

# *Quality is Everyone's Responsibility in the Supply Chain*

Sep 28, 2023

# Agenda

- Quick Housekeeping
- Introductions
- Cross-functional Quality Management and Challenges
- Workflow Based Approach to Cross-functional Quality Management
- Case Study
- Demo
- Q&A

# Quick Housekeeping

You are viewing Kris GorrepatiCa...'s screen View Options

Sign In

**Q&A**

**Welcome to Q&A**

Questions you ask will show up here. Only host and panelists will be able to see all questions.

Will suppliers be able to participate in the External CAPA process?

Send anonymously

Who can see your questions?

Quality is Everyone's Responsibility in the Supply Chain  
Digital Workflows for Quality Management Excellence  
Sep 28, 2023

KZ

Audio Settings ^ Chat Q&A Raise Hand Leave

# About Cambrian Lab

## Team

Supply Chain, New Product Introduction, and Technology Experts from SAP, Samsung, Siemens, GM, Ford, Applied Materials

## Expertise

- New Product Development/Introduction, Supplier Development, and Quality Management
- Enterprise and Supply Chain Technology (ERP, SCM, Manufacturing, CRM, Sourcing, Finance)

## Industries

Automotive, High-tech, Semiconductor Equipment, Medical Devices, Consumer Products  
**(From Fortune 100 to Start-ups)**

## Locations

**SF Bay Area**, Detroit, Boston, Houston

# Our Mission

*To Make*

Quality is everyone's responsibility  
*- W. Edwards Deming*

*A Reality in the Organization and the Supply Chain*

# Panelists Today

## Kris Gorrepati

- 20+ years experience in New Product Development and Introduction and Supply Chain Manufacturing
- SAP, Samsung, Ford, Caterpillar
- Auto, High-tech, Software
- Michigan Tech (Mech Engg.), UCLA

## Manish Mathur

- 20+ years experience in PLM, Business Analytics, Software Engineering
- GM, Ford, Siemens PLM, Cap Gemini
- Auto, High-tech, Software
- Michigan Tech (Elec Engg), Walsh College

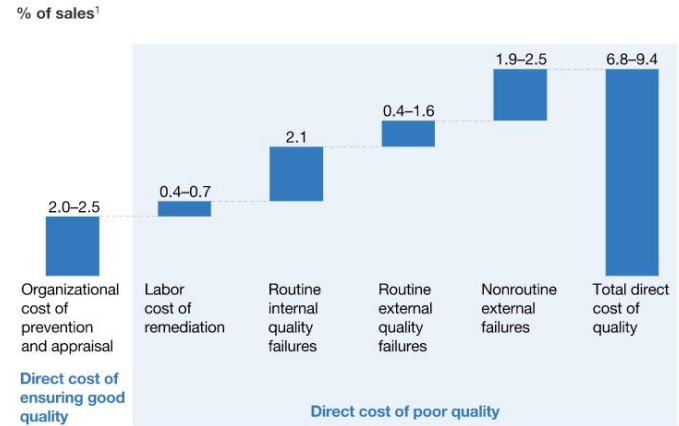
# Cost of Poor Quality >>>> Cost of Achieving Good Quality

Cost of Quality			
Cost of Good Quality		Cost of Poor Quality	
Prevention costs	Appraisal costs	Internal failure costs	External failure costs
<ul style="list-style-type: none"><li>• Planning</li><li>• Process Control</li><li>• Quality Audits</li><li>• Maintenance</li><li>• Supplier Evaluation</li><li>• Training</li><li>• Design Review</li><li>• Risk Assessment</li><li>• FMEA</li></ul>	<ul style="list-style-type: none"><li>• Inspection</li><li>• FAT</li><li>• Document Review</li><li>• Quality Audits</li><li>• Calibration</li><li>• Test Materials</li><li>• Test product</li></ul>	<ul style="list-style-type: none"><li>• Scrap</li><li>• Rework</li><li>• Missing documents</li><li>• Problem solving</li><li>• Retest</li><li>• Redesign</li><li>• Downgrading</li><li>• Variation</li><li>• Downtime</li></ul>	<ul style="list-style-type: none"><li>• Warranty charges</li><li>• Complaints</li><li>• Returned Materials</li><li>• Late Delivery Penalties</li><li>• Rework After Installation</li><li>• Lost Opportunities</li></ul>

# Cost of Poor Quality

For the first nine months of 2020, Ford's warranty costs totaled \$3.87 billion, while GM's were \$1.68 billion, according to regulatory filings.

The direct cost of quality in the medical device industry is \$26 billion to \$36 billion annually.



<sup>1</sup>Estimated annual sales of \$380 billion.

McKinsey&Company | Source: Health Research International; McKinsey analysis

paperwork, often slowing down efforts to address issues. The result: Today's CAPA process consumes significant resources— case studies of participating organizations have indicated that it could be around 1% of a company's revenues!



# Not uncommon to feel as if

- Quality Management is primarily a Documentation Exercise
- Quality is the Responsibility of Quality Department
- Stakeholders have Limited Visibility and Control to Ensure Quality Issues are Addressed in a Timely and Effective Manner

"The only real mistake is the one from which we learn nothing."

