Siemens Quality Management Solution

Scene-based Demonstration

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Key Trends impacting Quality in Industrial domains

Challenging Market & Globalization

Increasing Complexity and Integration

Customer Demand to exceed expectations

Analytics From prevention to prediction

The biggest threat to profitability

Growing supplier complexity

Strictly Government Regulation

Social Media Channel

Choosy and aware customers

Pressure to be faster on R&D and production

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All Industries are crushed

AUTOMOTIVE

Car manufactures
Tier suppliers

Vehicle Recall by year*

*Source:2020 Recall Annual Report - https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/2019_recall_annual_count_final-021121.pdf

2020 **31** million

PROCESS INDUSTRY

Food
Beverage

CONSUMER PRODUCT GOODS

Toy producer
Clothes manufactures

ELECTRONICS

Hardware producer

MEDICAL

Medical devices
Components

INDUSTRIAL MACHINERY

Industrial Equipment
Machinery
Tooling

WHITE GOODS

Domestic appliances

Sources: Wikipedia, Vox, NHTSA, BBC, Kiplinger, FDA, Allianz, Industry week

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Most expensive recall campaigns

FAULTY IGNITION SWITCH (AUTO)

Recalled 30 million vehicles

Source images: Pexels

$4 billion

PHONES FAULTY BATTERY

Recalled 3 million phones

$5 billion

Source images: Pexels

2009 | **….** | **2014** | **2015** | **2016** | **….**

PEANUTS CONTAMINATION

Recalled more than 3,900 products from more than 360 companies

Source images: Pexels

$1 billion

AIRBAG ISSUE

Recalled 63 million units

Source images: Unsplash

$25 billion

Sources: Wikipedia, Vox, NHTSA, BBC, Kiplinger, FDA, Allianz, Industry week, NY Times

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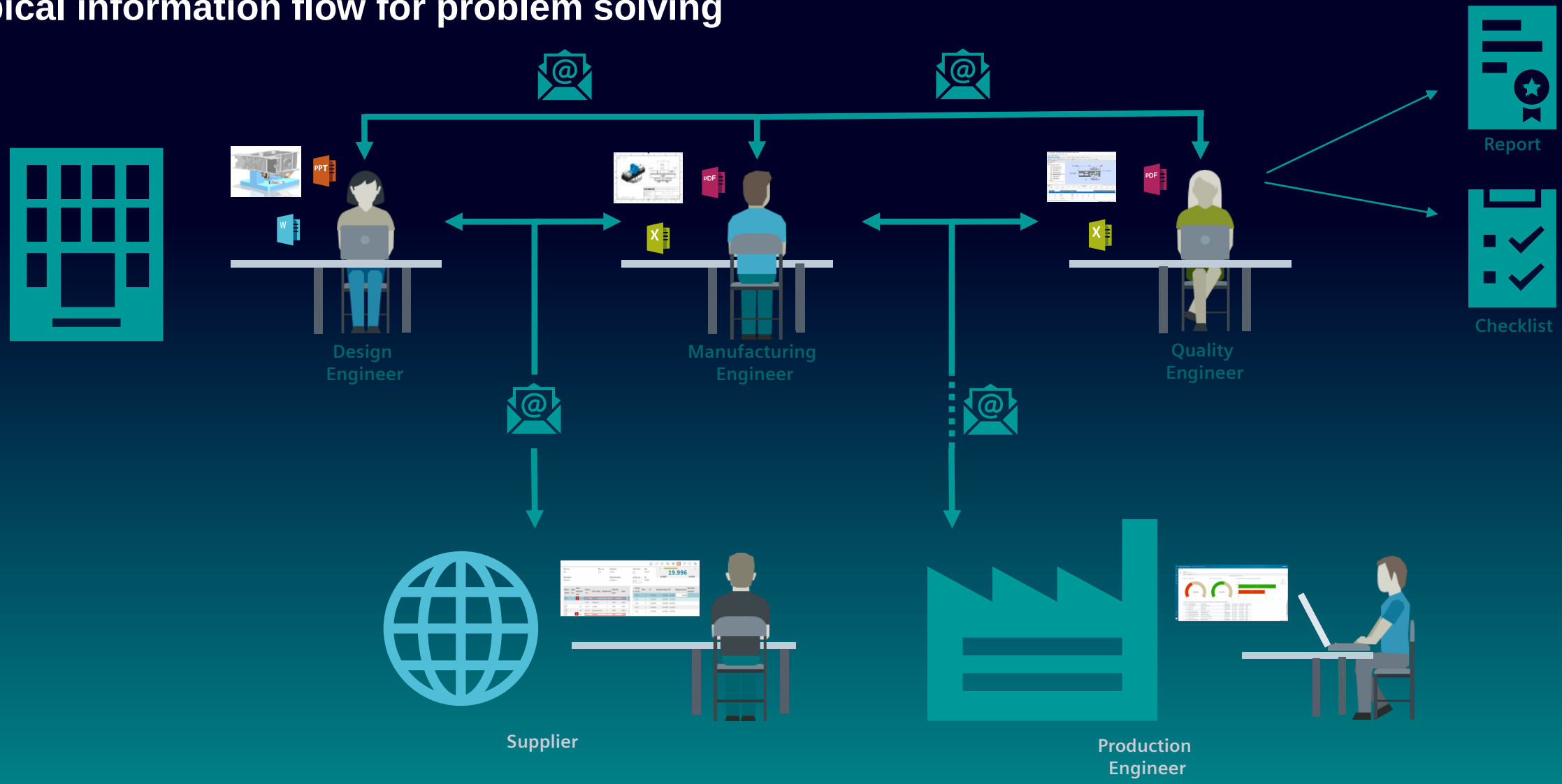
Disclaimer

