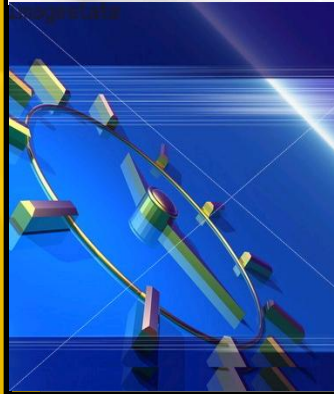




The Power to
Innovate



SAP Manufacturing

Tomi Isopoussu,
SAP Nordic

THE BEST-RUN BUSINESSES RUN SAP



1 SAP Today

2 Our Vision for Customers

3 Supply Chain & Manufacturing offering

4 Manufacturing

SAP Today

53,800+

SAP employees worldwide

120

countries

25

industries

37

languages

75

country offices

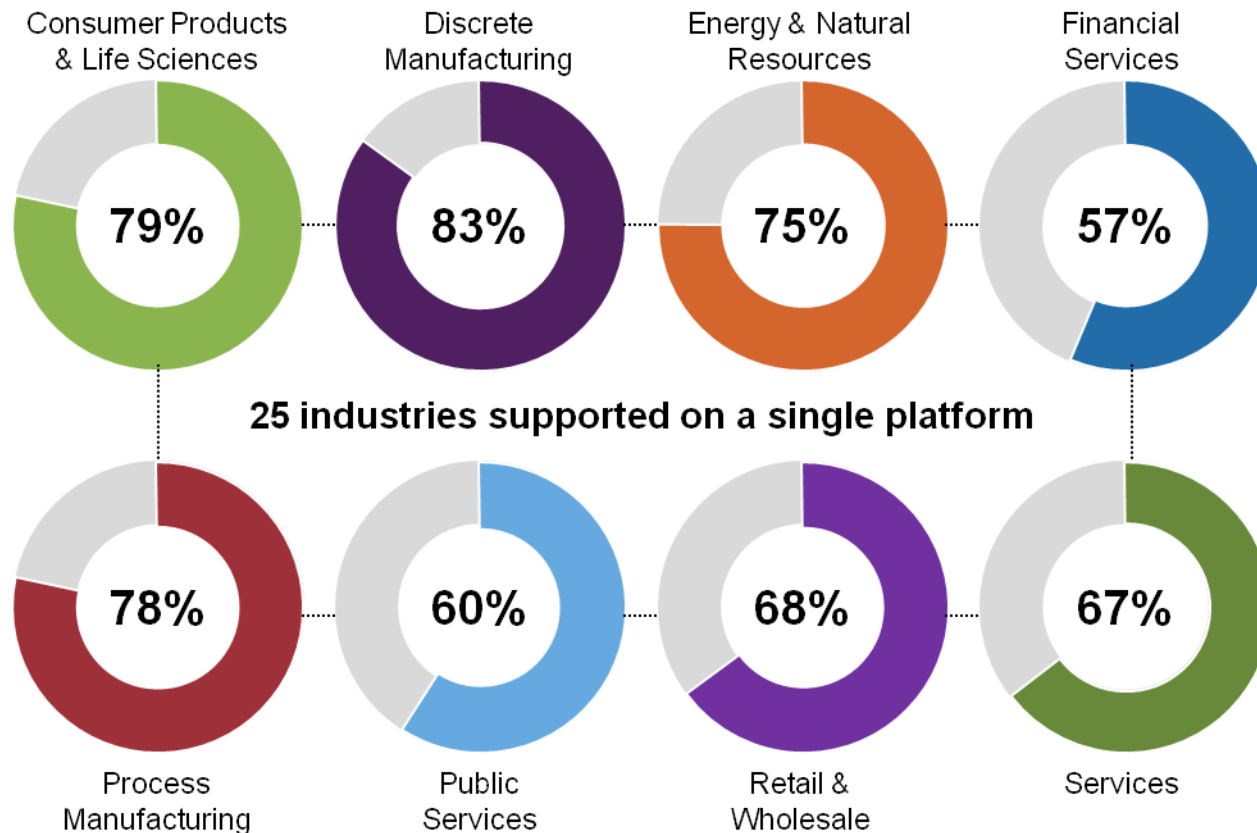
1,200+

services partners worldwide



Our Industry Expertise Helps Companies Run Better

SAP share of Forbes 2000 companies by sector



Multi industry support
on a single platform

Deep industry-specific
capabilities

Embedded preconfigured
best practices

Clear industry road maps

Source: SAP analysis of Forbes 2000 rankings and SAP customer database, January 2011

SAP Product & Service Portfolio

| Business Process | Business Analytics | Technology | Services |
|--|---|---|--|
| <ul style="list-style-type: none">• Enterprise resource planning (HR, finance and operations)• Supplier relationship management• Product lifecycle management• Supply chain management• Customer relationship management• Collaboration | <ul style="list-style-type: none">• Business intelligence• Enterprise information management• Enterprise performance management• Governance, risk, and compliance• Sustainability | <ul style="list-style-type: none">• Application foundation / integration• On-demand platform• Mobility platform• In-memory computing | <ul style="list-style-type: none">• Implementation consulting• Business analytics consulting• Transformational consulting• Custom development• Support and maintenance• Program management and quality assurance• Education and training |

Solutions for Industries and LoBs

SAP Manufacturing Strategy and Status

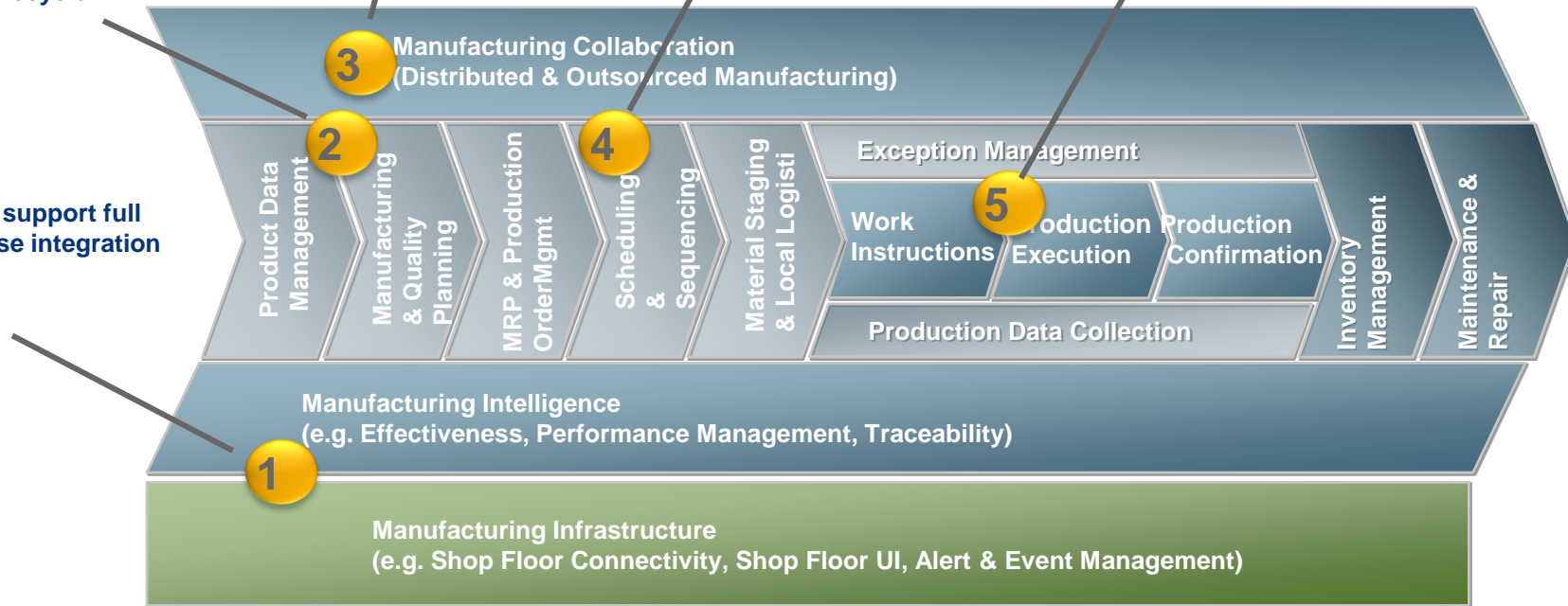
SAP Strategy:
Closed-loop between PLM, Engineering and Manufacturing as well as the Supply Chain to support the product and production lifecycle