- Henry Ford

# Quality Management is primarily a Documentation Exercise

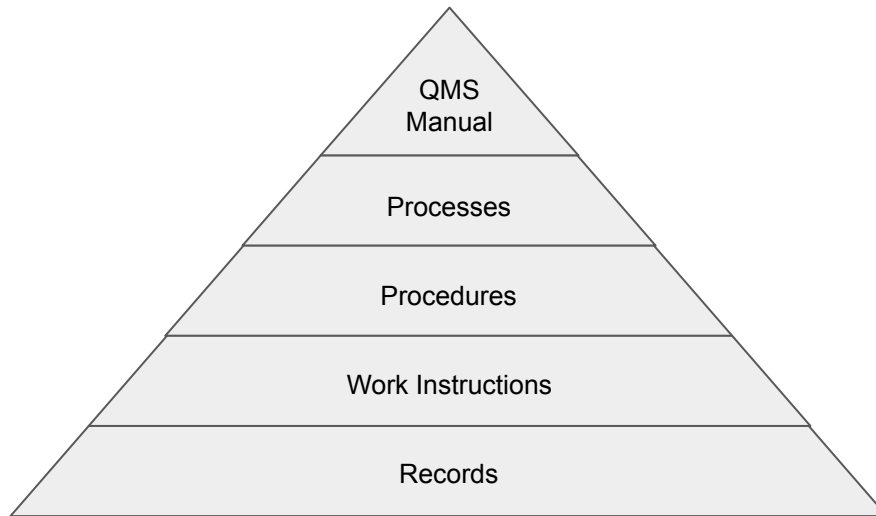
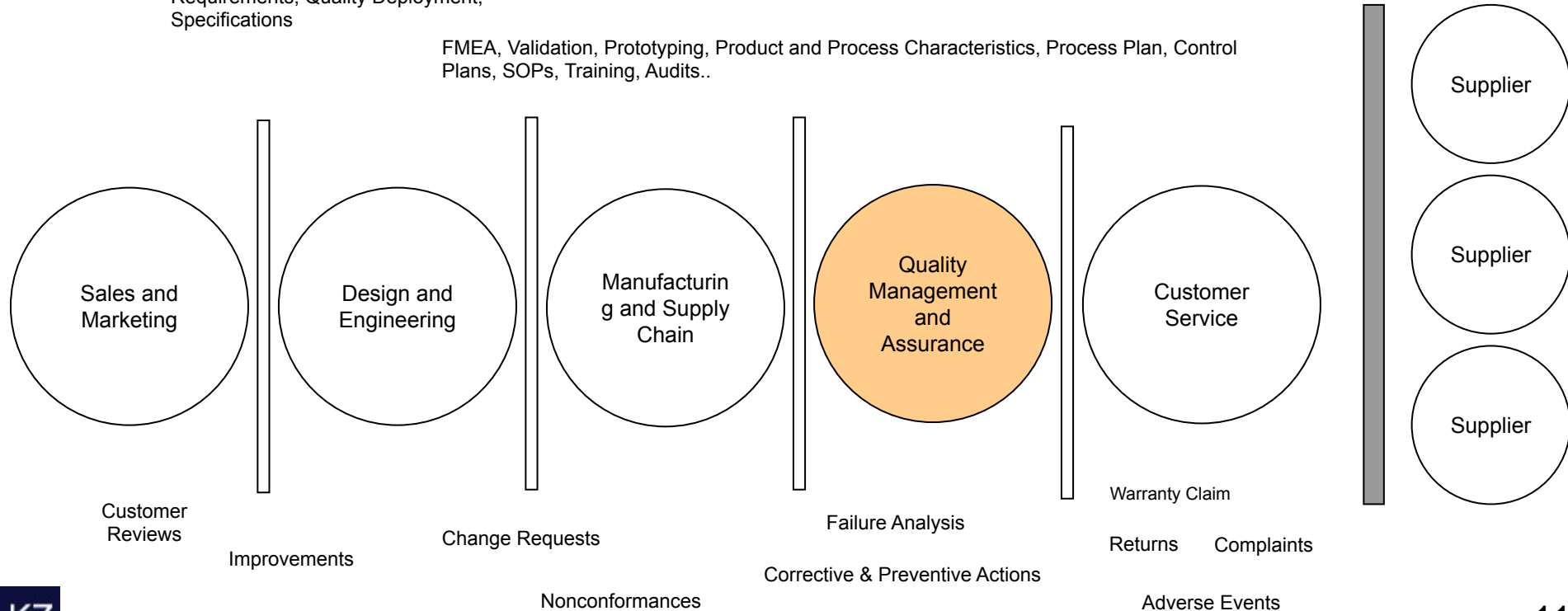


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Paragraph	Title	Page
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1.2	Quality Manual: Scope and Exclusions	1
<b>2</b>	<b>RELATED DOCUMENTS</b>	<b>2</b>
<b>3</b>	<b>ACRONYMS</b>	<b>2</b>
<b>4</b>	<b>QUALITY MANAGEMENT SYSTEM</b>	<b>2</b>
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4.2	Documentation	2
4.2.1	General	2
4.2.2	Quality Manual	2
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5.5	Responsibility, Authority and communication	2
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7.3	Design and Development	2
7.3.1	Design and Development Planning	2
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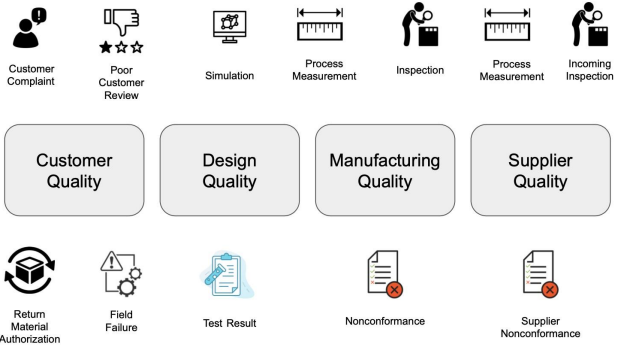
# Quality is Responsibility of Quality Department

