

2008 Camstar Global Customer Conference

Manufacturing 360



Closing the Production-Quality- Performance Loop: Valuable Lessons for High Growth Manufacturers

*Julie Fraser, Principal Industry Analyst
Cambashi, Inc.*

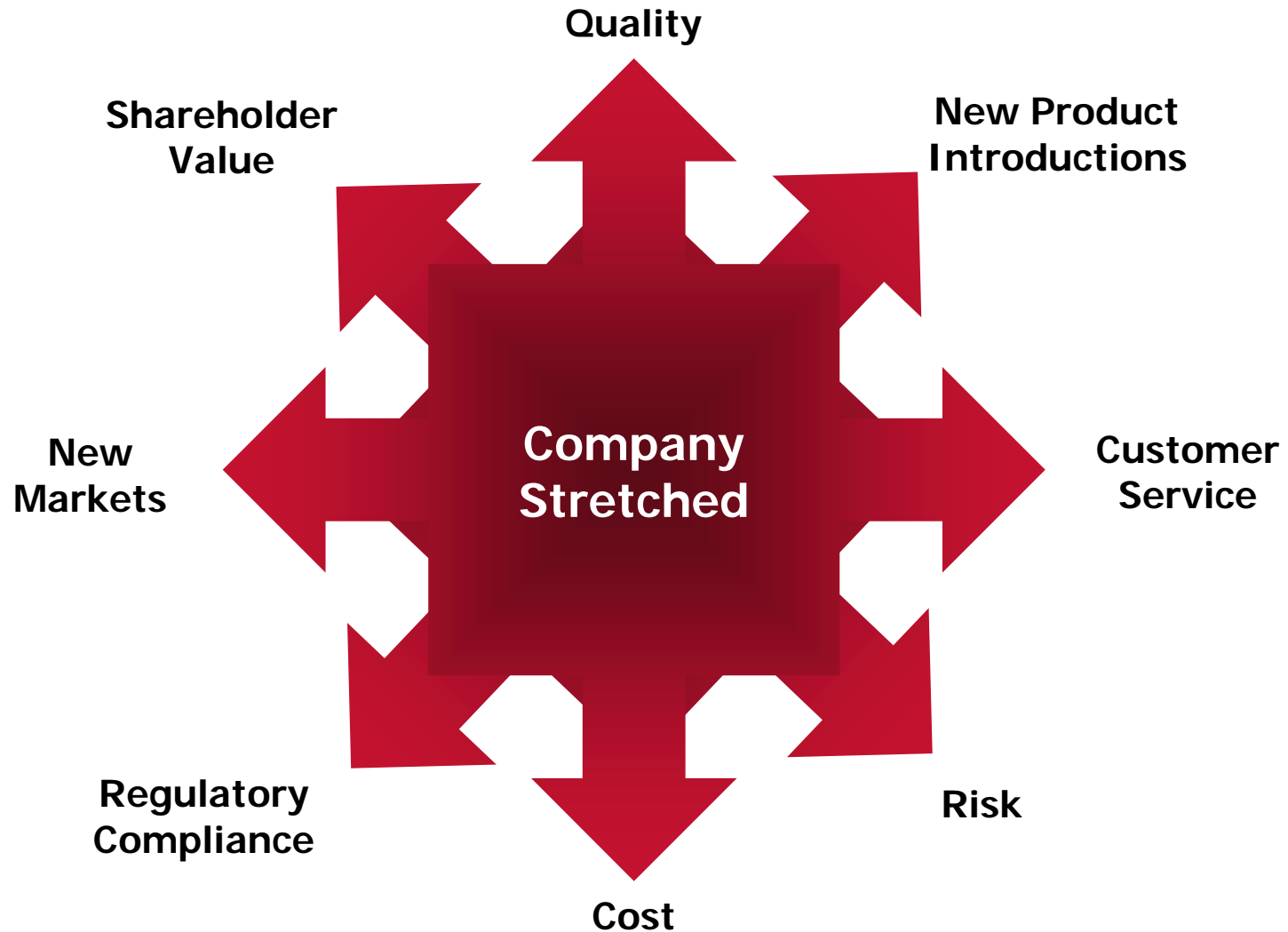
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 INDUSTRY DIRECTIONS



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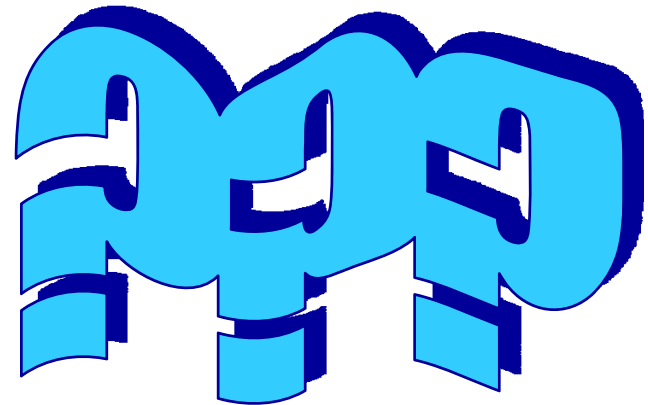
- Pitfalls of High Growth
- Keys to Success
- Value of MES
- Closing the Loop with Quality
- Performance Metrics Matter