- The presentation that will follow and related videos are based on Teamcenter Quality, the Siemens quality solution fully integrated within Teamcenter, our collaborative engineering platform.
  - https://www.plm.automation.siemens.com/global/it/products/collaboration/quality-compliance-management.html

- For companies not using Siemens Teamcenter we are happy to present in a dedicated meeting Siemens standalone quality solution, Opcenter Quality, a complete suite that covers all aspects of the PDCA quality cycle.
  - https://www.plm.automation.siemens.com/global/it/products/manufacturing-operations-center/qms-professional.html

Typical information flow for problem solving



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… Siemens extends the conventional PDCA cycle in Quality Management to Engineering and Manufacturing domains

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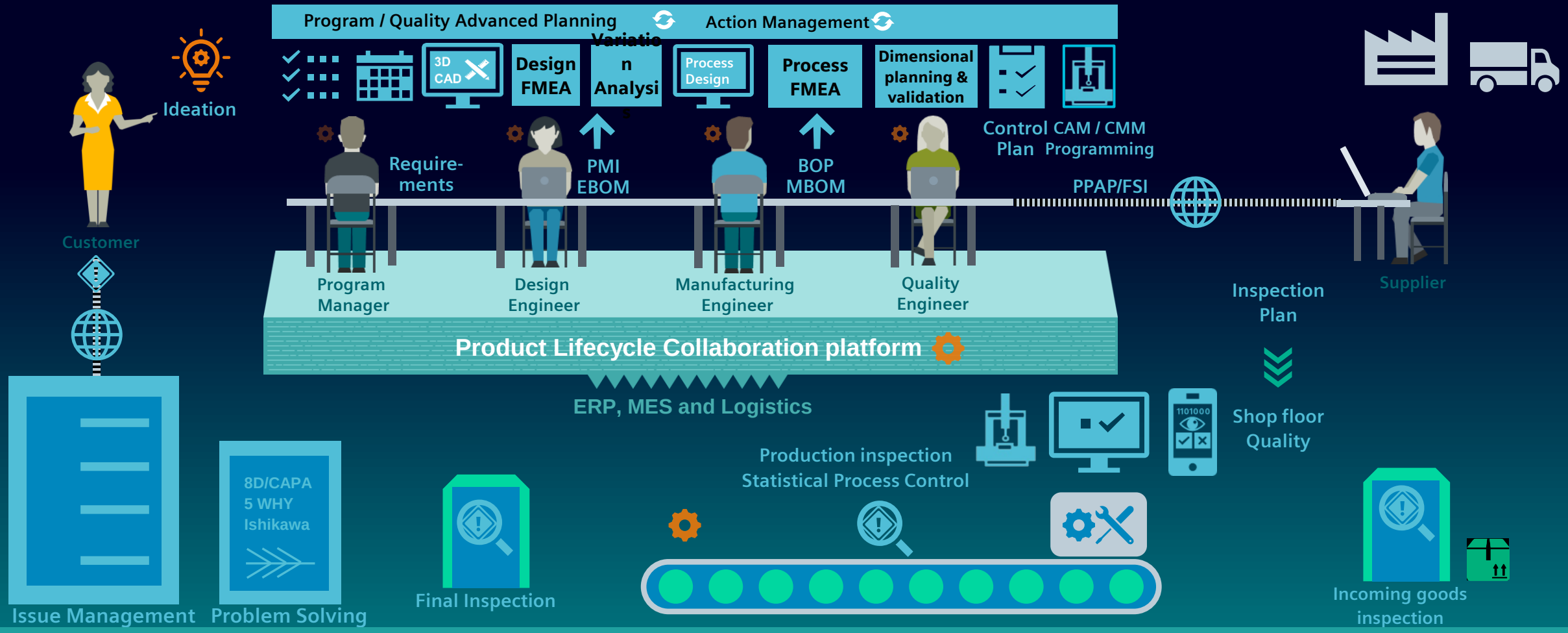
