

# Closed Loop Supplier Collaboration At Mercury Marine

**CIMdata**® PLM Road Map North America 2018  
Charting the Course to PLM Value Together  
May 15-16 Tysons Corner, VA



# Mercury Marine

- 1939 founded in Cedarburg, WI as Kiekhaefer Corporation
- 1961 acquired by Brunswick
- \$2.6 billion in revenue in 2017 (Brunswick parent \$4.5 billion)
- 6,000+ employees
- Strategic segments
  - Outboard Engines
  - Inboard, Sterndrives and Jet Drive Engines
  - Racing High-Performance Outboards and Sterndrives
  - Rigid Inflatable and Inflatable Boats
  - Mercury Smart Craft Electronics
  - Engine Parts and Accessories
  - Mercury Digital Services



# Mercury Marine Operations



## Fond du Lac Wisconsin

### Mercury Headquarters

**Mercury Assembly  
Plant 15**  
Outboard 2S  
Outboard 4S 75hp+  
MerCruiser engines & drives

**Mercury Casting  
Plant 17**

**Mercury Machining  
Plant 4**

**Mercury P&A  
Plant 3**

**Mercury Racing  
Plant 36**

**Juarez Mexico  
Plant 22 Wire  
Harness**

**St. Cloud Florida  
Electrical & Plastic  
Assemblies**

## Komagane Japan

TMC Joint Venture  
Outboard 2.5-30hp  
Opened 2005  
300k sq ft

## Suzhou China

Outboard 4-stroke  
40-60hp  
Opened 2005  
150k sq ft



# Product Development Tools at Mercury Marine

## CAD Applications & Viz tools in use:

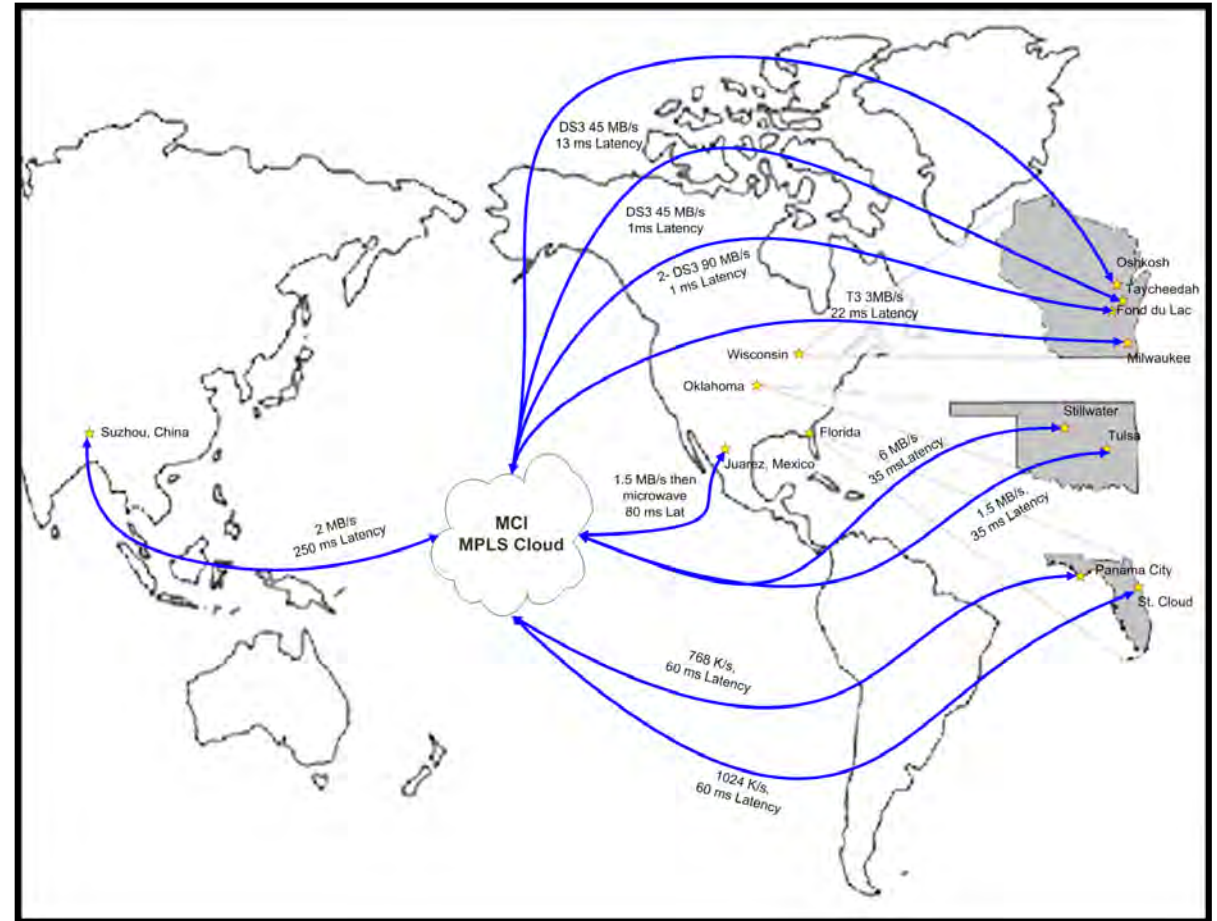
- Creo MCAD
- Teamcenter Integration with Creo (IPEM)
- Keyshot
- Cortona

