



Process Wrapped in Culture Leads PRO-TEC's Quest for Performance Excellence and Innovation

**Eric Franks
T&QA Manager**



Key Concepts

- 🔑 **Why Baldrige**
- 🔑 **Learning Opportunities**
- 🔑 **Our Company**
- 🔑 **Company Culture**
- 🔑 **Approach to Leadership**
- 🔑 **Lessons Learned**





How We Found Baldrige

Traditional Business

*Continuous
Improvement
Business
Model*

ISO and QS Sys

ISO 1



- Root Cause Analysis
- Interim Actions
- Corrective Actions
- Systematic Continuous Improvement





Where We Are Today

Continuous Improvement Business Model



- Root Cause Analysis
- Interim Actions
- Corrective Actions
- Systematic Continuous Improvement



Our Journey....

Encouragement



Networking



Benchmarking

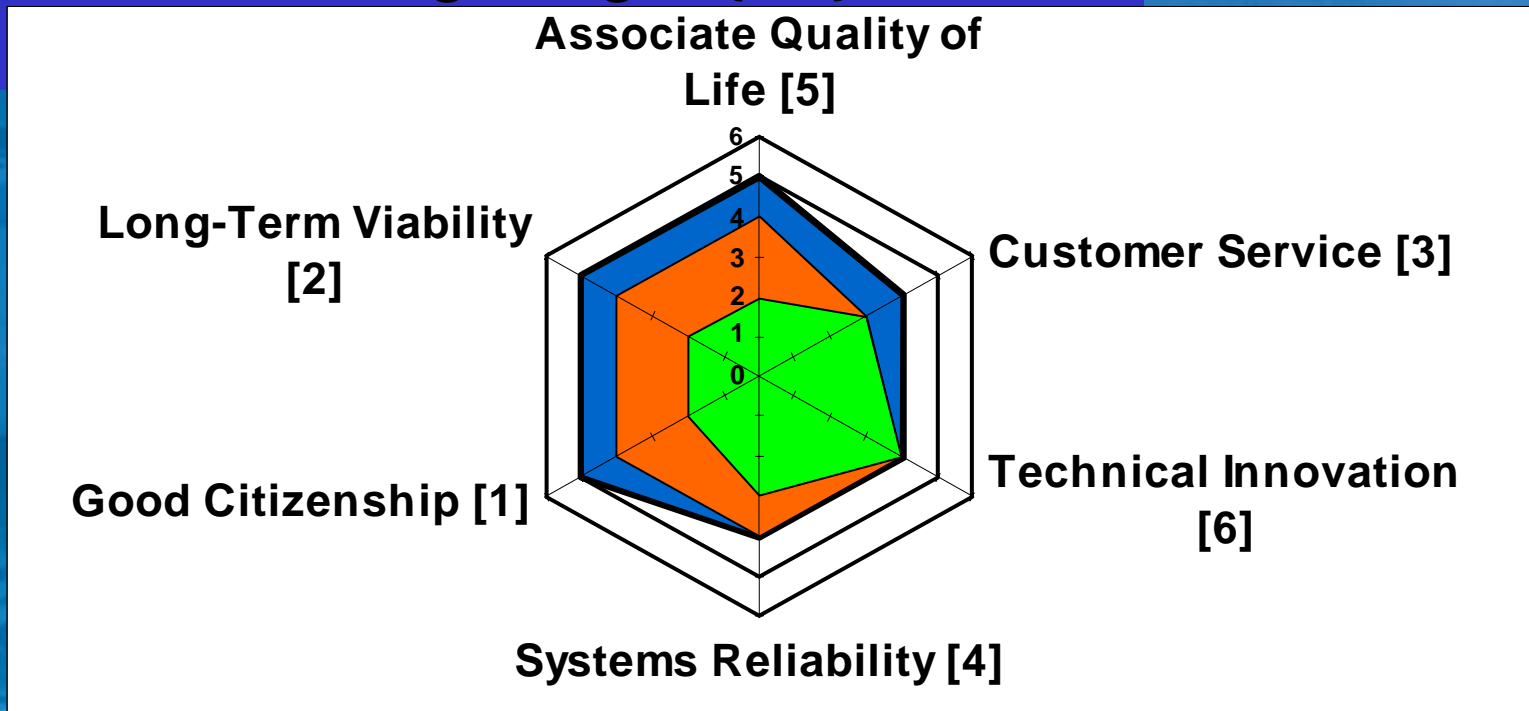


Feedback



Maturity Level – KSF [Cat.#]

- **Growth – Looking Back (green)**
- **Seeking – 1st MBNQA (orange)**
- **Innovation – BAR (blue)**
- **KEY: Criteria Scoring Ranges {1-6}**





Our Company



● Leipsic, OH

● 1990 joint venture between U. S. Steel and Kobe Steel to meet corrosion-resistant steel demand

