

»»» *Beyond Industry 4.0*

CLM »»»

**Closed
Loop
Manufacturing** »»»

How End-to-End Quality is driving Business forward

Closed Loop Quality
Management

Agenda



Why End-to-End Quality Management?

How to achieve good Quality?

Closed Loop Quality Use Case

Quality integrated with Engineering

End-to-End Quality Management Benefits

Introduction Round



Who uses Siemens Teamcenter?

Who uses Siemens MES?

Video

SIEMENS
Ingenuity for life



<https://www.youtube.com/watch?v=YxfPTmJCp7U>

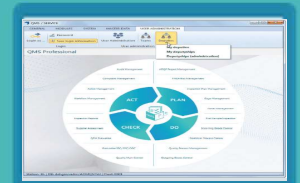
Increase transparency - Closed Loop Quality Systems

Disconnected systems and processes



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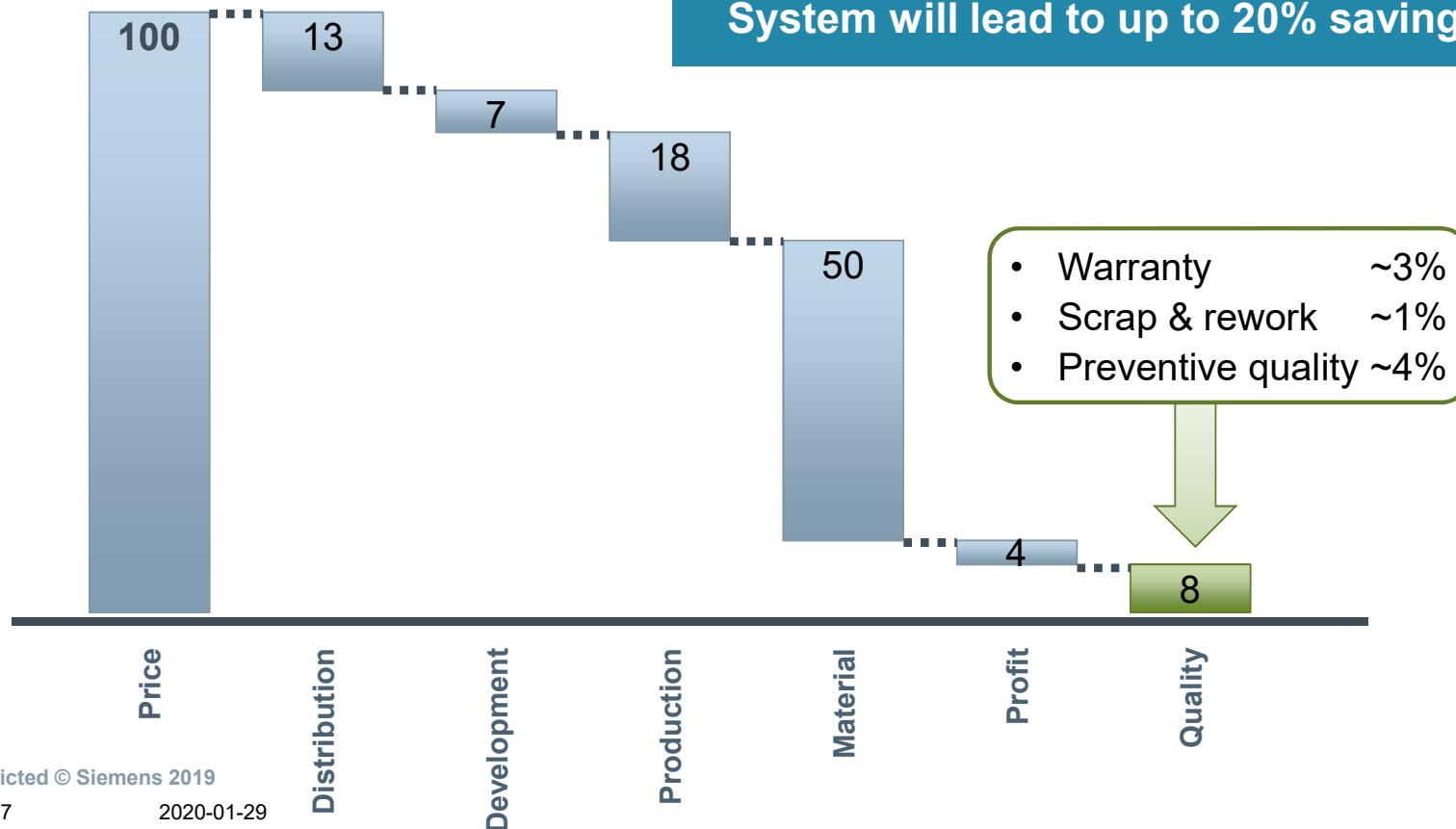
Holistic quality
management
software