SAP Strategy:
Collaboration across plants for maximum responsiveness and transparency

SAP Strategy:
Comprehensive support for Scheduling & Sequencing

SAP Strategy:
Provide industry-specific, fully-integrated manufacturing execution

SAP Strategy:
Infrastructure to support full plant-to-enterprise integration



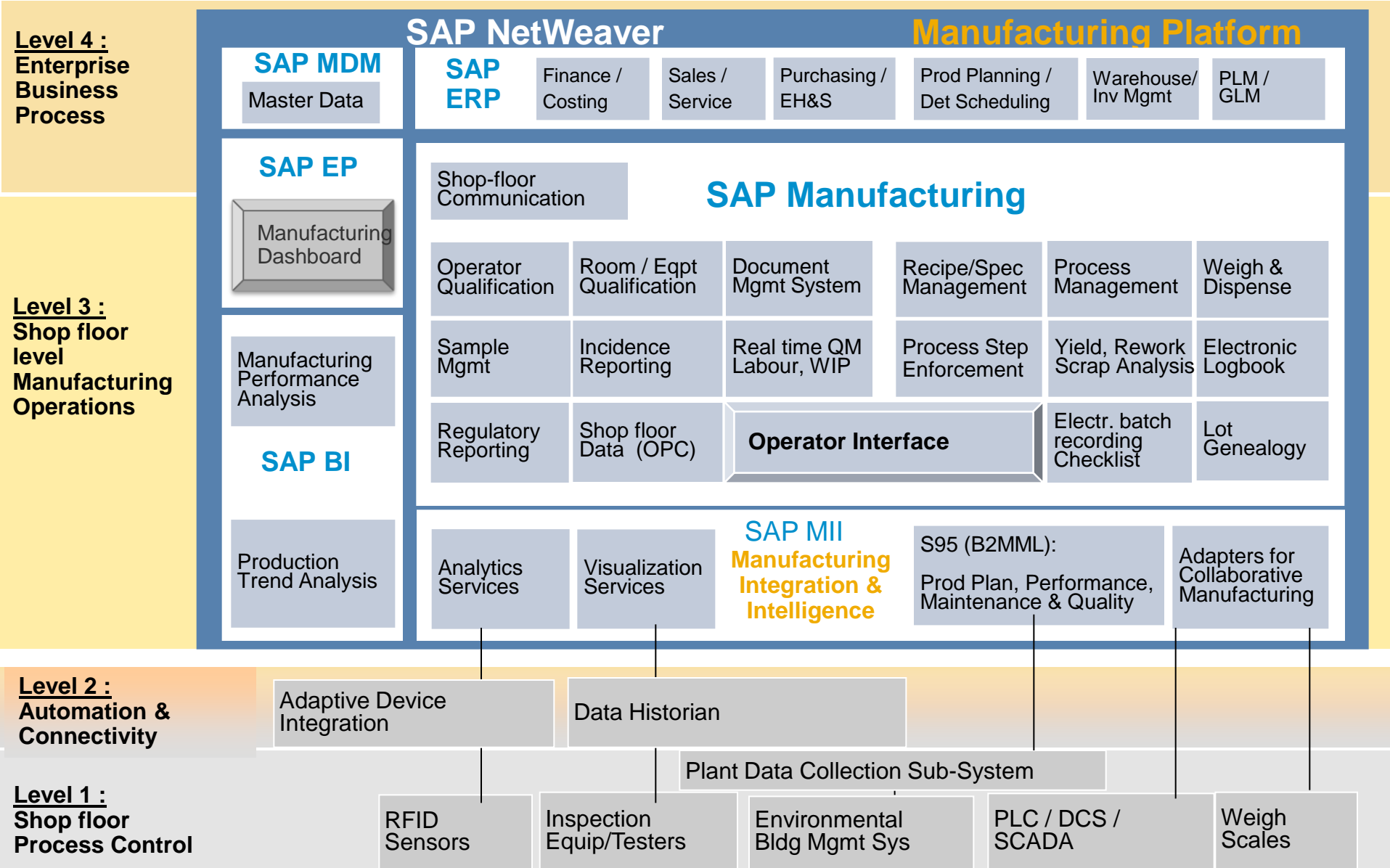
KEY MESSAGES

- Manufacturing solutions need to cover the end-to-end process from product design to after sales services
- SAP has already invested and will continue to invest in key manufacturing areas with various solution components