Siemens vision for Closed Loop Quality from design to manufacturing



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A deal with a critical complaint

Scene 1

Live Survey

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A deal with a critical complaint

How integrated Quality helps to define immediate actions

Scene initiation

Customers of Smartphone producer Squeeze-Phone report it is not possible to recharge the phone or they have issue with USB connection to recharge it.*

Squeeze-Phone needs to investigate the issue and avoid damages to customers.*

Before Teamcenter Quality and Opcenter Quality Control were in use

Not having properly integrated quality processes lead to excessive costs of quality control and time-consuming data collection.

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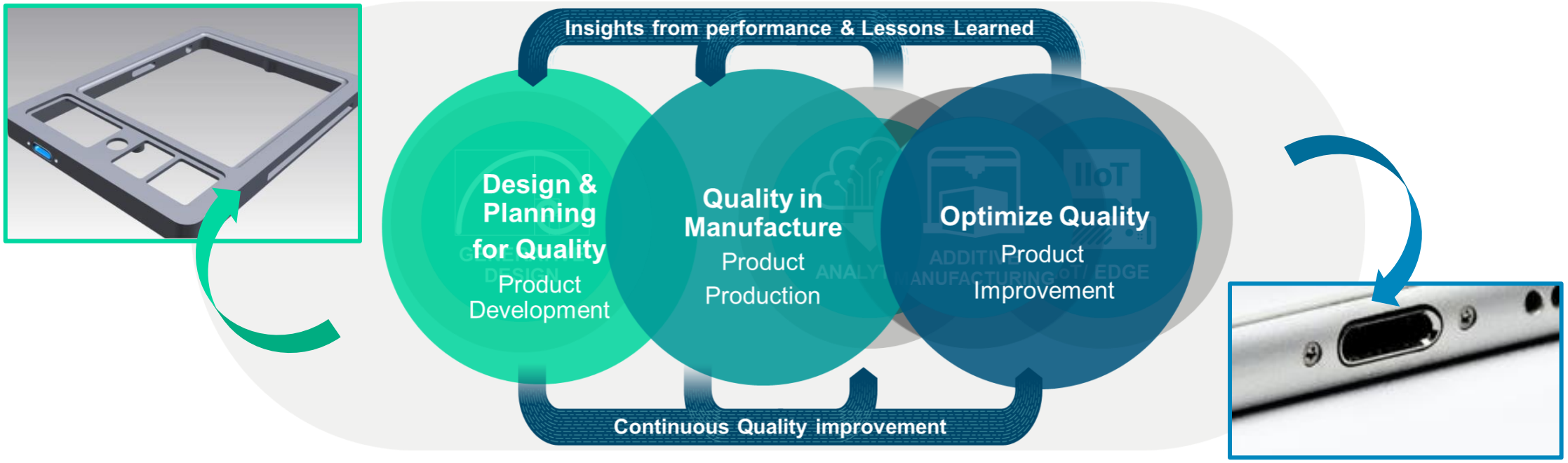
Using a Digital Approach for Quality Management reduce the risk of poor-quality performance