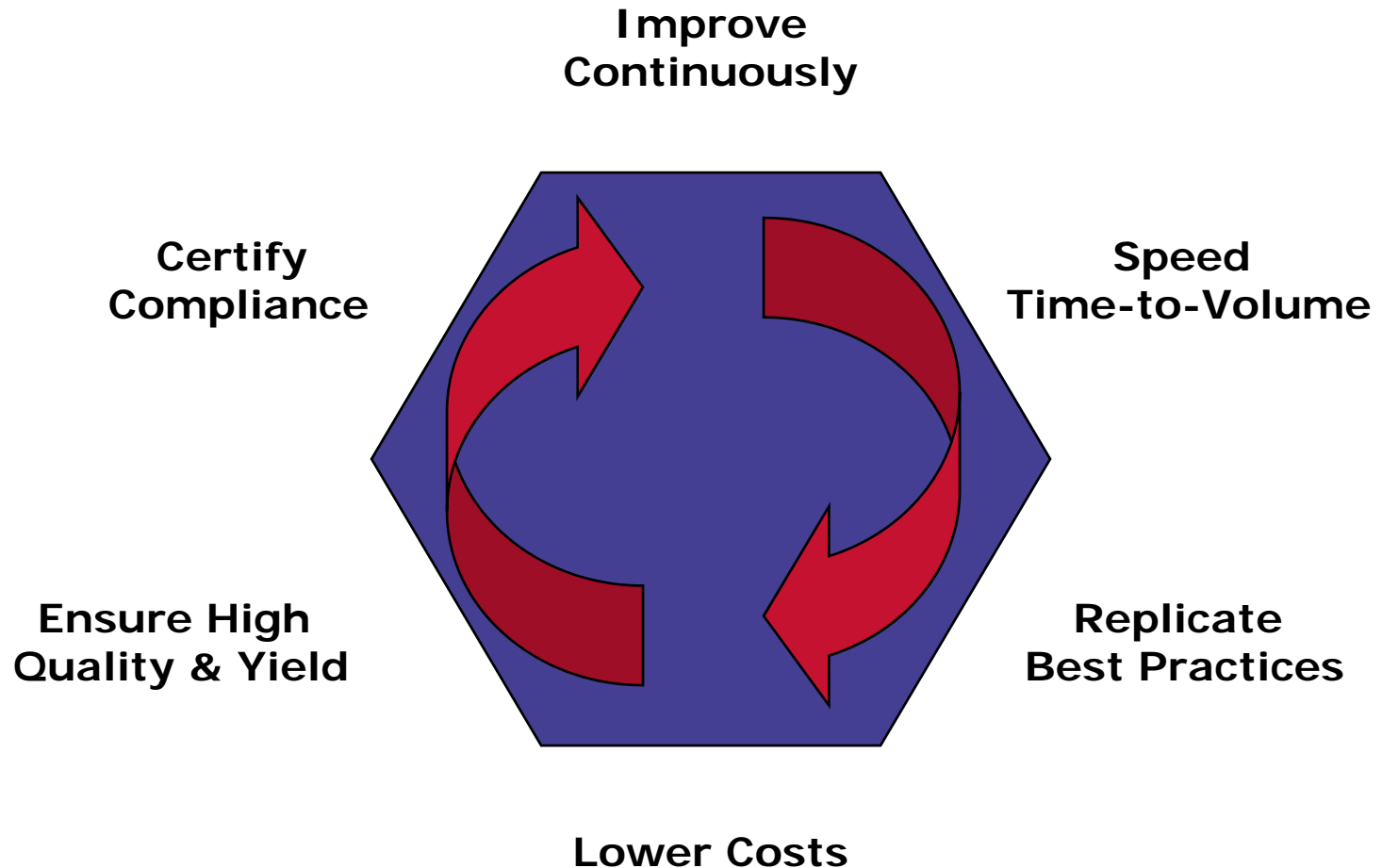
- Higher volume - capacity constraints
 - More components
 - More changeovers
 - More quality tests
- More to details to track
- Dynamic, learning environment
- Tougher decisions
- Attractive market – more competition

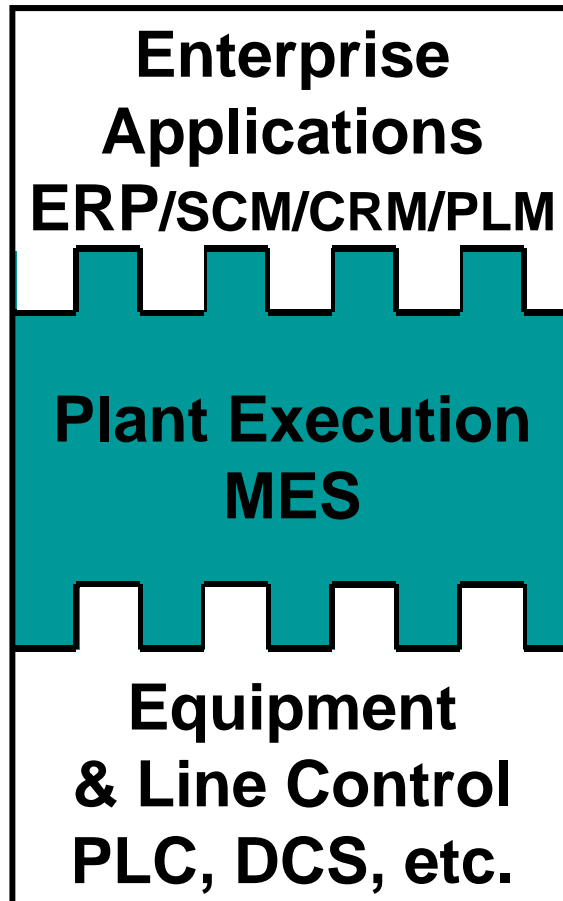


1. Ramping up: time to quality & volume
2. Gaining repeatability and predictability
3. Lowering costs to compete
4. Ensuring output quality & mix match demand
5. Improving yield of high-quality products
6. Preventing errors & non-conformances
7. Improving processes



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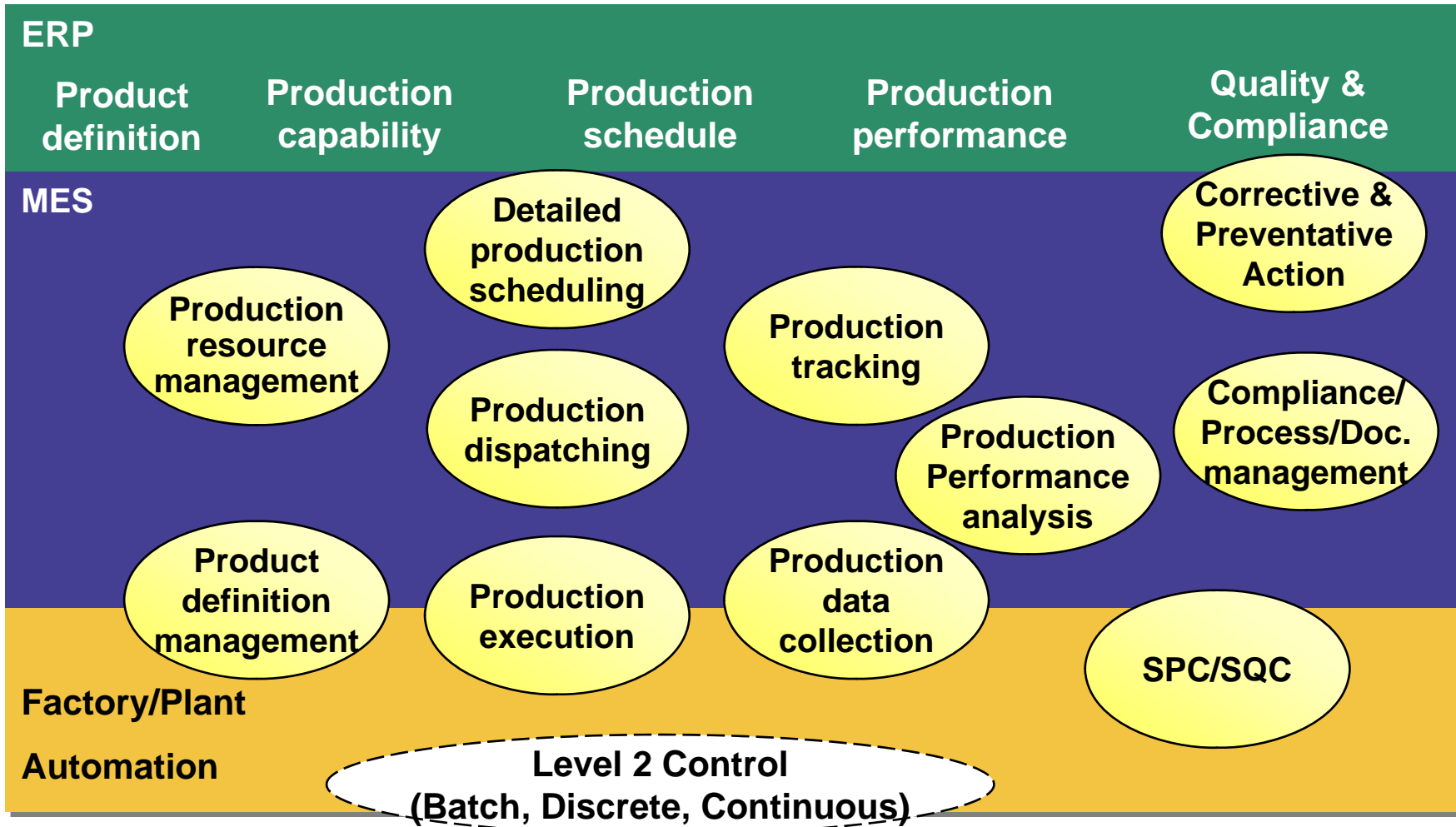