## PLM Applications in use:

- Teamcenter Foundation
- Teamcenter Classification
- Teamcenter Change Management
- Teamcenter Visualization
- Teamcenter Multi Site
- Supplier Relationship Management

## Digital Solutions in use

- Parts Planning Application (PLM – ERP Tracker)
- Test Request System
- Engineering Knowledge Base





# Mercury Digital Services & Solutions

**Consulting Practice Founded in 2009**

**Industries served include:**

- Aerospace, Defense, Industrial Machinery, Automotive Supply, Medical Devices, Diversified Manufacturing, Consumer Durables

**Digital Solutions include:**

- Parts Planning Application (PLM – ERP Tracker)
- Test Request System
- Engineering Knowledge Portal
- Lab Test Management System
- Workflow Analysis Tool
- Teamcenter to SharePoint (Tc2SP)

**Digital Services include:**

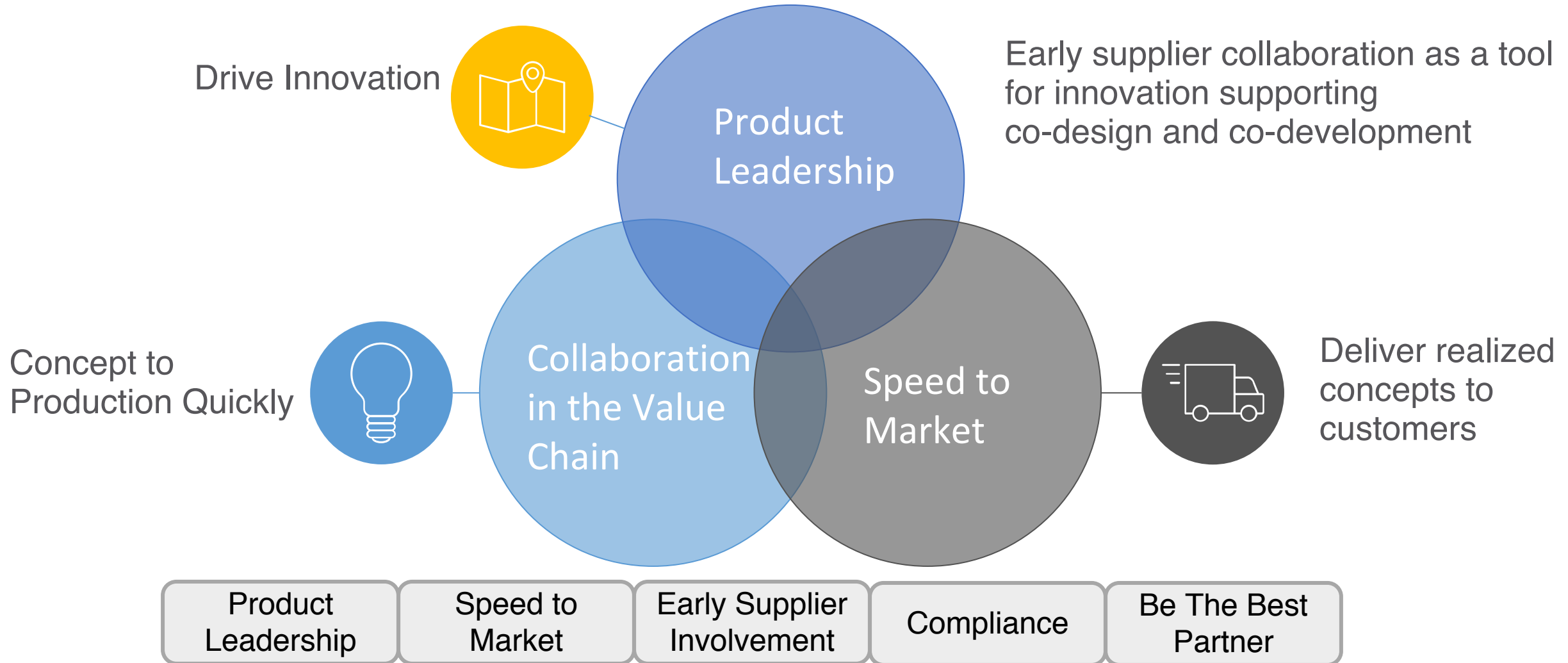
- PLM assessments/Digital Transformation roadmaps
- Business process & value stream mapping workshops
- Project management, Requirements development, Test script development & validation
- Teamcenter architecture, hardware sizing, installation, configuration, workflows, customizations
- CAD to PLM to ERP system integration (IPEM, T4S, T4O, T4EA)
- Data migration services
- Teamcenter upgrades – Active Workspace (usability)
- Training materials creation and delivery
- Teamcenter Help Desk services