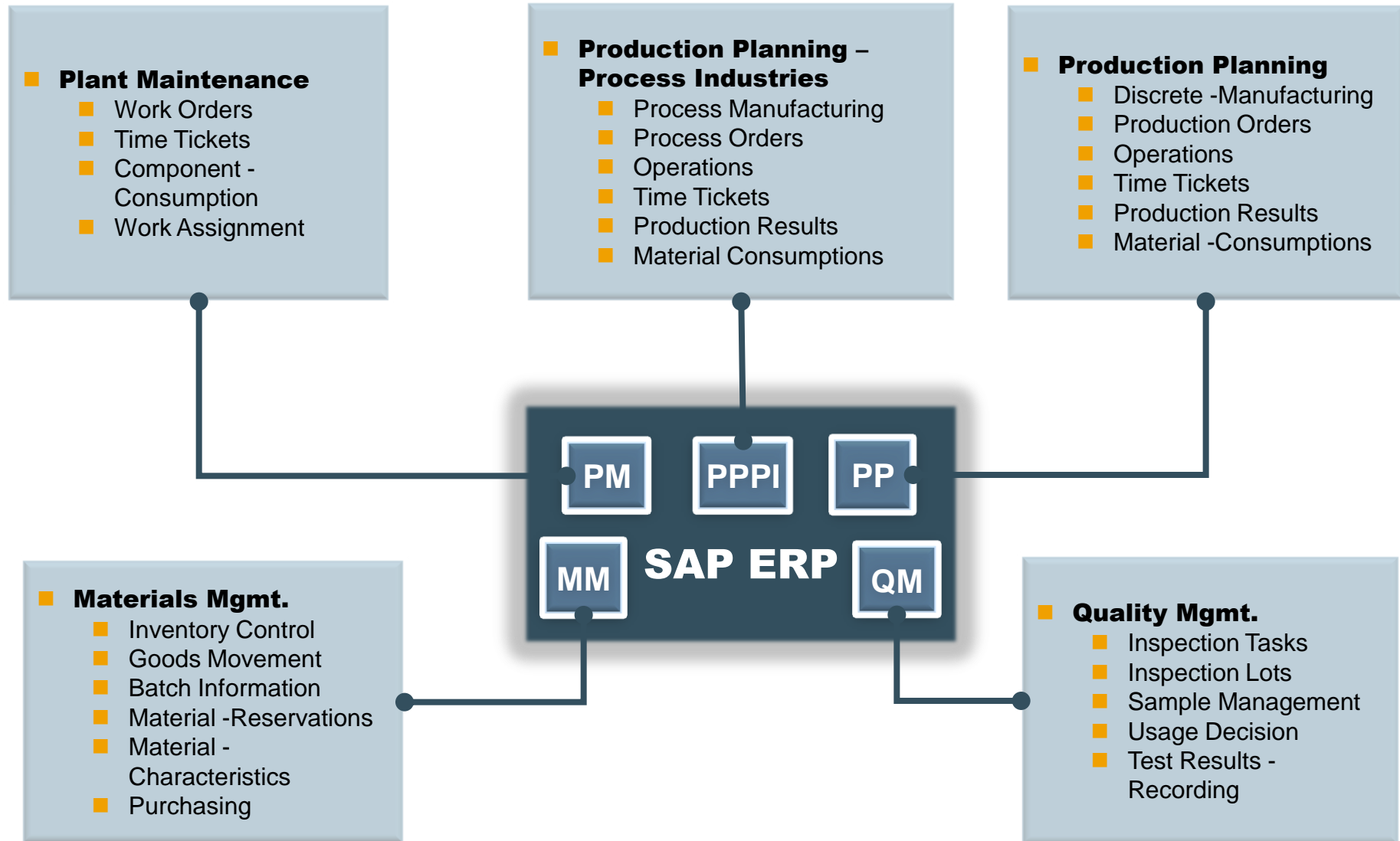
SAP Manufacturing Architecture

(based on S95 standard)

Manufacturing solution space (SAP focus) SAP platform focus No SAP focus



SAP Touchpoint Processes



Supply Chain Management

Complementary SAP Solutions

Supply Chain
Performance Management

Product Tracking &
Authentication

Rapid Deployment
Solutions for SCM

SAP SCM Suite

Advanced Planner &
Optimizer

Supply Network Collaboration

Extended Warehouse
Management

Transportation Management

Infrastructure

Event
Managem.

