

TOCICO 2012 Conference

Ellwood City Forge (ECF)'s Quest to Become Ever Flourishing

Presented By: Dan Hamilton, Ellwood City Forge

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Ellwood City Forge

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- **Celebrating 102 Years of Forging**
- **Family-Owned – 4th Generation of Leadership**
- **Over 450 Employees in 3 Plants in Western Pennsylvania**
- **Heavy Metallurgical Section – Highly Engineered Products**
- **Introduced to “THE GOAL” in 1992**



Forging



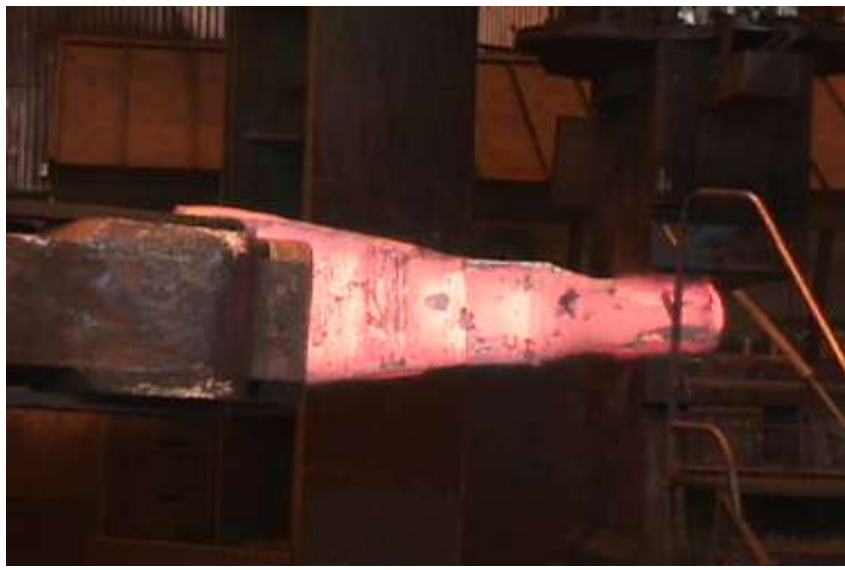
Heat Treat



Machining



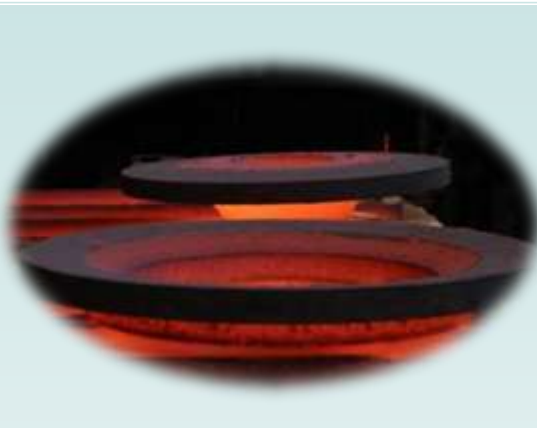
Aerospace



Oil & Gas