**SIEMENS**  
Zone SI Partner

# Three Business Value Levers

**Delivering innovation to drive growth, consistently**



# Business Challenges

- Manufacturing of components requires Early Supplier Involvement
- IP Protection & Traceability
- Commercial tie-in to correct, current revision
- Effective Change Control
- Sourcing Integration

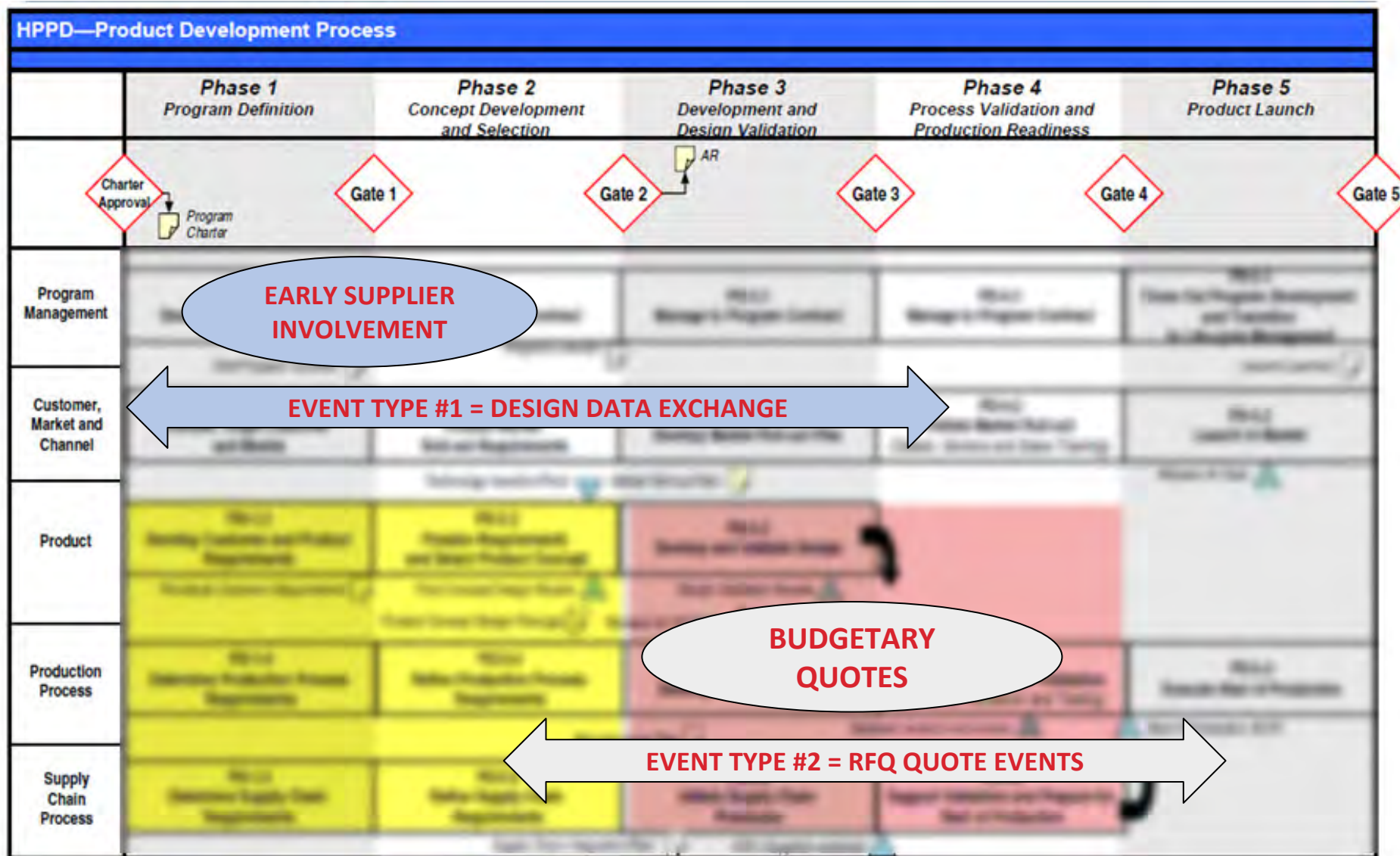
## Key Objective:

Increase the throughput of early supplier involvement for improved costs and capabilities.





# Key Business Requirements



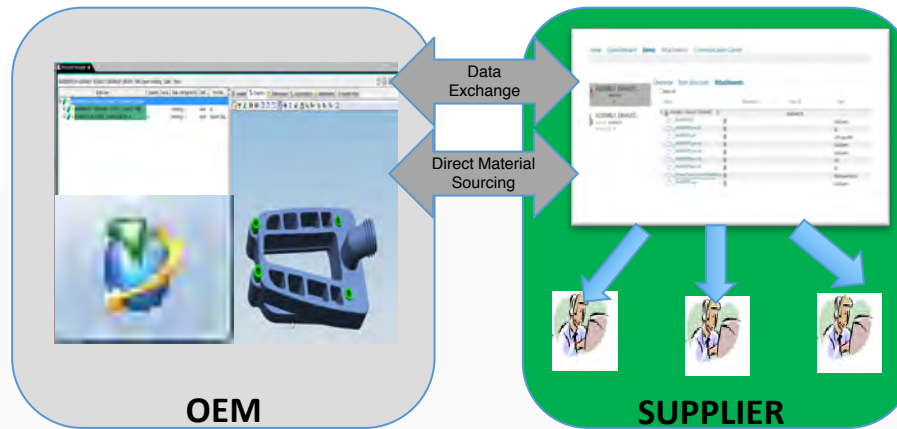
1 Early Supplier Involvement

2 RFQ

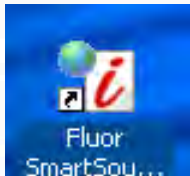


# Mercury Sourcing Transformation

## Technology-enabled Sourcing



- ✓ Standardized global sourcing process
- ✓ Directly integrated with PLM system
- ✓ Sourcing process tied to latest design data
- ✓ Real-time collaboration
- ✓ Workflow, signoff driven
- ✓ Transparency & Traceability
- ✓ Vendor Management