● 1,000,000-ton capacity





Global Strategy

Participation in world's first global platform

Facility & resource investment

Continuous improvement

Social contribution

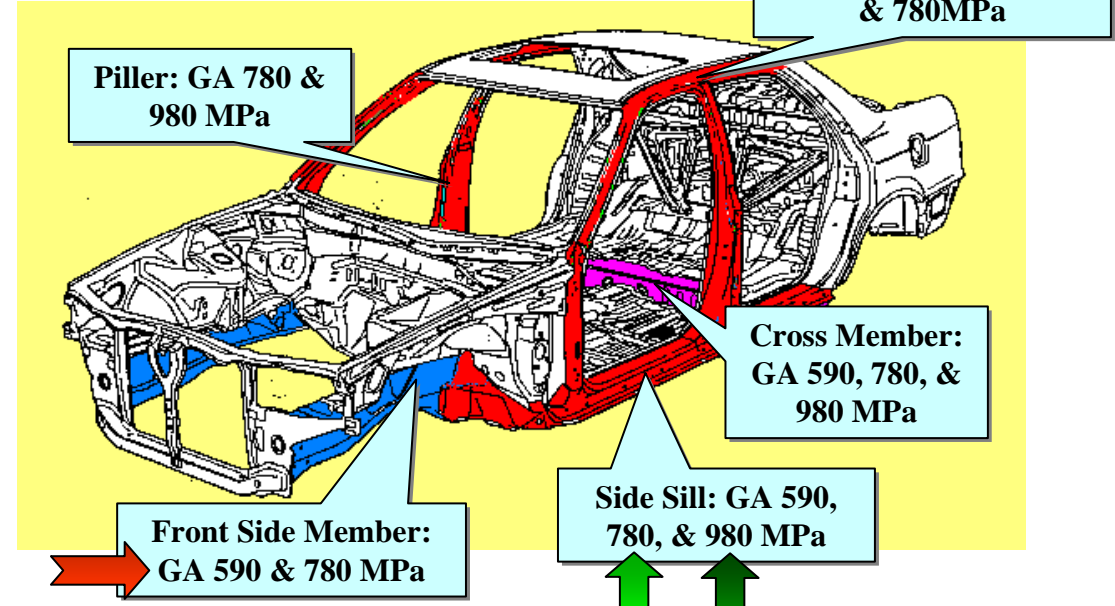
Joint development



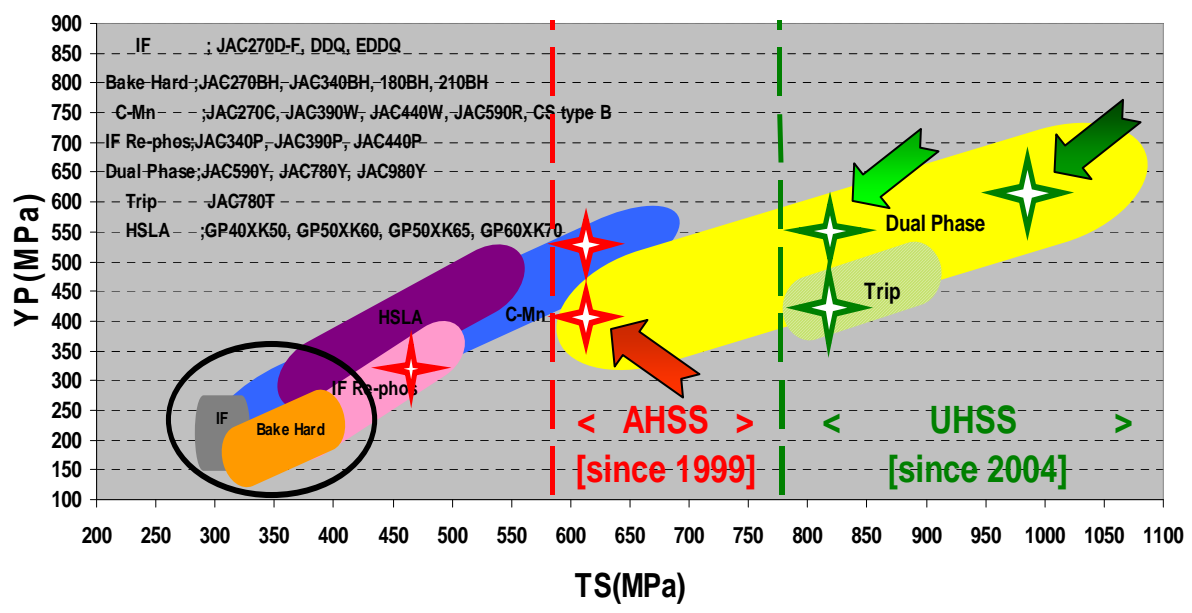


AHSS & UHSS Applications

Typical BIW Vehicle - '05 '08 Models



Generic Grade Mechanical Property



Breakthrough Innovation

7.5a2-7 - Breakthrough Innovation - Adaptive Annealing

Issue: Chemistry variation causes large variation of mechanical property



Concept: Apply different annealing cycle based on chemistry variation



Developed **adaptive annealing cycles** with chemistry ranges defined by regression equation derived from design of experiment modeling