Collaboration across departments will be the key to be successful!



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A deal with a critical complaint
How integrated Quality helps to define immediate actions

Service opened several complaints in the system. Several issues can be combined and analyzed in one problem solving process. (In this use case failure and cause are generally the same.)

1. Issues need to be analyzed with a Problem-solving process

2. Identify an additional characteristic to inspect samples

3. Extend the existing Control Plan

4. Execute sample measurement and identify of range values

Main Benefits

Continuous improvement for products and production processes.

Process- and design-oriented integrated solutions.

Common cross-industry problem solving process with configurability for industry flavors.

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Home
Folders
Active Folders
Assistant
Favorites
Inbox
Changes
Schedules
Schedule Tasks
Alerts
Help
No Active Change

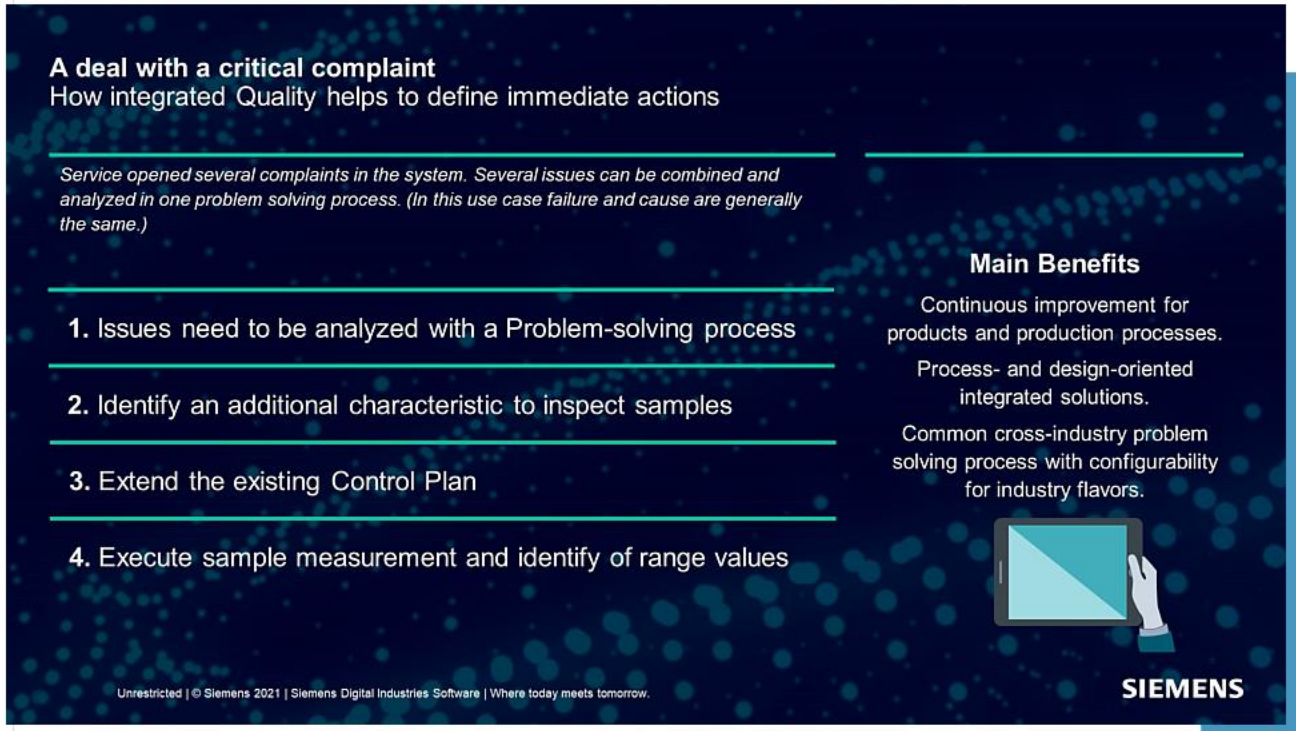
List with Summary | Selection Mode | Select All | Filters

