



# Creating a Holistic Performance Program: Metrics for Effective Production & Distribution

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2008 European Plant-to-Enterprise Conference  
November 3-4, Prague, Czech Republic



# Metrics Matter to Strategic Initiatives

***The following Strategic Initiatives of MESA International are associated with this presentation:***

Lean Manufacturing  
Quality & Regulatory Compliance  
Product Lifecycle Management (PLM)  
Real-Time Enterprise  
Asset Performance Management (APM)

# Agenda in Four Movements

- Do shared metrics between manufacturing and warehousing execution matter?
- What are MESA and its partners doing?
- What metrics?
- Next steps



# Do Shared Execution Metrics Matter?

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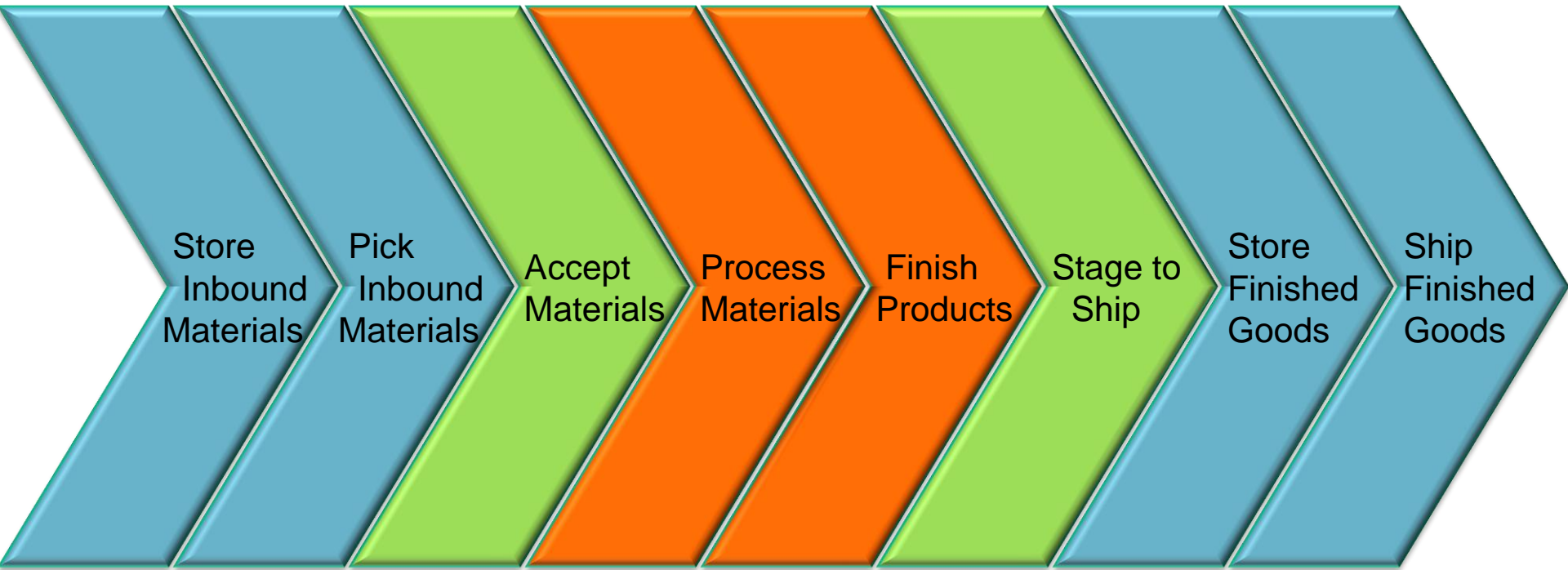
# Customers' View