Requirements, Quality Deployment,  
Specifications

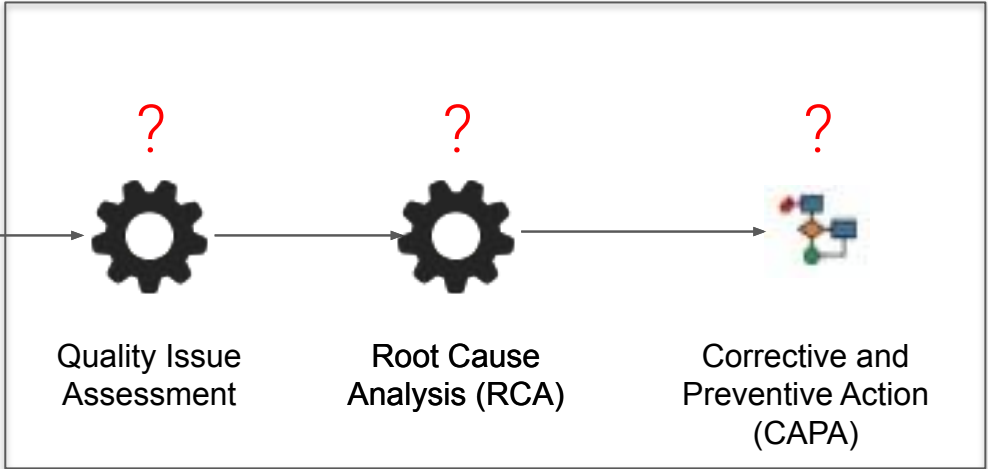
FMEA, Validation, Prototyping, Product and Process Characteristics, Process Plan, Control  
Plans, SOPs, Training, Audits..



# Limited Visibility and Control



Quality Events



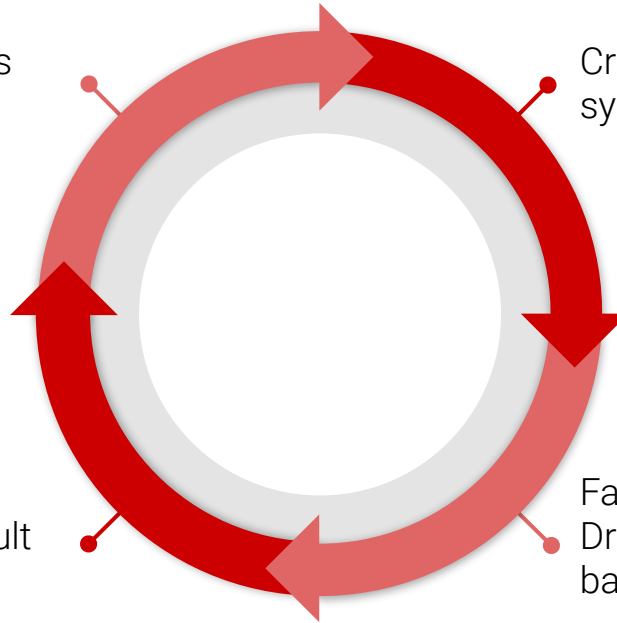
# Why Making “Quality is Everyone’s Responsibility” Remains a Challenge

To “Do What is Documented” as QMS Procedures is Hard

Cross-functional teams and systems are disconnected

Involving Supply Chain is Difficult

Falling through the cracks, Dropping the ball, Not passing the baton



# The Answer - Cross-functional Workflows to make “Quality is Everyone’s Responsibility” a Reality

Quality Workflows that can be started by anyone and any system

Quality Workflows connected to ERP, MES, PLM, Supply Chain systems

Flexible and Adaptable



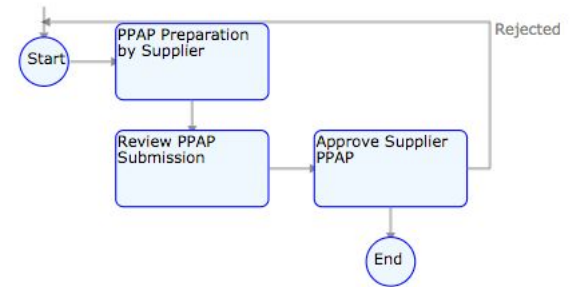
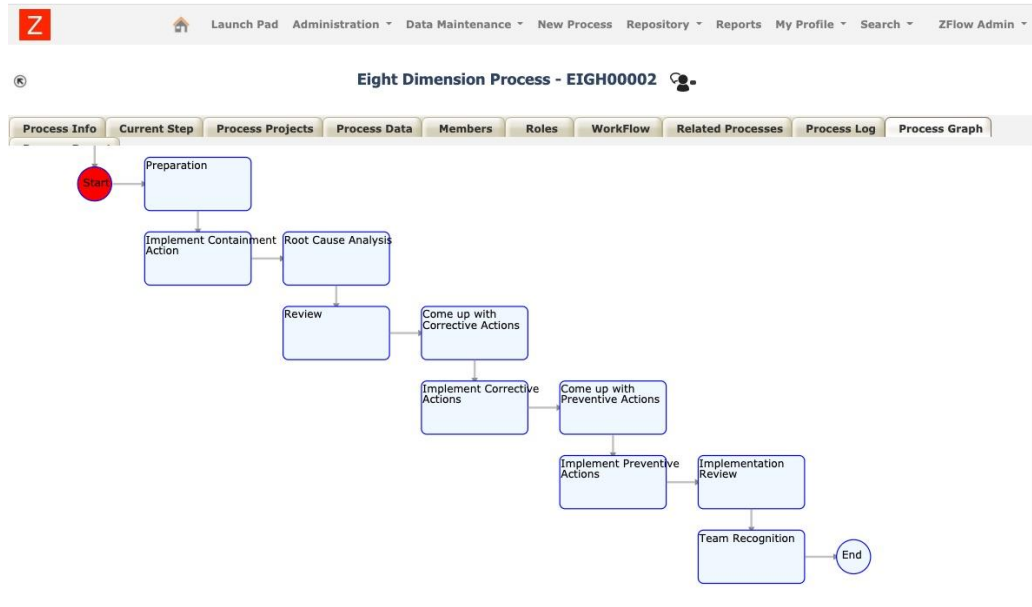
Proactively Involve Right People at the Right Time