Find in this content

- Smart phone is not charging
  PSP-00001
  Revision: A
- The smart phone does not c...
  PSP-00036
  Revision: A
- The smart phone does not c...
  IR-000040
  Revision: A
- The tablet does not charge
  PSP-00035
  Revision: A
- The tablet does not charge
  IR-000039
  Revision: A
- Nonconformance based on ...
  PSP-00017
  Revision: A
- Nonconformance based on ...
  ECR-000001
  Revision: A
- Label does not stick to "6 to ...
  IR-000018
  Revision: A
- Nonconformance based on ...
  IR-000017
  Revision: A
- Nonconformance based on ...
  IR-000016
  Revision: A

Filter Results by: Creation Date

Chart by: Creation Date



Information
Open
Copy
Paste
New
Edit
Manage
Share
View

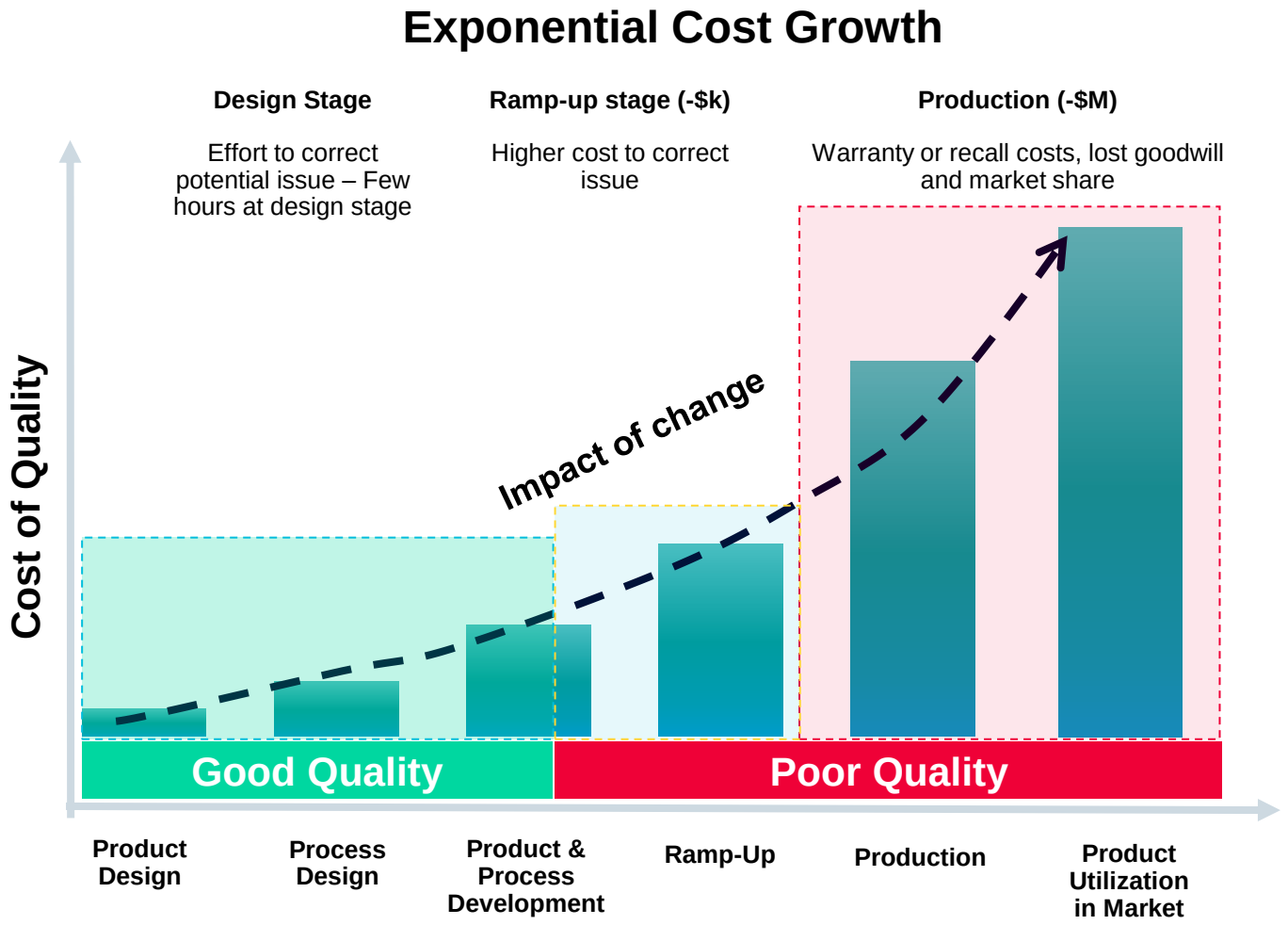
Decision making to mitigate risks

Scene 2

The importance to plan and prevent

Exponential Cost Growth related to changes in product or process

Fundamental to identify potential critical problems during design / process development stages or prior manufacturing ramp up, and earlier product introduction in market.



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Decision making to mitigate risk

How to improve the quality of products and processes starting from design phase

Scene initiation

During the development stage, all the required steps for the homologation were performed.

Squeeze-Phone team needs to reopen documents and check risks and possible actions for mitigation.*