Siemens
Opcenter
Quality

Why End-to-End Quality Management Cost Structure of Manufacturers

Implementation of an integrated Quality Management System will lead to up to 20% savings in quality costs



Top operational challenges in quality management

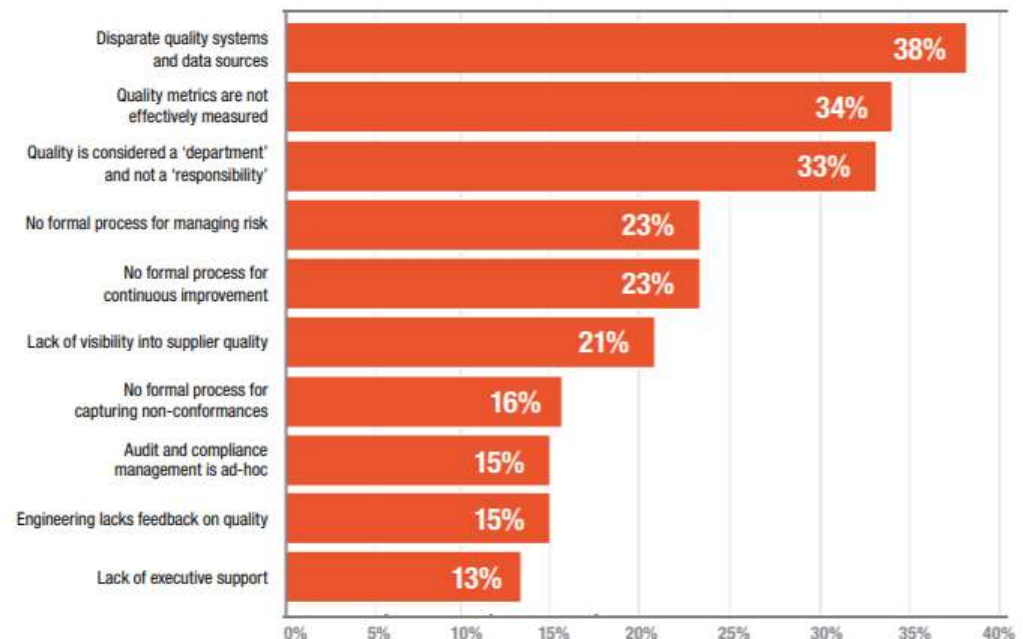
Holistic quality approach is becoming more critical



Much of industry has low quality maturity due to:

- Chronic **underinvestment** in quality
- **Lack of technology** and lack of formal processes
- Quality is considered to be a **department**, not a global responsibility