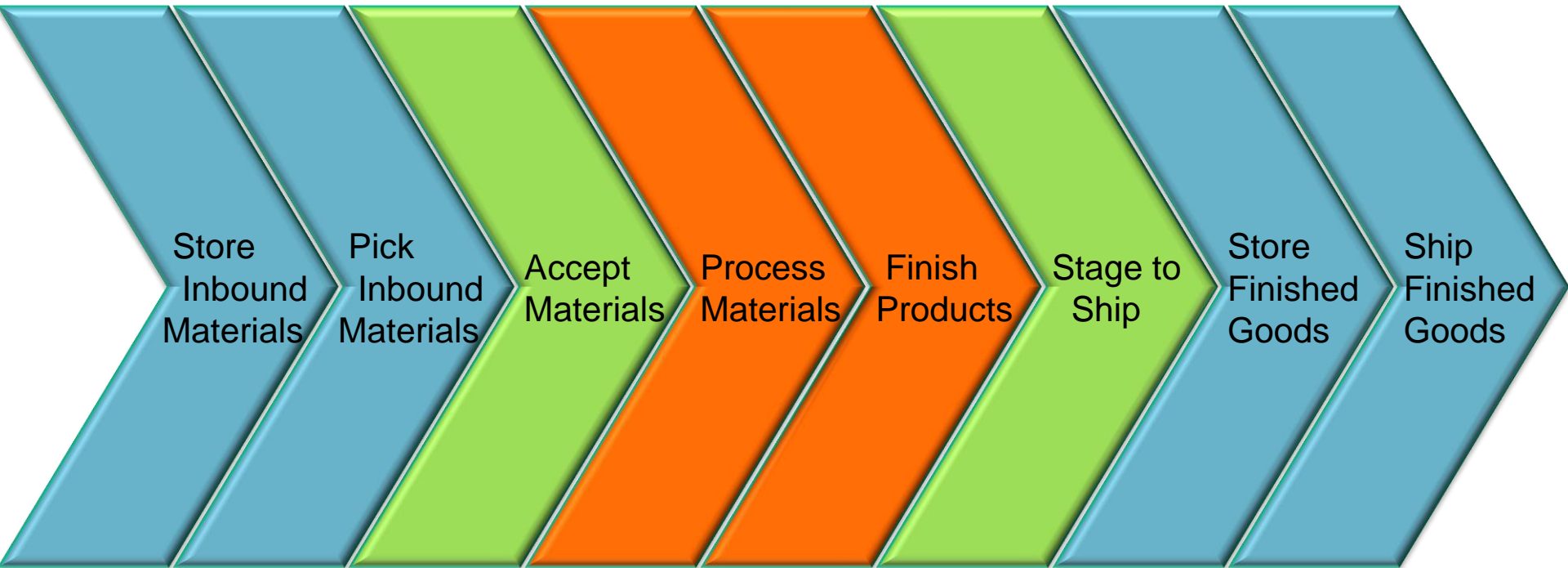
- Customer rules
- They know whether they got exactly
  - what they expected,
  - as they expected it
  - when they expected it
- If they don't – you're toast!