- Not just integration
- Not just data collection
- System to control total plant operation
- Different time scale & scope

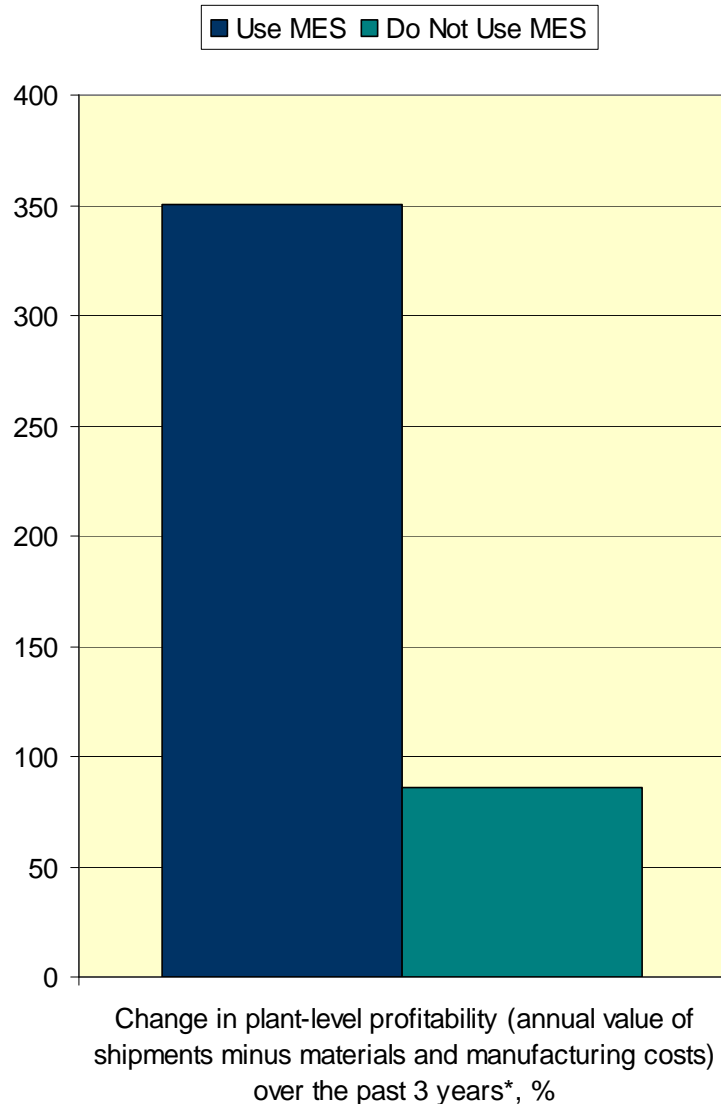
Graphic Source: AMR

Key to Success	Plantwide System Feature
Time-to-Volume	Sends alarms, documents processes, procedures & settings
Best Practices	Models procedures, guides operators, prevents errors
Lower Costs	Tracks 5Ms: Materials, machines, manpower, methods, measures; triggers activities
Quality & Yield	Monitors non-conformances & trends, IDs root causes, create & enforce CAPAs
Compliance	Records activities, sign-offs, improves documentation accuracy & efficiency
Improvement	Records results & trends in context for analysis, distributes & enforces new processes



Modified from ISA S95, www.isa.org

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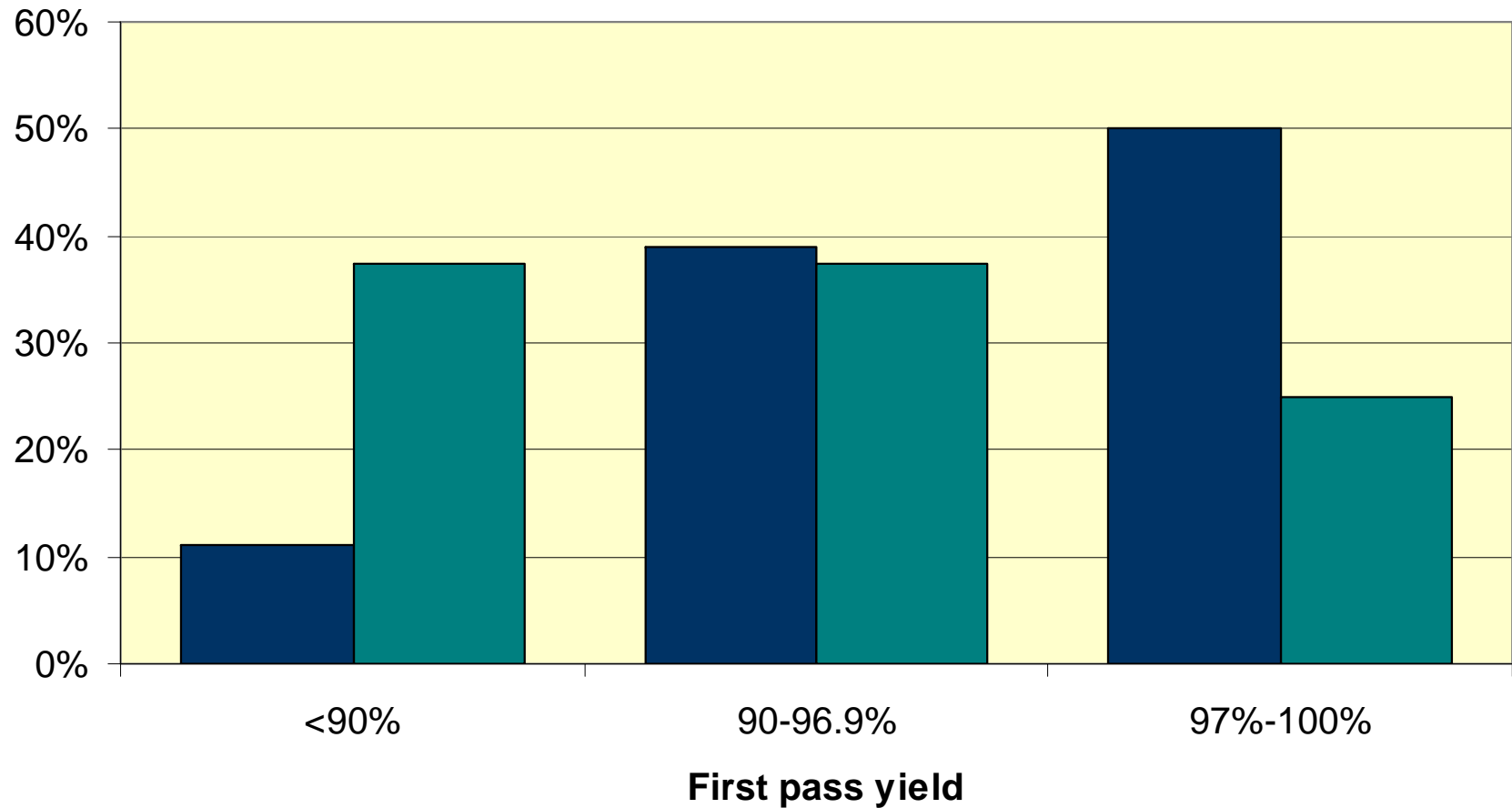


