

# Cessna – A Lean Look

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**Lean Transformation Summit  
March 4-5, 2009**

## Agenda

- **Defining True North at Cessna**
- **A Historical View at Our Progression**
- **TPS Tie to Lean Leadership**

# Defining True North for Cessna

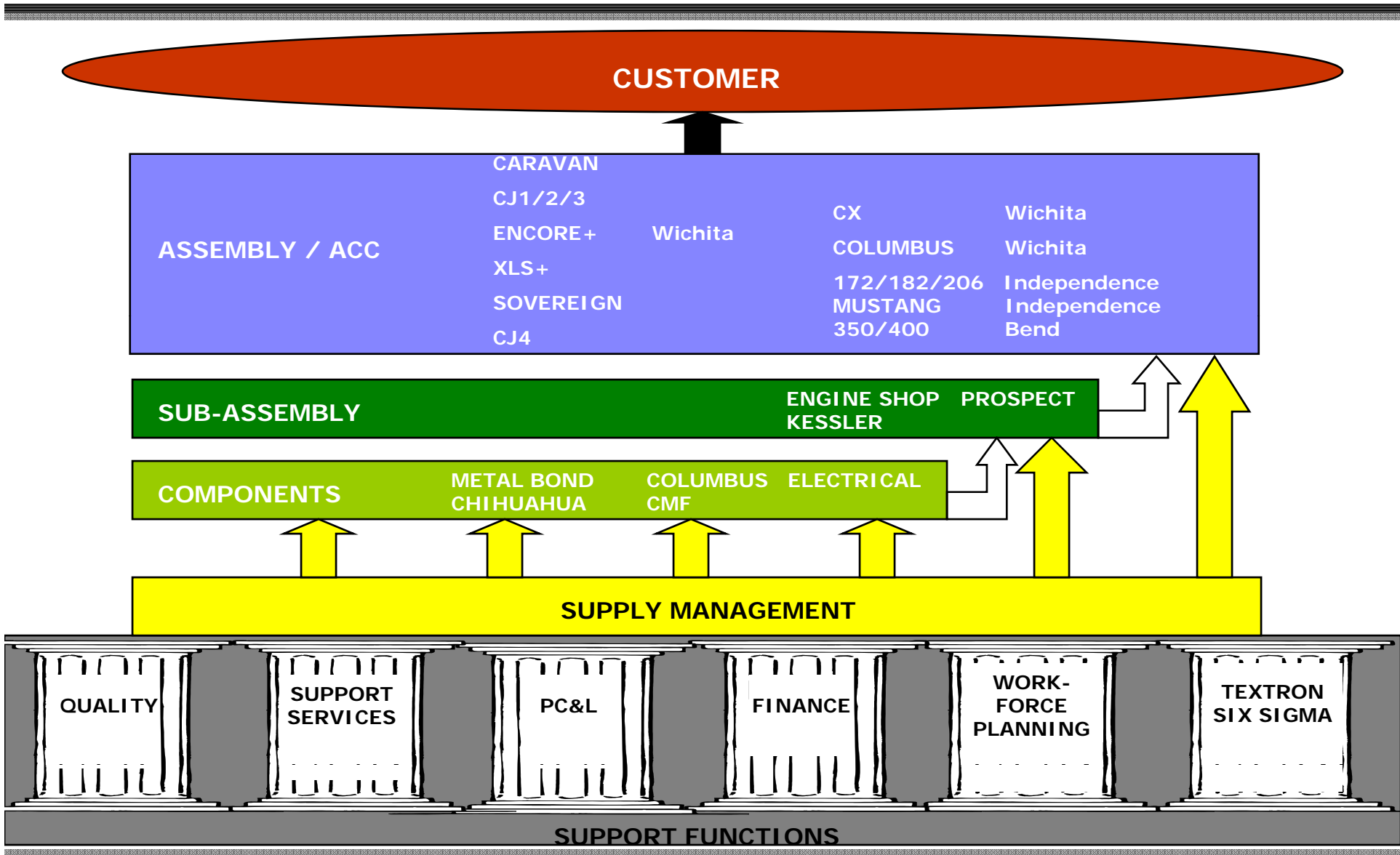
## ISC Leadership Values

- 1. Treat People with Respect and Dignity –**  
Everyone should always be treated with respect, and dignity, especially our employees
- 2. Developing People –** A leader's commitment to developing people is an expression of respect and dignity
- 3. Meeting Commitments –** Leaders must be focused on, and consistent in, meeting commitments
- 4. Continuous Improvements –** Leaders must have a passion for continuous improvement