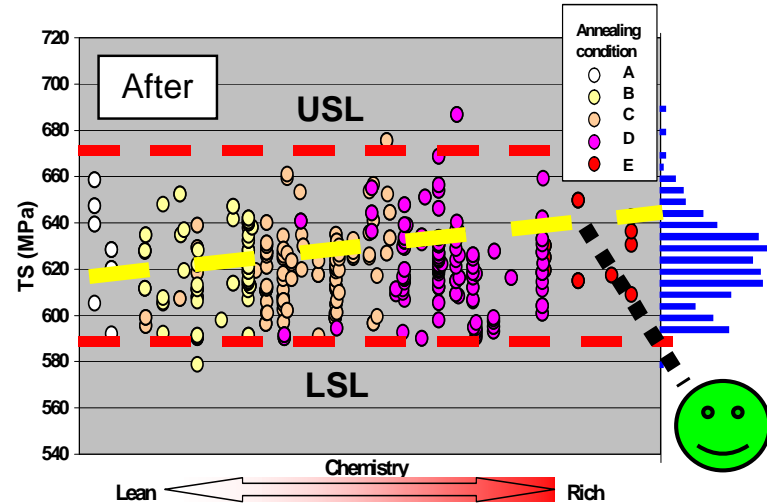
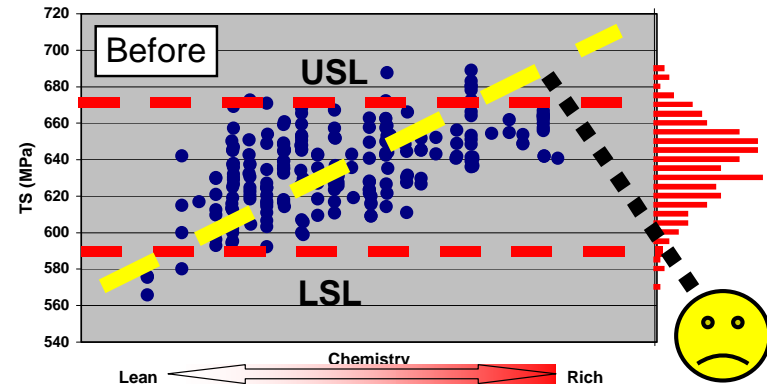
Example of Stdev. of Tensile Strength (TS) for 590Y (AHSS)

30% reduction for Standard Deviation of Tensile Strength

Before adaptive annealing: 26 Mpa

After adaptive annealing: 18 Mpa (Please see graphs)

- ➔ Improved product yield from baseline of <85% (in 2004) to ~95% (current) due to reduced material property variability
- ➔ Increased capacity to produce 590Y AHSS for new customer applications [4Q'03 2,500 t/mo.>>1Q'07 14,000 tons/mo.]
- ➔ Replicated approach to 2nd coating line and shared concept with Parents & USS-HDG. Now in 5th cycle of refinement, using same approach with each new product development.





Next Challenge: Generation of Coating Line Automation Pre-Set Values



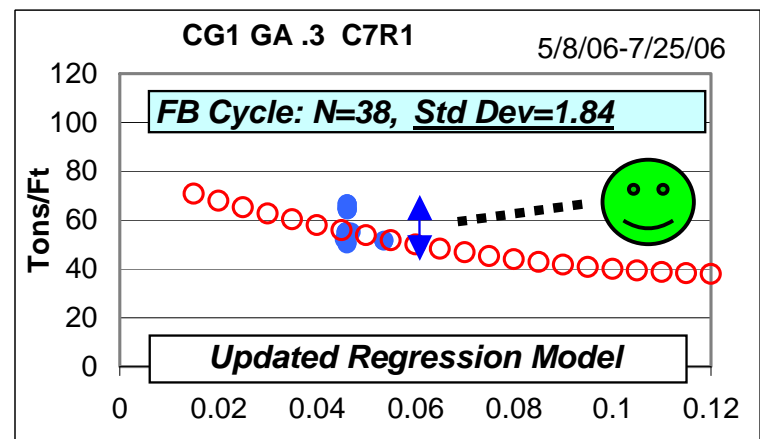
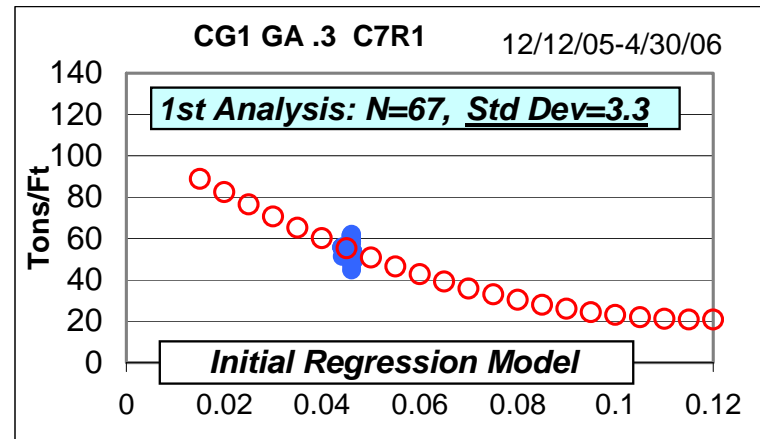
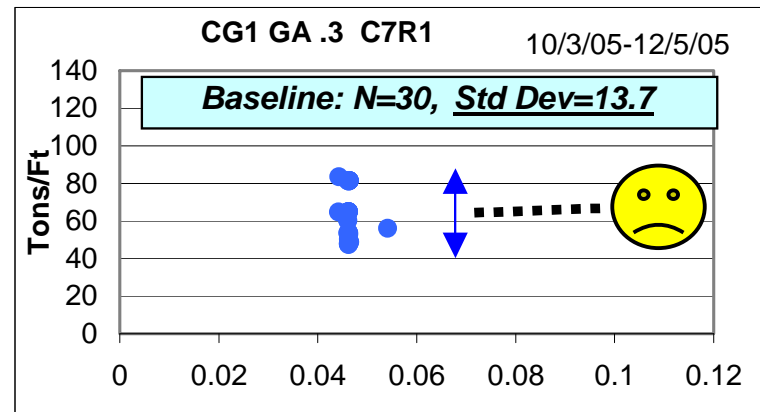
7.5a2-6 - Breakthrough Innovation - SPC of Temper Mill Roll Force (Technical Innovation & Product Development)