Include Supply Chain

Integrate quality tools and techniques into workflows

# Workflows that Naturally Keep People, Process and Systems in Sync

## Support for Industry Standard and Company-specific Quality Management Processes



# Integrated and Effective Techniques as part of Quality Workflows

**Design FMEA - Delta Eclipse XZ**

**Design FMEA**  
 Delta Eclipse XZ  
 Maintains designed level of low pressure  
 Desired vacuum level not maintained  
 Contamination of test environment  
 Leak due to o-ring failure  
 Continuous measurement  
 New o-ring  
 Vacuum system failure  
 Continuous measurement  
 Controls movement of IC test beds  
 Maintains temperature

**Form Identifier:** Delta Eclipse XZ DFMEA  
**Status:** Work In Process  
**Created By:** admin@zflow.io  
**Last Update:** 2020/12/14 8:37:54

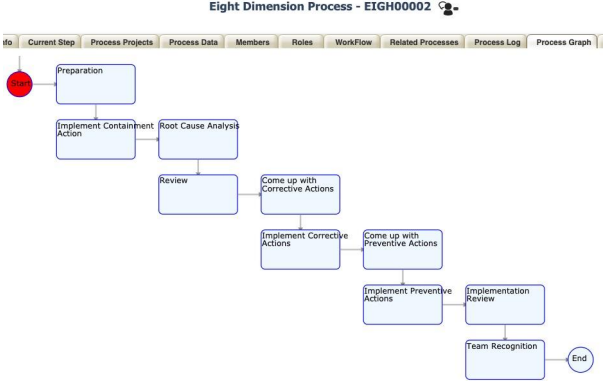
**Part Number:** Delta Eclipse XZ  
**Rev.:** A  
**Creation Date:** 2020/12/14 8:37:54  
**Updated By:** admin@zflow.io

**Description:** Delta Eclipse XZ DFMEA  
**Rev.Status:** Pending

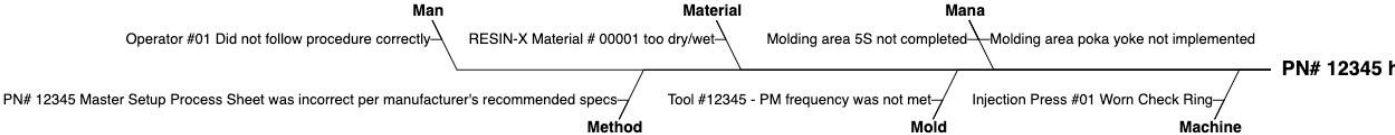
**Design FMEA Function**

#	System	System Interface
<input type="checkbox"/> 1	Vacuum Chamber	
<input type="checkbox"/> 2	Motion Controller	
<input type="checkbox"/> 3	Thermal Controller	

FMEA



8D





Fishbone





# Cross-functional Team Collaboration

**Z**
**Roles - Supplier PPAP**
✕

  
New

  
Edit

  
Delete


  
Update Processes


Role Name	Description	From Org	Privileges
<input type="radio"/> Participant			
<input type="radio"/> Design Engineer		No	
<input type="radio"/> Process Admin			
<input type="radio"/> Purchasing Lead		No	
<input type="radio"/> Supplier Representative		No	


**Z**
**Menu**


- Administration ▾
- Data Maintenance ▾
- New Process
- Repository ▾
- Reports
- My Profile ▾
- Search ▾
- ZFlow Admin ▾