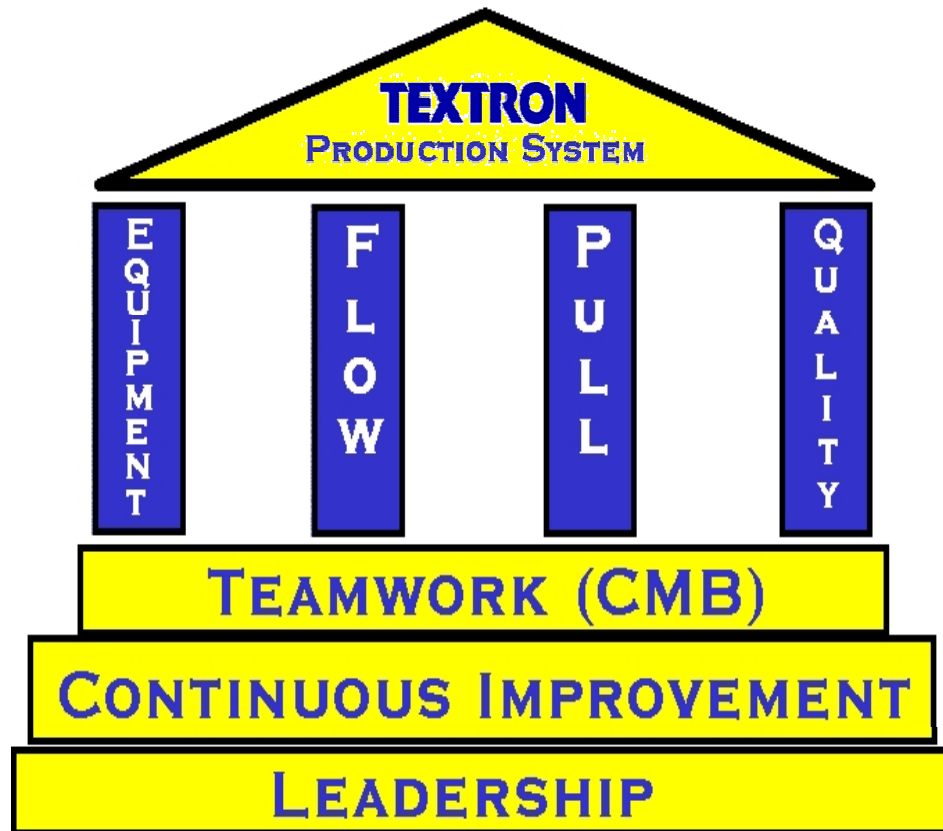
## *Cessna True North*

- **Best Customer Value**
- **Highest Quality**
- **Best Safety**
- **Most Competitive Cost**
- **Shortest Lead Time**

# Value Streams and ISC Functions



## *Driving Operational Excellence*



- **Textron Production System is:**

- The integrated lean production system by which value is created for our customers

**Leadership, Continuous Improvement, and Teamwork are foundational for sustainability of the TPS**

# A Historical View at Lean Progression at Cessna



# Historical Look

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- **Cessna's Journey**
    - **Historical – Phase 1**
      - Lean at UT (1999)
      - Textron Six Sigma (2002)
      - Shingi-jutsu (Event Based) (2003)
      - Lean Accelerator at Independence Facility (2006)
      - Lean Works (2006 – 2008)
      - ATD on the lines (2006 – onward)
      - Development of the Textron Production System (TPS) (2006 initial with continuous improvement)
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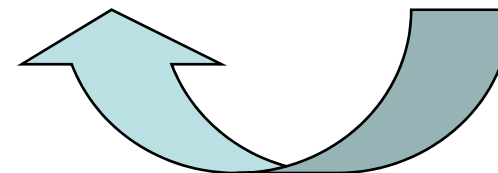
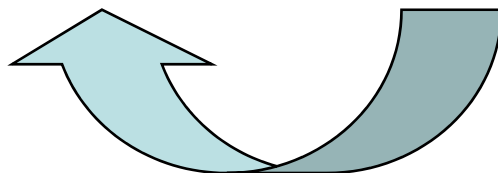
# Value Stream Journey