Issue:
The proliferation of annealing cycles due to the development of AHSS made accurate generation of pre-set values increasingly difficult.

- Goals:**
- 1) Decrease the effort required to maintain current pre-set tables
 - 2) Increase the accuracy of values generated for temper rolling
 - 3) Decrease variability in finished product
 - 4) Provide a model to drive CI in other processes

- Results:**
- 1) Replaced look-up tables (about 14,000 lines of code) with regression models (about 1,500)
 - 2) With only original analysis and one feedback cycle:
 - Reduced Stdev by avg. of 60%
 - Increased R² by avg. of 245%
 - 3) Created toolkit to update regression equations without the need to re-do the analysis

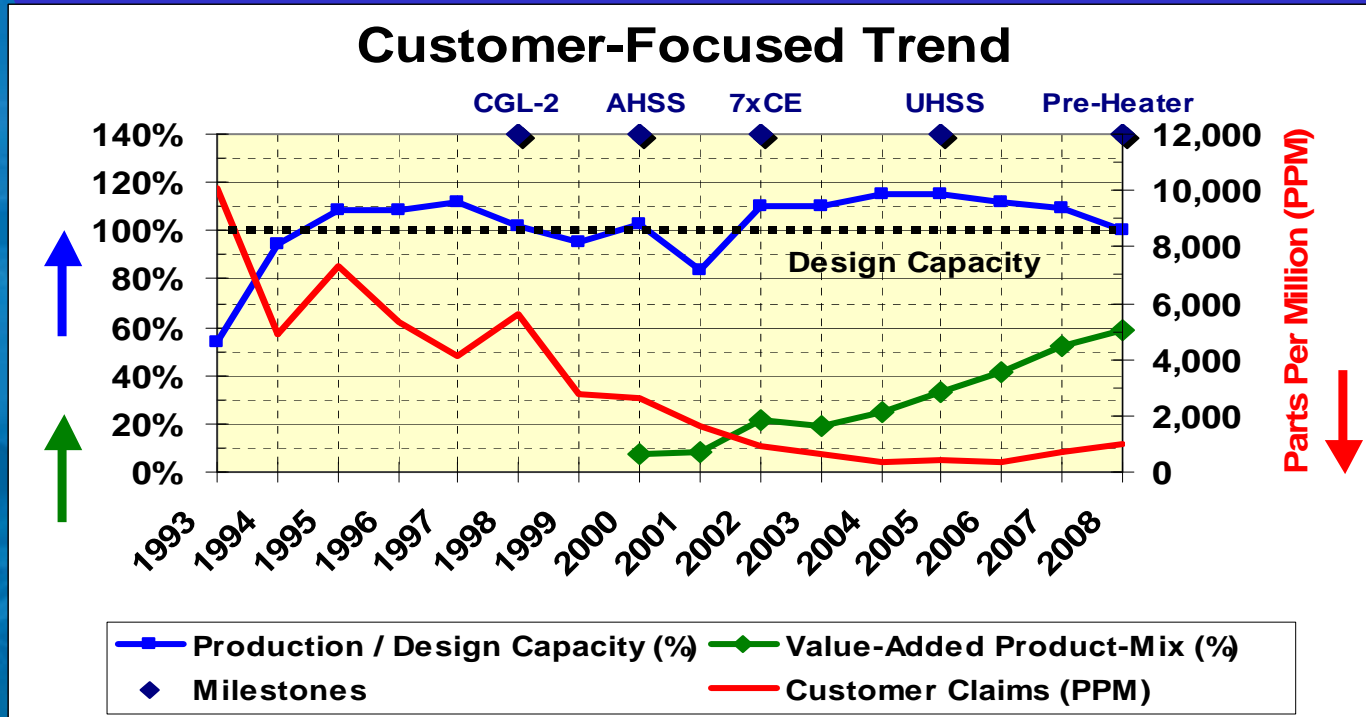
Outcomes:
Applied approach to all anneal cycles, replicated to 2nd coating line, and shared concept with Parents & USS-HDG Partners.





