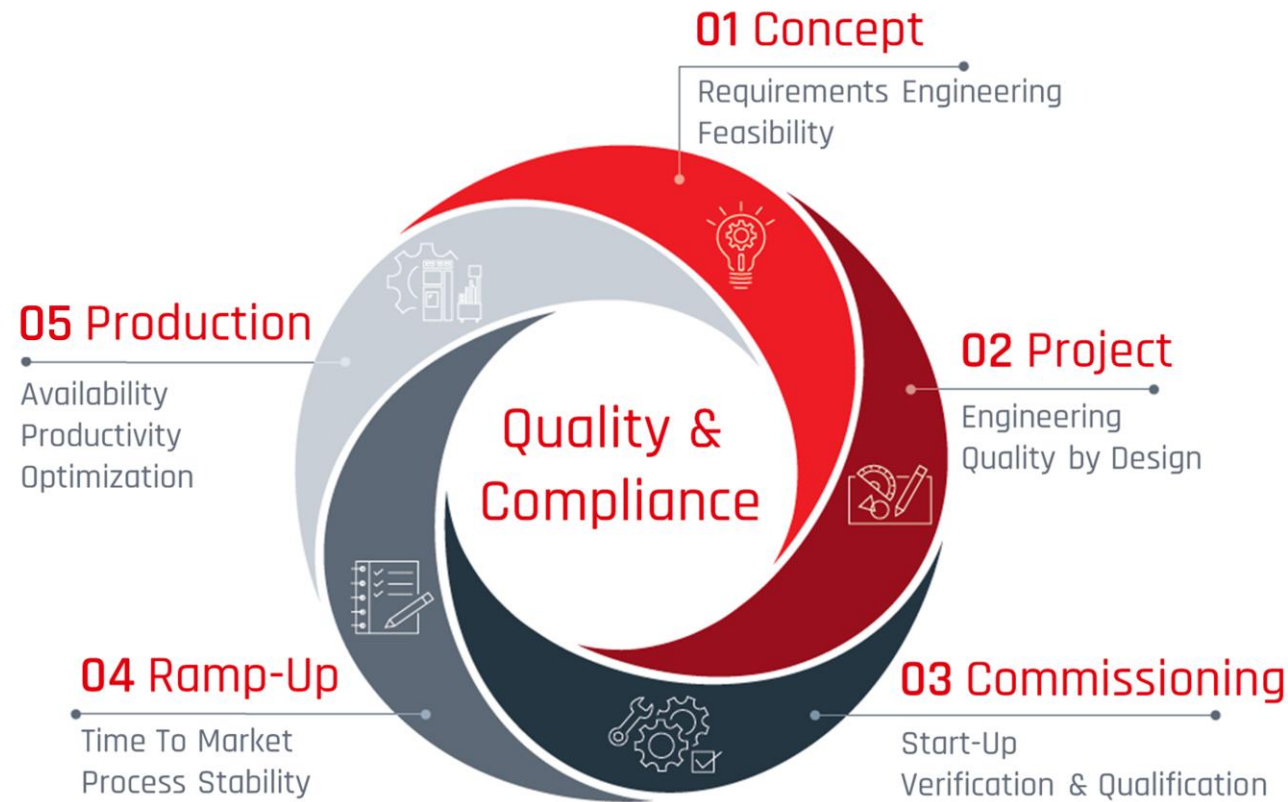


Life Cycle Services

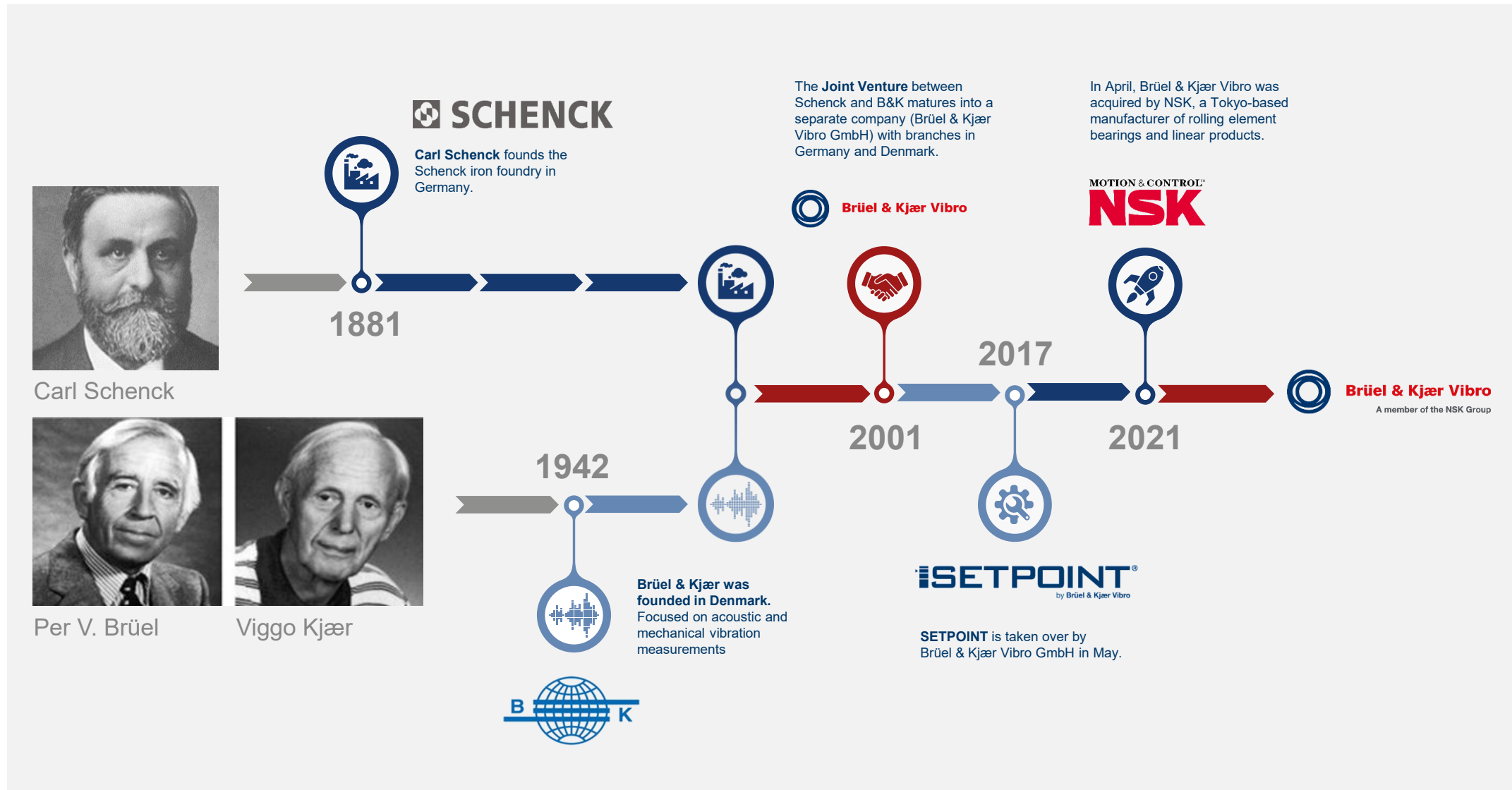
// Not only leading
in technology. ///

With our Life Cycle Services
we accompany you through
all stages of your
pharmaceutical production:

From the first idea to spare
parts management to
optimizing your production.