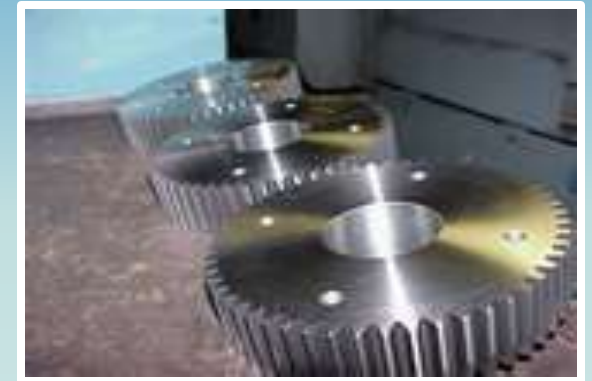
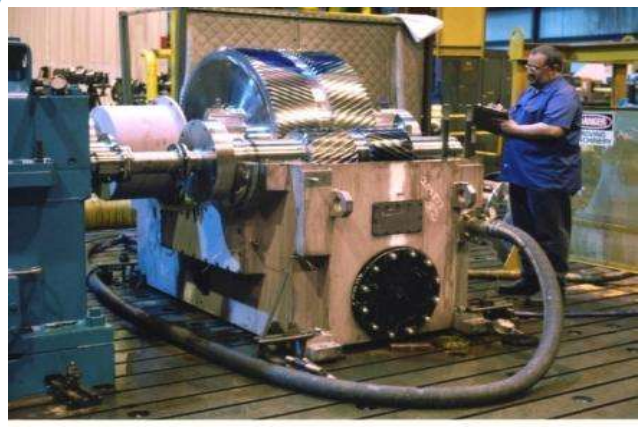
Power Generation



Mining



Gearing/Power Transmission



State of ECF - 1992

- **Excellent quality reputation**
- **Heavy investment in technology**
- **"Working" MRPII system**
- **Good job shop standard cost system**
- **Gross margin product profit reports**
- **Accurate labor reporting**
- **QIP ala Juran**

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State of ECF - 1992 (cont.)

- **Market turndown**
- **loss of largest customer**
- **lay offs, relocation of finish machine shop**
- **Things not going well**

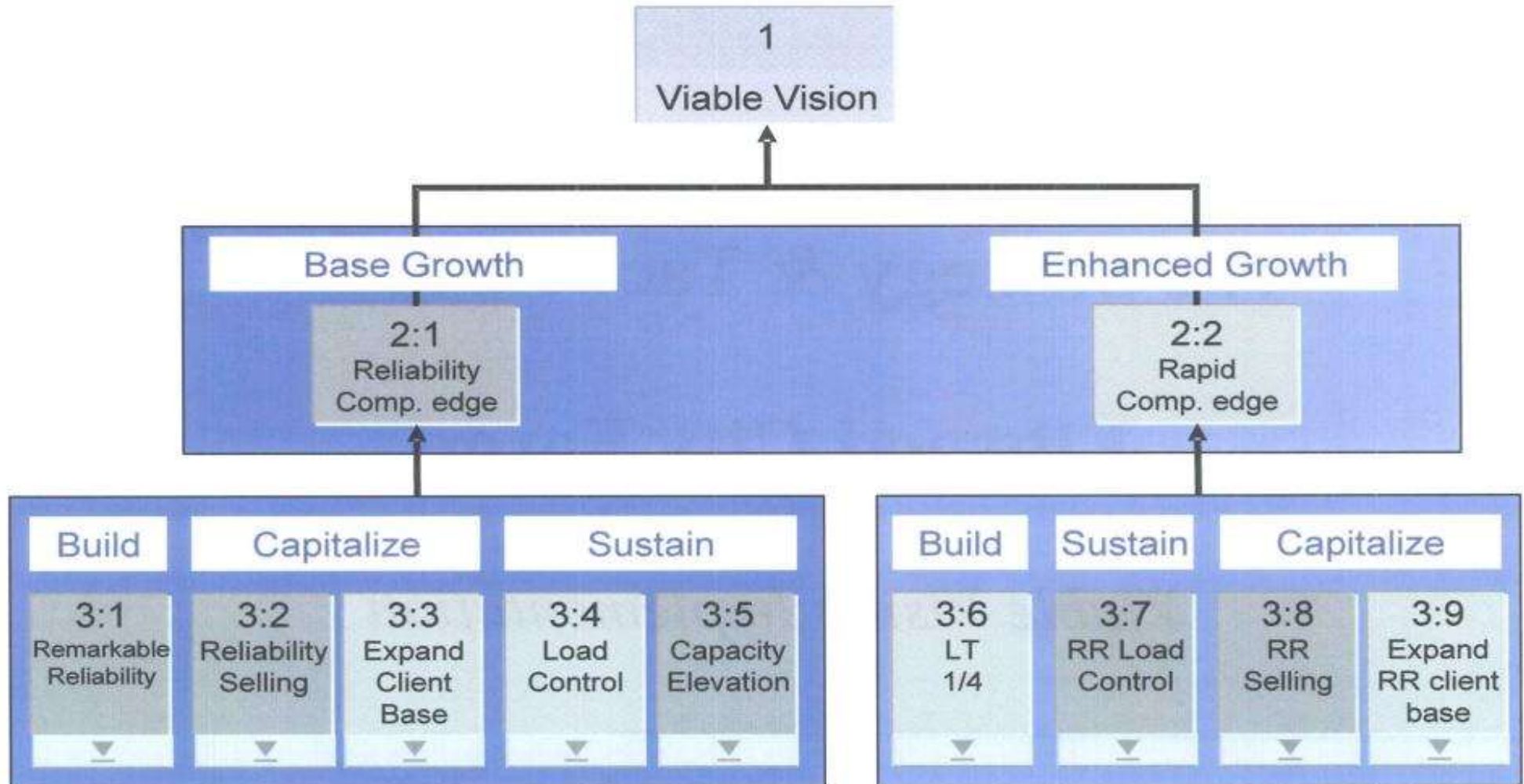
What we think we should do:

- Pick what we think are our constraints**
- Set Q's to zero and calculate actual manufacturing time**
- Establish a constraint and/or shipping buffer for constraint WC's and products**
- Assign flow responsibilities for major product groups to a foreman**

Customer Survey Results

	1992	1993	1995
<u>On-time Delivery</u>			
% above average	22	25	67
% average	58	65	29
% below average	20	11	4
<u>Quoted Lead Time</u>			
% above average	8	6	44
% average	62	68	43
% below average	30	26	13

2006 – “an offer we could not refuse”

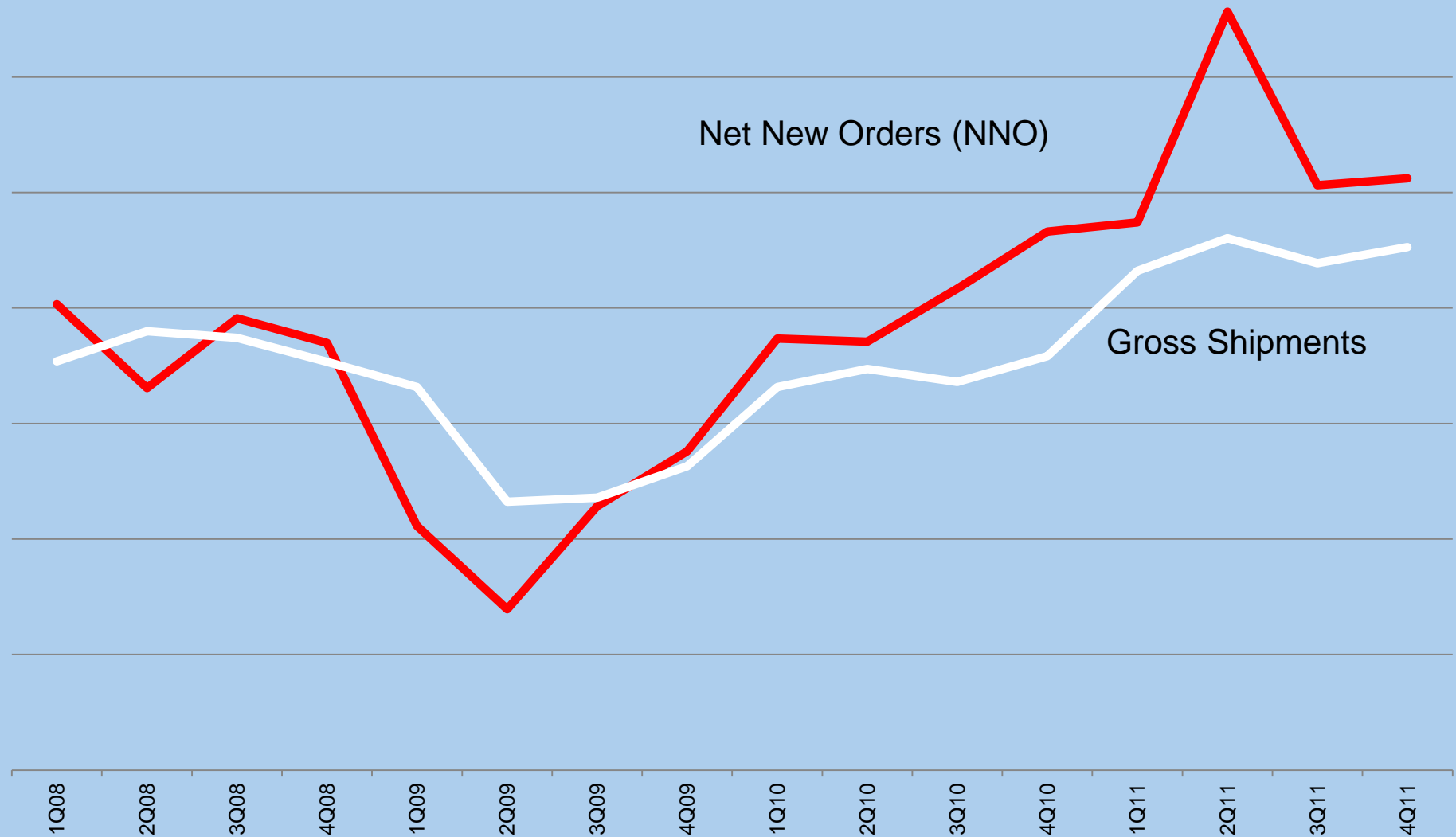


1	Viable Vision
Strategy	<p>The Company is Ever Flourishing (solidly on POOGI)</p> <p>Viable Vision is realized in 4 years or less.</p>
Parallel assumptions	<p>For the Company to realize the VV its T must grow (and continue to grow) much faster than OE.</p> <p>Exhausting the Company's resources and/or taking too high risks severely endangers the chance of reaching the VV.</p>
Tactic	<p>Build a decisive competitive edge and the capabilities to capitalize on it, on big enough markets without exhausting the Company's resources and without taking real risks.</p>
Sufficient assumptions	<p>The way to have a decisive competitive edge is to satisfy a client's significant need to an extent that no significant competitor can.</p>