Customer-Focused Trend

- Reliable Operations (*blue*)
- Improving Quality (*red*)
- Making Difficult Stuff (*green*)

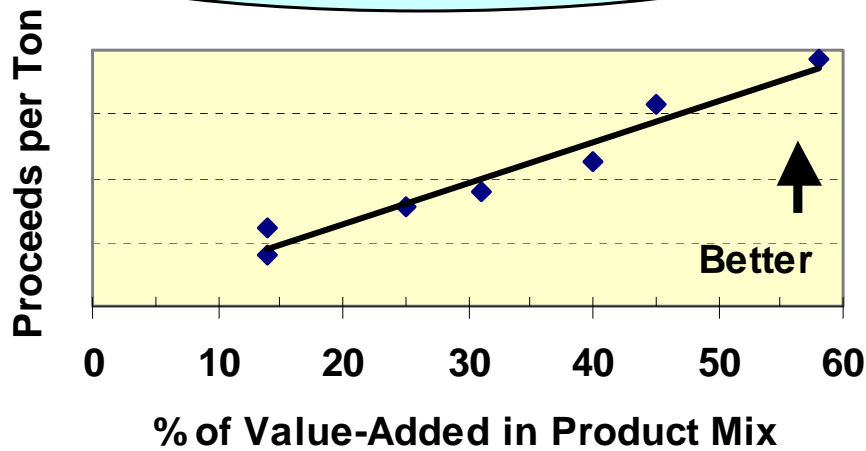




Contributing to a Sustainable Competitive Advantage

Figure 7.1a1-4 - Relationship of Value-Added Growth to Improved Proceeds
(Technical Innovation & Product Dev.)

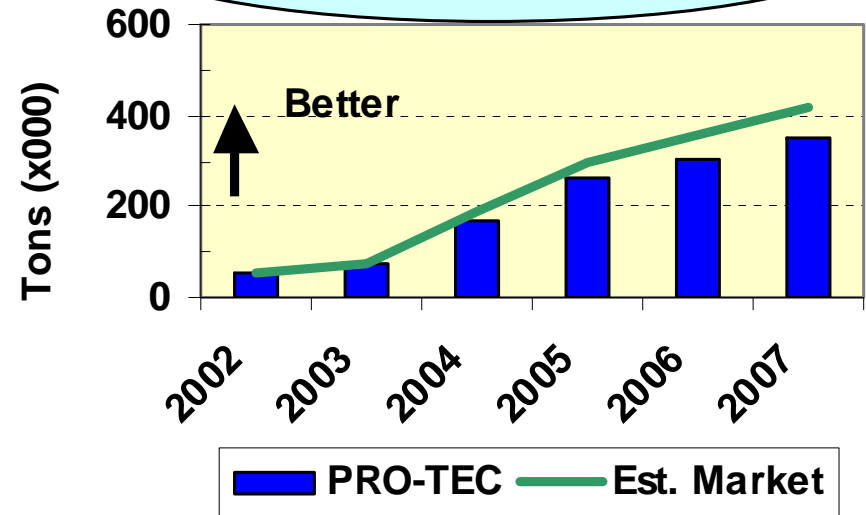
Positive Trend Regarding Value-Added Differentiation!



◆ V-A vs. Proceeds — Correlation

Figure 7.1a1-5 - PRO-TEC Share of U.S. HDG Market for AHSS Production
(Technical Innovation & Product Dev.)

Industry Leader Since Inception of AHSS in 1999!



■ PRO-TEC — Est. Market





Our Culture

ORA
ownership responsibility accountability

- **Self-directed work teams**
- **All Associates are salaried**
- **Promotions occur from within**





Our Mission

To foster human potential, a spirit of cooperation, and technical innovation for the betterment of our industry, Associates, and community.



Vision

BE

- Totally committed to personal safety and wellness.
- Recognized as industry technology leader in both product and process.
- Consistently profitable.

DO

- Provide on-time delivery with world-class quality.
- Develop/maintain world-class facility and business systems.
- Maintain high standard for community citizenship and service.

HAVE

- A highly skilled, engaged workforce committed to ongoing performance excellence.
- Optimal utilization of production capacity and capability.
- Valuable vendor/supplier relationships.



Core Values

Integrity

We abide by the highest standard of moral and ethical behavior.

Honesty

There is truth in our words and sincerity in our actions.

Willingness to Serve

We feel a duty to help others and to mentor.

Effective Communicator

We want to understand first and then strive to be understood.