Auto ID
Infra-
structure

SAP SCM
Basis

Partner Solutions

Demand Data Analytics

VISION CHAIN



Supply Network
Design



Supply Chain Response
Management

icon-scm
the supply chain innovators



Inventory Optimization

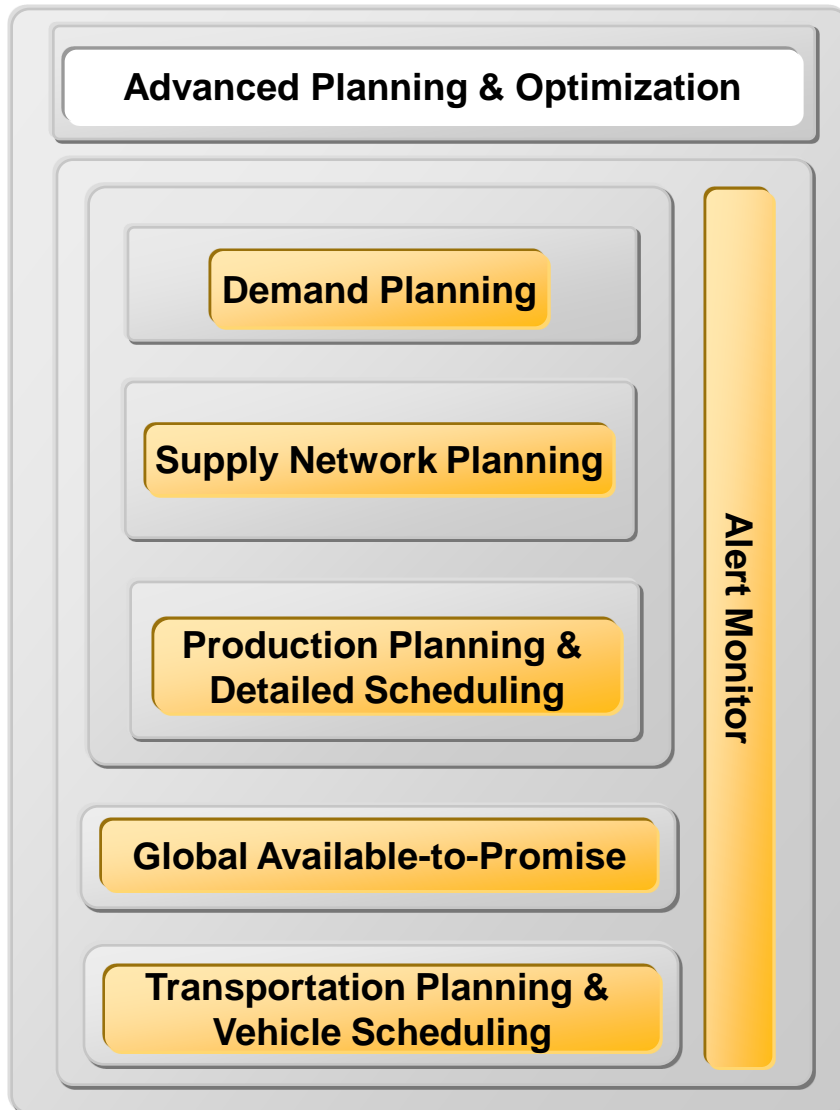
SmartOps



B2B Collaboration

CRESSGATE
automated business exchange

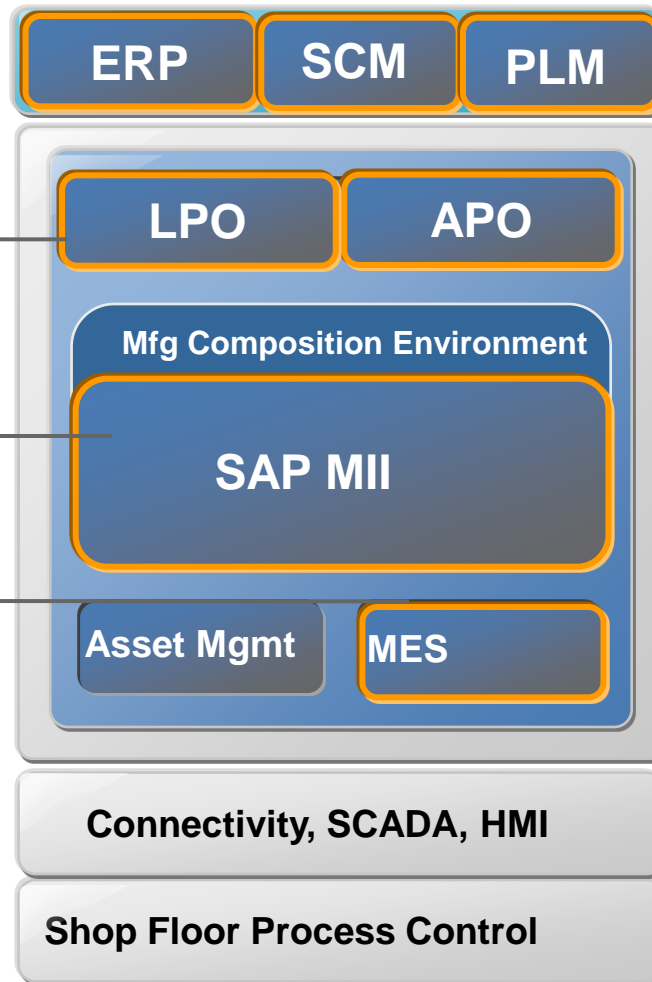




Synchronize supply with demand in your global supply chain by balancing push and pull network-planning processes and by handling replenishment and production based on actual demand.

- APO DP: Improves the forecast quality and planning accuracy
- APO SNP: Improves visibility across your global supply chain and lowers inventory
- APO PP/DS: Supports you in creating optimized production plans
- APO gATP: Allows state-of-the-art sales order confirmation planning processes
- APO TP/VS: Optimizes transportation loads and minimizes transportation costs
- APO Alert Monitor: Powerful exception message system integrated in all APO planning modules

In Pursuit of the Perfect Plant with SAP: An Integrated Ecosystem and “Smart” Acquisitions