# Order Execution Process

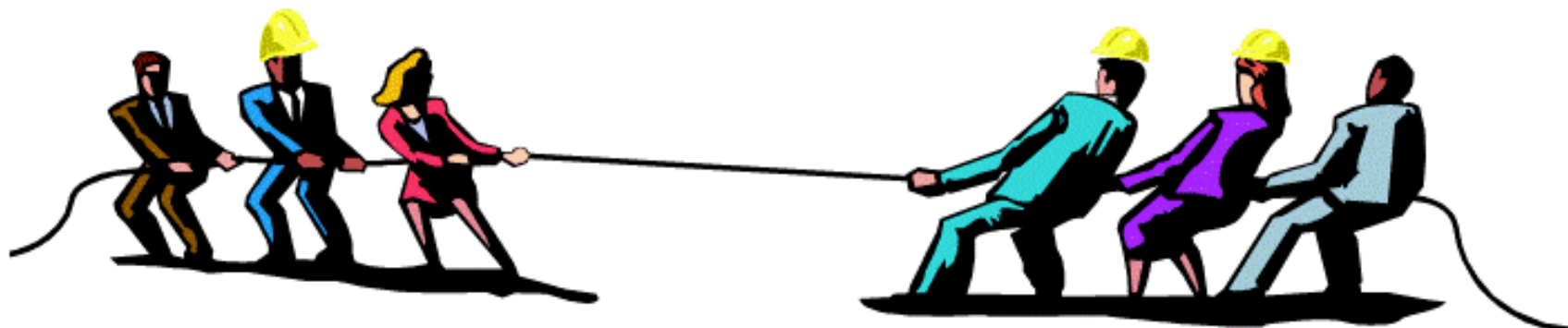


# Order Execution Process



**They have us surrounded!**  
**OR: We have them at our mercy...**

# The Challenge: Conflicting Goals and Metrics



Warehouse Metric or Goal	Plant Metric or Goal
Low Inventory Days	Asset Utilization
On-time shipments	Overtime
Warehouse costs	Postpone adding value



# **MESA's Contribution: Collaboration Between Manufacturing and Warehousing Associations**

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# Three Associations Collaborating

- Focused on execution across plants, warehouses
- MESA Metrics that Matter
- Order Fulfillment Council & Supply Chain Execution Systems & Technologies Group of MHIA interested in joint work
- WERC has annual benchmark study



- 2004 – ID Warehouse Metrics
- 2005 – Begin to Benchmark
- 2006 - Improve Understanding
- 2007 – Add Perspective
- 2008 – Add Clarification, Technology
  - Standardize definitions with MESA and MHIA
  - Add metrics to support improved definitions
  - Include data on technology implemented & utilized





# Joint MESA-MHIA-WERC Progress So Far

- Harmonized definitions & calculations of 63 metrics
  - Small team from 3 organizations involved
- White Paper on Holistic Execution Metrics
  - Free to Premium MESA Members
  - For sale by all 3 organizations

# P2E<sup>SM</sup> How the Benchmark Looks

Metric	Major Opportunity	Disad- vantage	Typical	Advantage	Best in Class	Median
This represents the metric that is being examined (metrics definitions can be found in the complete WERCWatch report)	<i>QUINTILE RANKINGS</i>					This indicates the actual median performance of all respondents
	These columns split all data responses into 5 equally divided groups. Each quintile ranking indicates 20% of the responses, with the 5 groups divided categories representing					
	Represents the lowest 20% of responses	Represents responses ranging in the 20-40 <sup>th</sup> percentile	Represents responses ranging in the 40-60 <sup>th</sup> percentile	Represents responses ranging in the 60-80 <sup>th</sup> percentile	Represents top 20% of all responses	



## What Metrics?

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# Six Shared Facets to Operations Performance



# Sample Joint Metrics

Category	Metric	Definition	Calculation
Order Fulfillment	On-time Delivery	The percentage of orders that arrive at their final destination at the agreed upon time	Number of orders delivered on time / total number of orders
Flexibility	% Revenue from products less than 2 Years old	Portion of company revenue from products introduced within past 24 months or 8 quarters	Revenue from Products Introduced in Past 2 years / Total Revenue
Productivity	Revenue per Square Foot	Revenue generated in plant and warehouse space	Number of square feet in plant & warehouse / Total company revenue
Financial	Return on (Net) Assets	Net Operating Profit / Net Assets (cash + working capital + fixed assets)	Net Operating Profit / Net Assets (cash + working capital + fixed assets)



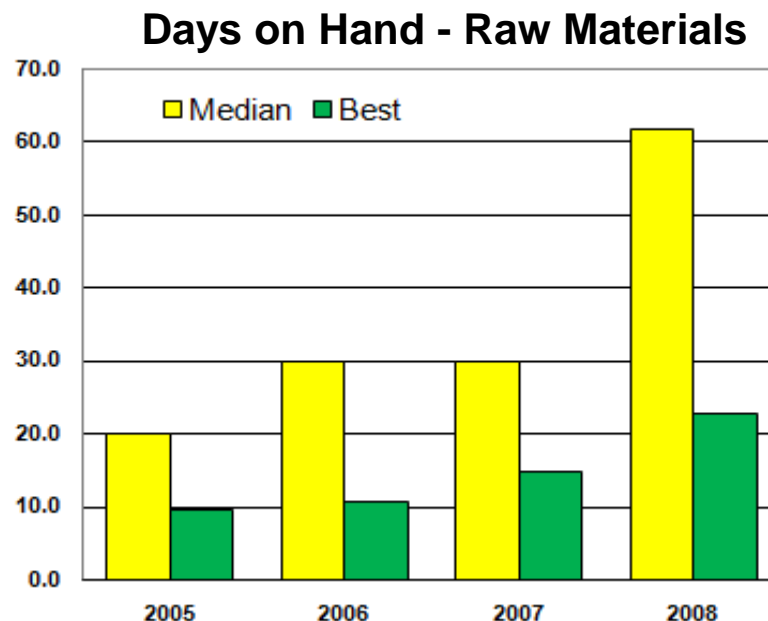
# Shared Metrics & Annual Benchmarking Allows...