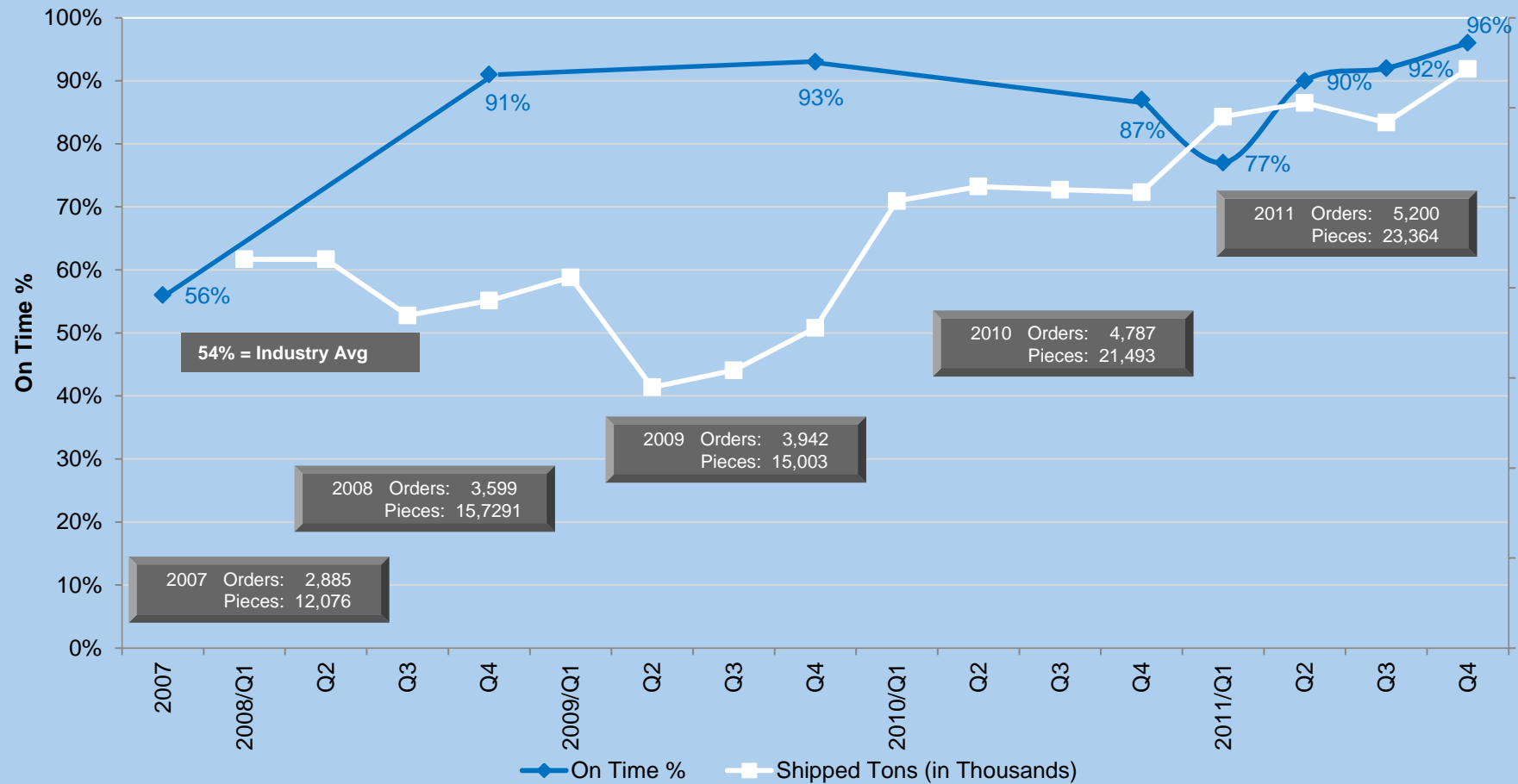
ECF Shipment & Order Growth