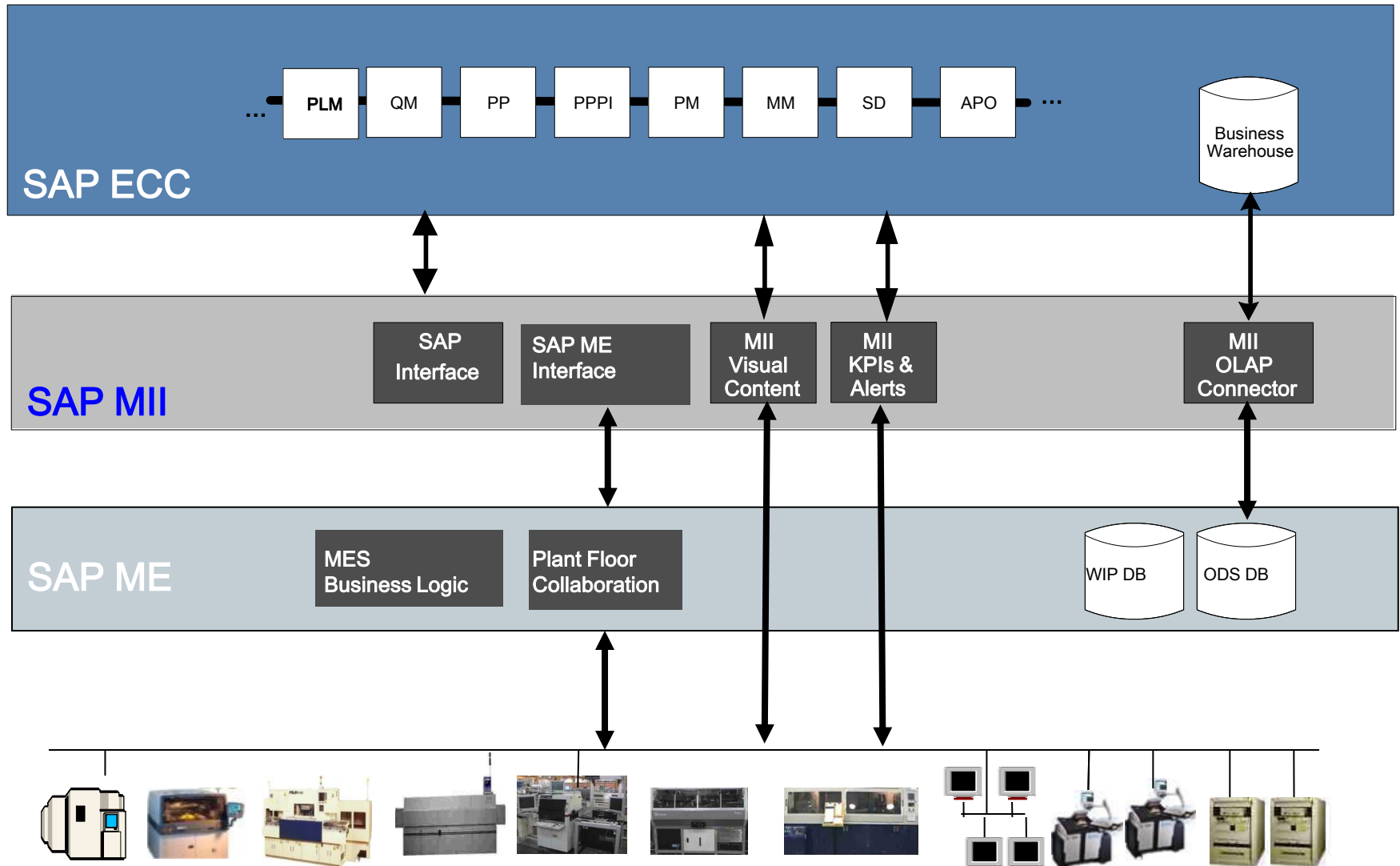


Co-Innovation Ecosystem



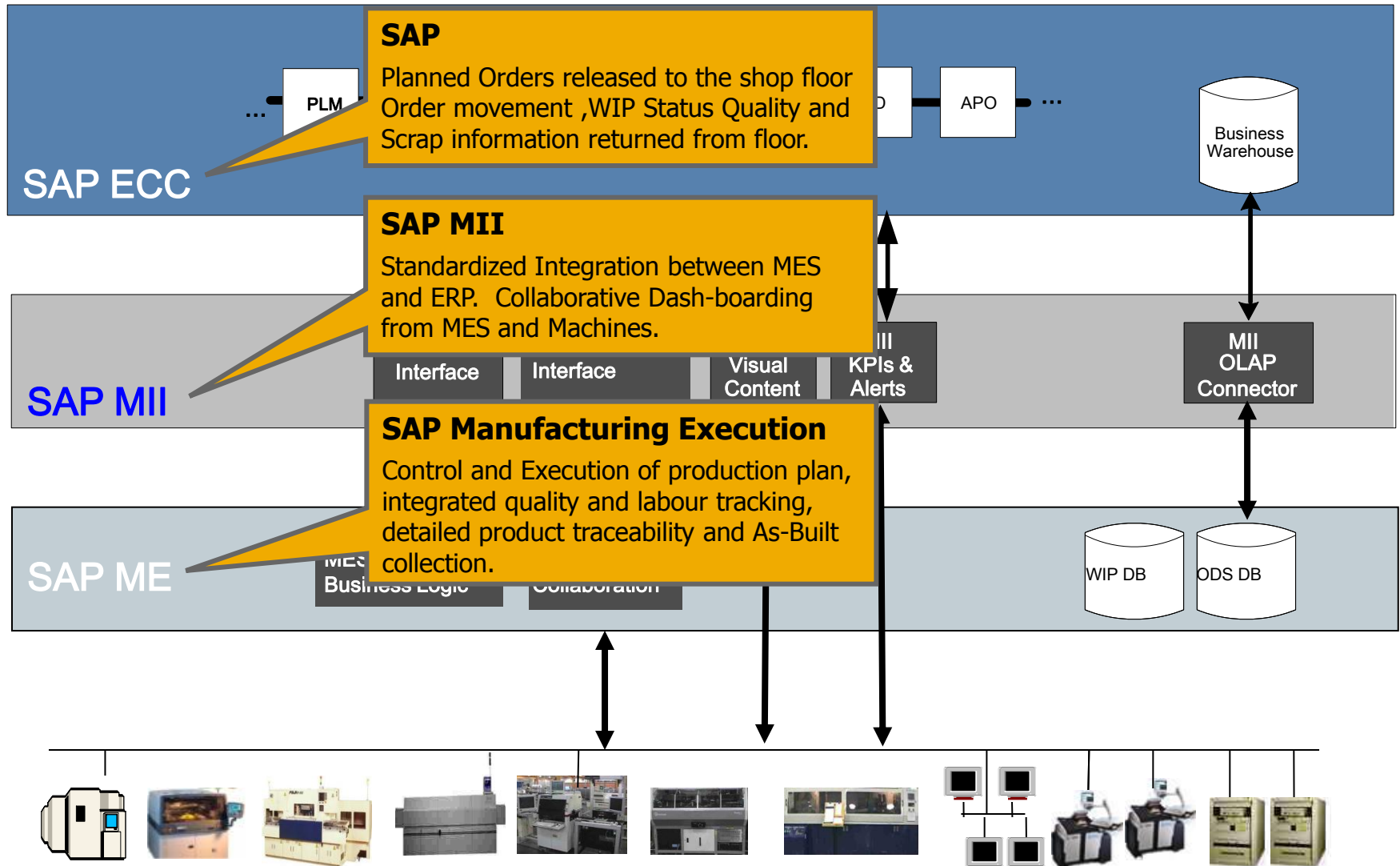
Decoupled Solution with Transparent Integration

System Architecture – Common Netweaver Backbone

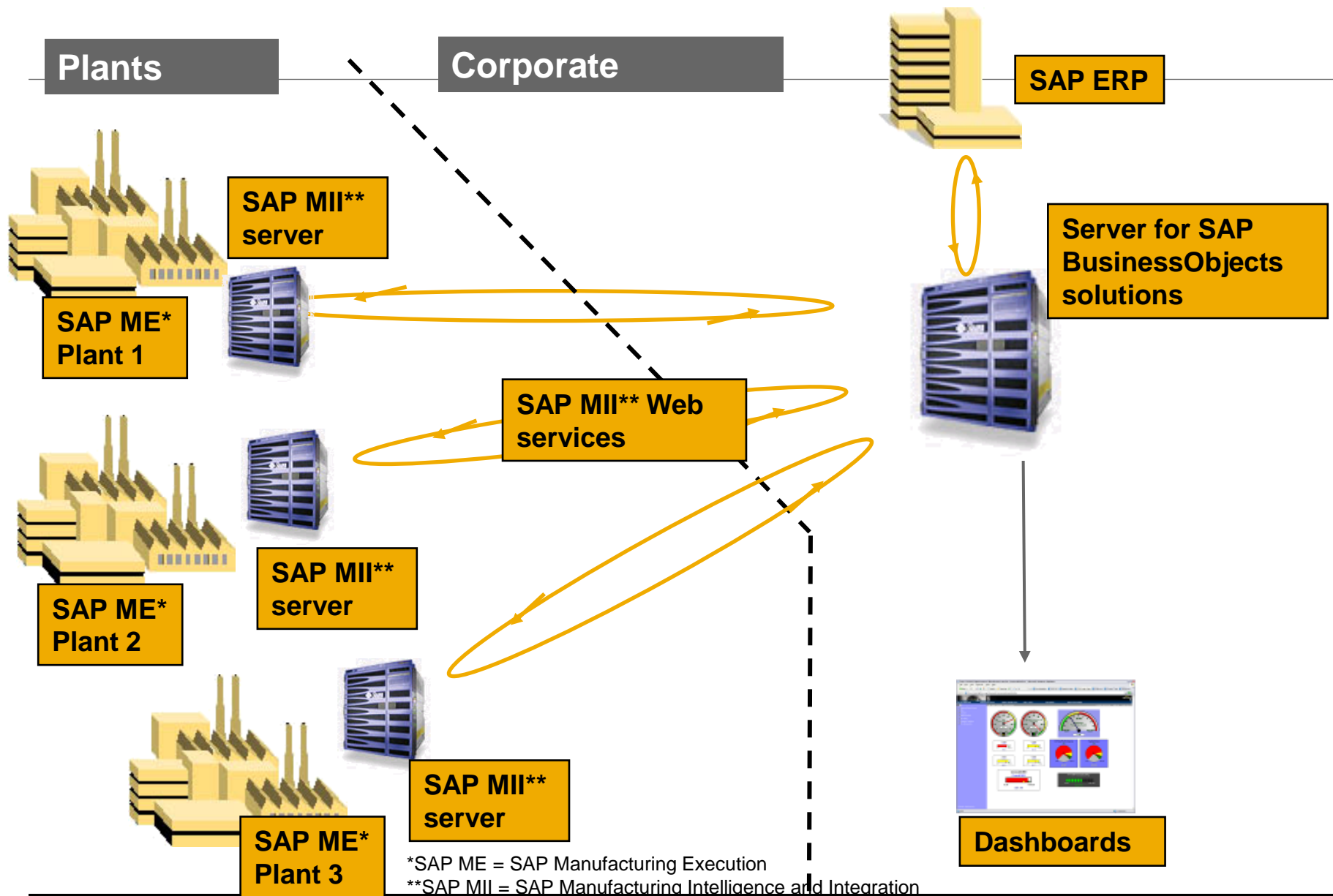


Decoupled Solution with Transparent Integration

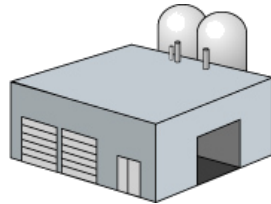
System Architecture – Common Netweaver Backbone