Humility

We are confident and humble.

Trust

Our stakeholders can rely on us to do the right thing.

Respect

We appreciate the strength of individuals and value diversity.



Concept of Boundaries

Provide
basis to make
decisions

Freedom to
be self-
directed

Freedom to
be
innovative

Freedom to
grow



“Processes Wrapped in Culture” ensures quality by establishing broad boundaries within which our Associates are free to practice ORA and Innovate!

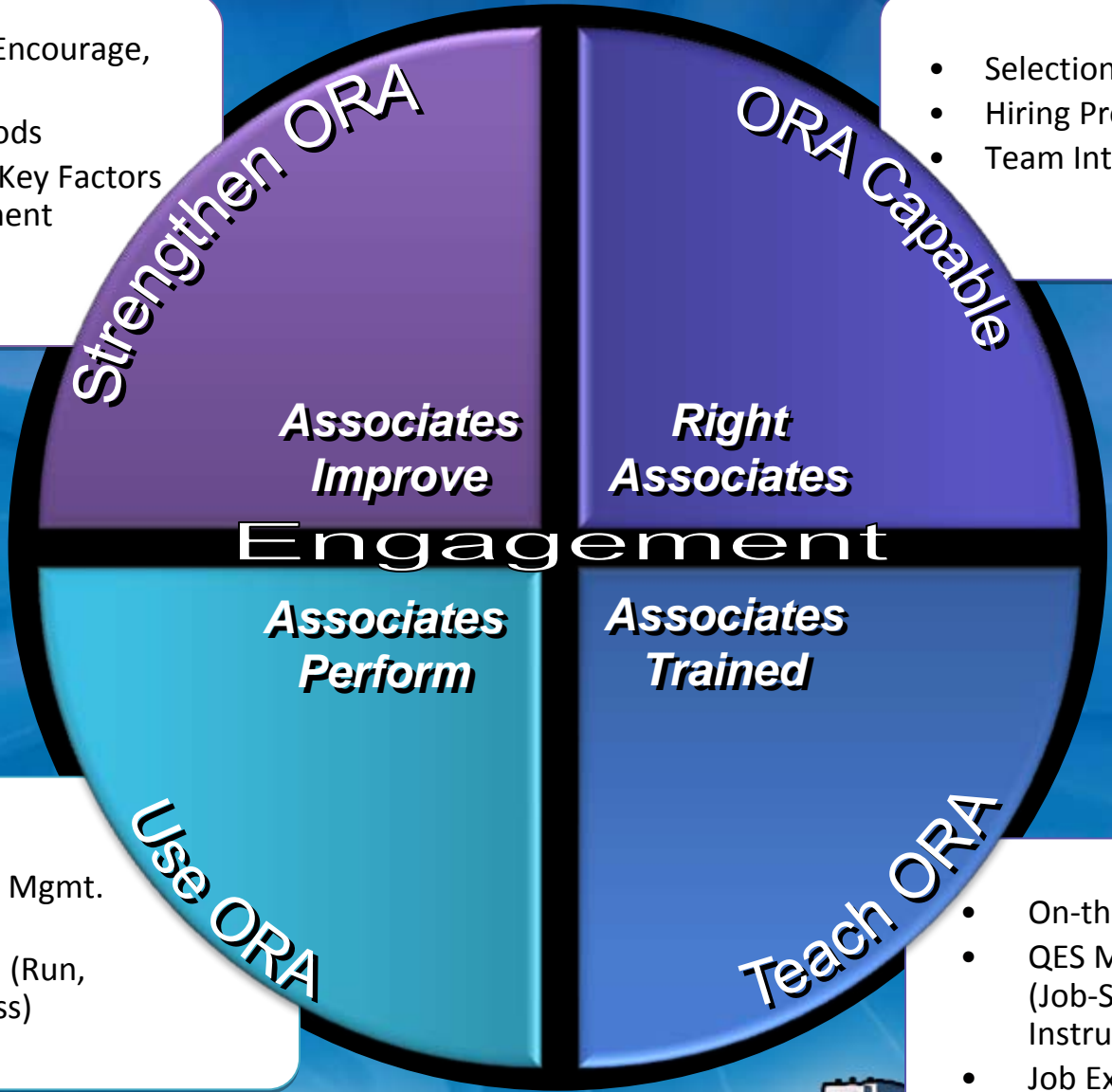


Culture Map



- Reinforce, Encourage, Reconstruct
- I-to-I Methods
- Determine Key Factors of Engagement

- Selection Criteria
- Hiring Process
- Team Interviews



- Resource Experts (Lifelines)
- Goals/Performance Mgmt. System
- Balanced Scorecard (Run, Change-the-Business)
- Work the Plan

- On-the-Job Training
- QES Mgmt. System (Job-Specific Work Instructions)
- Job Expectations