Plants using MES have increased profitability 4X more than others

Continuous Improvement

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*MES Performance Advantage:
Best of the Best use MES*

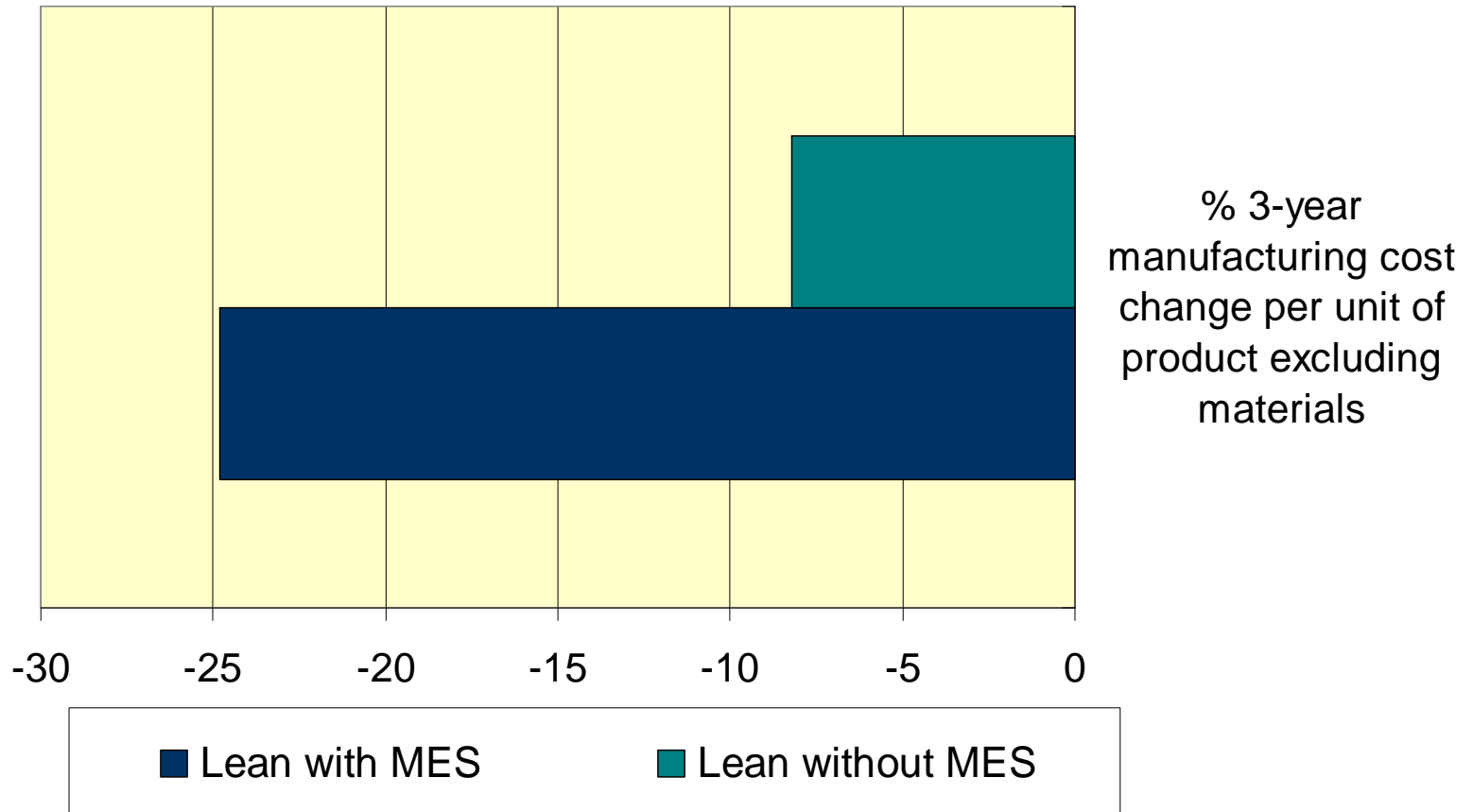
**Study of >100 Industry Week
Best Plants Winners & Finalists**



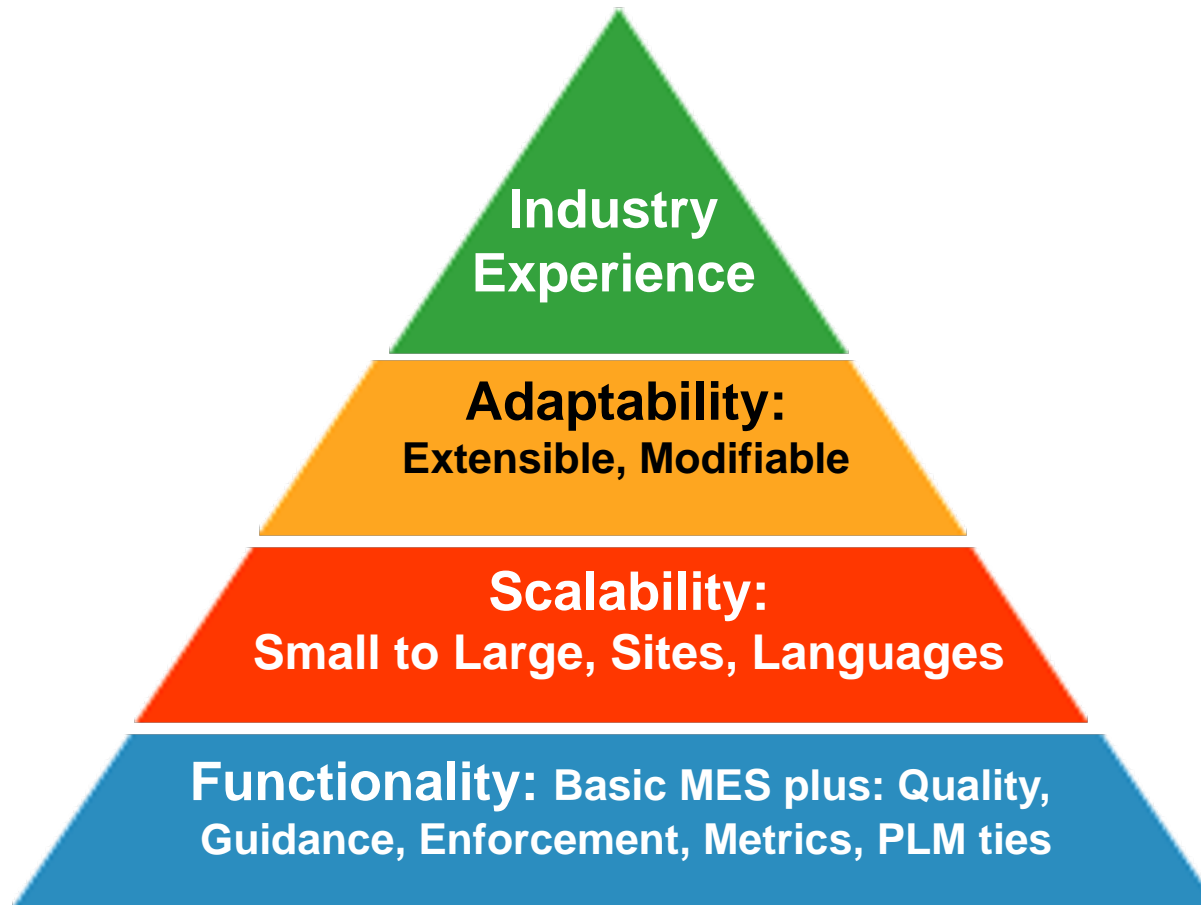
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*Boosting Six Sigma Results with MES:
Greater Improvements for Fact-based Management*

