

Key Enablers of a successful and profitable MBD process

Mark Nielsen

TechAzul

310-729-6275

marknielsen1@gmail.com

Key Enablers Overview

Agenda

- Digital Thread Goal
 - “We want the Digital Thread to go from Engineering all the way through our Installed Base...”

GE's Jeff Immelt on digitizing in the industrial space | McKinsey ...

- Agenda
 - The Vision
 - The Reality
 - The Solution
 - Demonstration video
 - The Next Steps

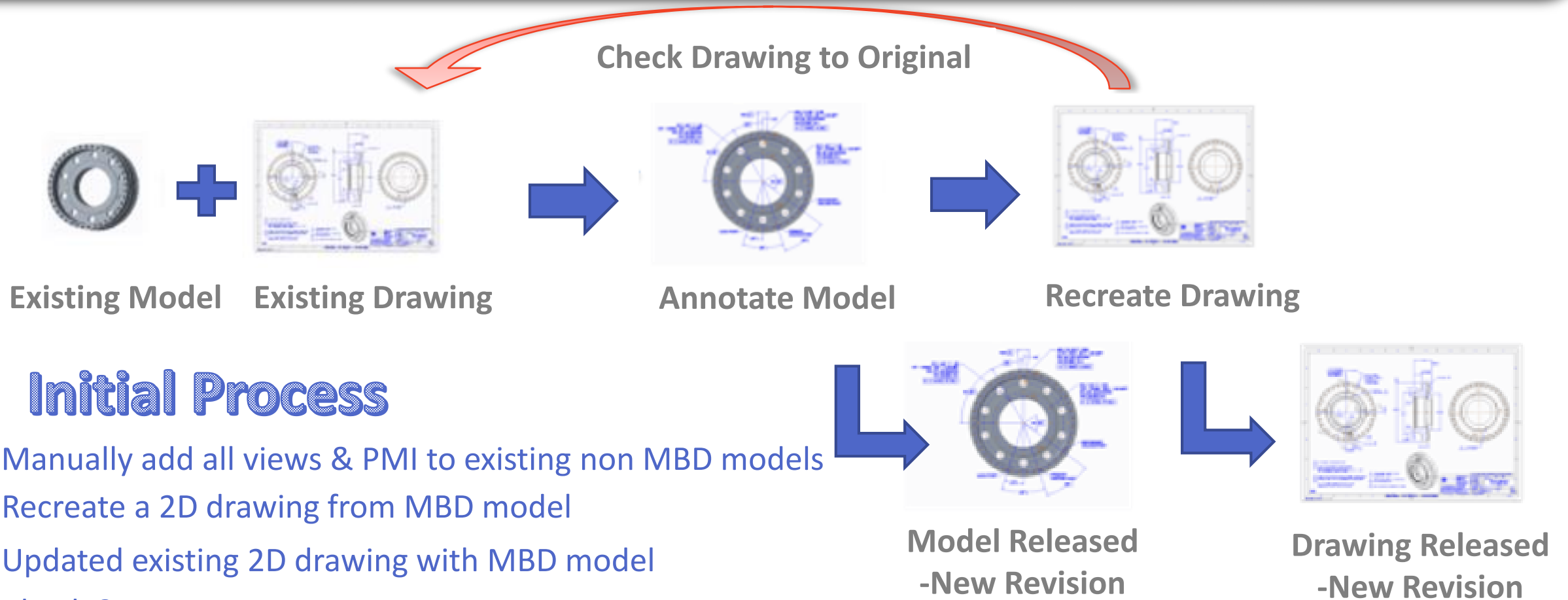




Becoming a Model Based Enterprise – Reality Starts at the Model



Legacy Process to create MBD models from Drawings



Initial Process

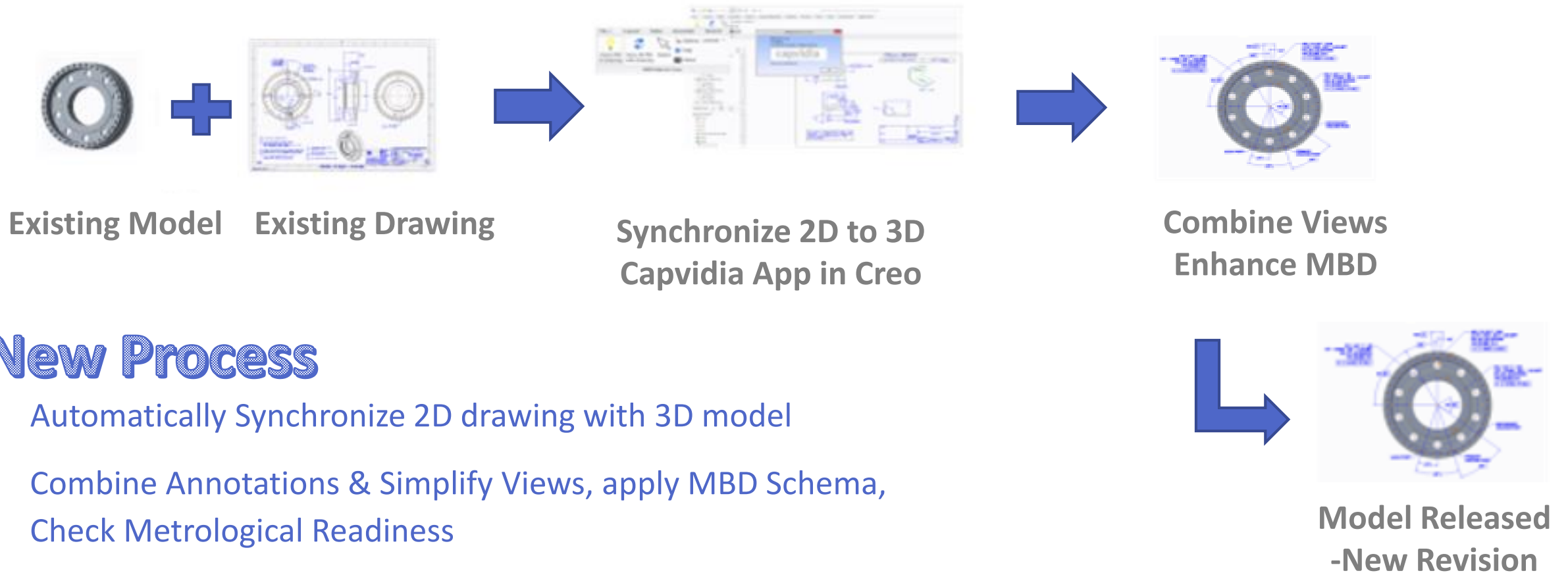
1. Manually add all views & PMI to existing non MBD models
2. Recreate a 2D drawing from MBD model
3. Updated existing 2D drawing with MBD model
4. Check & Repeat
5. Release new model & drawing (Manual)

Average Hours for Initial Process = 12 hours

Issues :

- Manual – Tedious & Time consuming
- Error Prone

New Process to create MBD models from Drawings



New Process

1. Automatically Synchronize 2D drawing with 3D model
2. Combine Annotations & Simplify Views, apply MBD Schema, Check Metrological Readiness
3. Re-release Model & Drawing

Average Hours for New Process = 1.2 hours

Automated:

- 10X Faster + Time savings
- Quality increased significantly

Return On Investment

Design

- Automated Legacy data conversion

Manufacturing

3D Models
utilized across
Manufacturing /
Supply chain

Quality

Automation
Full CMM
Utilization

*Additional features = Conversion to STEP AP 242 & QIF formats
for Manufacturing & Supplier consumption*

Benefits

1

Accelerate 3D PMI

- Automatically Synchronize 2D to 3D
- Automatically Integrate Schema
- 75% + Reduction vs. Manual

2

Improve PMI Quality

- Detect Duplicate Annotations
- Ensure Completeness
- Optimized Checking for Completeness