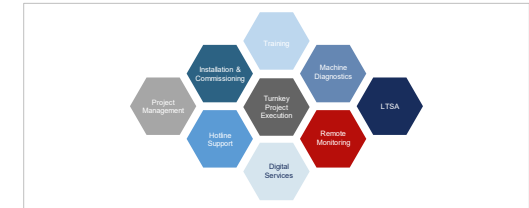


Pioneering spirit since 1881

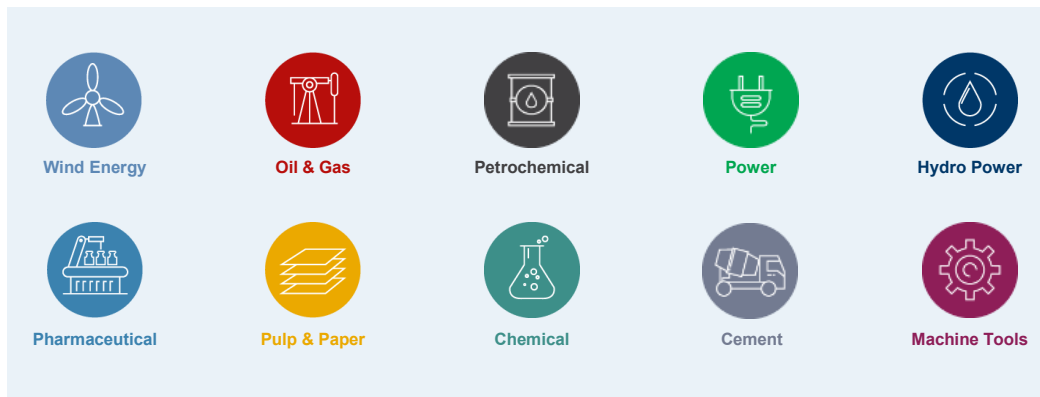


B&K Vibro's winning formula

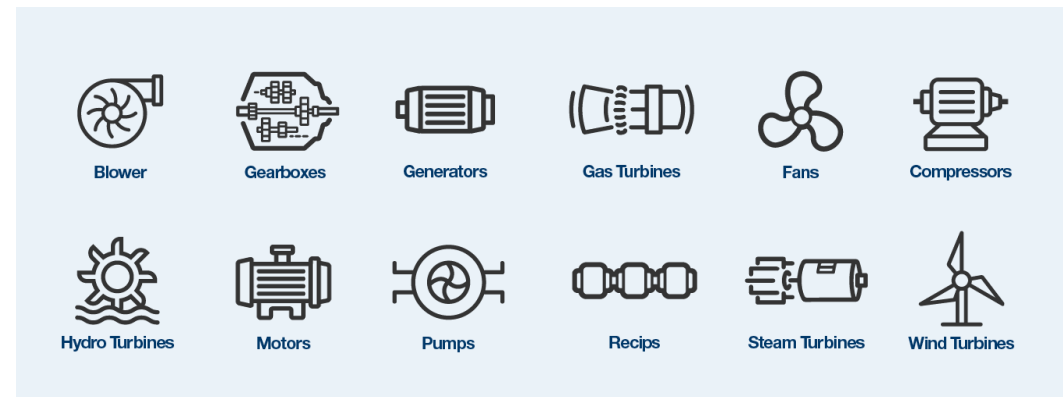
360° offering



Across a wide range of industries



Across all rotating equipment assets



Unique experience and data ownership

1tn+
data points owned

200k+
monitoring hours

40k+
monitoring systems sold

1,180+
bearing types monitored

120+
gearbox types monitored

10+
years average tenure
of R&D team

Where the Value is Shifting / Voice Of The Market

TRADITIONAL CAPEX FOCUS

Historically, pharma investments focused on building assets. The primary question was: How do we build this machine effectively?

- Isolated equipment decisions
- Fragmented data silos
- Higher risk of unplanned downtime

EMERGING OPEX FOCUS

Today, the focus is on realizing lifecycle value. Decisions are evaluated based on long-term performance and digital continuity.

- Integration into existing IT/OT
- High data usability for operations
- Systematic performance optimization

We are on the mission to enable lifecycle value realization through radical collaboration.

The Strategic Pillars / Voices Of The Customers

OPEN INTEGRATION

Standardized interfaces over "black boxes." Seamless fit into existing IT/OT landscapes.

KEY LEARNING