### Organization Structure - Root


  
Edit


  
Add Organization


  
Add Position


  
Add New User


  
Export


  
Rename


  
Delete


  
Delete All


  
Expand All











  
Users

  
Open Org

  
Report

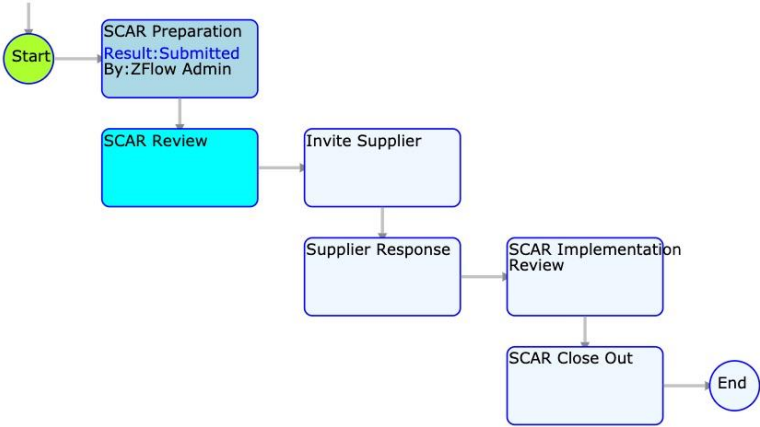
  
Download

  
Back

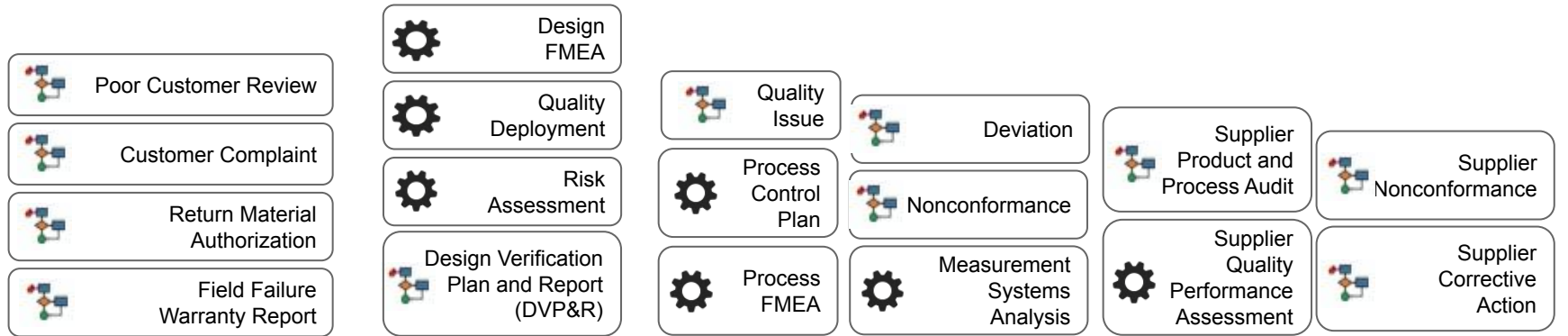
Entity	Type	Person Assigned	Reports To Position
<input type="radio"/>  Root	Organization		
<input checked="" type="radio"/>  ZZ Corp	Company		
<input type="radio"/>  Tezla	Organization		
<input type="radio"/>  CEO	Position	<a href="mailto:zflow-ceo@mailinator.com">zflow-ceo@mailinator.com</a>	
<input type="radio"/>  VP of Finance	Position	<a href="mailto:zflow-vp-finance@mailinator.com">zflow-vp-finance@mailinator.com</a>	
<input type="radio"/>  VP of Manufacturing	Position		
<input type="radio"/>  Fremont Plant	Division		
<input type="radio"/>  Plant Manager	Position		
<input type="radio"/>  Giga Factory	Division		
<input type="radio"/>  Z Lab	Organization		

# Easy and Secure Supply Chain Collaboration

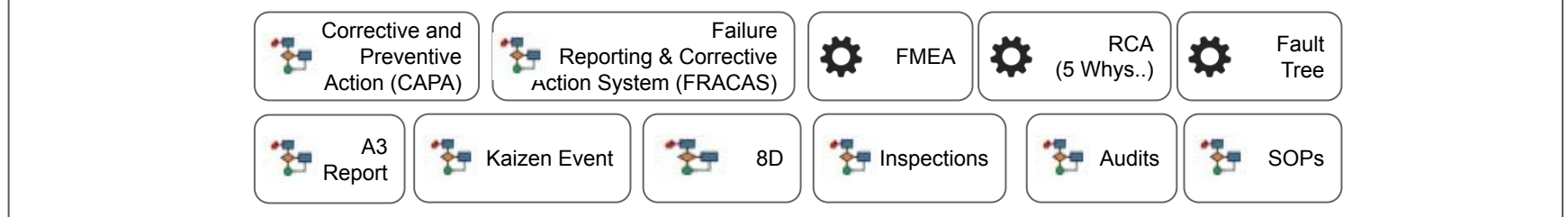
Business Name	Supplier ID	Supplier Relationship Status	Supplier Maturity Level	Supplier Category
<input type="checkbox"/> Avioq Inc.	SAVIOQ	Active	Advanced	Strategic
<input type="checkbox"/> Bosch Sensortec	SBOSCH	Qualified	Advanced	Non -strategic
<input type="checkbox"/> Broadcom	SBRCM	Active	Advanced	Strategic
<input type="checkbox"/> Carrier UTC	Carrier			
<input type="checkbox"/> Cirrus Logic	SCIRRUS			
<input type="checkbox"/> Genco Contractors	Genco			
<input type="checkbox"/> Generac	Generac			
<input type="checkbox"/> Honeywell	Honeywell			
<input type="checkbox"/> Huizhou Desay	SHUIZHOU		Basic	Non -strategic
<input type="checkbox"/> Intel Corp	SINTC	Preferred	Integrated	Strategic
<input type="checkbox"/> Jabil	Jabil	Preferred	Integrated	Strategic
<input type="checkbox"/> Lattice Semiconductor	SLATTICE	Qualified	Advanced	Non -strategic
<input type="checkbox"/> Lennox International	Lennox			
<input type="checkbox"/> MetalDyne	MetalDyne	Active	Basic	
<input type="checkbox"/> Murata Manufacturing	MURATA	Active	Advanced	Routine
<input type="checkbox"/> Northern Tool and Equipment	NorthernTE			
<input type="checkbox"/> NXP Semiconductor	NXPSEMI	Preferred	Advanced	Non -strategic
<input type="checkbox"/> Qorvo Inc	QORVO	Qualified	Advanced	Non -strategic
<input type="checkbox"/> Qualcomm Inc.	QCOM	Restricted	Advanced	Strategic
<input type="checkbox"/> Skyworks Inc.	SKYWOKRS	Active	Advanced	
<input type="checkbox"/> TDK Corp	TDKCORP			