Top Operational Challenges in Quality Management



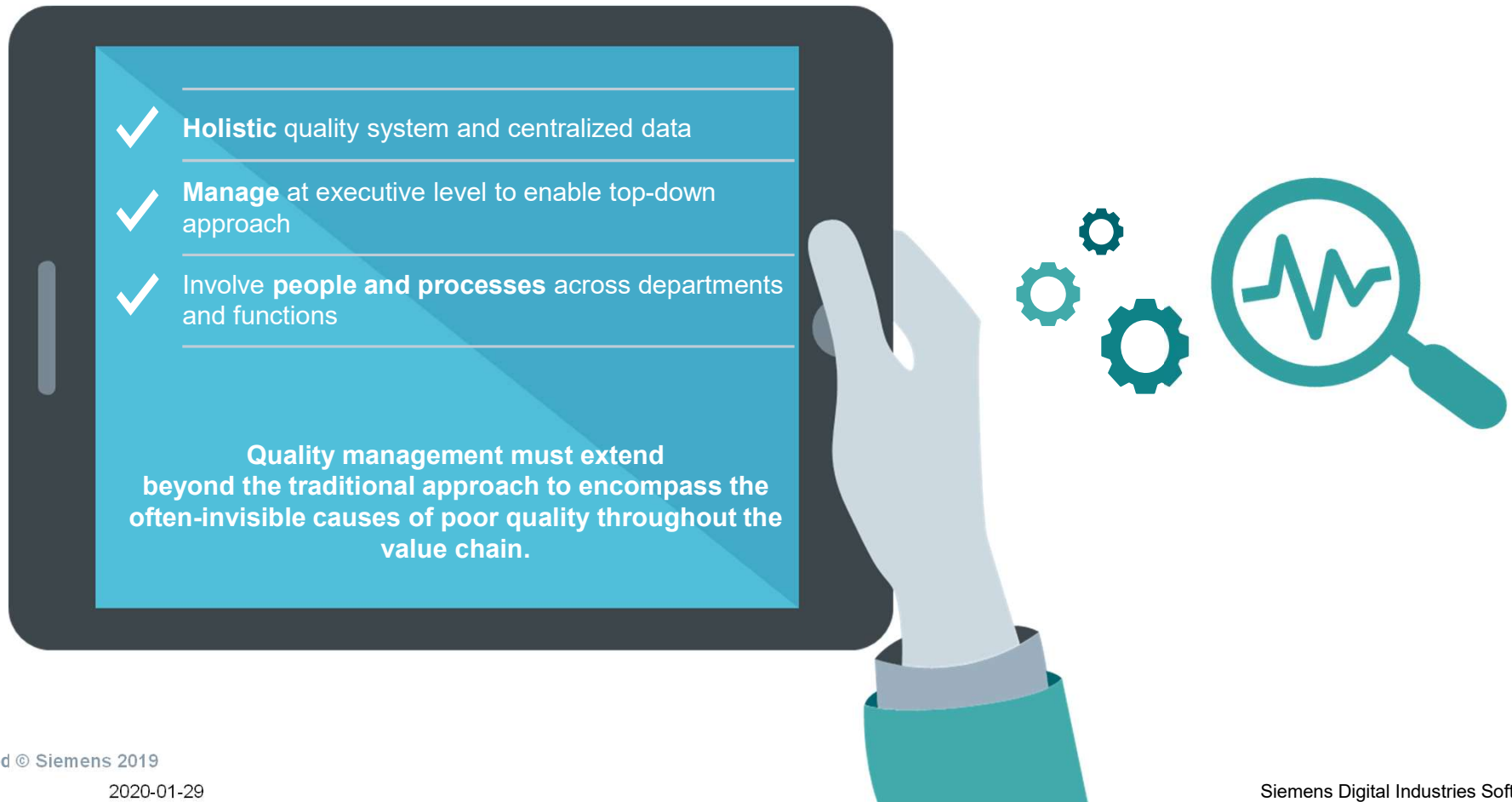
Source : LNS Research 2016 Quality Management in the Board Room: Building the Executive Business Case for EQMS

How to achieve a good quality maturity within company?

Quality has often been an aspect **heavily talked**, but **scarcely invested** and its value is well understood but, at most times, is not properly managed.