**CMF** (Components Manufacturing) Accelerator - (November 2007)

**MB (Metal Bond)** Accelerator – point of material constraint in the value stream (September 2007)

Started – **CJ final assembly** (August 2006)



# Initial Leadership Mindset

- **Understood**
  - Basic Lean principles
  - Basic lean activity (5S, 7 wastes, employee engagement, kaizens, etc.)
- **NOT Understood**
  - Problem solving culture
  - Permanence of the lean journey
  - Importance of standard work
  - Ownership

**Leadership mindset; The six sigma guys are going to lean out the operation.**

**Reality; We did not understand full breadth of the journey and culture change required**

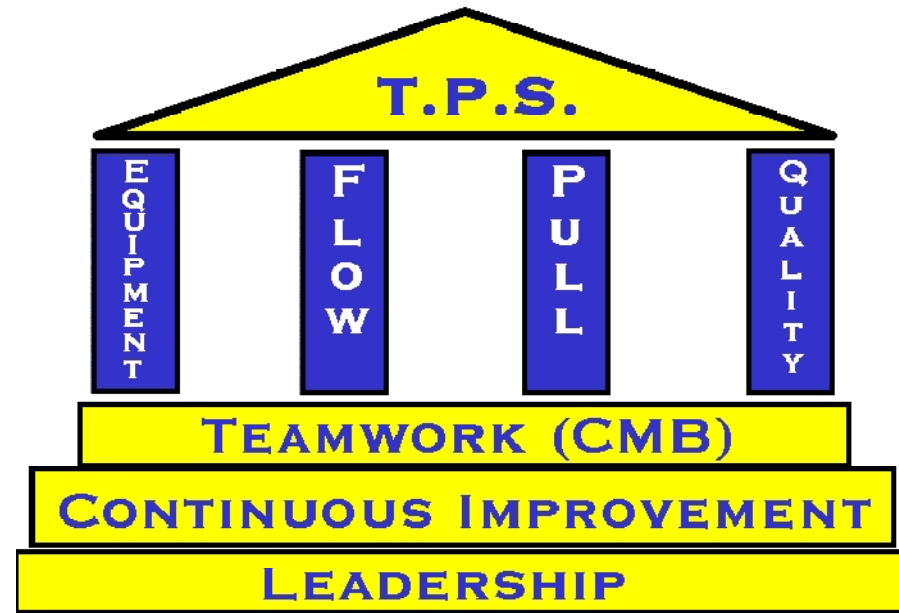
# Lean “Accelerator”

- **Deployment method**
  - Led by six sigma black belts and consultants
  - Series of events with a completion date
  - Started to look at value stream improvement
  - Area Team (natural work group) deployment
- **Plan of attack**
  - Map the value stream
  - Stabilize the schedule
  - Create flow through standard work and improved quality control
  - Establish support teams (ATD)

**Leadership mindset: Fully engaged, enthusiastic, “let’s fix it”, we’ll be finished by December.**

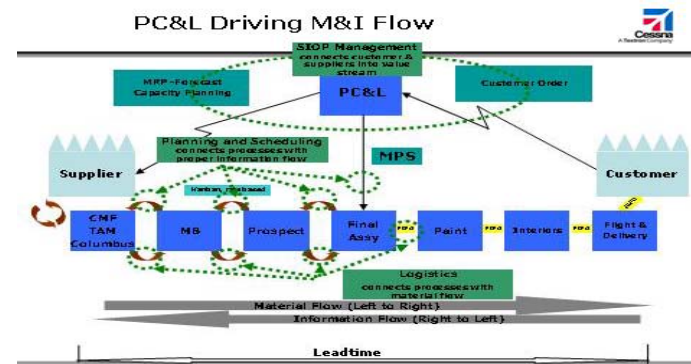
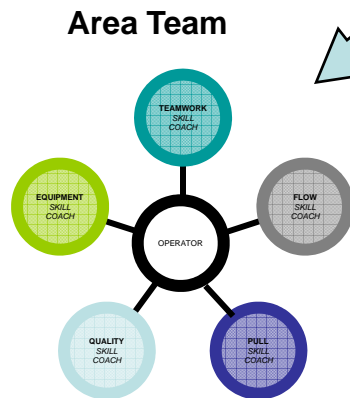
**Reality: Embarking on a never-ending problem solving journey.**

