

Canyon Engineering Products



Todd Strickland

President-CEO, Canyon Engineering Products, Inc.

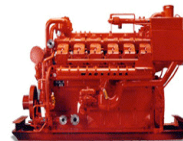
Todd Strickland has a solid technical background in engineering and manufacturing. In the days of the cold war, Todd served on board the USS Stonewall Jackson as a nuclear submariner in the engineering department. Following his service, Todd earned a degree in Mechanical Engineering from the University of Texas. Todd began his career as a manufacturing engineer where he developed a passion for manufacturing processes. Fifteen years ago, Todd accepted a position as a Sales Engineer and began his career in the Aerospace industry in the fluid control market. He became President of Canyon Engineering Products in 2001.





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November 17th, 2011



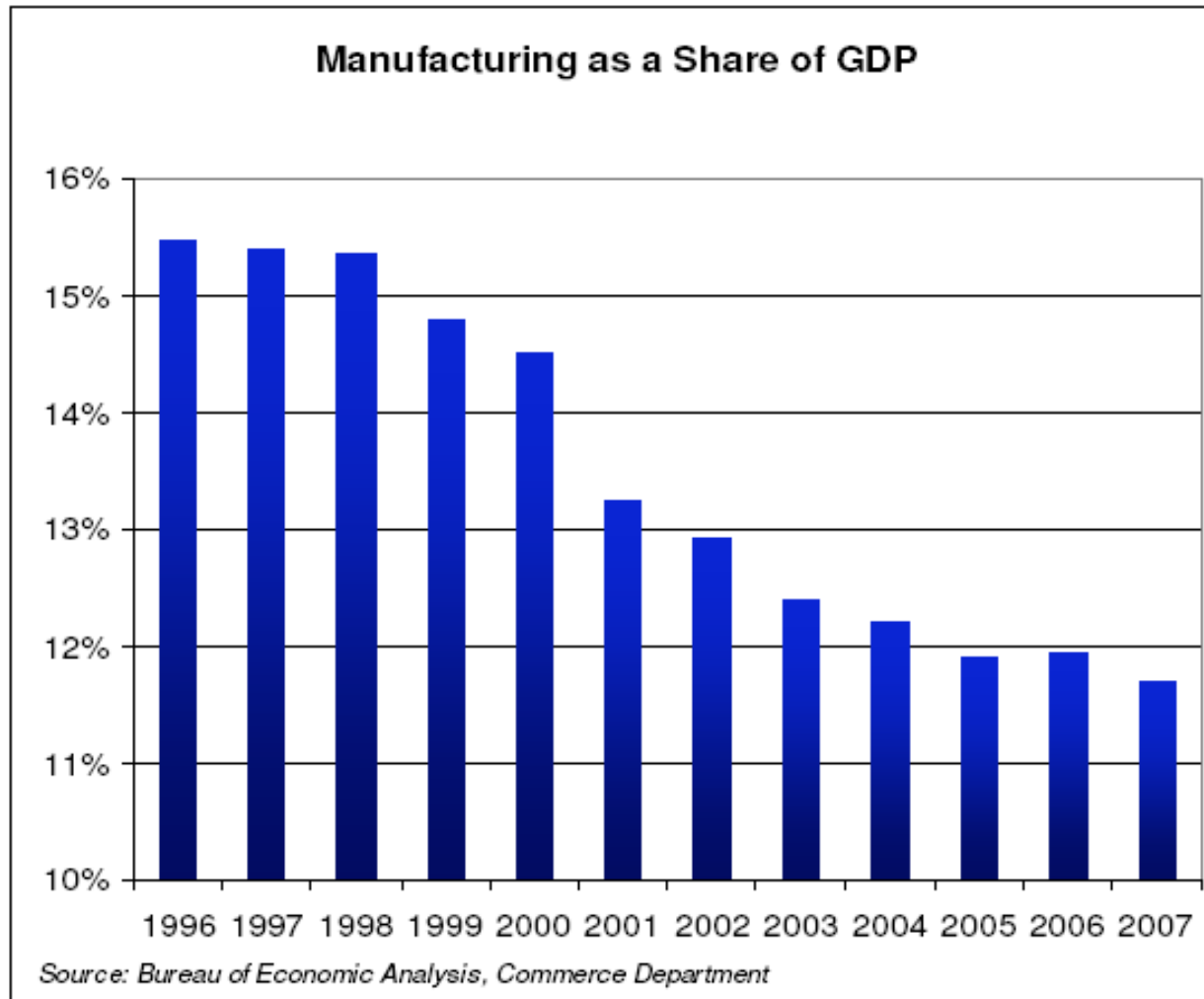
Company Overview

- Canyon Engineering Products was established in 1978
- Provides design, manufacturing, assembly and test of high-tech fluid control devices for aerospace and industrial applications
- Annual Sales \$13M
- 76 Employees