Deployment: Collect Locally, Report Globally



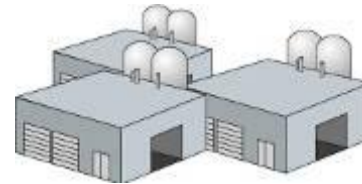
SAP® Manufacturing Execution



NEW PRODUCT
INTRODUCTION



TRANSFER PRODUCTION
GLOBALLY



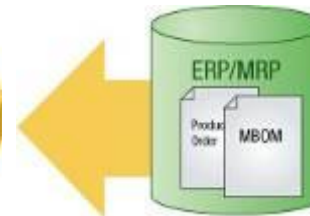
VOLUME MANUFACTURING



MANUFACTURING
ENGINEERING



WORK INSTRUCTIONS, BOM
MANAGEMENT,
ENGINEERING CHANGES



PRODUCTION ORDERS,
ROUTINGS, TOOLS, MBOM



MRP/ERP

TRACEABILITY & GENEALOGY,
CERTIFICATION, AUDIT TRAILS

NON-
CONFORMANCE
TRACKING

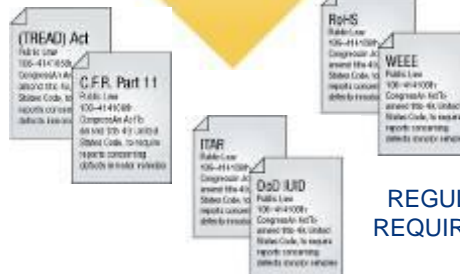
CORRECTIVE &
PREVENTIVE ACTION



QUALITY INFORMATION,
GENEALOGY
INFORMATION



QUALITY
MANAGEMENT



REGULATORY
REQUIREMENTS



CUSTOMER REQUIREMENTS

SAP Manufacturing Execution

Data & Processes

Stand-alone Manufacturing Execution System (MES) for discrete manufacturing

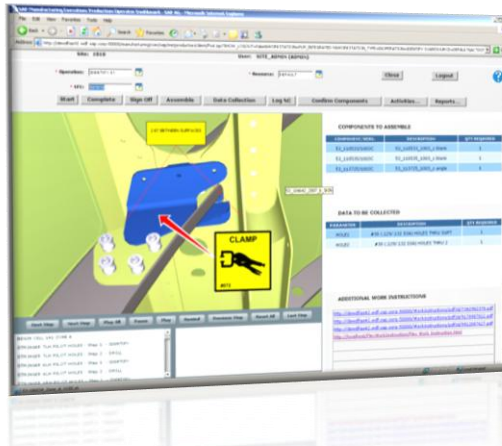
Detailed modeling of production processes, and dynamic control of WIP execution

Real-time production information

Product and process quality improvement:

- role-specific provisioning of relevant information
- Zero-defect production
- Compliance with internal and external regulations
- Serialized Traceability

Full Integration between shop floor and enterprise



Production and Process Management

- Process planning and modeling
- Process data collection and monitoring
- Paperless production (Operator Terminal)
- Alarm/Event Management

Quality Management & Traceability

- Tests & SPC
- Defect recording and Non-conformance management
- Serial number / Batch / Time-based material Traceability
- Process-Traceability

Plant /Machine Data Collection

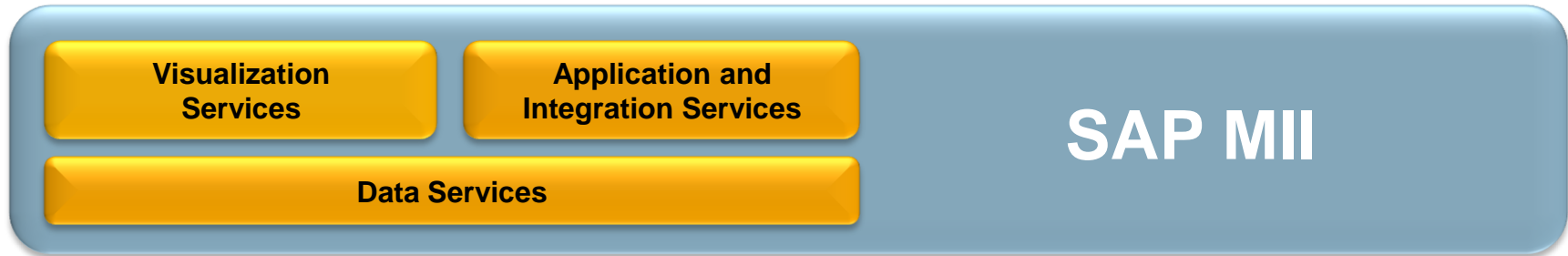
- Time recording
- Machine connectivity
- Production monitoring (WIP, OEE, Yield, Line monitor, machine status, etc.)

Production Reporting

Enterprise Integration (ERP, PLM, etc.)

Some of SAP ME Customers





SAP MII is an **XML-based** composite application environment that utilizes a collection of internal services for delivering Manufacturing **Integration** and Manufacturing **Intelligence** applications.

Data Services

- Real-time exchange of data with plant floor systems and applications.