# Production System Focus



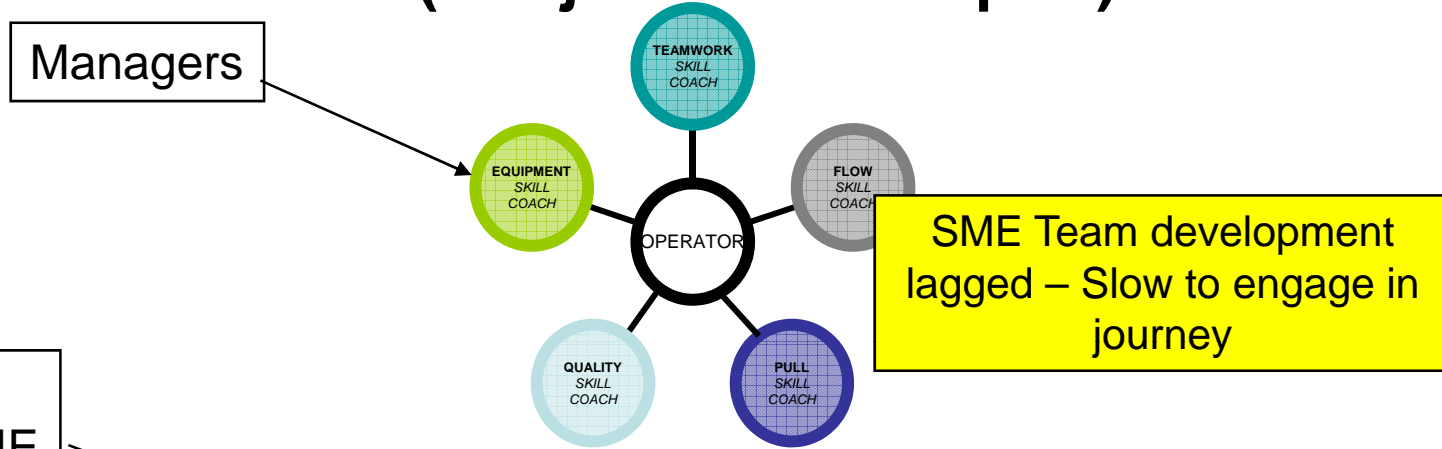
ATD = people and process capability

Material and Information Flow (M&I Flow) = Linkage/connection systems through the value stream



# Area Team Development

## SME (Subject Matter Expert) Team



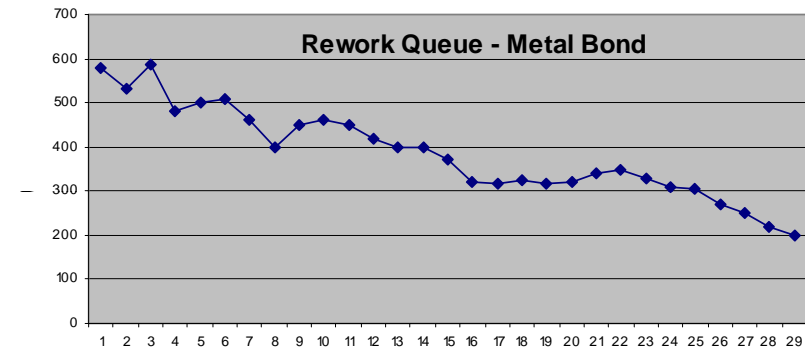
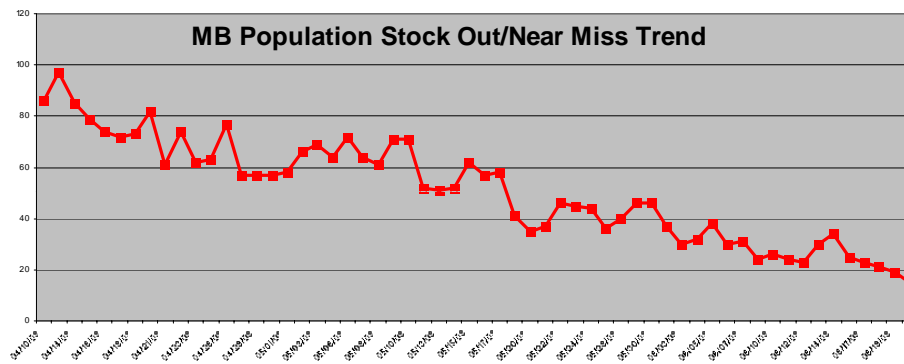
## Skill Coach Team 1   Skill Coach Team 2   Skill Coach Team 3   Skill Coach Team 4



**Leadership mindset; I need more people!**  
**Reality; Same people – different roles.**

# Results – Lessons Learned

## ■ Results positive but many starts and stops



## ■ Leadership Lessons Learned

- Black Belts can't lead or own lean  
Need to engage leadership in developing and sustaining a problem solving culture
- Not a "deployment" – that implies you finish
- Everyone must have standard work
- Check and adjust!