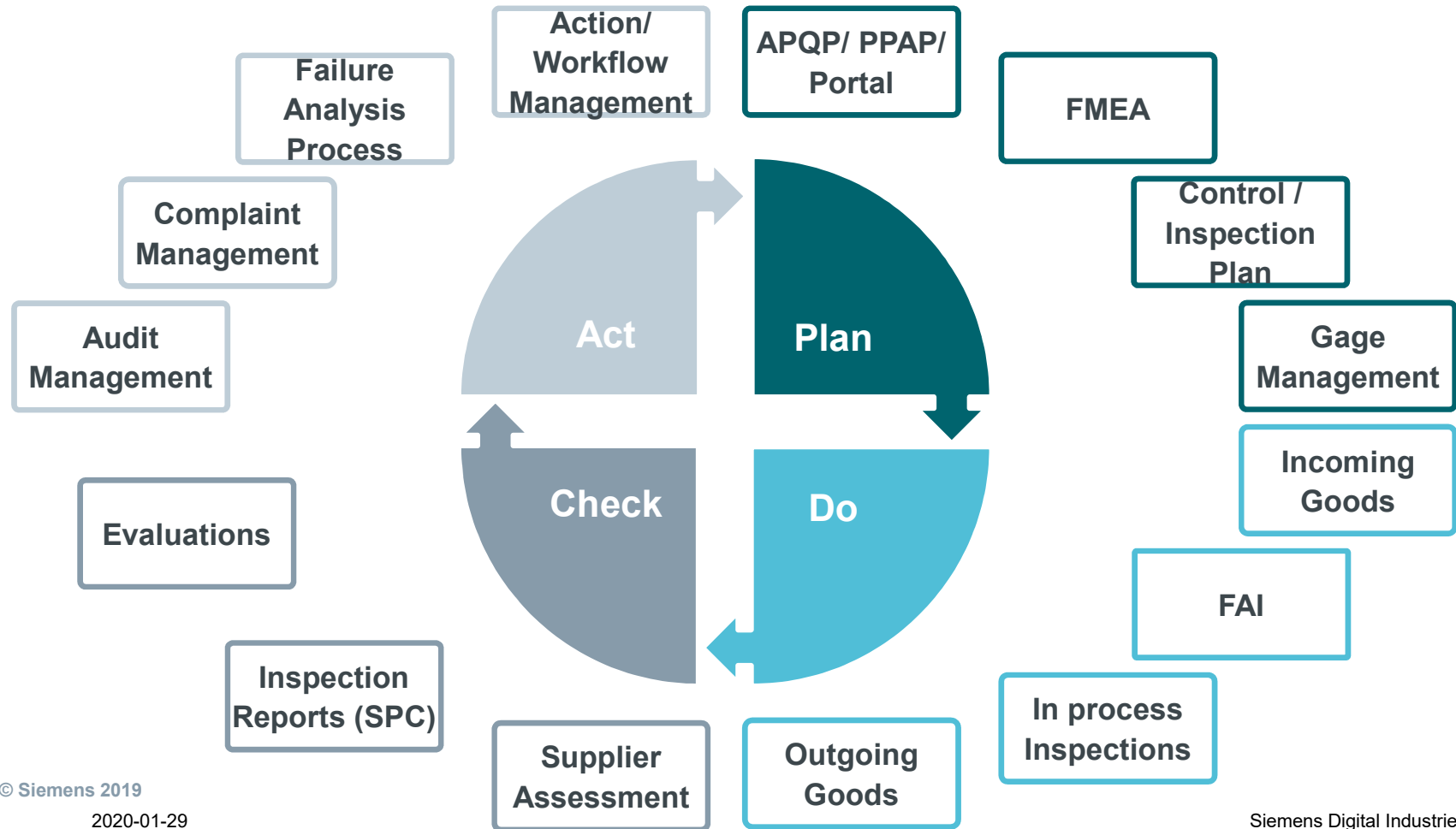
How to achieve a good quality maturity within company?