# Quality is Everyone's Responsibility - A Few Examples



## Cross-functional Quality and Continuous Improvement Tools

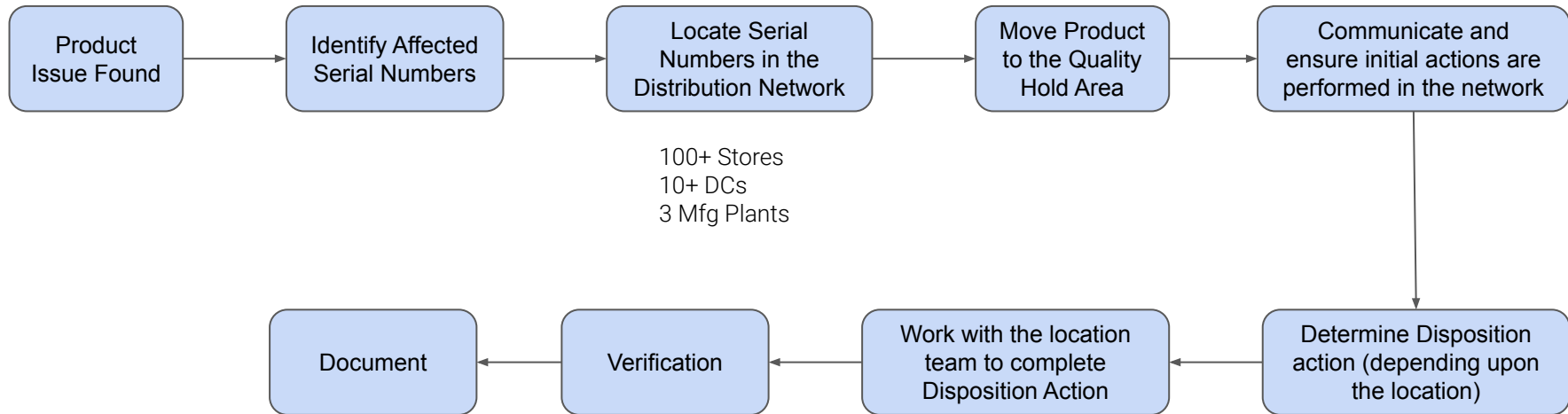


# Agenda

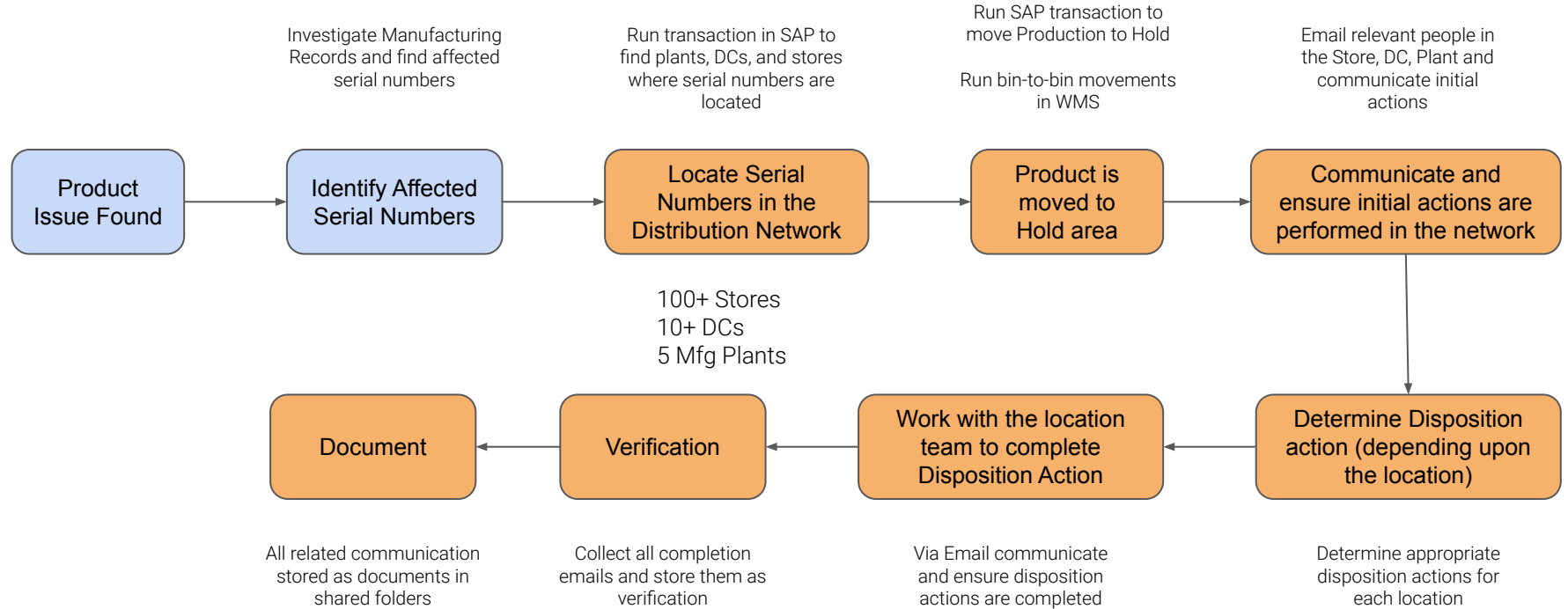
- ❑ Introductions
- ❑ Cross-functional Quality Management and Challenges
- ❑ Workflow Based Approach to Cross-functional Quality Management
- ❑ **Case Study**
- ❑ Demo
- ❑ Q&A

# Case Study Overview

Manufacturer needs to act fast to move non-conforming product (so that it does not end up with customers) from various distribution nodes (Stores, DCs, and Manufacturing Plants) to support immediate actions, fixes and eventual disposition