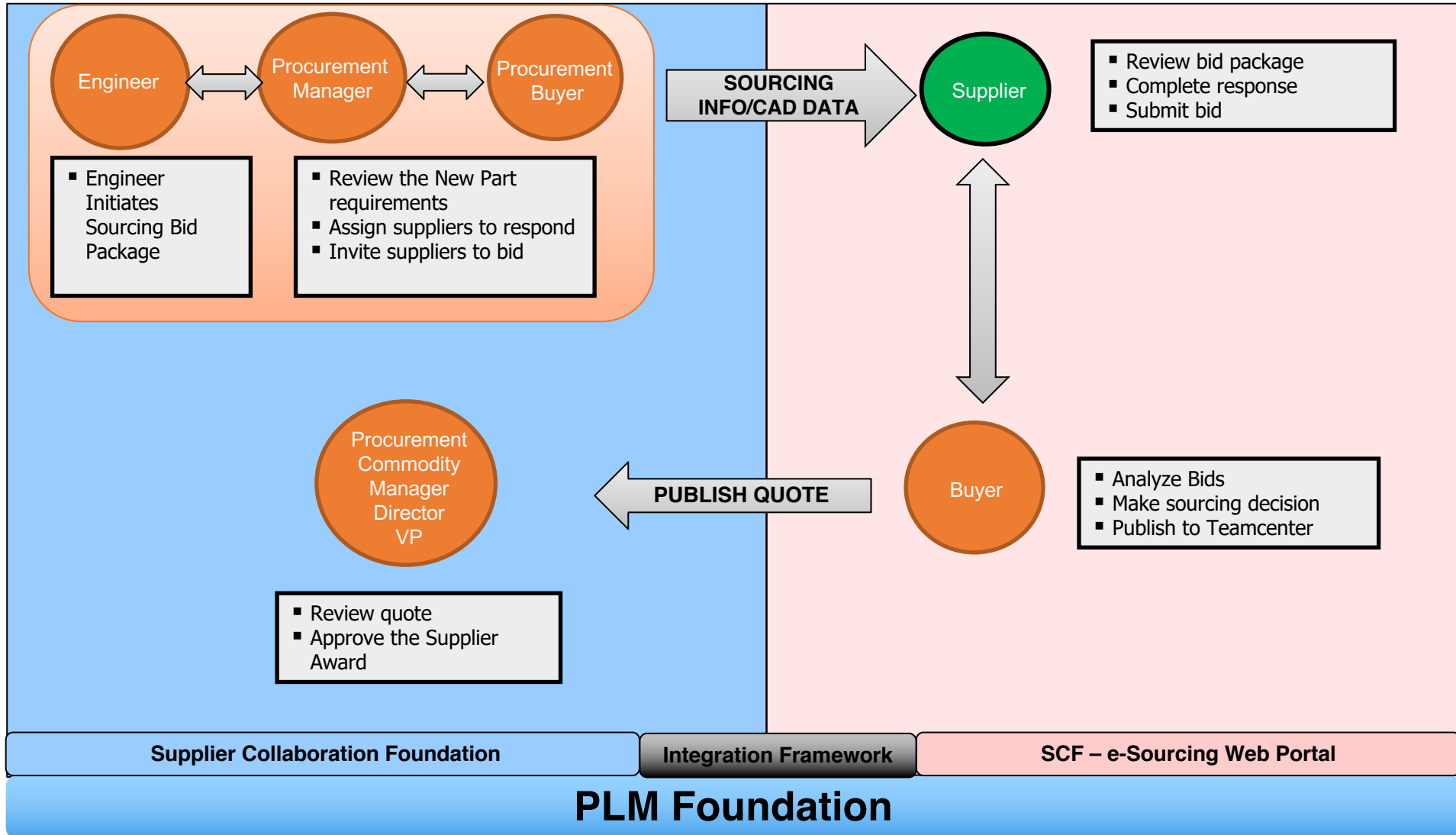


- ❌ Multiple fragmented systems & sourcing process
- ❌ FTP method for transferring data
- ❌ No tie in to correct cad versions