Before Teamcenter Quality was in use

Failure to set correct priorities to increase the success of a product launch by identifying and mitigating risks early in the project stages.

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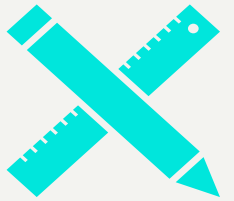
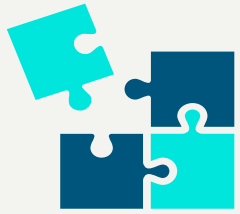
From bunches of spreadsheets to a paperless solution on a Collaborative Platform



Manual

Copy pasting

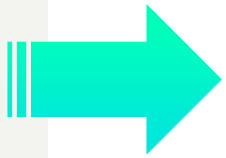
Governance



Lookup values

Data dependencies

Data integrity



Collaborative Platform

Companies can benefit from a common user and organization management for all participating domains.

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Decision making to mitigate risk

How to improve the quality of products and processes starting from design phase

One of the key documents to be controlled in case of Safety issue, customer critical problem or injuries is the FMEA. D-FMEA and P-FMEA are fundamental documents and mandatory for new product development

1. Verify the BOM for anomalies

2. Assure all Q-Milestones were respected

3. Control D-FMEA and risk assessment

4. Introduce new corrective actions in Problem Solving

Main Benefits

Risk analysis directly connected to the design and process definition.

Integration provides optimal exchange of data points.

Support FMEA in accordance with the new harmonized AIAG and VDA approach.