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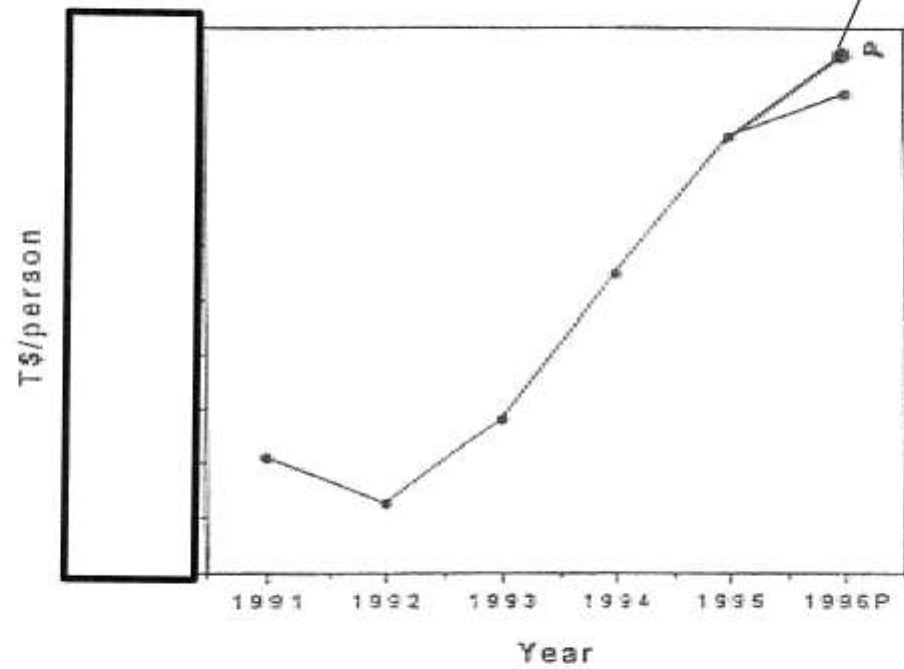