Customers are no longer buying isolated equipment or software. They demand an integrated system that functions as a seamless part of their digital ecosystem.

FAST TIME-TO-VALUE

Early alignment via joint workshops reduces iteration loops and accelerates deployment.

MANAGED REQUALIFICATION

Modular greenfield integration strategy minimizes regulatory risk and avoids late-stage changes.

TRUST & OPENNESS

Value depends on trusted, interoperable ecosystems. Rejection of proprietary lock-in.

SMARTER DATA

Contextualized health metrics over volume. Insights that drive immediate equipment decisions.

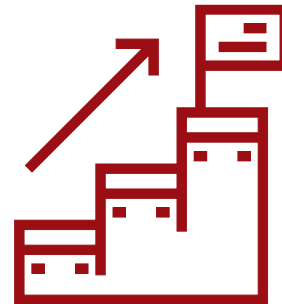
Where We Are Today

Evolving from a validated concept to a clear market mandate



GOALS

- Secure smooth operations
- Optimize maintenance windows
- Make the solution retrofittable



APPROACH

- Collecting data
- Generate insights
- Enlighten users

A Blueprint for Radical Collaboration

We set out to validate a systematic, standardized approach for integrated monitoring.



Equipment &
Process Expertise



Brüel & Kjær Vibro
A member of the NSK Group

Condition Monitoring &
Vibration Analysis

AVEVA

Industrial Data Backbone
(PI & CONNECT)



CUSTOMERS

Operational Expertise &
Value Co-Creation

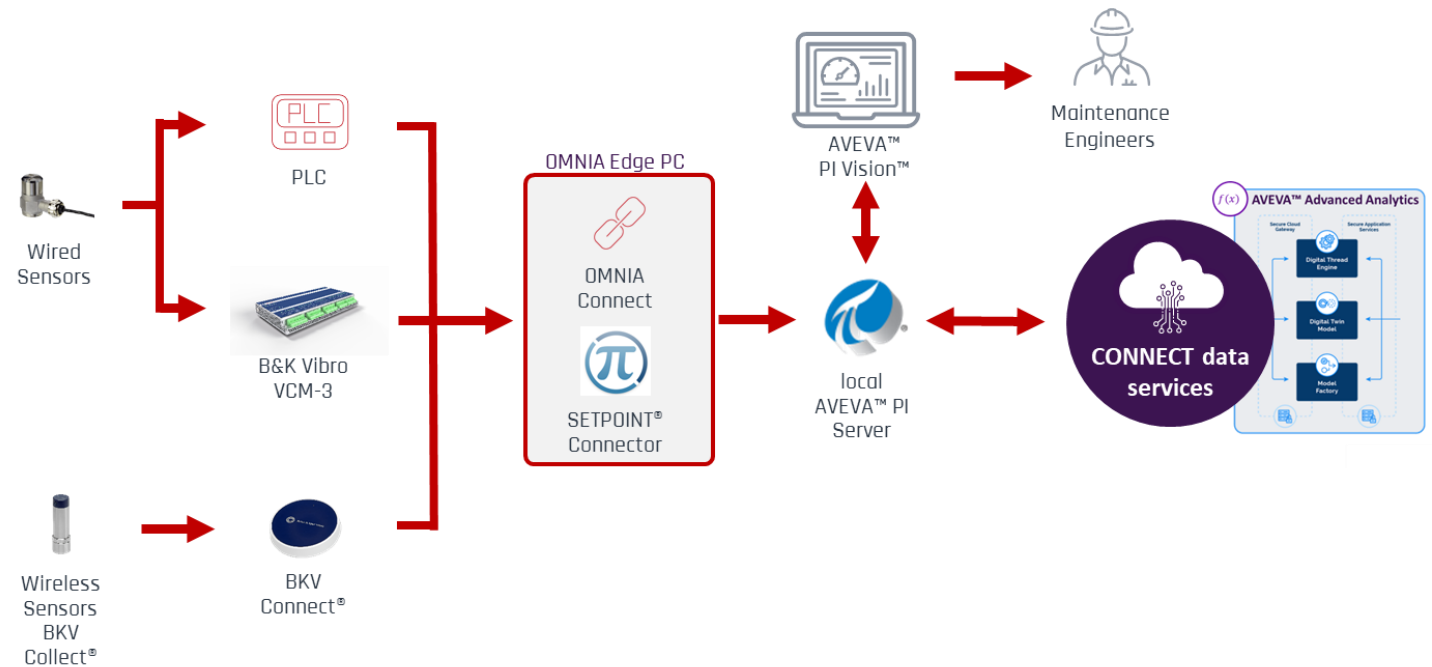
Key Principle: Not a custom one-off, but a standardized, scalable architectural blueprint.