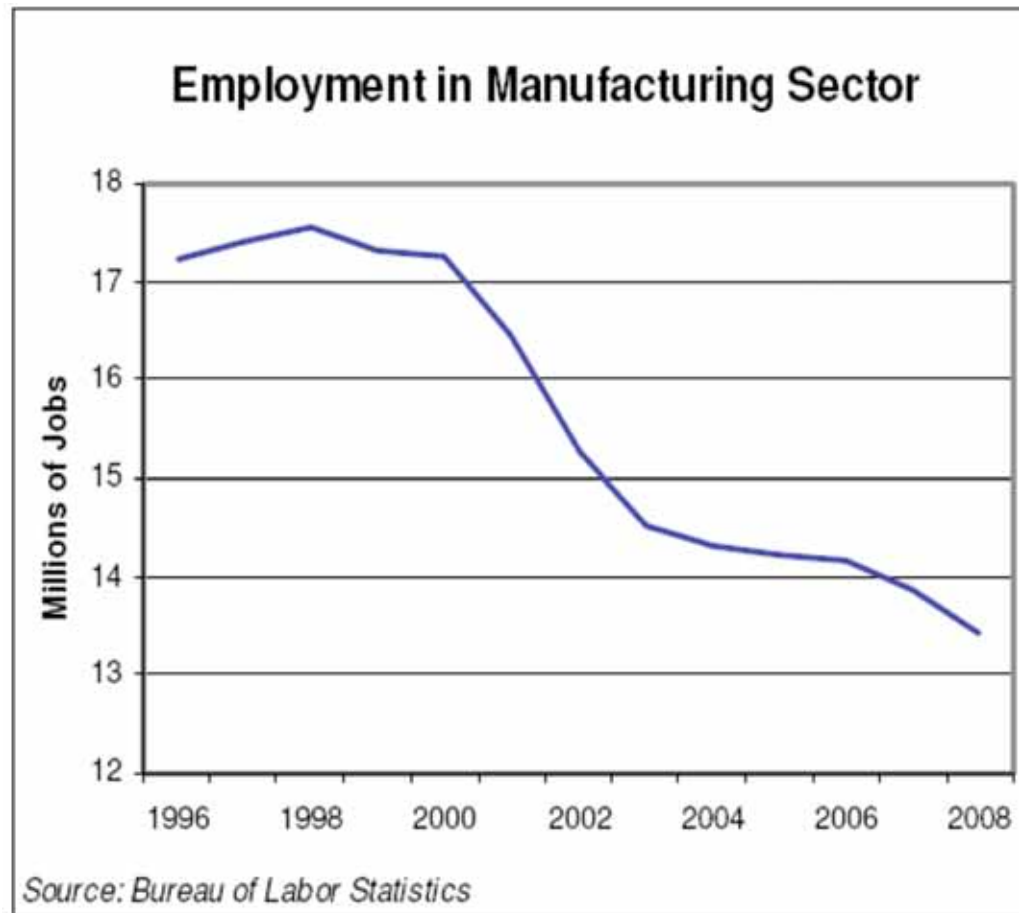
Key Customers



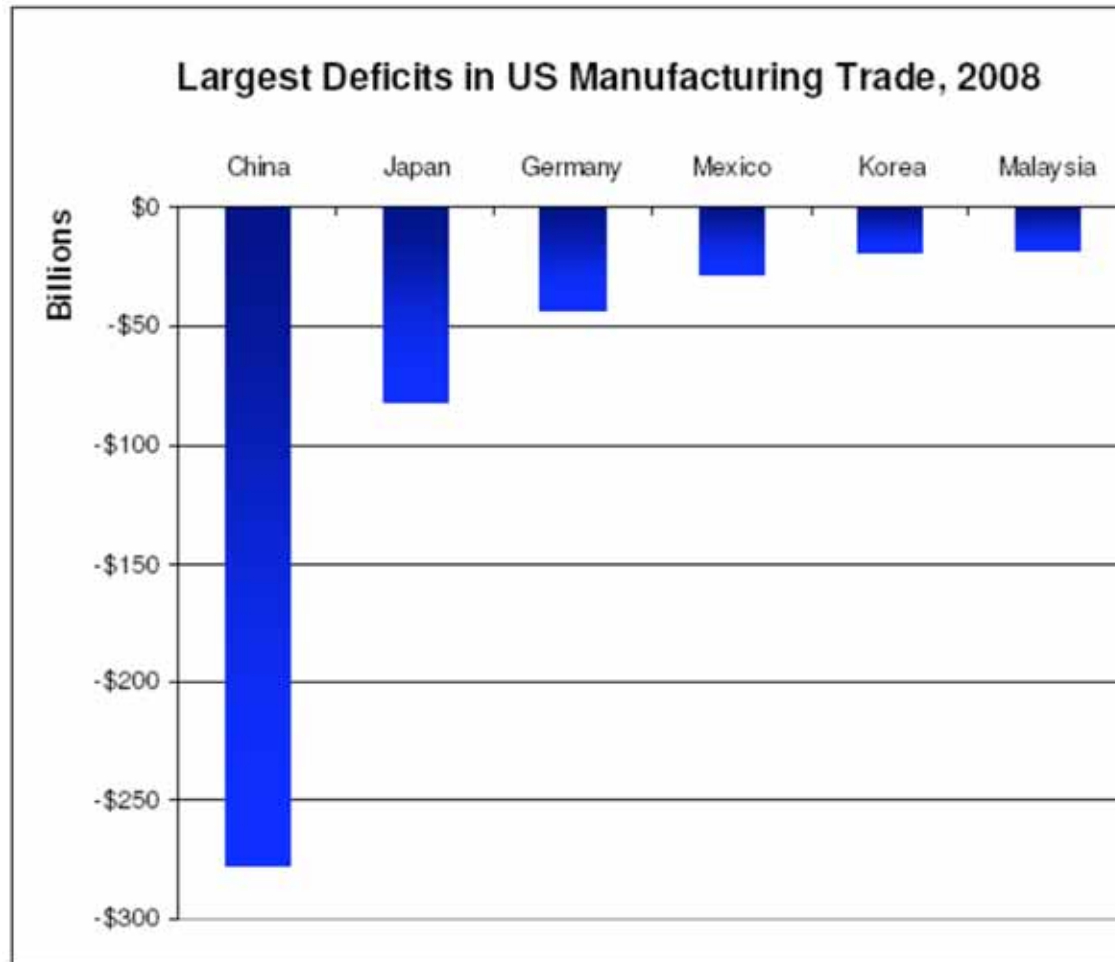
Historical Economic Trends



Manufacturing Job Trends



Trade Deficit by Country



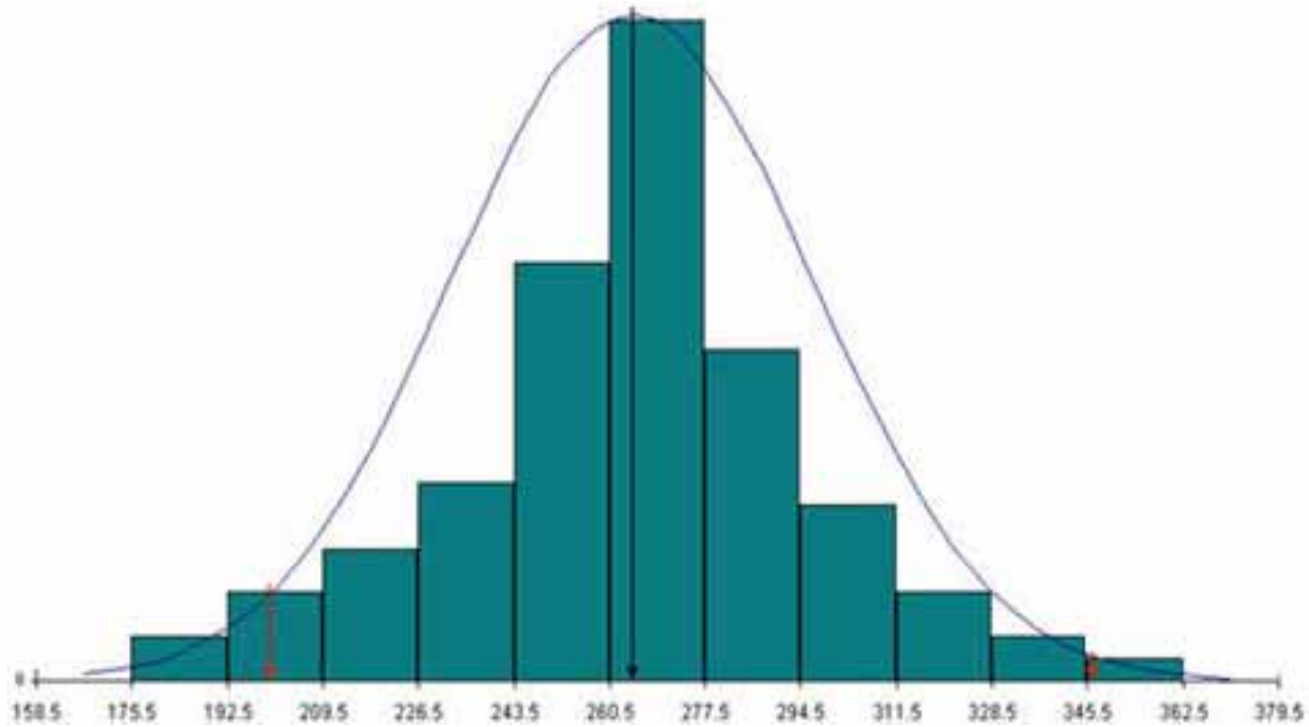
Implications of Economics

- U.S. Manufacturing is shrinking
- Jobs are going overseas
- Low cost countries are contributing more to the global manufacturing GDP
 - China 4% in 1978 to 17% in 2008
- Dramatic consolidation in supply chain
- Global competition is our new reality

Competing on a Global Scale

- Requires paradigm shift in philosophy
 - “Build Quality Into the Part”
 - AQL batch & queue method costly & wasteful
 - Major shift in ideology: Measure Process Capability vs. Inspect to Tolerance
 - Detect changes before they create problems
- Business must become more process driven

Lean Implementation



Establish Part Family

- Select family of parts
- Use common materials
- Select parts with similar run time
- Choose parts with common mfg processes

Establish Control Plan

- Control Plan is established by Tool Maker, CNC Programmer and Inspector
 - Ties how the part is being made and held to inspection plan
 - Create Tool matrix
 - Standardize tooling