# Skill Coaches on ATD



## The Journey

- Improved communication and common language
- Visual signaling
- Co-location, collaboration and sharing across elements
- Breaking down barriers and removing silos
- Focus on standard work

*“It has turned a communication line into a communication circle.”*

*Shadow Williams, Primary Crew Chief*

## The Results

- Consistent method for feedback to the operators and across elements through visual signals, cadence and knowledge transfer
- No doubt as to aircraft and operator status to schedule through process metrics and flow status
- Increased engagement and development opportunities for all employees with quicker issue resolution using common tools
- Provide structure on the floor and visibility to cross training needs by identifying critical path parts and dependencies



# SMEs on ATD

## The Journey

- Open and challenging discussions
- Transformed from “in the office” to a “go see” mindset and cadence through Leadership Standard Work
- Visual signals and linkage from andon to area team to product line boards
- SMEs mentoring and coaching of each other and dedicated area teams

## The Results

- Common focus and shared accountability across elements
- Skill coaches no longer having to bring the issues to the SMEs since they are on the floor more
- Getting the signal to the right level at the right time with simple process status and metrics
- Skill Coaches solving issues with common tools that in the past they would automatically escalate

*“Improved the health measurement system of the product line so employees at every level know where they are to schedule at all times.”*

*Shawn Hawks, Product Manager / SME*

# Sr. Product Director on ATD



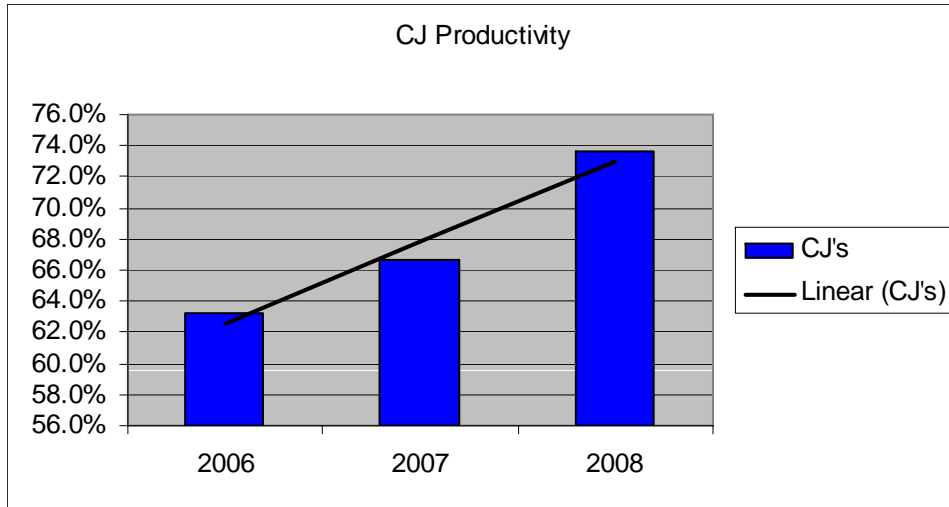
## The Journey

- Hard discussions amongst the SMEs to align to a common purpose
- Gap analysis between Operations goals and Element goals – cannot assume all are on the same page
- SME leadership standard work - modeling the right behaviors