Systematic Integration

From Concept to Reality

We built a multi-layer infrastructure spanning equipment, monitoring sensors, and global data infrastructure.

- **Equipment Layer:**
OMNIA Connect IoT Gateway
- **Monitoring Layer:**
High-precision vibration sensors
- **Data Layer:**
AVEVA PI System & Connect platform



Where We Are Today

Evolving from a validated concept to a clear market mandate

CONCEPT (LIGHTHOUSE)

Validated the technical sensor-to-cloud workflow and proved the value of Condition Monitoring.

MARKET REALITY

Concrete demand signal from customers: Integration is expected early in the asset lifecycle.

OPEN ECOSYSTEM

No more isolated subsystems. A standardized architecture integrated into the customer's IT/OT landscape.

Our solution is not just another isolated product, it is a **standardized, open ecosystem** built on proven market pull.

The Foundation of Success

“

No single vendor can deliver digital transformation alone. Real value is created when equipment experts, customers, and industrial data are connected through a shared data ecosystem.

”

- Bausch+Ströbel & Brüel & Kjær Vibro's Shared Vision



Q & A



SLIDO # 2948864

Early OEM Engagement – Integration Starts at Specification

Embed “data-ready by design” into all new investments to progressively transform the manufacturing landscape.



OEM REQUIREMENTS FOR DATA MUST HAPPEN AT THE PROCUREMENT PHASE – Whether this is Greenfield or Brownfield. The weighting for new equipment/system acquisition should be **highly scored on data** and digital capabilities.

WHY EARLY OEM ENGAGEMENT MAKES A DIFFERENCE



LOWER COST

Fewer reworks, change orders, and integration costs.



LOWER RISK

Reduced project risk, commissioning delays, and data gaps.



FASTER TIME TO VALUE

Quicker startup and earlier realization of operational and business value.



BETTER OUTCOMES

Higher data quality, interoperability, and future readiness.