- Common definitions of execution performance in industry
- Trends: Year-to-year comparisons
- Best-in-Class vs. Median comparisons
- Approaches to management to set goals that match corporate objectives

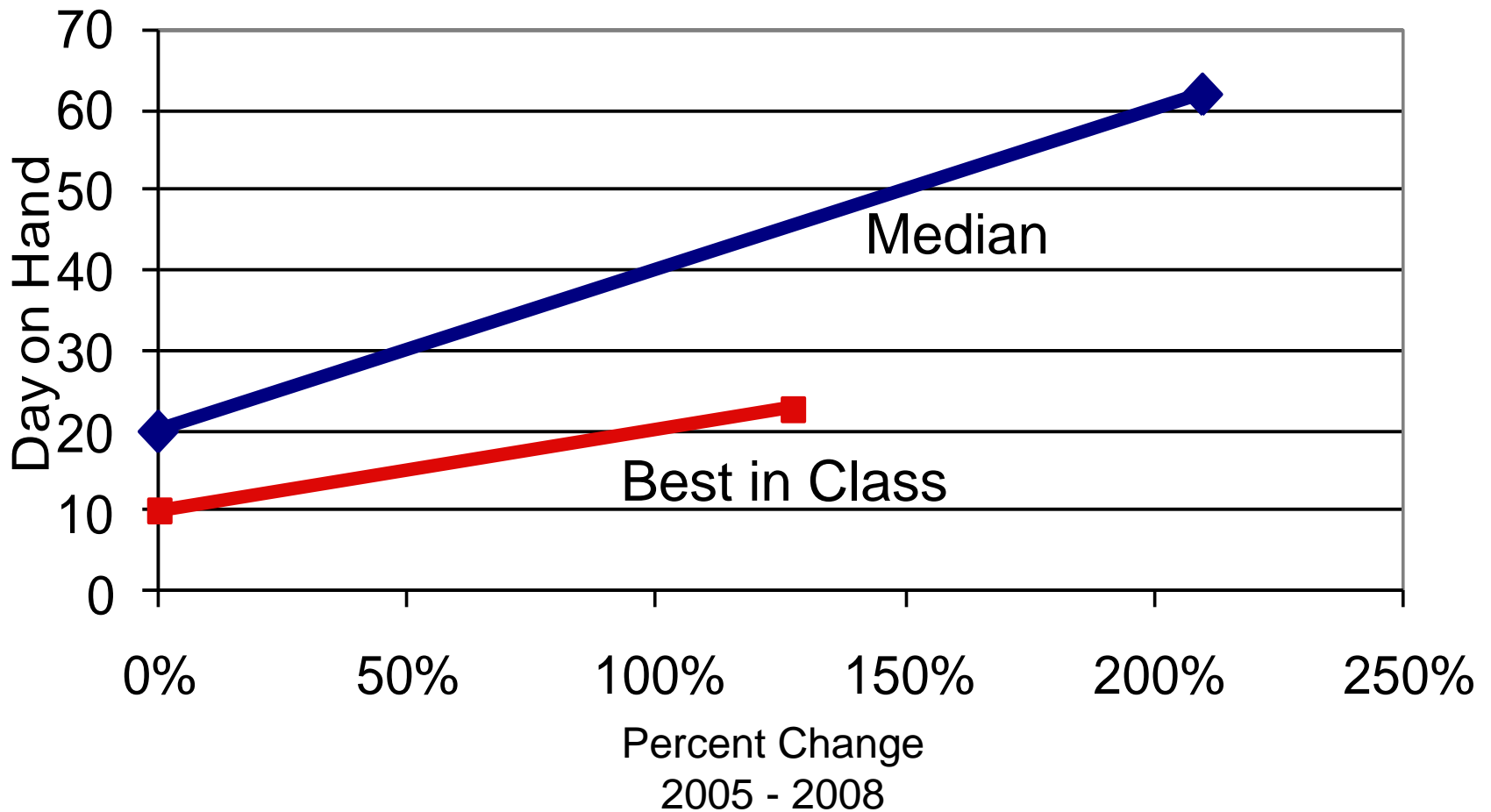
# Trend: Biggest Change Raw Material Days on Hand