Closed Loop Quality Use Case

Modular, but integrated maximizing re-use – Opcenter Quality

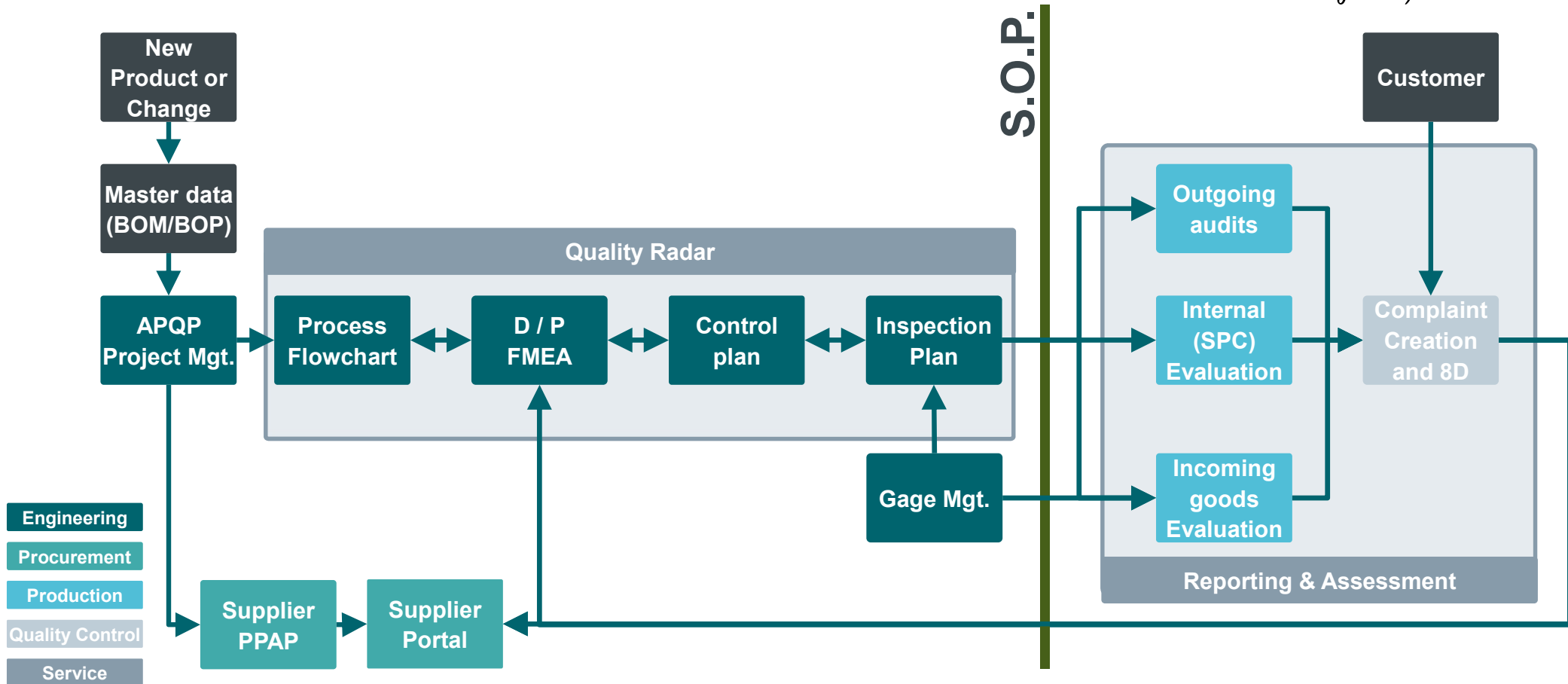
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Closed Loop Quality Use Case

Process Flow – Opcenter Quality

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The market is asking for new generation of quality solutions

Let us competitively enter the next decade

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Closed Loop approach between Engineering, Manufacturing and Quality converging towards integration – confirmed by analysts