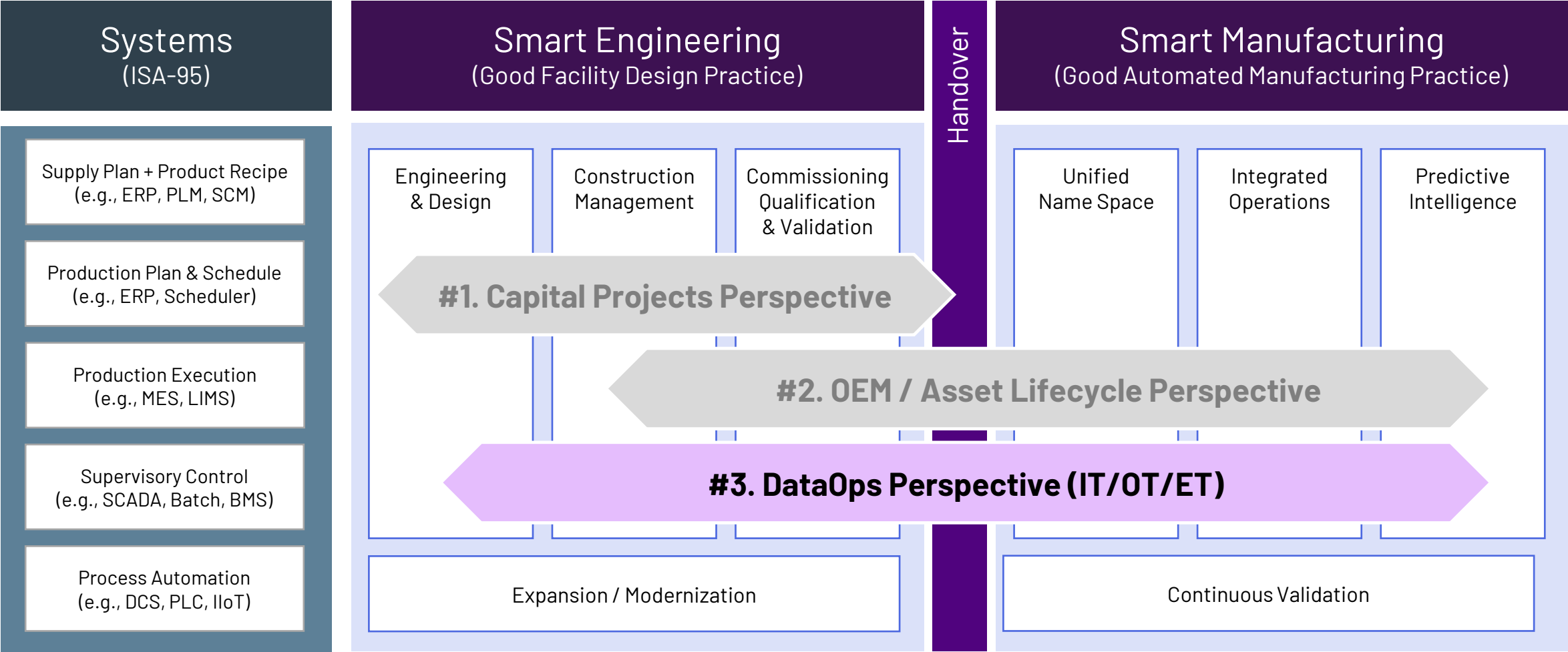


Engage early. Specify clearly. Integrate seamlessly. Realize more.

The best integrations are designed – not retrofitted.

10-minute Break

Session #3: The DataOps Perspective (IT/OT/ET)



Pursuit of Excellence: Why Discipline Matters

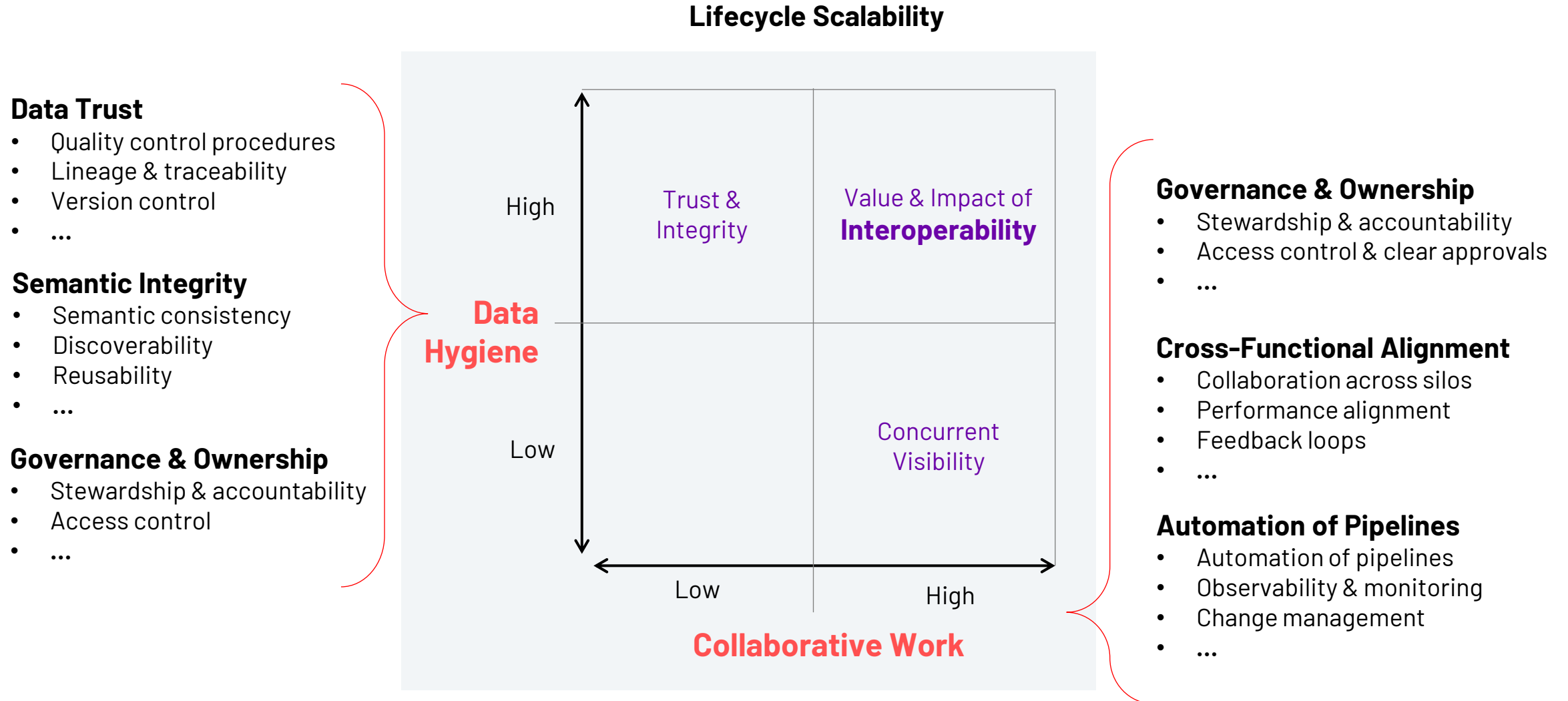
Feature	Operational Excellence	↔	DataOps (Information Excellence?)
Introduced / Adoption	70s / 80s - Present		2014 / 2018 - Present
Primary Domain	Physical assets & business processes		Digital assets (data pipelines, analytics)
Champion / Sponsor / Steward	Chief Operating Officer		Chief Information/Digital Officer
Collaboration Goal	Aligning strategy, people, and processes (removing silos between functions)		Removing silos between data producers and consumers
Core Methodologies	Lean, Six Sigma, Shingo Model		DevOps, Agile, Statistical Process Control
Continuous Improvement	Kaizen events		Agile/DevOps loops
Waste Reduction	Physical waste (7 wastes of lean)		Digital waste (technical debt)
Standardization & Automation	Standard Operating Procedures (SOPs)		Code-based automation / CI/CD pipelines
Customer Centricity	Value : Product / Service		Value : Intelligence / Insight