# AS-IS Standard Operating Procedure



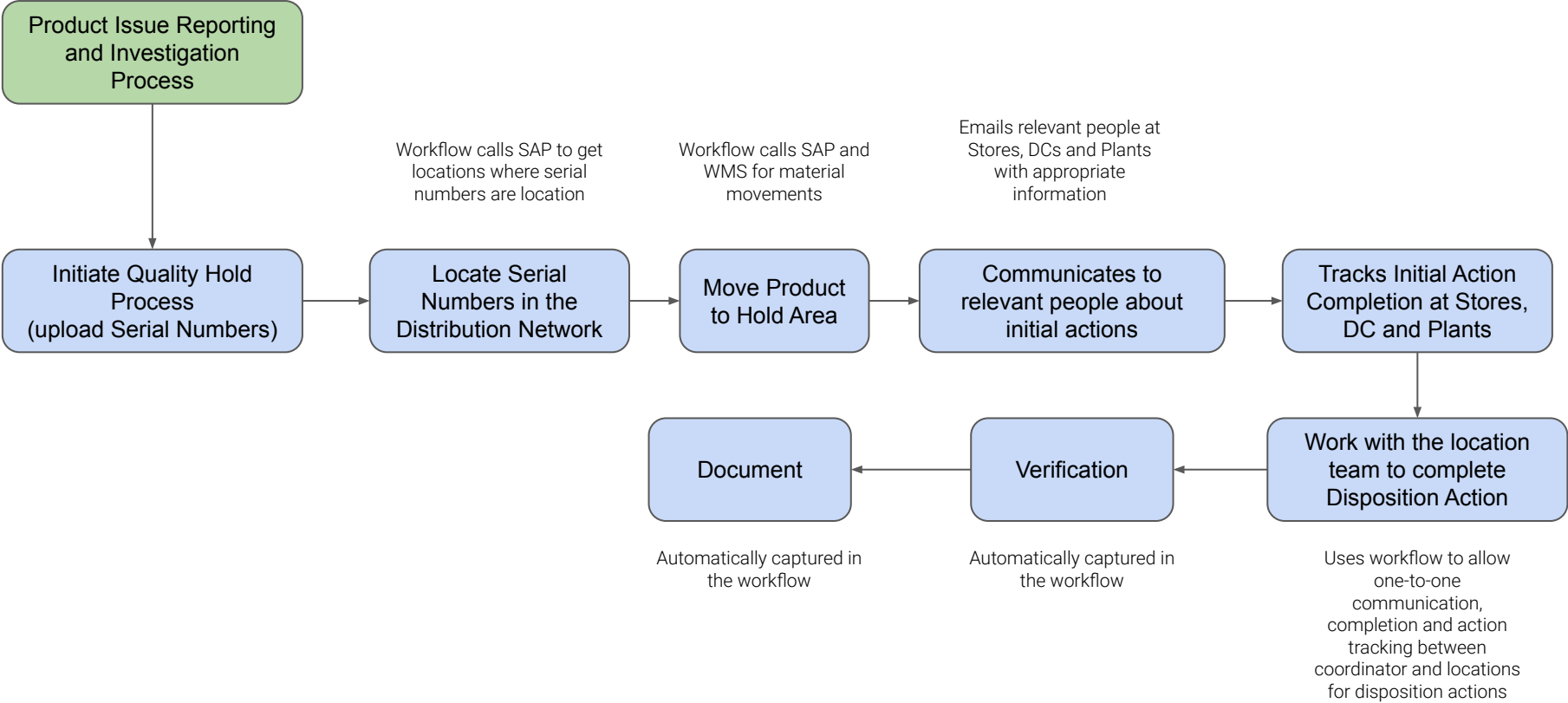
3-6 month project

20 -50 people involved


**High chance of defective product making it to customers** if not done in a timely manner

**Very expensive and damaging to the brand** if not resolved in a timely and effective manner

# Digital Workflow Based Standard Operating Procedure



# Workflow Allows bidirectional communication and coordination of initial actions, fixes and eventual disposition

Initial Action Instructions:	Put these items in hold Disposition Plan - FTC's will visit for rework - Please respond Back when complete	Disposition Instructions:	12S87
Current Scope:	Disposition	Creation Date:	2023/05/04 14:06:56
Last Update:	2023/05/04 14:22:31		
<b>Plant</b>			
Plant:		Email Distribution List:	
Initial Action Completed?:	Yes	Initial Action Response:	Moved all the serial numbers to HOLD area
Initial Action Completed By (USER ID):		Initial Action Date:	2023/05/04
Impacted Quantity Summary:	Qty: 10 Qty: 15 Qty: 75 Qty: 90 Qty: 110	Disposition Completed?:	Yes
Disposition Actions:	Held in HOLD Area - Will confirm once reworked	Disposition Completed By (USER ID):	
Disposition Date:	2023/05/04		
<b>Attachments</b>			
 <input type="button" value="CHOOSE FILE"/> No file chosen			



# Agenda

- ❑ Introductions
- ❑ Cross-functional Quality Management and Challenges
- ❑ Workflow Based Approach to Cross-functional Quality Management
- ❑ Case Study
- ❑ **Demo**
- ❑ Q&A

# Demo

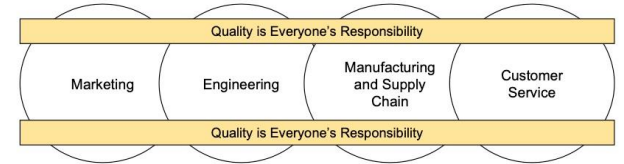
No Quality Issue  
left Behind

Supply Chain  
Engagement

Industry and  
Company-specific  
Quality Management  
Workflows

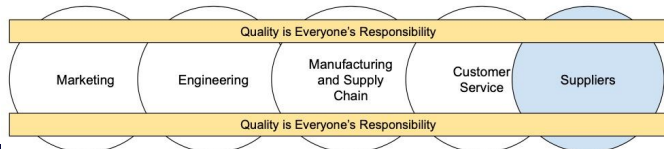
# Digital Workflows Make “Quality is Everyone’s Responsibility” a Reality

Right People involved at the Right Time



Process, People and Systems in Sync

Supply Chain on the Same Page



Smooth Handoffs



# Ready to Use Cross-functional Quality Workflows, Tools, and Techniques

KZ Launch Pad Administration ▾ Data Maintenance ▾ Repository Reports New Search ZFlow Admin ▾

### Launch Pad for Administrator

#### Crossfunctional Quality

- Corrective Action Request  
List | Find | Insights | New
- Failure Report  
List | Find | Insights | New
- Custom Corrective Action Report  
List | Find | Insights | New
- Nonconformance Report  
List | Find | Insights
- Quality Issue  
List | Find | Insights | New