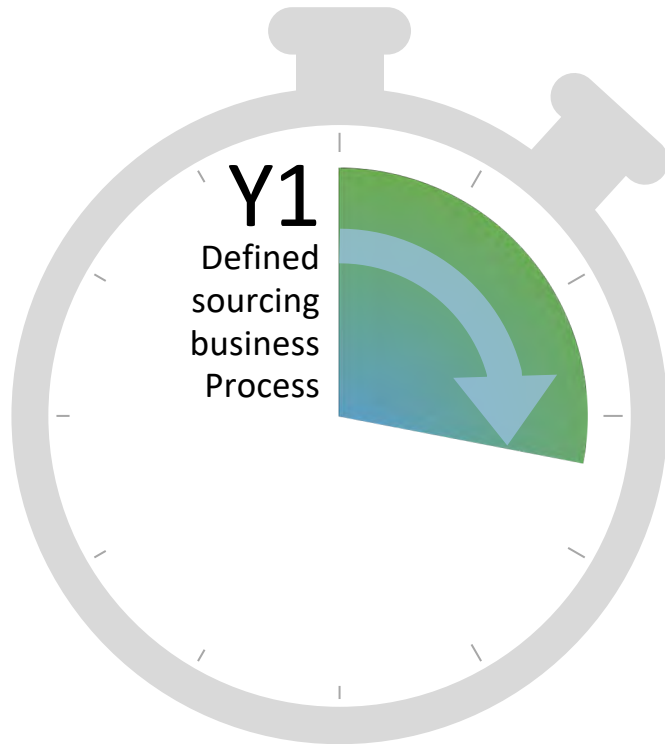


- ❌ Lack of formal/standard sourcing process
- ❌ Emails, FTP methods for requesting, communicating, decision making
- ❌ No Audit Trail , IP Leakage

# Supplier Collaboration Sourcing Process



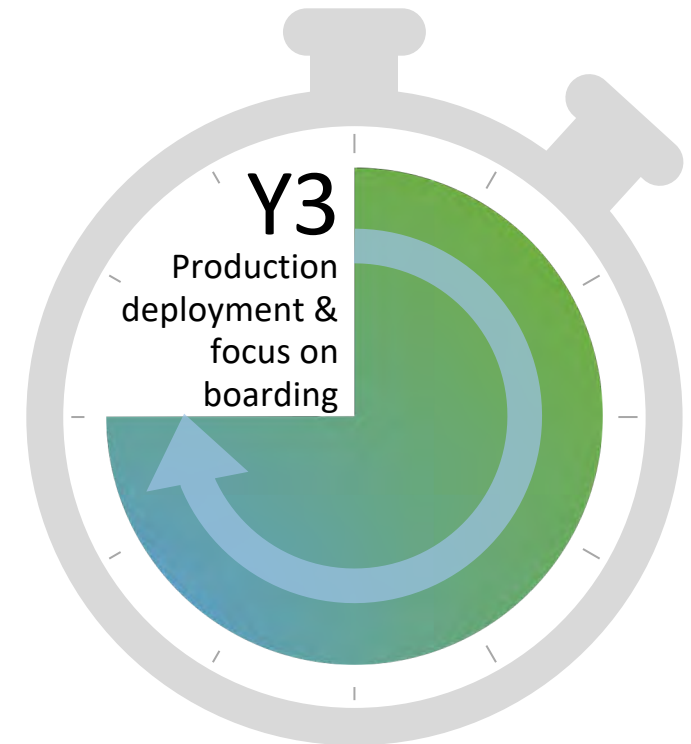
# The First Three Years



Business Workshops  
Define requirements & use cases  
Define To Be Sourcing Process



Conference Room Pilot  
Proof Of Concept Deployment  
Refine use cases & system design



User Acceptance Test  
Production Deployment  
Train Internal users  
External Supplier Training



# SRM Design Data Exchange – Business Outcomes

## Secure method of data exchange

- IP protection
- Robust & traceable process
- Eliminate FTP & Emails

## Access to latest & correct set of design data

- Improved quality
- Eliminate data inaccuracies
- Version control – save on tooling scrap & waste cycles

## Efficient methods to track suppliers and supplier data

- Objective evidence for audit purpose
- Reporting & transparency

## Early supplier involvement

- Prove out design , early identification of designs that are not feasible
- Understand cost drivers early in the process
- Accelerates product development cycle

# SRM Direct Material Sourcing - Business Outcomes

## Effectively manage supplier quotes

- Cycle time reduction
- Traceability
- Eliminate email and verbal requests for quote

## Electronic signoffs

- Global sourcing process
- Supplier transaction history & tracking report
- Supplier bid comparison
- Project award routing for cross-functional signoffs

## Track Metrics

- Part Level Target costs vs. Actual production costs
- Sourcing process response time



- ✓ Decrease new product introduction costs to meet program commitments
- ✓ Product leadership in global markets through innovative co-design and co-development with suppliers across four continents
- ✓ Realize faster time-to-market with expectation to cut product sourcing cycle times by 15 to 20 percent



THANK YOU