## The Results

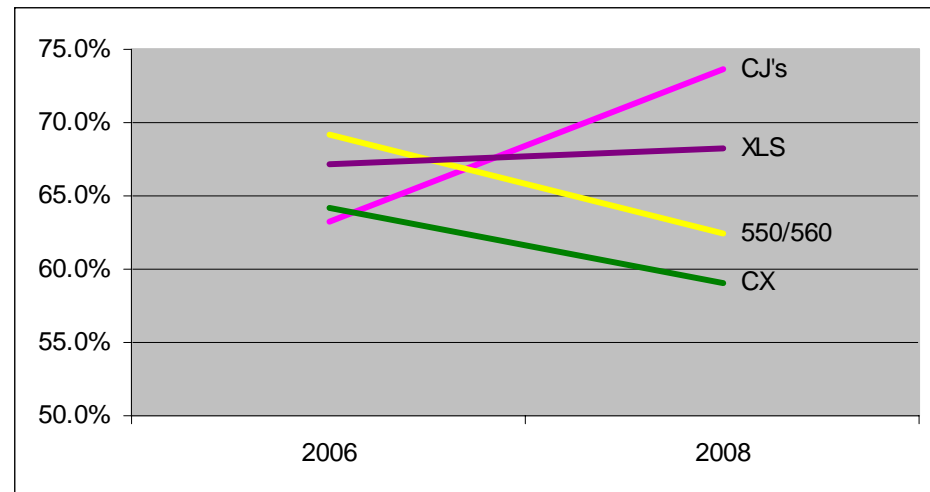
- Performance Goals for 2009 aligned through every element with process metrics of Safety, Cost, Schedule and Inventory
- Shared focus and engagement with metrics at the operator level
- Driving Skill Coaches to become better lean leaders through SME cadence

# Lean Driving Productivity in CJ (Citation Jet)

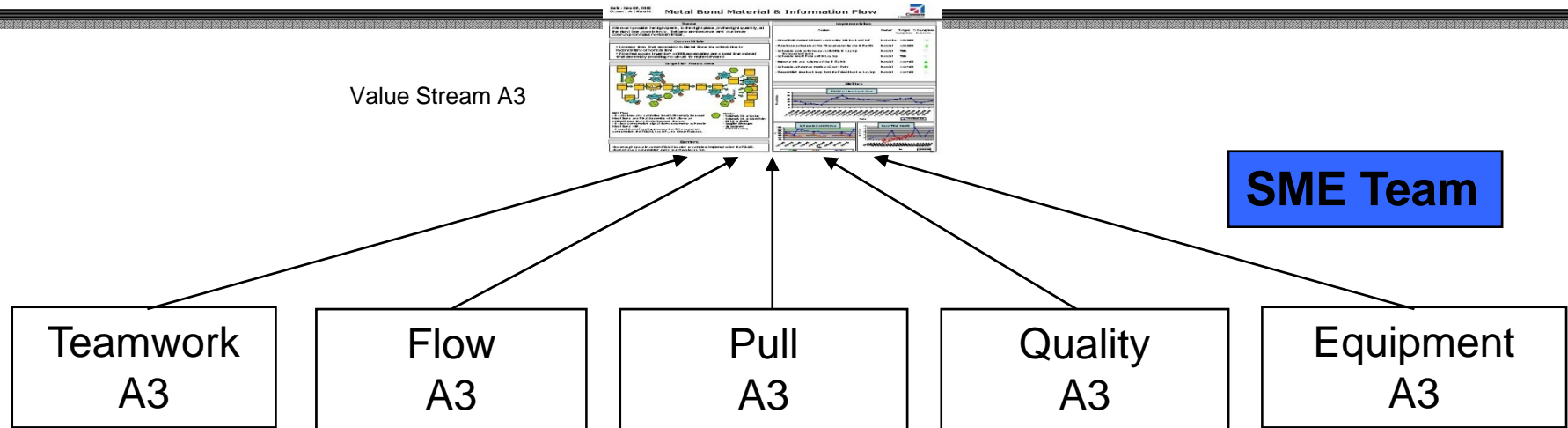


CJ (focus lean pilot area) product line productivity improvements

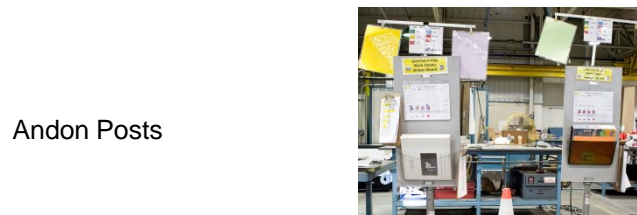
Comparison of productivity between CJ and other product lines



# Performance Management



**Skill Coach Team**



**Operators**

- Everyone needs standard performance measurements
- Leaders need to review all levels as part of standard work

# Continuing the Journey

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## ▫ Recent Past

### → LEI Partnership (Dec 2006)

→ Support integration to lean

### → Development of PC&L Organization (August 2007)

→ M&I to drive RP, RT, RQ

→ Connection systems throughout the value stream

→ Closed loop value stream leakage

→ MRP for capacity planning

→ Replenishment Systems (supermarkets, pull, rate based/repetitive schedules) for execution