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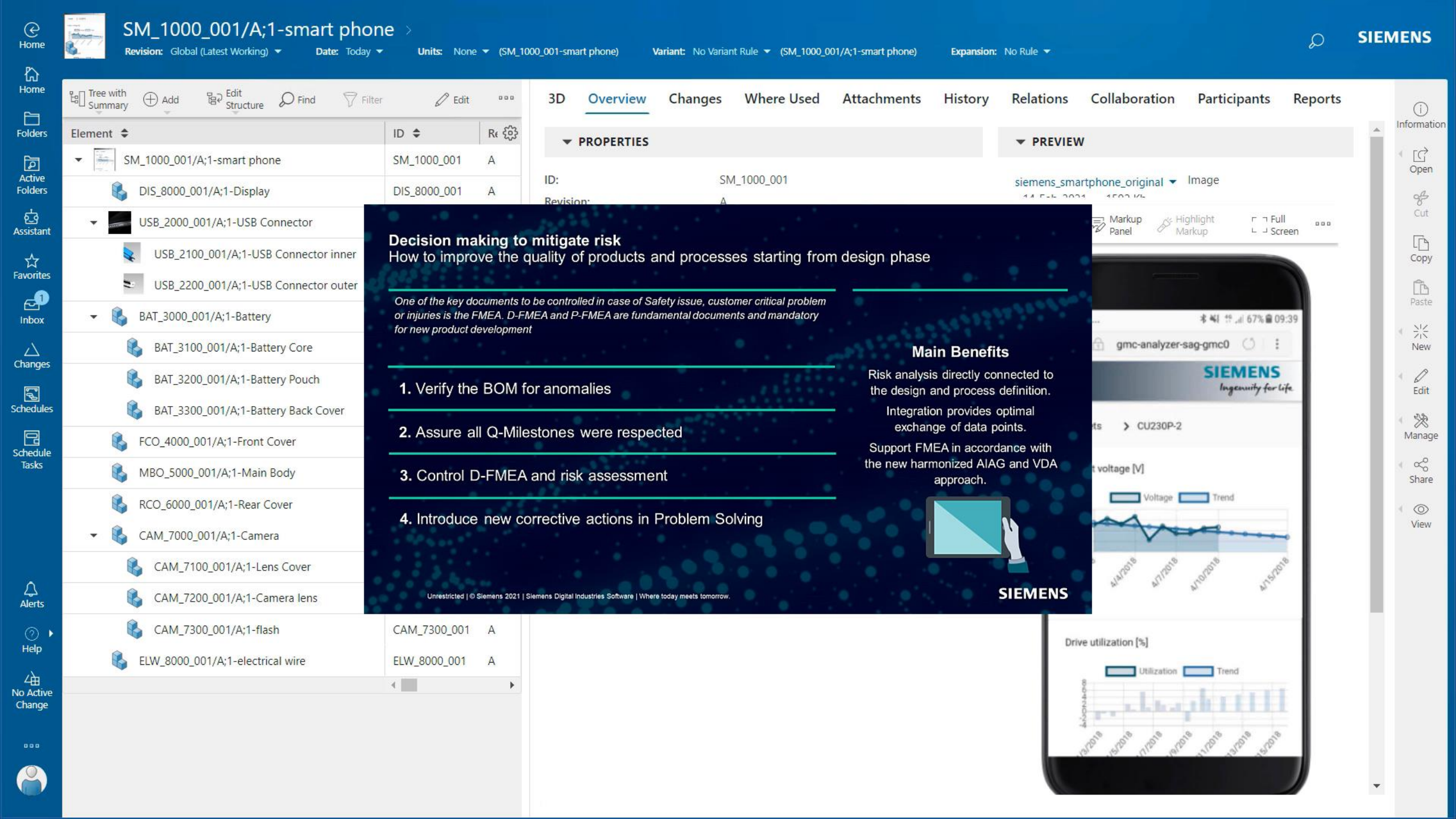
SM_1000_001/A;1-smart phone
Revision: Global (Latest Working)
Date: Today
Units: None (SM_1000_001-smart phone)
Variant: No Variant Rule (SM_1000_001/A;1-smart phone)
Expansion: No Rule
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Home
Folders
Active Folders
Assistant
Favorites
Inbox
Changes
Schedules
Schedule Tasks
Alerts
Help
No Active Change
Tree with Summary
Add
Edit Structure
Find
Filter
Edit
Element
ID
SM_1000_001/A;1-smart phone
SM_1000_001
DIS_8000_001/A;1-Display
DIS_8000_001
USB_2000_001/A;1-USB Connector
USB_2100_001/A;1-USB Connector inner
USB_2200_001/A;1-USB Connector outer
BAT_3000_001/A;1-Battery
BAT_3100_001/A;1-Battery Core
BAT_3200_001/A;1-Battery Pouch
BAT_3300_001/A;1-Battery Back Cover
FCO_4000_001/A;1-Front Cover
MBO_5000_001/A;1-Main Body
RCO_6000_001/A;1-Rear Cover
CAM_7000_001/A;1-Camera
CAM_7100_001/A;1-Lens Cover
CAM_7200_001/A;1-Camera lens
CAM_7300_001/A;1-flash
CAM_7300_001
ELW_8000_001/A;1-electrical wire
ELW_8000_001
3D
Overview
Changes
Where Used
Attachments
History
Relations
Collaboration
Participants
Reports
PROPERTIES
ID: SM_1000_001
PREVIEW
siemens_smartphone_original
Image
Markup Panel
Highlight Markup
Full Screen
Information
Open
Cut
Copy
Paste
New
Edit
Manage
Share
View
Decision making to mitigate risk
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gmc-analyzer-sag-gmc0
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Ingenuity for life
CU230P-2
voltage [V]
Voltage
Trend
Drive utilization [%]
Utilization
Trend