Gartner



Importance of cloud applications - underlined from industry experts



McKinsey
& Company



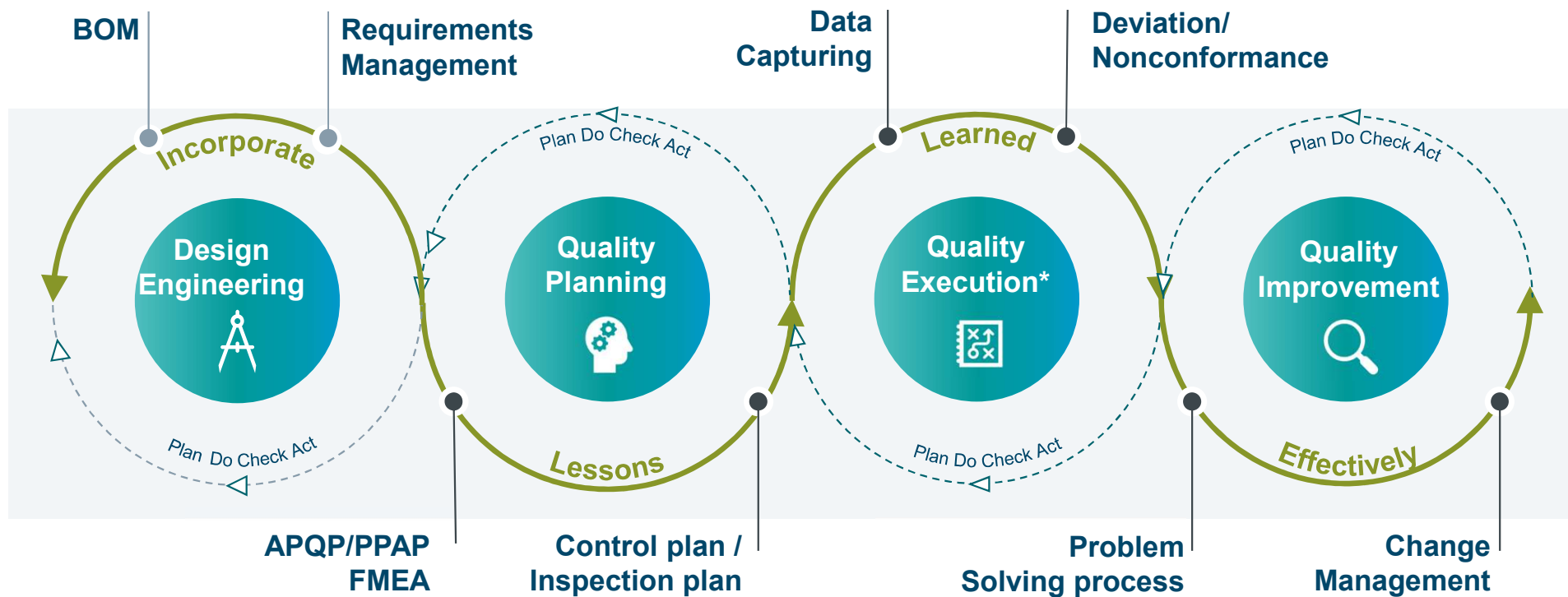
Added value of a comprehensive PLM / Quality solution

- 100% native PLM solution
- CLM for ERP and MES
- Engineering associate value to Quality requirements
- Enable digitalization via MBSE
- Fully integrated change management



Our vision of Siemens Digital Enterprise for Quality solution

Bring value by keeping quality processes & teams in sync



* Within MES/CLM or as stand-alone Quality Execution

End-to-End Quality Management Business Benefits



- A consistent and integrated IT system supports the **Zero Defect Strategy** through **Lessons Learned** loops in all interdisciplinary fields
- Achieve **Operational Excellence** and increase **Customer Satisfaction** whilst facilitating **shorter development times**
- **Reduction of administrative workload** (Paperless Quality)
- **Increased supply chain efficiency** due to direct supplier involvement
- Corrective actions become **Preventive Actions**
- Allows **Significant Savings ~ ROI in less than 1 year**
- Reduction of process-, quality- and defect costs (internal, external)
- Strengthens **Market Position** and **Competitive Advantage**



Q&A

How End-to-End Quality is driving Business forward

Maria Walther, Business Consultant MOM