Everyone Is a Leader

Leadership
is safety

Leadership
is service

Leadership
is trust



ownership
ORA
responsibility
accountability

PRO-TEC
COATING COMPANY






Leadership System



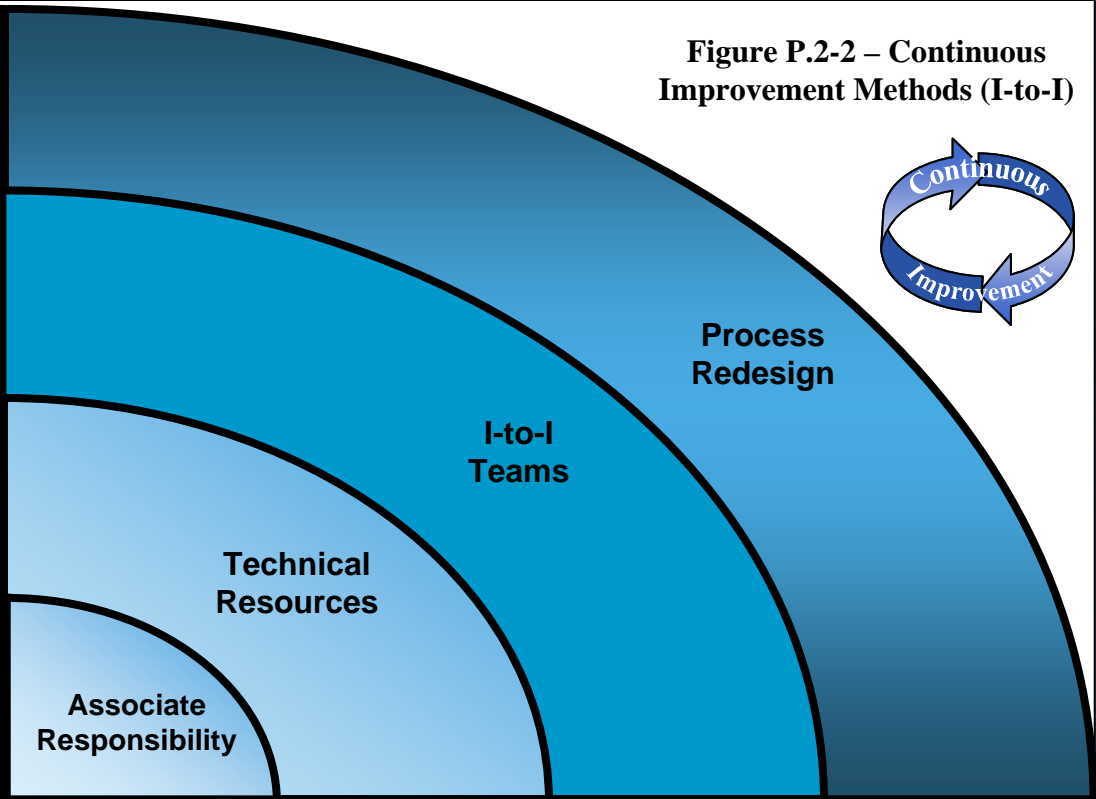


Figure P.2-2 – Continuous Improvement Methods (I-to-I)


 (see Area to Address 1.1 for description of this symbol)