DataOps as a Discipline: What “good” looks like

Criteria	Characteristics	Why it matters	IT	OT	ET
→ Data in Digital Format?					
→ Governance & Ownership	- Stewardship & accountability - Access control & clear approvals	<i>Prevents chaos when multiple teams touch the same data.</i>			
Semantic Integrity	- Semantic consistency - Discoverability - Reusability	<i>DataOps is as much about meaning as movement. And it must mean the same to everyone.</i>			
Data Trust	- Quality control procedures - Lineage & traceability - Version control	<i>Trustworthy data is the foundation of repeatable use.</i>			
Operational Automation	- Automation of pipelines - Observability & monitoring - Change management	<i>Manual creates delays, errors & bottlenecks vs. digital enables continuous improvement.</i>			
Cross-functional Alignment	- Collaboration across silos - Performance alignment - Feedback loops	<i>DataOps fails when it stays trapped in one function.</i>			
Lifecycle Scalability	- Scalable use cases - Reuse across sites - Resilience over time	<i>A mature DataOps capability supports more than one team or use case.</i>			

Poll Question

Simplified to two basic dimensions



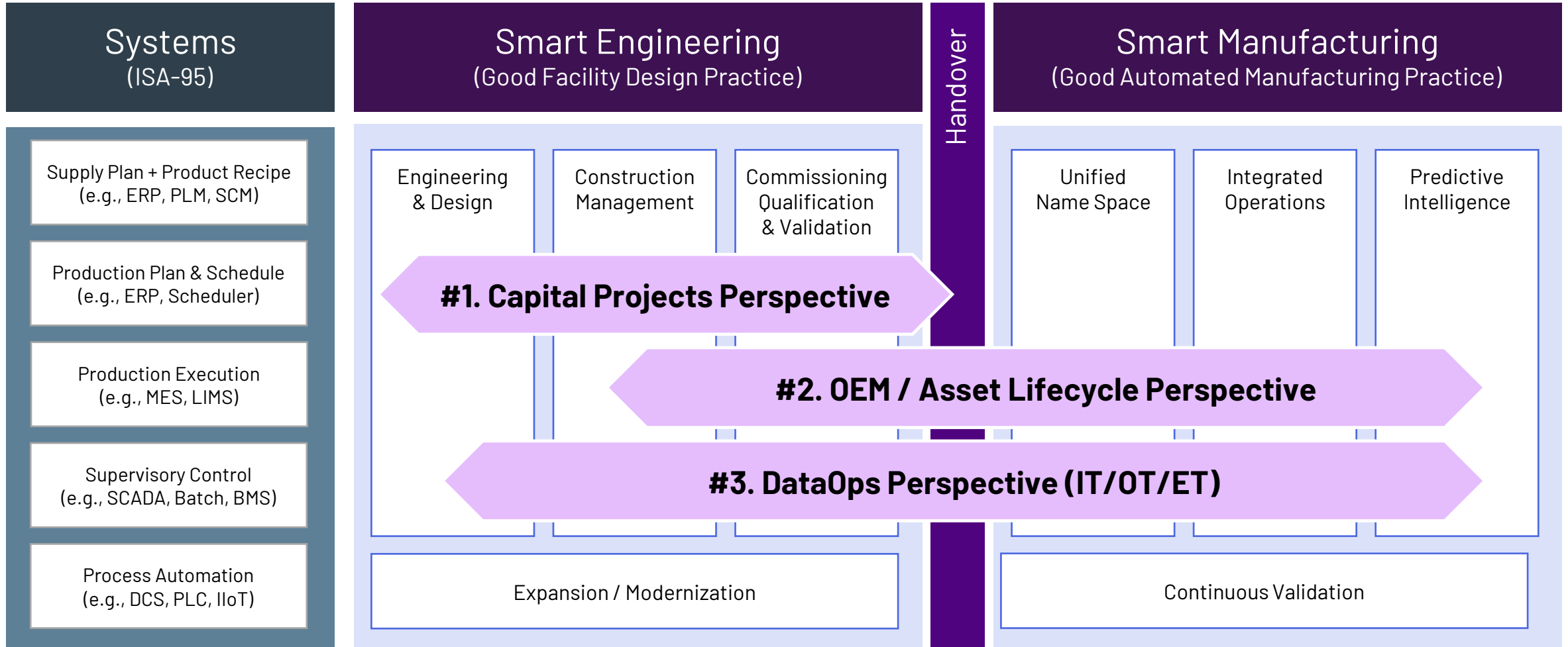


Q & A



SLIDO # 2948864

Wrap up



What can we learn from
peers in other segments?

BSH Türkiye
Day 1 / Tue /MAN
4:45 – 5:15



10 · VALUE

Value logic and strategic benefits

Al-Esayi Beverage
Day 1 / Tue / MAN
5:30 – 6:00

The value comes from discipline, not dashboards.

Four strategic value dimensions matched to SIRI prioritised dimensions and KPI categories



Faster

Traceability & Investigation Speed

Enhanced traceability and faster investigation capabilities through integrated vertical integration.

- ✓ Real-time traceability across all production lines
- ✓ Faster investigation and root cause analysis
- ✓ Reduced time-to-resolution for quality issues

SIRI: **Vertical Integration**

↑ High Impact



Tighter

Execution Control & Visibility

Stronger execution control and real-time visibility through shop floor intelligence.

- ✓ Real-time execution monitoring
- ✓ Automated quality checks
- ✓ Consistent execution across shifts

SIRI: **Shop Floor Intelligence**

↑ High Impact



Disciplined

Inventory & Quality Discipline

Improved inventory management and quality discipline through material genealogy tracking.

- ✓ Material genealogy tracking
- ✓ Spec validation at each step
- ✓ Reduced waste and rework

SIRI: **Materials & Asset Efficiency**

↑ Medium Impact



Trusted

Co-Packing Readiness

Enhanced customer trust through controlled recipe transfer and version discipline.

- ✓ Controlled recipe transfer
- ✓ Version discipline enforcement
- ✓ Audit trail for compliance