3

Simplify Release Process

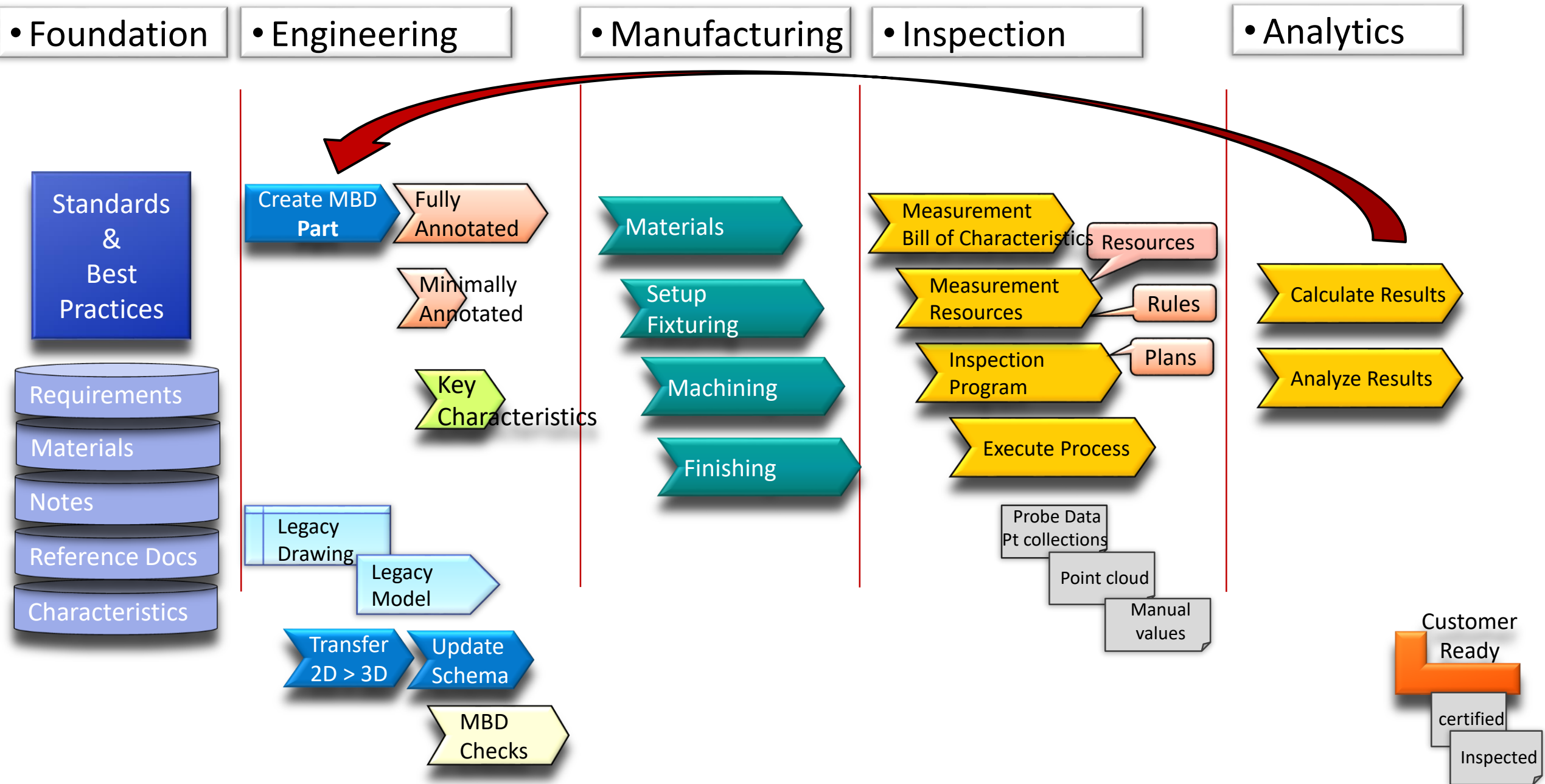
- No Need to Redo Drawings
- Simple one button application

Metrics

- 90% reduction in engineering hours
- Automated checking to legacy drawing – Zero errors