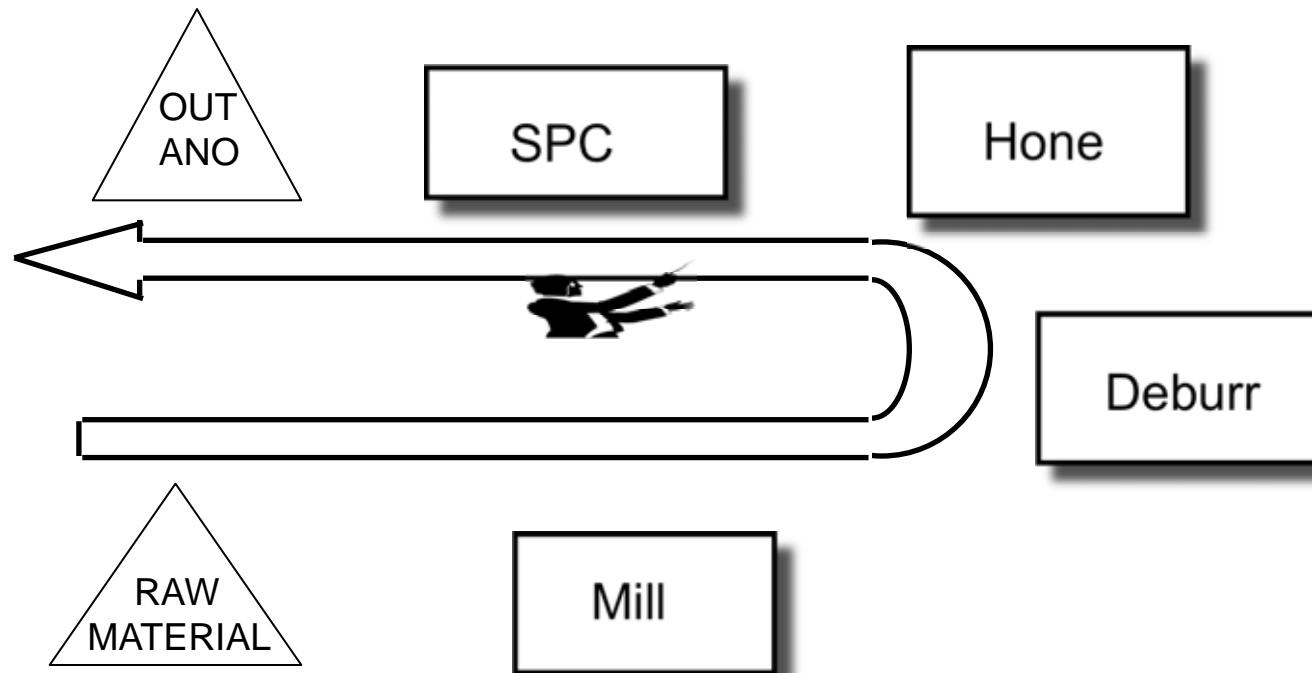
Programming

- “Run it until it breaks and back it off”
Eric Satterthwaite, Lean Solutions
- Paradigm shift for CEP
- Increased cutting speed from 500 to 1500 surface feet/minute
- Dramatic reduction in run time

Create SPC Plan

- Utilizing the CNC program, develop features to inspect
 - Minimizing number of tools touching the parts drastically reduces features being measured
 - Fundamentally, the tightest linear and diameter of each tool is measured, by default all other features are good
 - Use form tools

Cellularize



Note:

- All secondary operations completed during cycle time
- Maximum inventory in process is 3 pcs

SEA Involvement

- Webcast Series
 - Attended by all managers (12 sessions)
- Attended 3-day SEA Leader Workshop
- Created Annual Improvement Plan
- SEA Consultant: Management Planning Workshop
 - Value Stream Mapping
 - Created one year Kaizen schedule
- Assigned Process Owners
- Submitted Quarterly Report