DDP and Shipment Summary

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ECF Throughput per Person Trend



2011

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Operations Team

Bill Nardone

First Steps

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- **Freeze Excessive WIP/ Create R-PLT's**
 - Approximately 50% of WIP was frozen and outsourcing was used as much as possible.
 - R-PLT's were created to maintain the new level of WIP.
 - Importance of Roadrunner Mentality.
- **Select CCR in each Product Line and Apply Load Control**
 - Set CCR's before any emerged as piling on the shop floor.
 - We selected CCR's to ensure no overloading.
 - Lesson - CCR's are relative to all other workcenters. Concept of Maintaining an Unbalanced System.



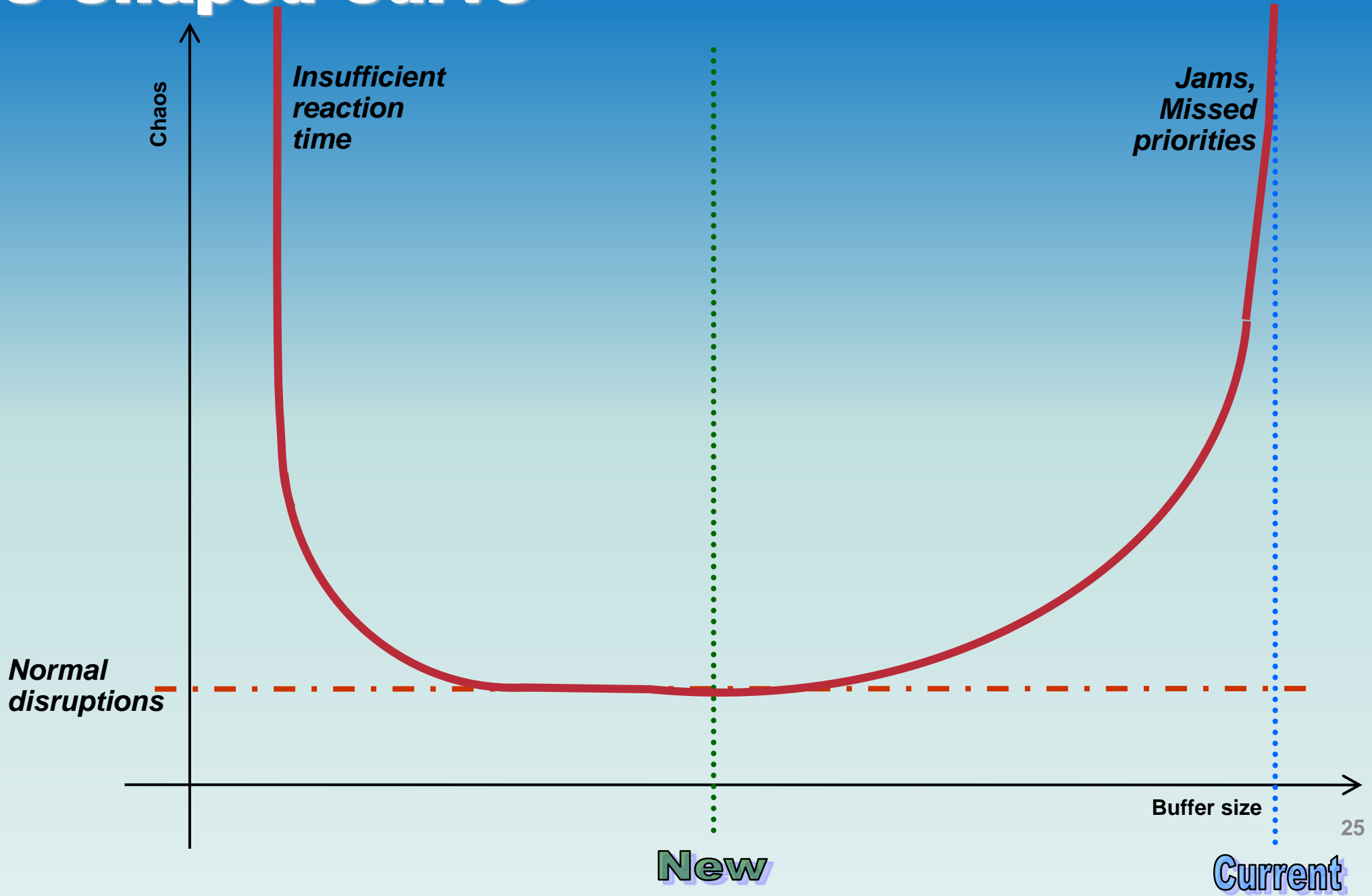
- **Color Priority System**
 - Began with S-DBR assuming touch times were close to negligible.
 - Conflict was created where color system was followed but intuition called for a different priority too often.
 - HTT Algorithm was created and implemented.
 - Due to the nature of our job shop, HTT model did not always apply either.
 - LTT- Linear Touch Time Calculation was created.