#### Continuous Improvement

- A3 Report  
List | Find | Insights | New
- 8D Problem Solving Process  
List | Find | Insights | New
- Kaizen Event  
List | Find | Insights | New

#### Manufacturing Quality

- Inspection Report  
List | Find | Insights | New
- Control Plan  
List | Find | Insights
- Measurement Sys Analysis  
List | Find | Insights
- Process FMEA  
List | Find | Insights
- Process Plan  
List | Find | Insights

#### Design Quality

- NPI Review  
List | Find | New
- APQP Program  
List | Find | Insights | New
- First Article Inspection Report  
List | Find | Insights | New
- Medical Device NPI  
List | Find | Insights | New
- Supplier PPAP  
List | Find | Insights
- DFMEA  
List | Find | Insights
- Design Verification Plan  
List | Find | Insights
- Part/Assembly  
List | Find | Insights
- QFD  
List | Find | Insights
- Requirement  
List | Find | Insights
- Risk Assessment  
List | Find | Insights
- Traceability Matrix  
List | Find | Insights

#### Supplier Quality

- Supplier Performance  
List | Find | New
- Supplier Risk Assessment  
List | Find | New
- Supplier Audit  
List | Find | Insights | New
- Supplier Corrective Action  
List | Find | Insights | New
- Supplier Performance Report  
List | Find | Insights | New
- Vendor Assessment  
List | Find | Insights | New
- Supplier Profile  
List | Find | Insights

#### Customer Quality

- Customer Review Assessment  
List | Find | Insights | New
- Field Failure Report  
List | Find | Insights
- MedWatch Report  
List | Find | Insights | New
- Return Material Authorization  
List | Find | Insights | New
- Warranty Claim Analysis  
List | Find | Insights

# Quality Process Visibility and Control

Supplier Corrective Action - Processes - Total Records: 6

Approval Status ▾

Completed Rejected Approved Other



Process Status ▾

Not Submitted Running - Work In Process



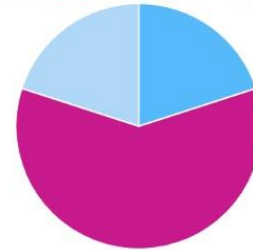
Issue Type

Field Failure Nonconformance Return Customer Complaint Poor Quality



Recommended CAR Type

Design Change Process Change Training Inspection

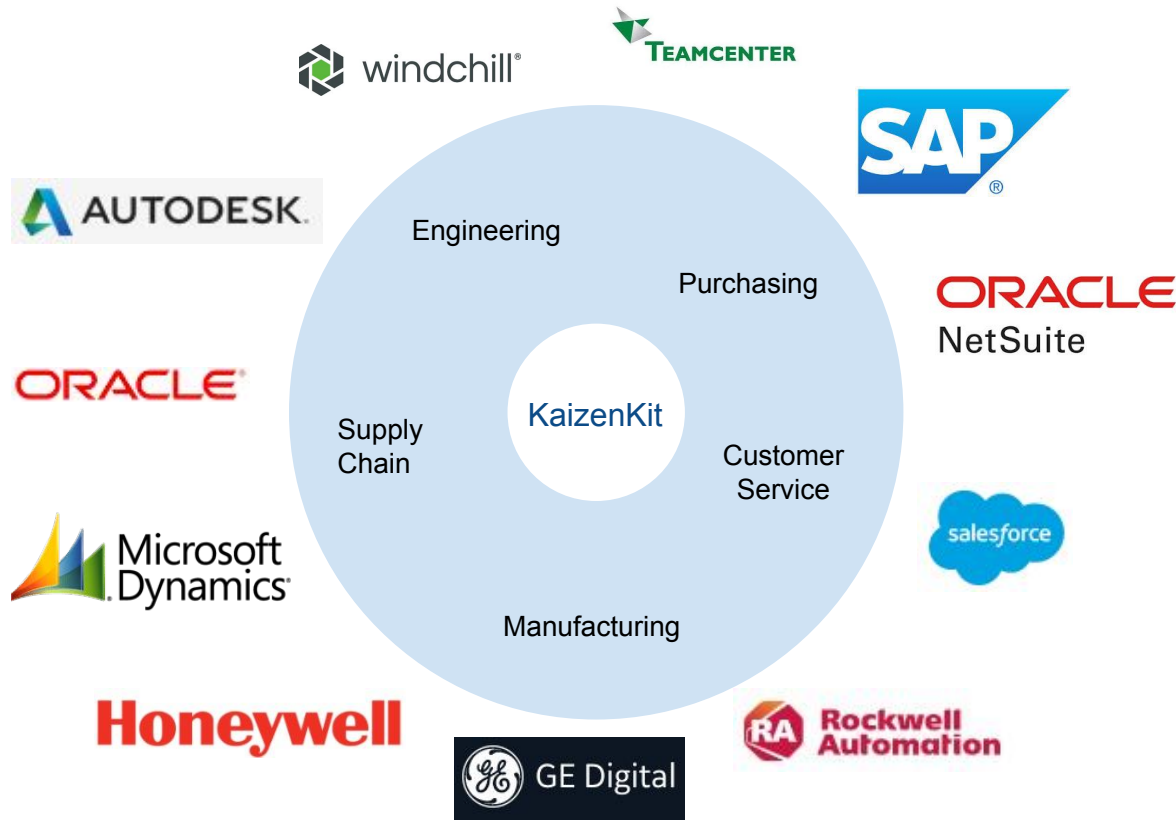


Root Cause Type

Part Process Training Quality Control



# Rich Capabilities for Integrating to ERP, Engineering, Manufacturing and Supply Chain Applications



# Summary

- ❑ *Proven success in many industries*
- ❑ *Easy to adopt and loved by users*
- ❑ *Easy to get started*

[Free Trial](#)

[Free Pilot](#)

# For More Information

<https://www.kaizenkit.io>

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