■ Six Sigma with MES ■ Six Sigma without MES

MES Boosts Lean Waste Reduction – 3X Annual Cost Reduction



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Combining MES with Lean Practices to Enhance Plant Performance



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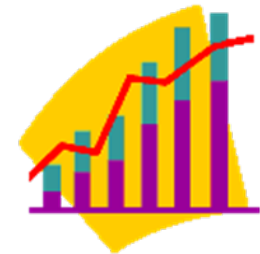
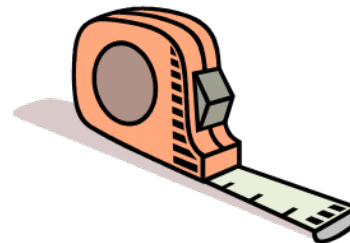
You can't improve what you can't measure.

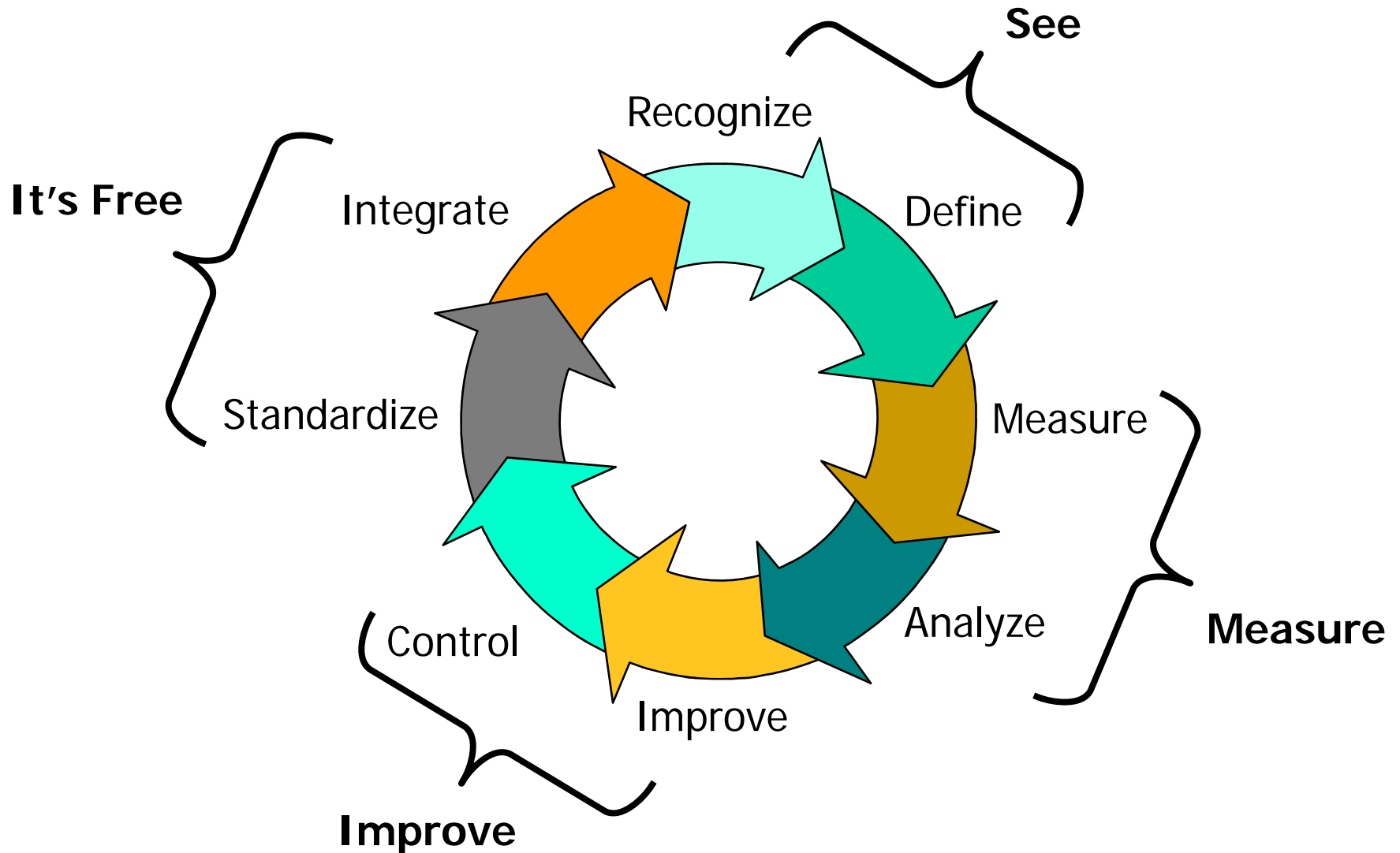
You can't measure what you can't see.

If you can see, do measure and can analyze you should improve.

Quality is free, if it's built right into the production process.