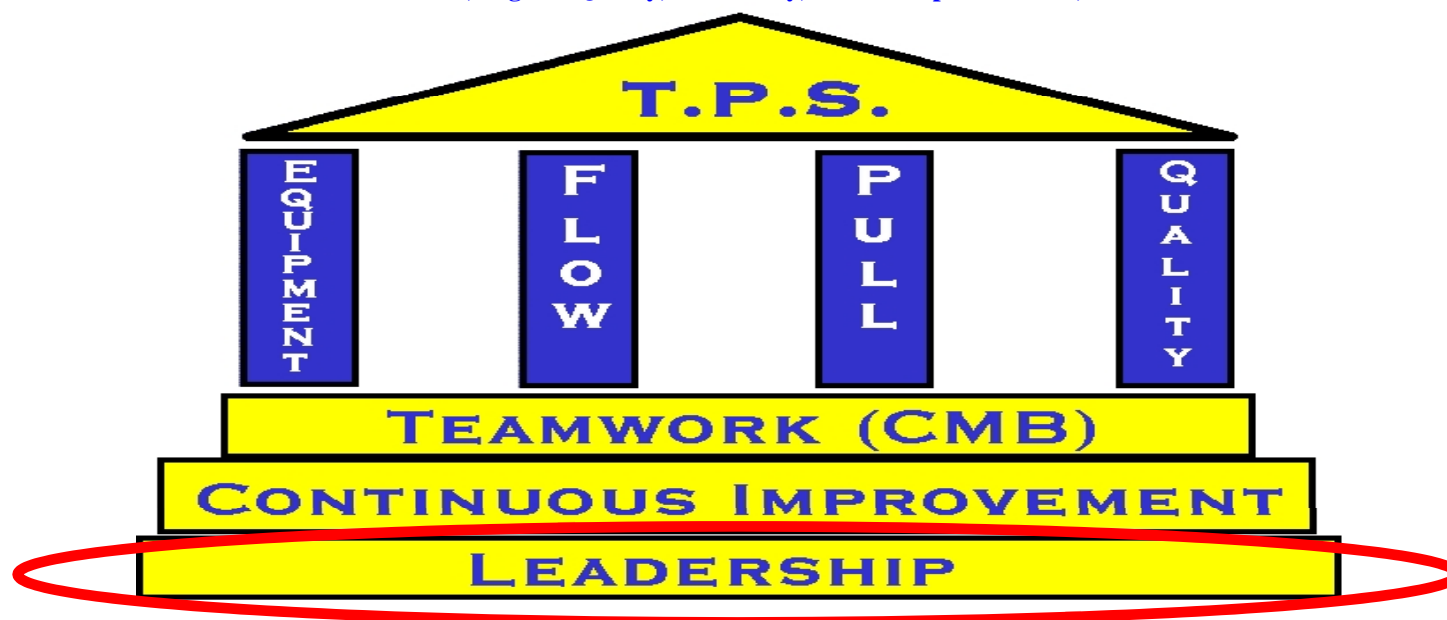
### → Development of TPS Organization (Sept. 2008)

→ Partner with ISC (Ops and PC&L) to drive a common lean approach across the value streams

# TPS Tie to Lean Leadership

# TEXTRON PRODUCTION SYSTEM

Best Customer Value, Highest Quality, Best Safety, Most Competitive Cost, Shortest Lead Time



Leadership is foundational in our lean production system model

- **Current state leadership –**
  - **Command and control (but in transition)**
  - **Manage by organizational status and power (not by influence)**
  - **Decision making with limited information available (rather than using the facts)**
  - **Not always “going to see the genba” (so assumptions are being made on what is actually happening)**



- **Future state leadership –**
  - **Go see, Ask why, Show respect**
  - **“No problem is a problem” mindset**
  - **Everyone is truly responsible for continuous improvement (it is part of everyone’s job)**
  - **Driving a “Learning Culture”**
  - **Driving Integration of Support Areas to support Lean Leadership (engineering, finance, HR, etc.)**

# Breakout Session

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## ***Learn More about Cessna's Lean Transition in the breakout session:***

- **TPS (Textron Production System) Overview (including handbook)**
- **Lean Video clips about the necessity of lean and how it is being used**
  - **Hear from our CEO and Chairman**
  - **See how we are communicating our efforts**
- **Example Lean Activities Throughout the Cessna Value Streams**
- **Question and Answer Session**