*Median Raw Material Days on Hand increased 210%*

Days on Hand - Raw Materials		
2005	Median	20 Days
	Best in Class	< 10 Days
2008	Median	61.9 Days
	Best in Class	< 22.8 Days



# Comparing Best to Median





# Why is Inventory Up?

**You tell us...**

# Making the Case Should not Be Difficult

## Interest in measures on the part of Senior Management

Decreasing	1.8%
Staying the Same	41.0%
Increasing	57.2%



## Next Steps

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# Know Your Metrics

- How is it defined
- How is it calculated
- Who is responsible
- How to improve performance
- How do scores on metrics interact
- What does a score (change) really mean

**FIGURE 13–3 Characteristics of Good Measures**

<b>A Good Measure</b>	<b>Description</b>
<ul style="list-style-type: none"><li>• is quantitative</li></ul>	<ul style="list-style-type: none"><li>• The measure can be expressed as an objective value.</li></ul>
<ul style="list-style-type: none"><li>• is easy to understand</li></ul>	<ul style="list-style-type: none"><li>• The measure conveys at a glance what it is measuring, and how it is derived.</li></ul>
<ul style="list-style-type: none"><li>• encourages appropriate behavior</li></ul>	<ul style="list-style-type: none"><li>• The measure is balanced to reward productive behavior and discourage "game playing."</li></ul>
<ul style="list-style-type: none"><li>• is visible</li></ul>	<ul style="list-style-type: none"><li>• The effects of the measure are readily apparent to all involved in the process being measured.</li></ul>
<ul style="list-style-type: none"><li>• is defined and mutually understood</li></ul>	<ul style="list-style-type: none"><li>• The measure has been defined by and/or agreed to by all key process participants (internally and externally).</li></ul>
<ul style="list-style-type: none"><li>• encompasses both outputs and inputs</li></ul>	<ul style="list-style-type: none"><li>• The measure integrates factors from all aspects of the process measured.</li></ul>
<ul style="list-style-type: none"><li>• measures only what is important</li></ul>	<ul style="list-style-type: none"><li>• The measure focuses on a key performance indicator that is of real value to managing the process.</li></ul>
<ul style="list-style-type: none"><li>• is multidimensional</li></ul>	<ul style="list-style-type: none"><li>• The measure is properly balanced between utilization, productivity, and performance, and shows the trade-offs.</li></ul>
<ul style="list-style-type: none"><li>• uses economies of effort</li></ul>	<ul style="list-style-type: none"><li>• The benefits of the measure outweigh the costs of collection and analysis.</li></ul>
<ul style="list-style-type: none"><li>• facilitates trust</li></ul>	<ul style="list-style-type: none"><li>• The measure validates the participation among the various parties.</li></ul>

Source: *Keeping Score: Measuring the Business Value of Logistics in the Supply Chain*, CSC, University of Tennessee, CLM, 8.



# Work Across Facilities

- Go back & discuss with warehouse peers
- Help educate management
- Collaborate to harmonize metrics
- Work toward a holistic view of execution
- Accelerate your performance



# The MESA-MHIA-WERC Joint Work Program

## Process

- Step 1: New Paper
- Step 2: Larger Joint Working Group
- Step 3: Benchmark study
- The rest is up to all of us!



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- Help shape and drive execution excellence!



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