- With apologies to W. Edwards Deming & Philip Crosby





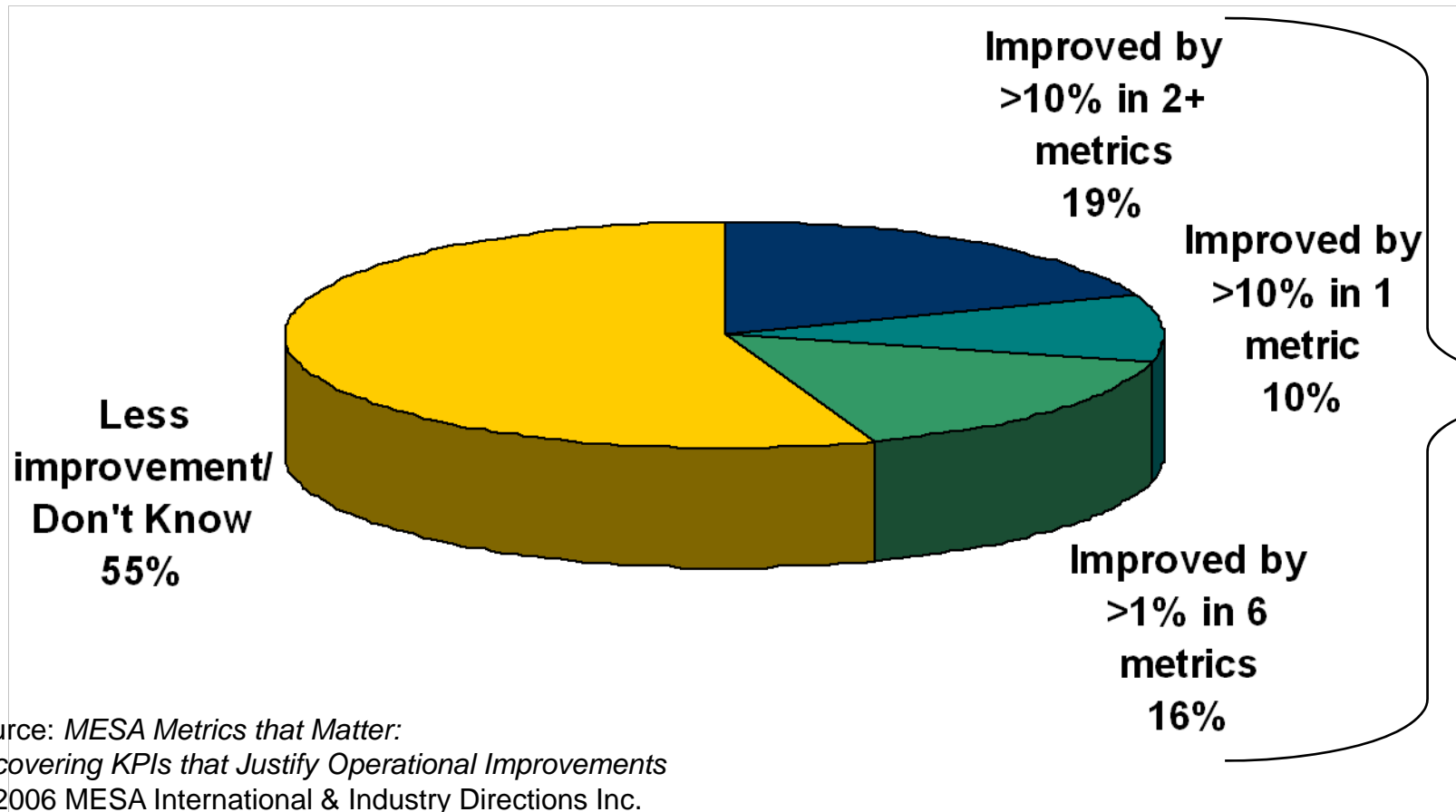
Enterprise Performance Management

Enterprise Resources Planning

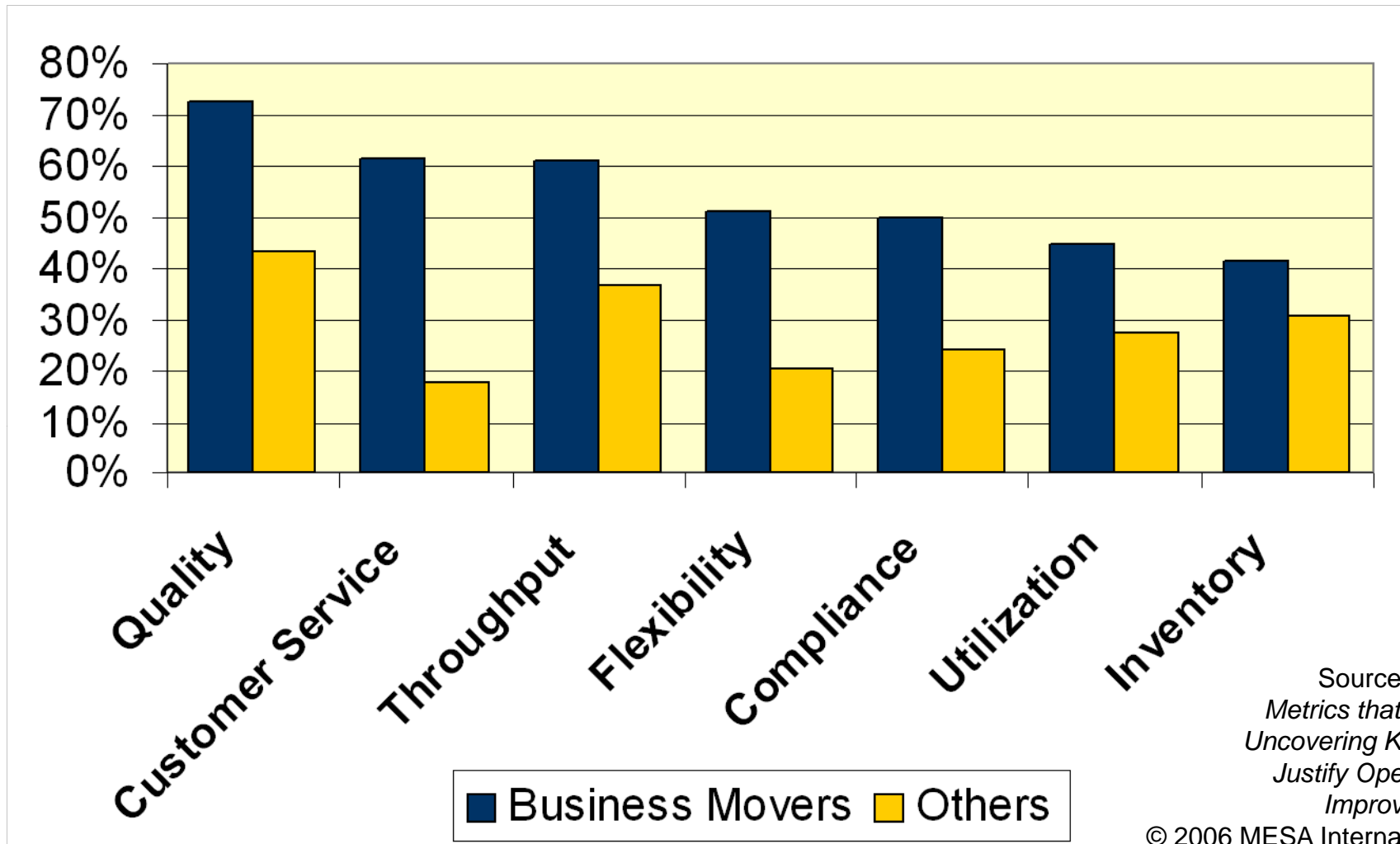
**Manufacturing
& Quality
Execution
System**

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Business Movers: Improvement to Financial Metrics