SIRI: **Strategy & Governance**

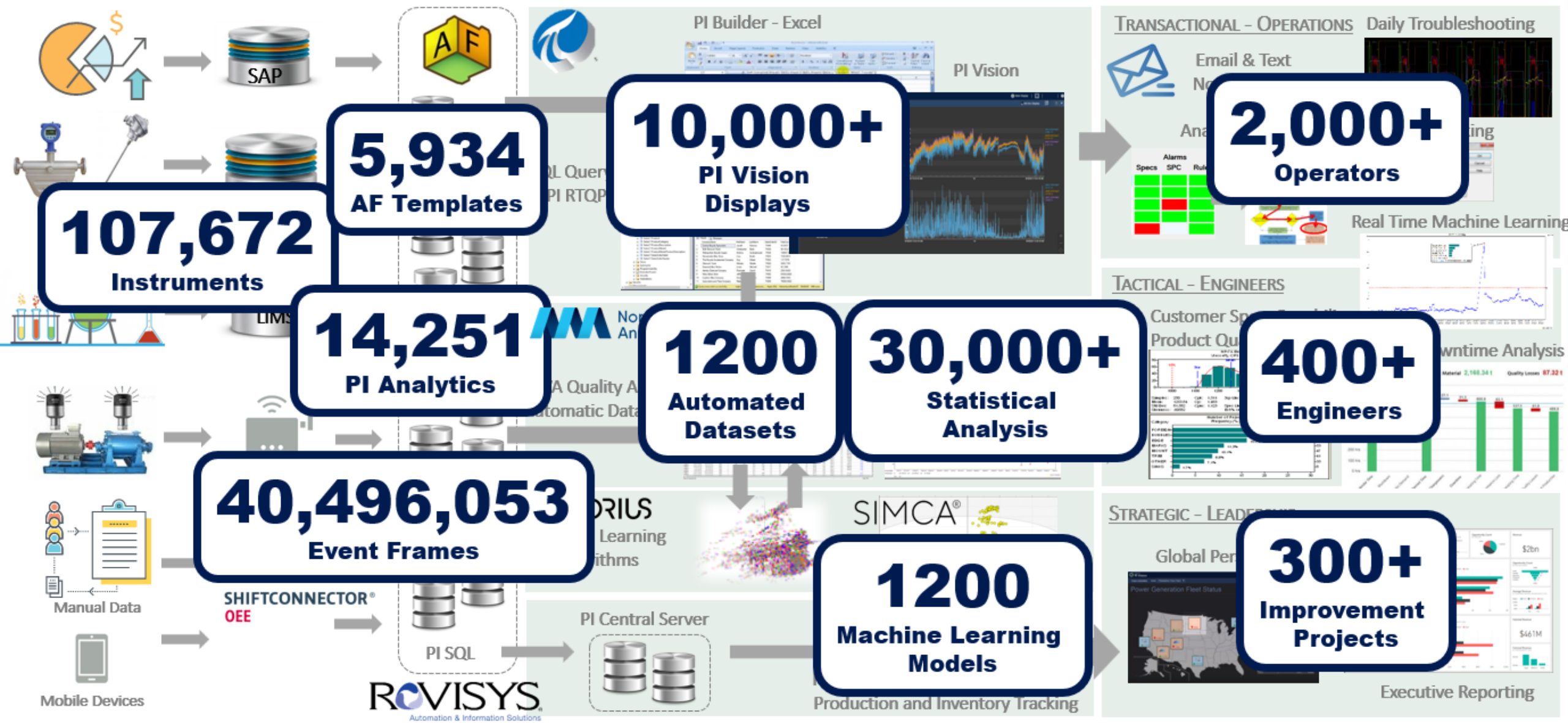
✓ Critical

Value logic and strategic benefits aligned with transformation goals.

DATA SOURCES

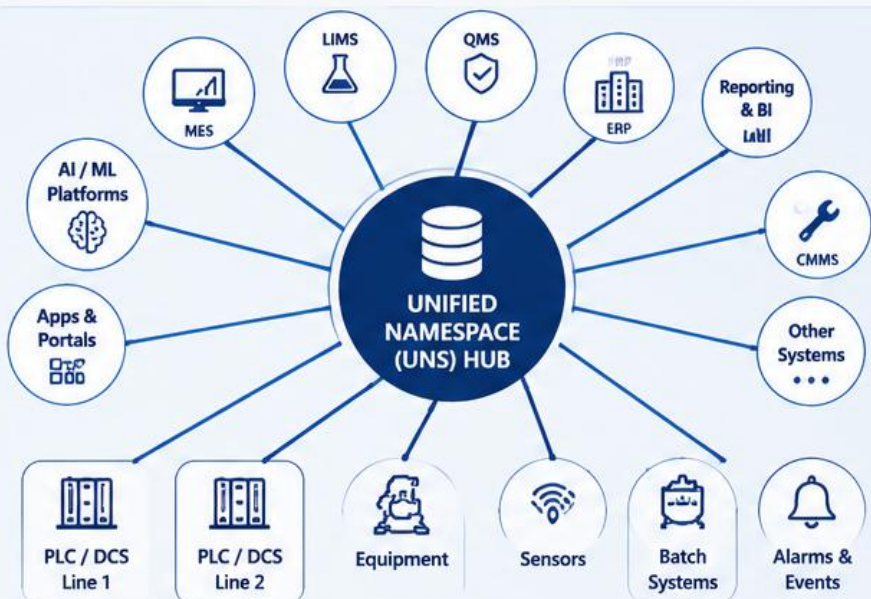
AVEVA PI ASSET FRAMEWORK

DATA ANALYTICS SUITE



THE SALE: HUB AND SPOKE VISION

The Message



Why It's Attractive

- ✓ Clear, simple, and compelling vision
- ✓ Promises enterprise transformation
- ✓ Easy to communicate and sell
- ✓ Implied future-state state of perfection

The Challenge

- ✗ Complex to implement all at once
- ✗ Requires massive standardization upfront
- ✗ High risk and cost
- ✗ Hard to achieve immediate outcomes

THE REALITY: DATA STRATEGY WITH INCREMENTAL EVOLUTION

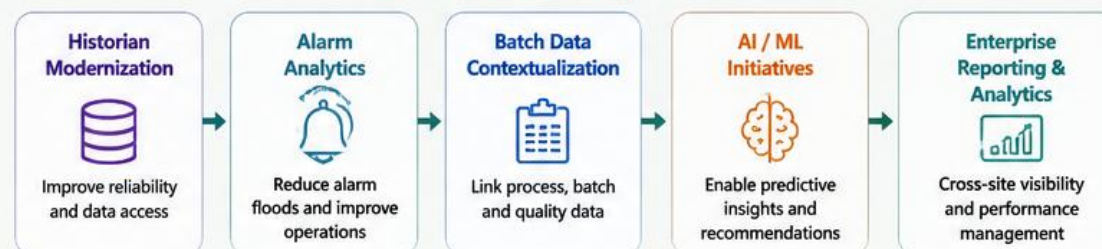
What Drives Success



The Incremental Journey



Example Use Case Progression



Key Success Factors



UNS & Beyond
Day 3 / Thu / MAN
9:00 – 9:30



UNS is not a one-time project. It is a continuous evolution of people, process, standards, and technology — delivering real business value.

Thank You to the workshop contributors

ZETA	Martin Mayer	Christoph Woltan	
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	Parastoo Aber		

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ACCELERATE INDUSTRIAL INTELLIGENCE

May 19-21, 2026 | Allianz MiCo, Milan, Italy

Life Sciences Community Workshop:
Thank You For Joining!