POOGI Process

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- Data collection
- Process is longer term, higher level. Not to be confused with piling.
- Pareto, focus efforts on largest reasons for delays.
- Use of Five Focusing Steps.
- Understand U-Shaped Curve and its relevance to the POOGI Process and the length of the R-PLT's.

U-Shaped Curve



Sales and Marketing Team

Mark Miller

Operations / Sales Integration

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- **Obtaining Ownership & Buy-In**
- **Breaking Down Departmental Silos**
- **Many DBR Tactics Can Be Utilized in Sales**

Unexpected Realizations

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- **It Really Works in Our Job Shop Environment!**
- **Client's Initially Were Not Ready for Our Solution**
- **Penalty is About ECF – Not About the Client**
- **Can't Offer Solution Until Agreement on Problem**

Selling a Business Solution

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- **Don't Underestimate The Overall Effort / Cultural Changes**
- **Impact of “Resistance to Change” on Sales Team & Clients**
- **Develop Sales Process (Role Play, Pre/Post Mtg Review, Target Markets, Sales Metrics, etc)**
- **Sell Cause/Effect Logic to Lead Client to Understand Value Associated With Eliminating The Pain They Are Experiencing**
- **Must Sell Beyond Purchasing Department – There is a price for receiving the product and a price for not receiving the product.**
- **Must Sell With Conviction / Belief in The Solution**

Stay Flexible

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- **Develop Market Intelligence to Understand When All Things Are Not Similar**
- **Be Ready For Success**
- **POOGI – Your Plan Will Change & Evolve**
- **Remember You Are Setting The New Industry Standard**

DCE – Customer Comments

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- Brian of ABC Corp reported that ECF's competitor is running 2-3 months late on orders. While due to a slowdown in O&G they did cancel/re-schedule some orders with ECF, he confirmed they canceled a lot more with ECF's competitor due to their poor delivery performance.
- “>>> <AY@DEF Corp.com> 2/22/2012 2:17 PM >>>
No problem. Just hurry up and make more forgings so we can drop your competitors...”



The journey never ends

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