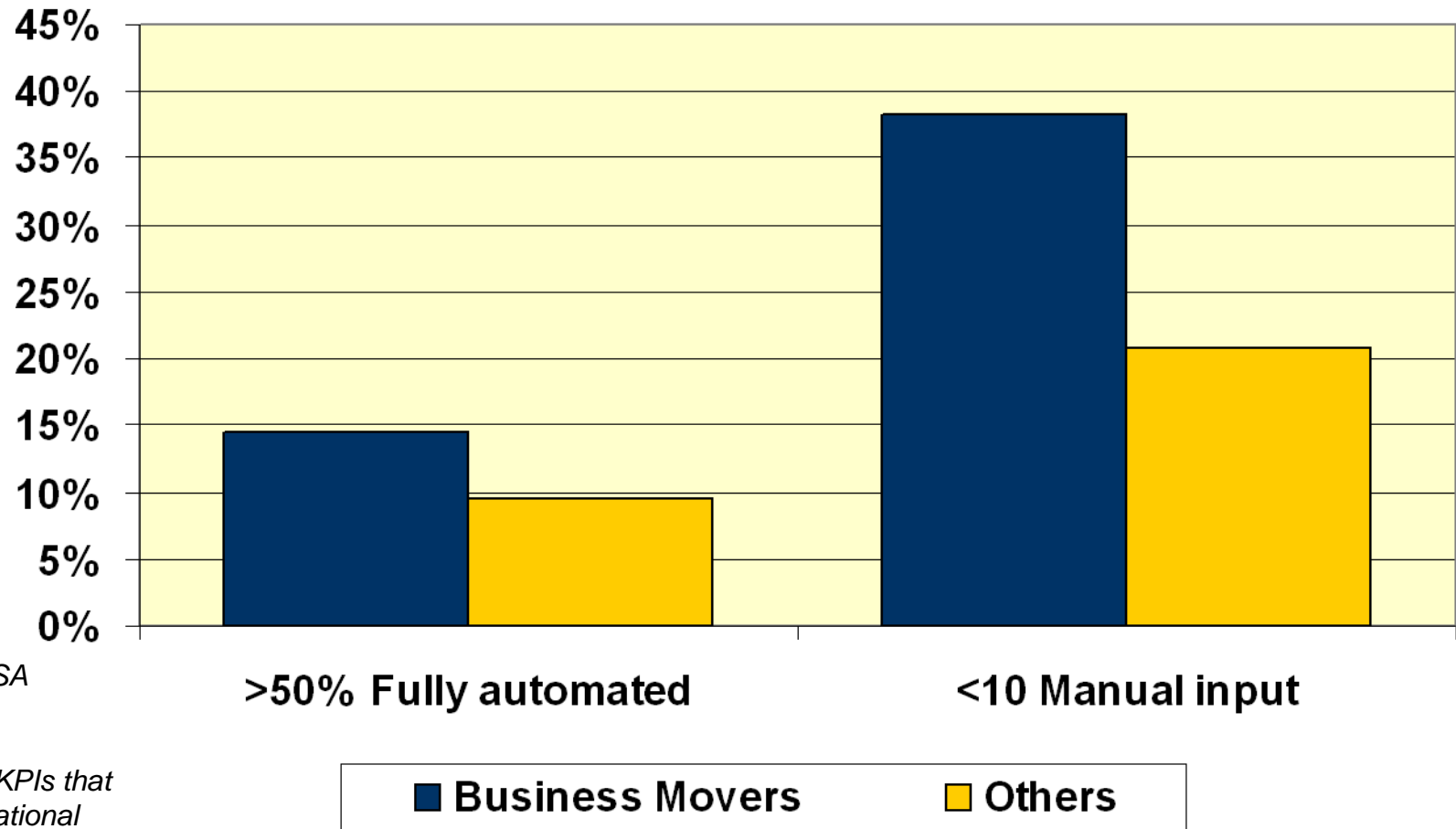


Business Movers Improved Operations Areas Also



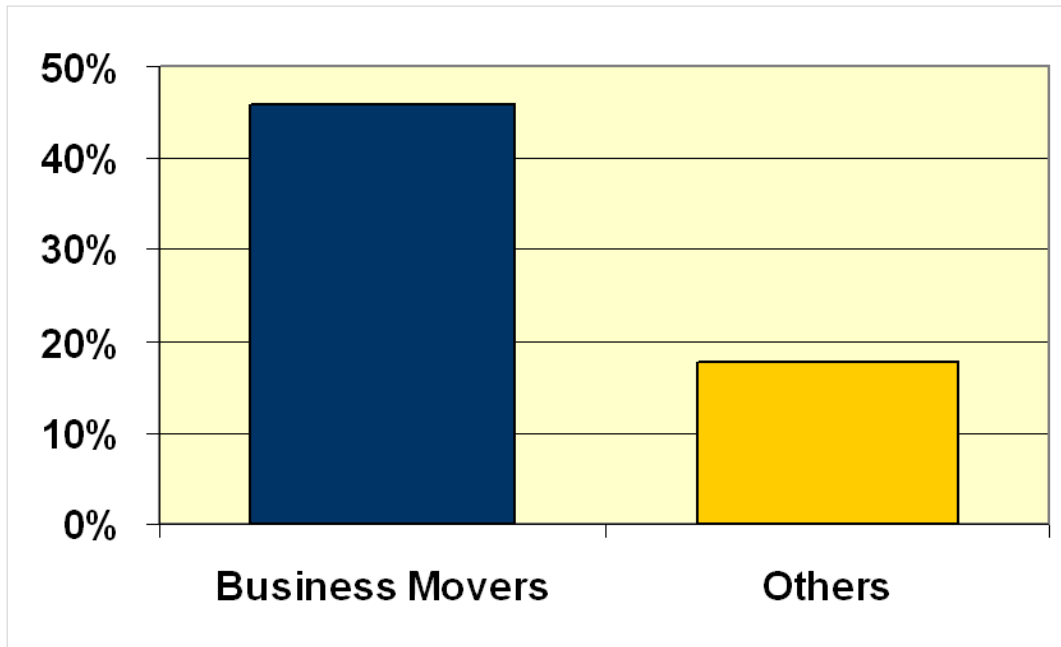
Source: MESA
*Metrics that Matter:
Uncovering KPIs that
Justify Operational
Improvements*