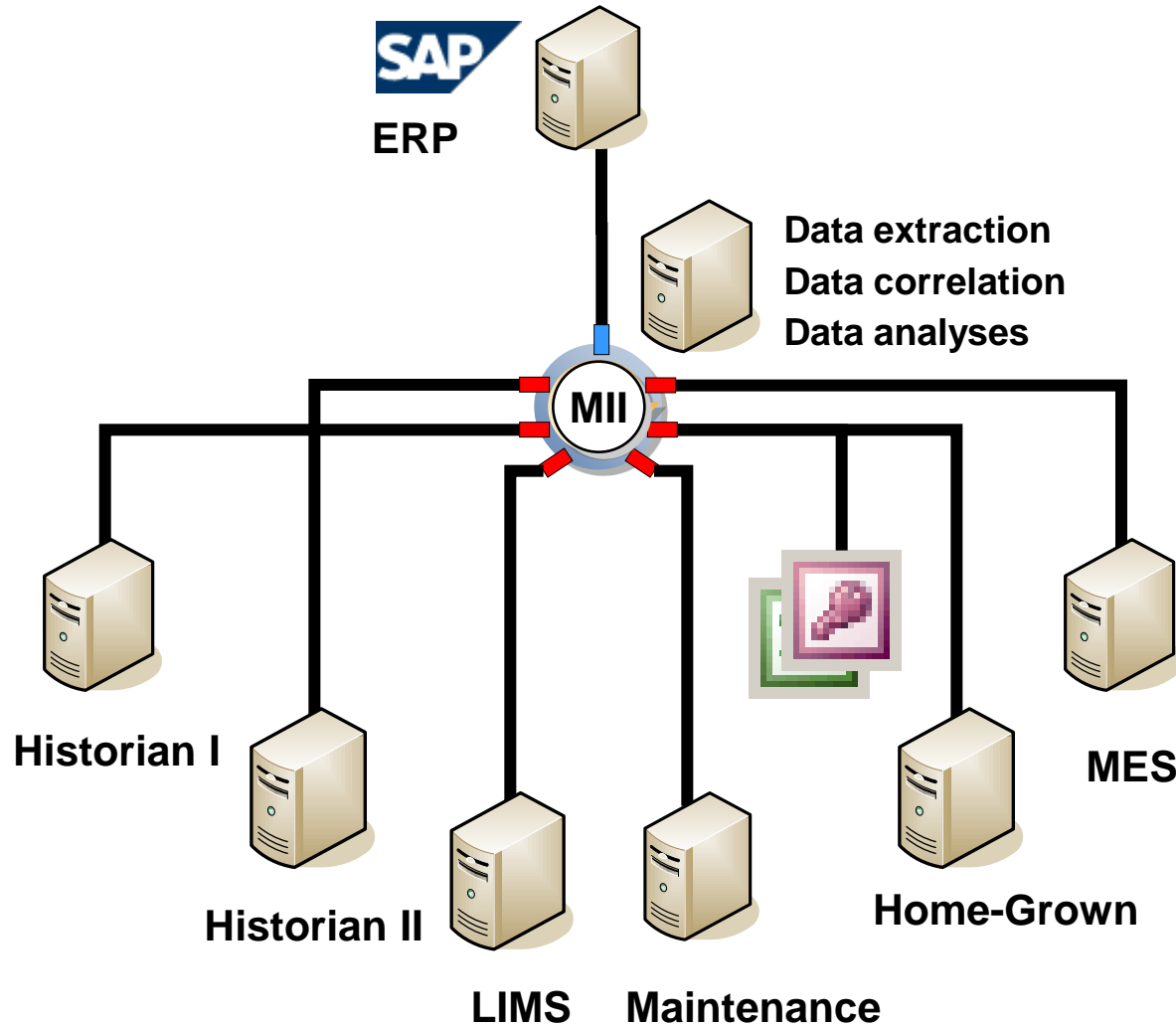
Visualization Services

- Links data services and application services to end user interfaces by exchanging data and actions through a variety of graphical forms and images using webpages, iViews, and Enterprise Portal technology.

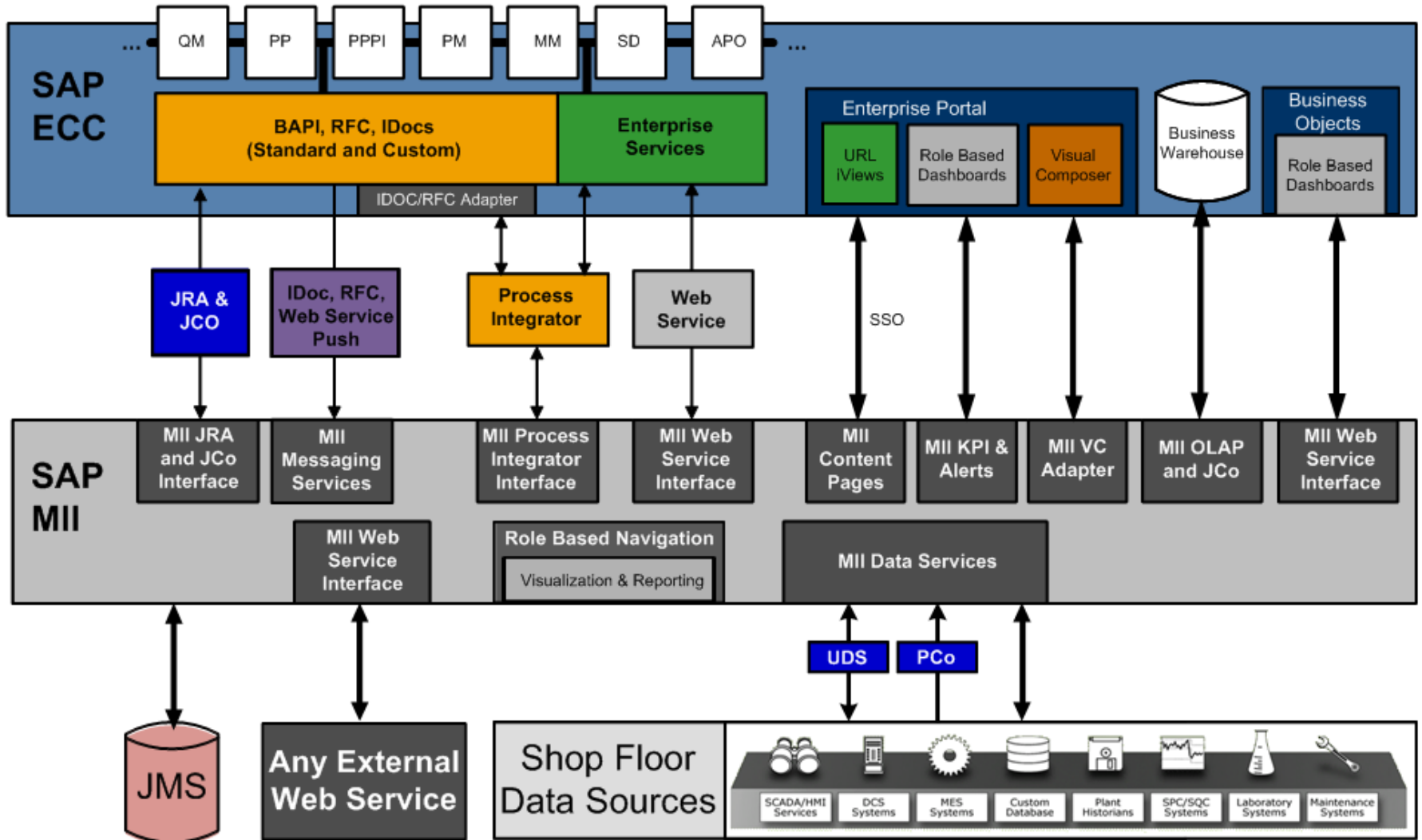
Application Services

- Process authoring environment for controlling and manipulating information exchanges between the plant floor and SAP transactional information.

Integration of Production with SAP MII



SAP MII Integration Landscape



SAP Manufacturing Successes in EMEA

Manufacturing Intelligence & Integration



DAIICHI SANKYO CO., LTD.



Plant Connectivity (PCo) – What is it?