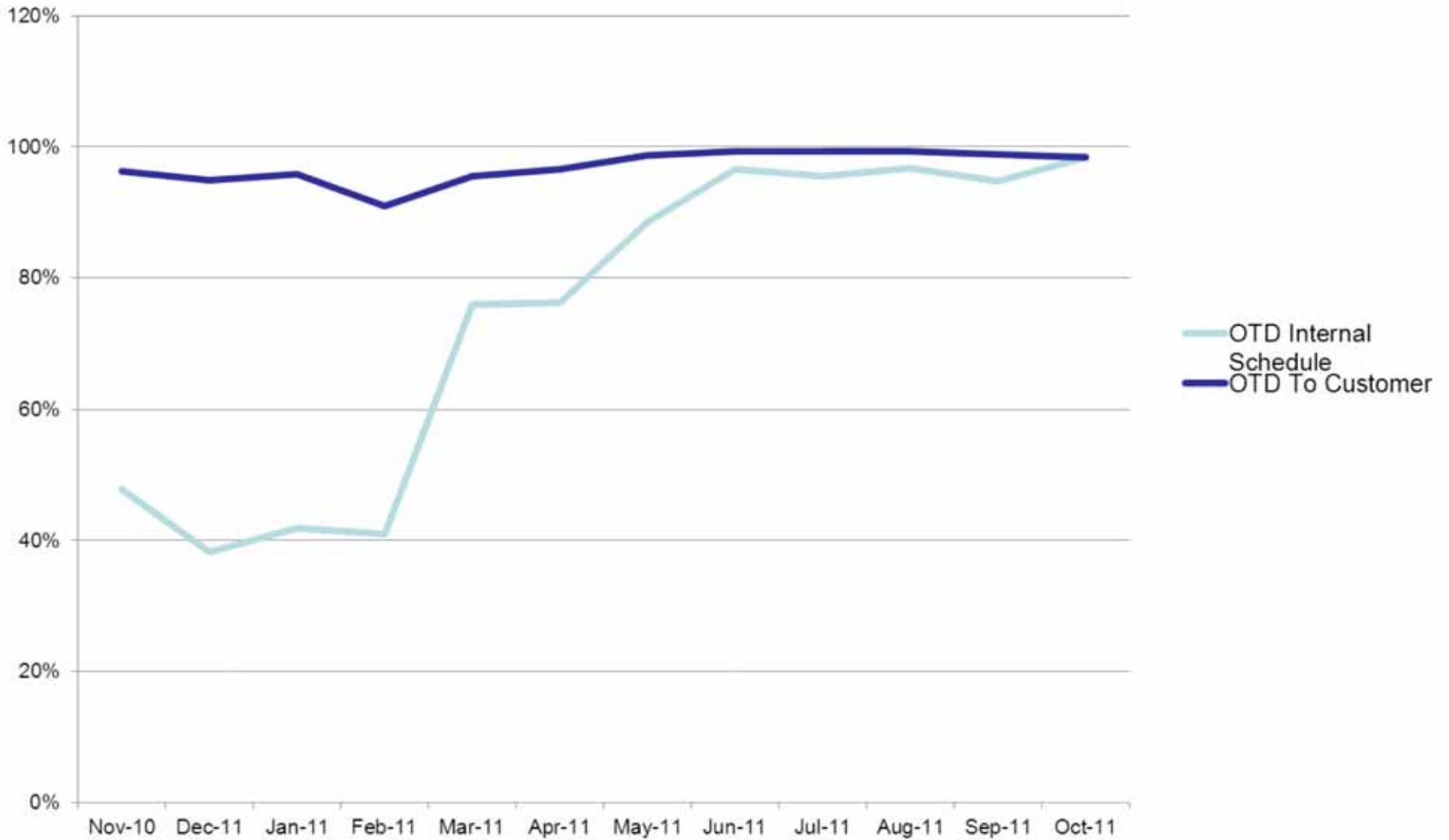
Measurable Results

	40181	40182	40701
	Hours	Hours	Hours
Set-up Time - (Prior to LEAN)	25	8	35
Set-up Time - (After LEAN)	.15	.15	0.15
Time Savings	24.85	7.85	34.85
Run Time - (Prior to LEAN)	5.0	4.2	3.16
Run Time - (After LEAN)	1.0	.75	.85
Time Savings - (25 pc. Lot)	150	86.25	57.75
AQL Inspection Time - (Prior to Lean)	7	2	5.25
AQL Inspection Time - (After Lean)	0	0	0
Time Savings	7	2	5.25
Deburr Process Time - (Prior to Lean)	1.0	1.0	1.5
Deburr Process Time - (After Lean)	0	0	0
Time Savings (25 pc. Lot)	25	25	37.5
Total Savings (25 pc. Lot)	206.85	121.10	135.35

Metrics: Cell Parts

Results	Before	After
On-time Delivery	95%	100%
Lead Time	14 Weeks	7 Days
Quality	2000 PPM	0 PPM
Cost		70% Reduction
Operators	5	1

Internal & External OTD



Instill a Culture of Trust

- Employees will always be most valuable asset
- Up to 80% of workplace errors are process oriented, not operator oriented
 - Ensuring employees understand this concept builds an environment of trust
 - Willingness to openly communicate with management without fear
- Critical to have robust processes and standard work
- Provide employees with the tools to succeed
 - Dash Boards
 - Metrics
 - Workforce Development: Training

Thank you



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