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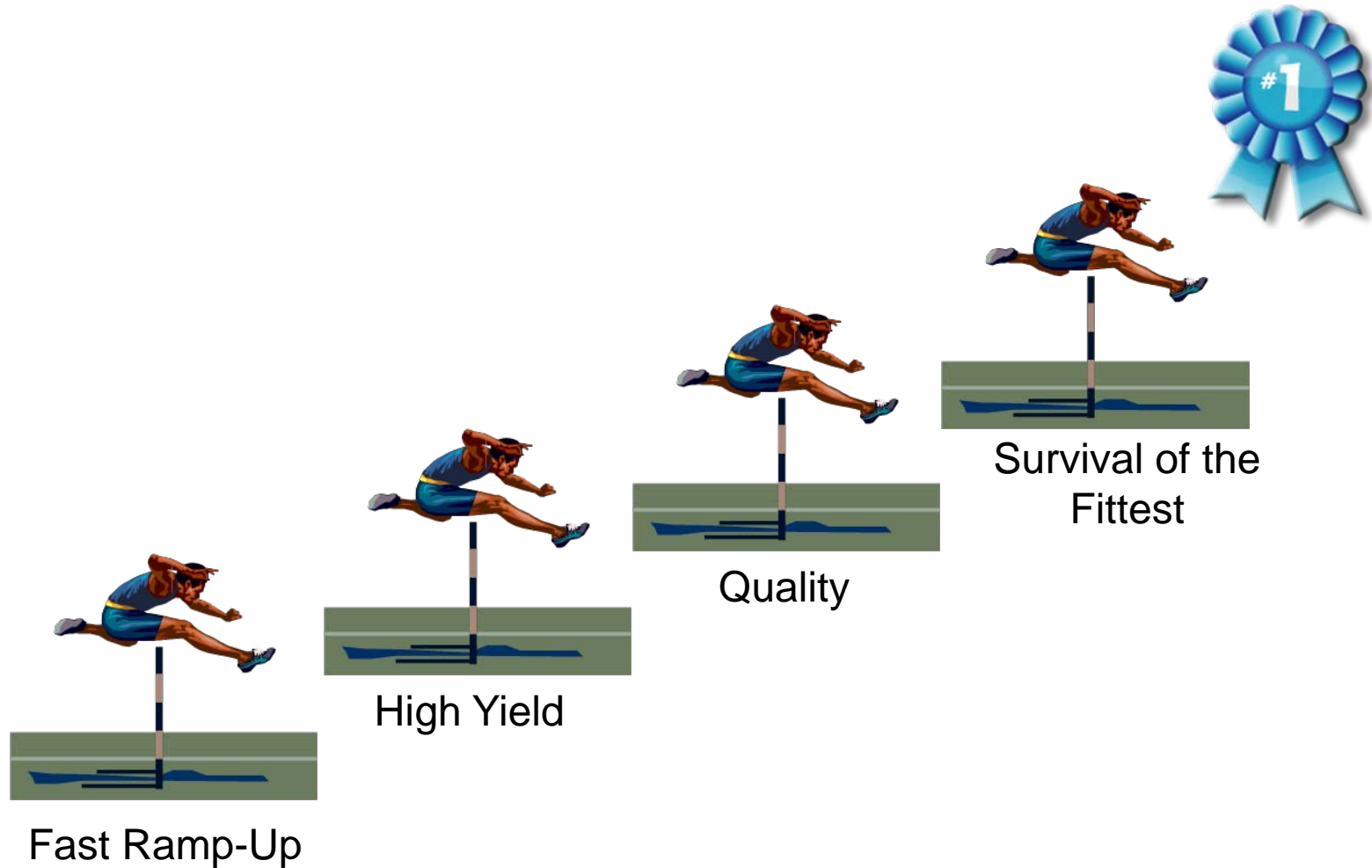
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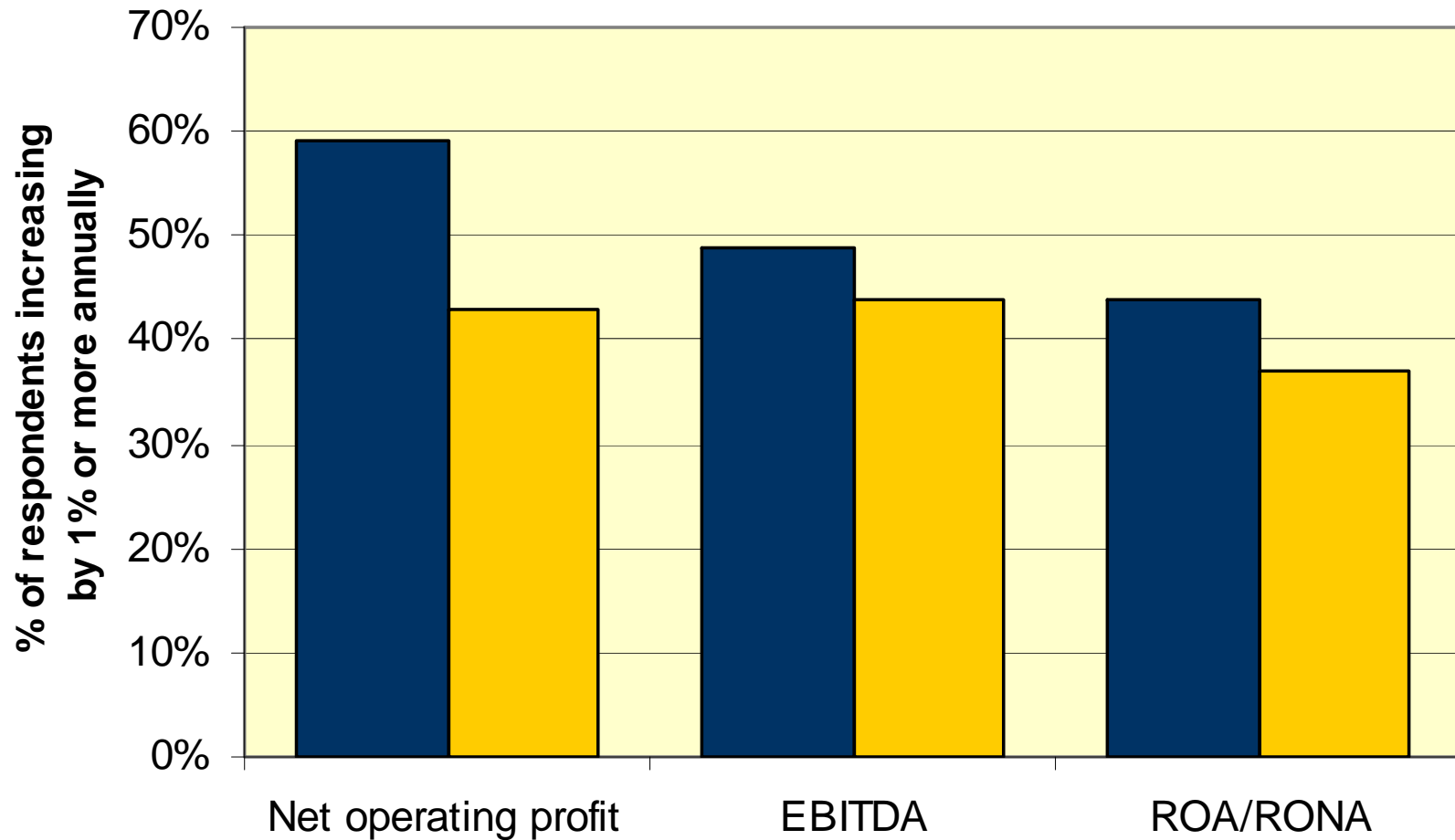
- Analyze & change process
- Alert Quality
- Request Maintenance
- Feedback to Product Design & Engineering
- Notify
 - scheduling
 - shipping
 - materials management
 - customer service/sales

Source: *MESA Metrics that Matter: Uncovering KPIs that Justify Operational Improvements*
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High Growth Companies Must be Swift & Close the Loop to Take a Leadership Position



Companies Using MES are More Likely to Improve on Financial Measures



Source: *MESA Metrics that Matter: Uncovering KPIs that Justify Operational Improvements*
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■ Use MES ■ No MES

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Thank You

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 **INDUSTRY DIRECTIONS**

Is merging into



C a m b a s h i