Speed up lead time to implement a change

Scene 3

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Speed up lead time to implement a change

How Siemens helps integrating quality processes in engineering

Scene initiation

Root cause analysis has been completed. An improvement for the product has been identified.

Squeeze-Phone Quality Team need to formalize the request to Engineering Department, which has already all data to proceed and realize the next steps.*

Before Teamcenter Quality was in use

Not possible to identify, prioritize and investigate potential product or process quality issues to reduce the final costs of quality

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Connect the typically disconnected quality processes across the value chain

High visibility on deviations with non-conformance management

Identify, prioritize and investigate potential product or process quality issues

Reporting and resolving quality issues with elimination of root cause

Minimize user training and fosters quick adoption throughout your enterprise

Improve product quality and production processes to reduce the total cost of quality

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Speed up lead time to implement a change

How Siemens helps integrating quality processes with engineering

Leveraging on common change management, Team distributes the changes to all stakeholders in the loop, so that the we reduced time to execute the modification and we can reduce costs.

1. Complete the root cause investigation

2. Create preventive action

3. Monitor the status of defined quality actions

4. Close the 8D process

Main Benefits

Reduce failure costs by eliminating rework on repeated quality issues.

Continuous improvement for products and production processes.

Integrated quality issue, problem-solving and change process flow.

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PSP-00001/A;1-Smart phone is not charging

Owner: Lauren (lauren) **Date Modified:** 04-Mar-2021 12:48

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Overview | Team | Problem Description | Containment Action | Root Cause Analysis | Corrective Action | Preventive Action | Relations | Attachments | Reports

Tree with Summary | Selection Mode | Select All

Name | Root Caus

- the USB port rattles
  - 5Why-Occurrence-Specific
    - Has the production process been changed were no changes.
    - Is the design correct? No changes have be but please check the FMEA and VA.
    - What about supplier parts? Analysis of the numbers has shown that different supplier
  - Ishikawa-Occurrence
    - insufficient training
    - poor maintenance
    - Incomplete bench test
    - Omission
    - Missalignment
    - Control document
    - Dust & Dirty
    - Gauge error
    - Inspection machine
    - Rust formation
    - Too high/low temperature
    - Wrong design
    - Impurities

Overview | Methodology | Attachments | Quality Action

Save Diagram | Print Diagram

Speed up lead time to implement a change
How Siemens helps integrating quality processes with engineering

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Why-3
What about supplier parts? Analysis of the batch numbers has shown that different suppliers

Thank you

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