ROI: Return on Investment is less than 90 days

Getting to the End game – useable parts



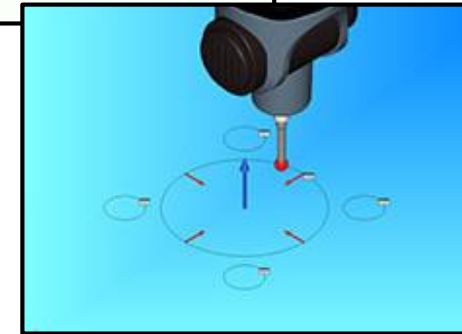
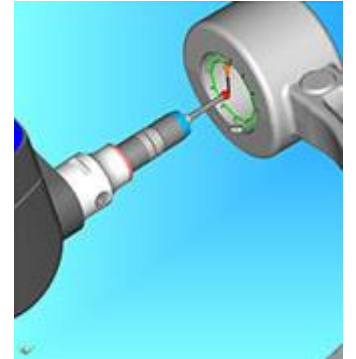
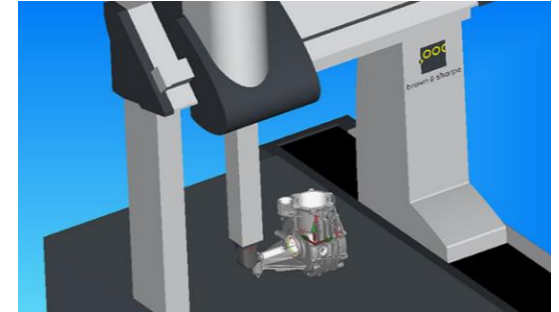
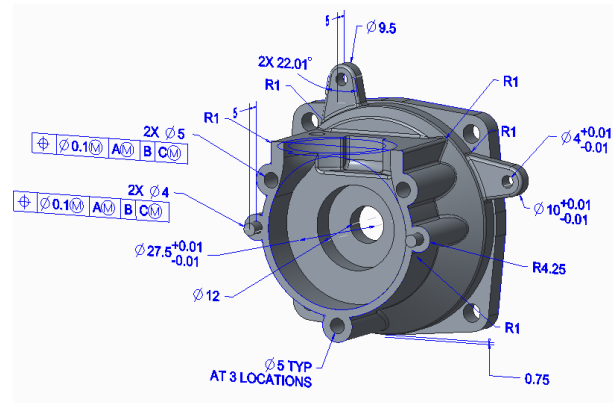
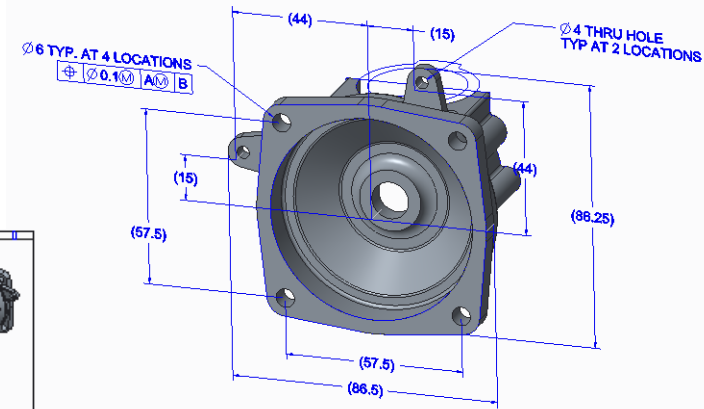
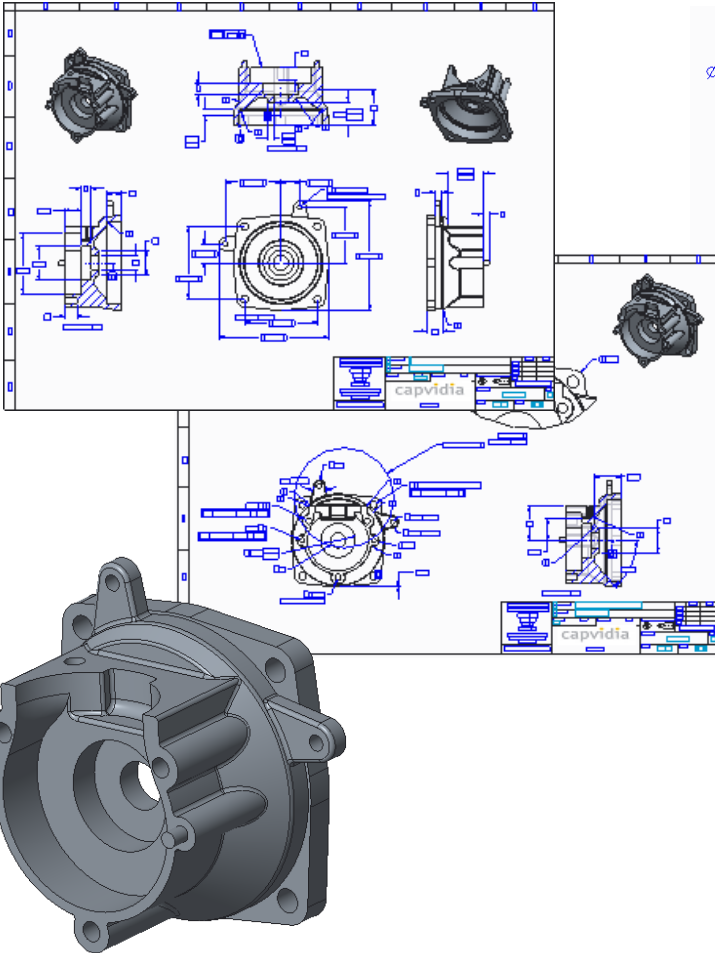
Demonstration/Video 2D drawing to CMM

2 sheet drawing & assoc model

MBD model with PMI & organized schema

Create PC-DMIS model

Execute Inspection



2D Drawing Annotations Synchronized with 3D Model





Comments,
thoughts?



Thank You