Plant Connectivity is SAP's link to real-world, real-time plant manufacturing data

- small, extensible, high performance, Microsoft-based software infrastructure that enables SAP to integrate with different Plant Manufacturing systems

It provides the following core connectivity services:

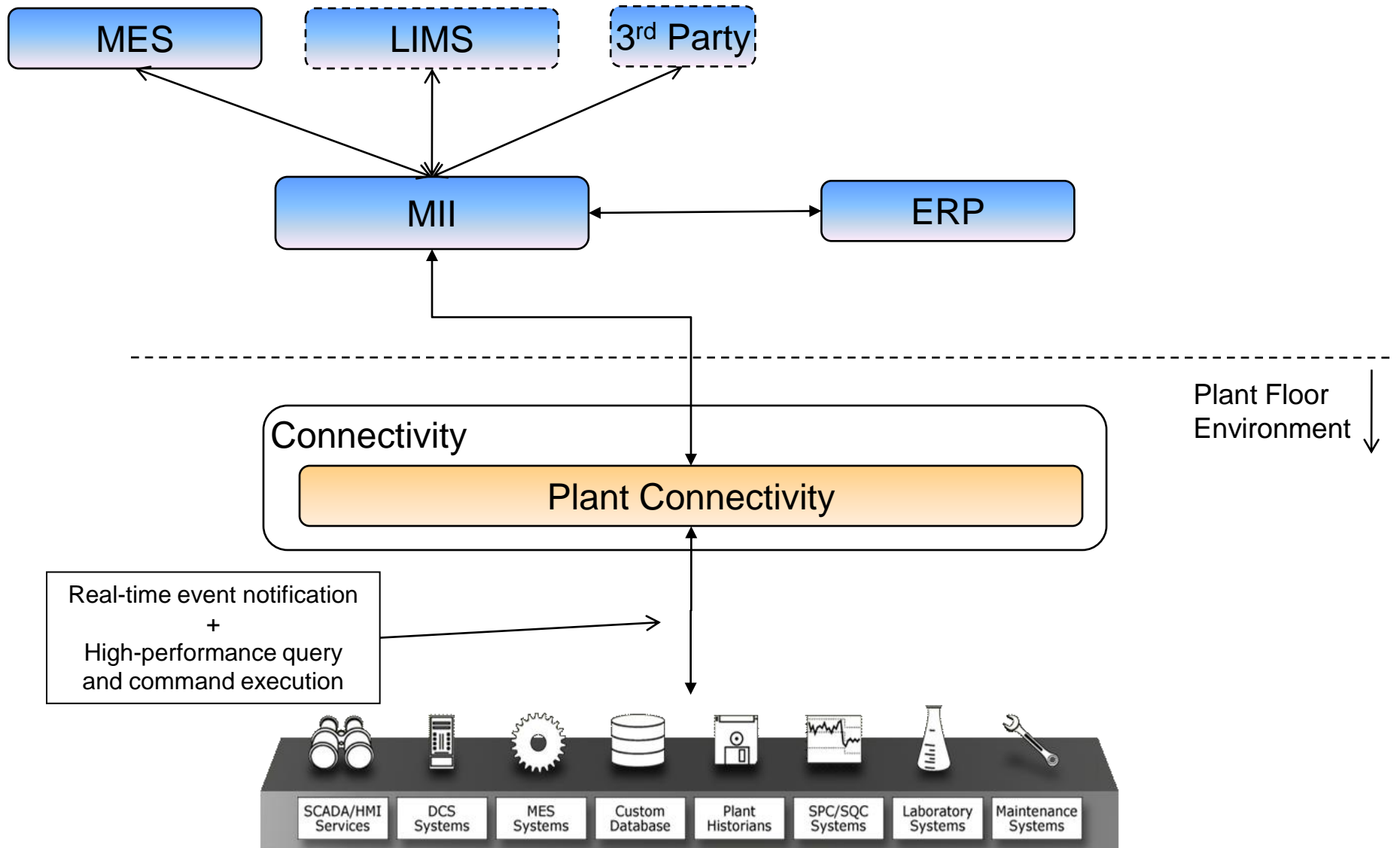
- Real-time event notification
 - Actively monitor various plant system events and deliver real-time event notifications to SAP applications (MII, etc.)
- High-performance execution services
 - Enable SAP applications (i.e. MII) to execute UDS-style queries and commands against plant systems

Leverage strategic industry standard and vendor interfaces

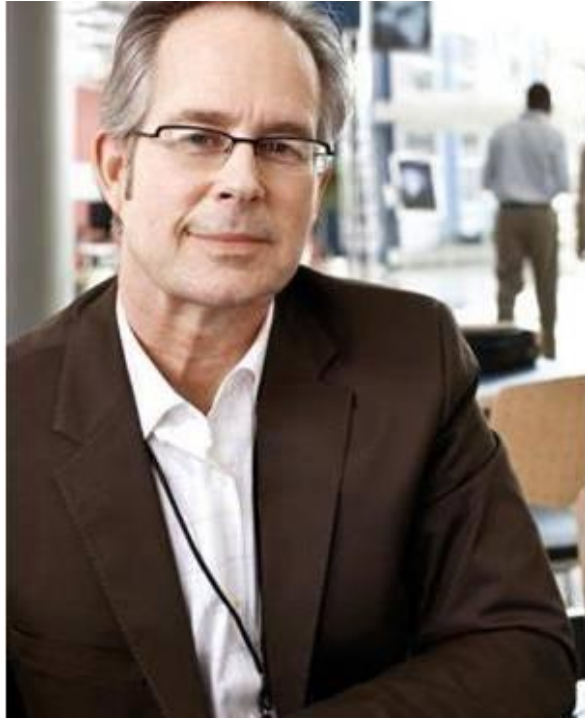
- OPC Foundation (new Unified Architecture + legacy OPC specs)
- Plant vendor API(s)

SOA/WS infrastructure using leading edge Microsoft technologies

Plant Connectivity



Why Manufacturers Choose SAP



1. A comprehensive portfolio of **closed-loop processes** across planning, execution, and asset management
2. Low TCO with native integration that **reduces integration costs** over both the short term and the long term
3. Innovative platform that is **adaptable and configurable** to leverage existing plant investments
4. Comprehensive solutions that **support any manufacturing style**
5. **Fast time-to-value** that is **proven** through the strong network of SAP customers

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Acquired in 2006 from Factory Logic, the SAP Lean Planning and Operations (SAP LPO) application extends the value of SAP manufacturing solutions by providing lean planning and scheduling capability for plant execution. Combined with SAP ERP lean functionality, SAP LPO offers an end-to-end platform for lean implementations across the enterprise.

With SAP LPO as your real-time production management and scheduling system, you can address the two critical requirements of lean manufacturing:

- 1.) Production leveling at pacemaker operations
- 2.) Synchronization to create stability in the upstream supply chain

SAP LPO supports an integrated approach to lean production management that directly links production to actual customer demand, while maintaining the stability required for consistent, reliable, waste-free factory and supply chain operations.

SAP LPO fills the gap between enterprise-level systems and visual factory controls – enabling factory personnel to:

- Establish pacemaker production schedules that are leveled over the shift, day, and week with lot sizes as small as possible (small EPEI)
- properly size and monitor inventory buffers, Kanban loops, and supermarkets that absorb demand variability, minimize carrying costs, and enable 100% customer order fulfillment capability
- Send level, stable requirement projections and buffer replenishment signals to upstream operations and suppliers
- Monitor actual production and changes to underlying demand volatility to adjust finished goods, WIP, and safety stock target levels as needed