+ Complexity -



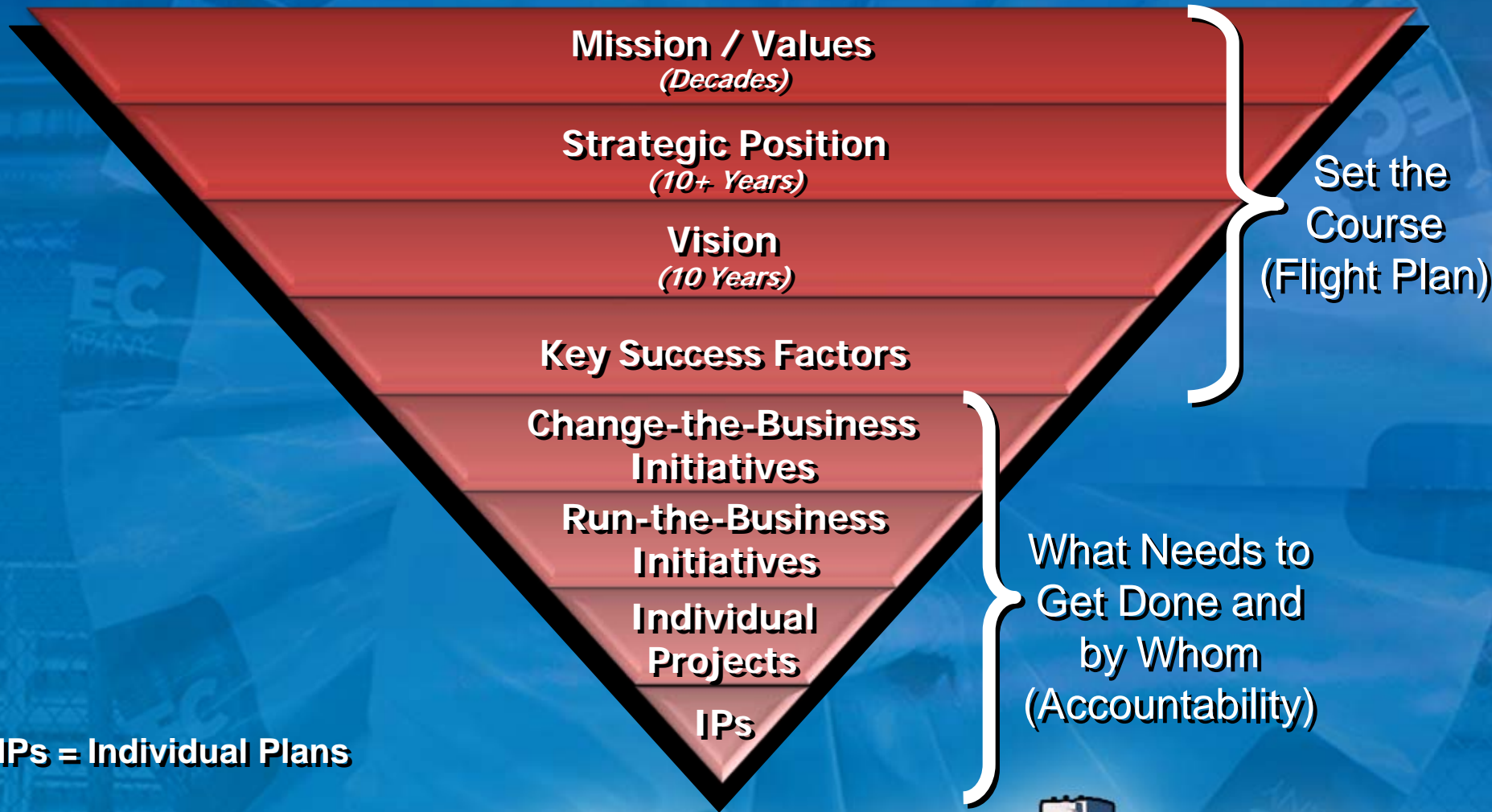
Continuous Improvement and Innovation

Attributes	- Scope +			
Methods:	QES, Associate Orientation, ORA	Technical Training & Vendor Support	QES, Team Training	Strategic Planning Process
Measurements:	Associate Surveys & Evaluations	Reliability, Safety	Preventive / Corrective Actions	Budgets, Resource Allocation
Tools:	"Run-the-Business" Balanced Scorecard (BSC)			"Change-the-Business" BSC
Examples:	Procedure Change	Engineering Change	Team-Based Change	Capital-Budgeted Change
Decision:	ORA – "We Just Fix It!"	Subject Matter Experts (SME)	I-to-I Resource Committee (RC)	Leadership Team (LT)
Implementation:	Associate	SME, Department Initiatives (6-D)	I-to-I PAR Team	SPP – Initiatives (Six Disciplines)
Knowledge Mgmt. Sharing:	Huddles, 7:15 Meeting / MP2	Staff Meetings, QES, Bulletins, I-to-I Lite	PMM Presentation, Bulletins, QES	Tactical Team & Communication Mtgs.
Evaluation:	Safety Audits & Conversations	IP Status Updates & Outcomes	PAR Feedback & Updates to RC	Initiative Status & Update by 6-D





Aligning the Organization from the Top-Down



****IPs = Individual Plans**





Results



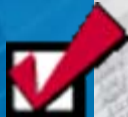
- **World-class safety performance**



- **70% of Associates have education beyond high school**
- **47 degrees earned while working at PRO-TEC**



- **0.6% absenteeism**
- **0.5% turnover**



- **99% internal promotions**
- **No layoffs**





Ohio Partnership for Excellence: Governor's Award [September 17, 2004]



PRO-TEC
COATING COMPANY



Our journey has just begun....



[April 22, 2008]

PRO-TEC
COATING COMPANY
INNOVATION LEADER IN COATED STEEL



BNQP Benefits to Preparing for Automotive Downturn Contingencies

Criteria:

- Mission, Vision, and core values are strategic
- Documented systems, processes, & policies
- Communication process with two-way information flow
- Deploying strategic planning & action plans
- Customer & market focus, voice of customer
- Capability & capacity of workforce, core competency
- ***Overall organizational business model***

Benefits:

- ✓ Helps define, perpetuate, & foster ORA
- ✓ Embraces change & is a lens for decisions
- ✓ Creates boundaries for our Associates
- ✓ Allows freedom to practice ORA & innovate
- ✓ Demonstrates operational transparency
- ✓ Gives clear line-of-sight to goals & objectives
- ✓ Ensures alignment, integration, & collaboration
- ✓ Fulfills vision by change-the-business initiatives
- ✓ Identifies 1st-to-market opportunity (value-added)
- ✓ Attains a sustainable competitive advantage
- ✓ Positions for transfer from idled USS facilities
- ✓ Determines out-sourced return opportunities
- ✓ ***Means to be “audit-ready” every day***
- ✓ ***Enhances Stakeholder trust!***

