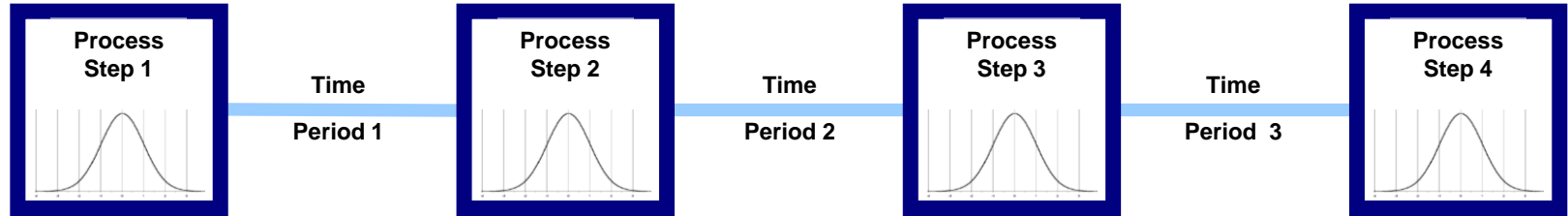


Lean Manufacturing & the Gravure Process

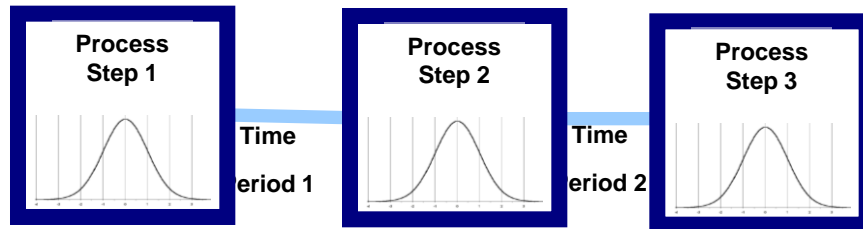
Burke McCarthy
Director, Marketing & System Sales



Lean removes non-value steps

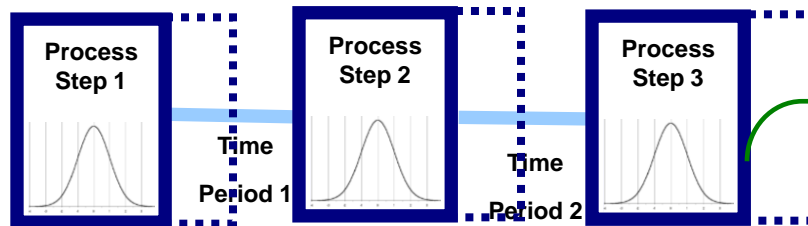


Identify non-value added steps. Measure time between steps



Lean Process

Remove non-value steps & Reduce time between steps



Speed & Quality Improvement

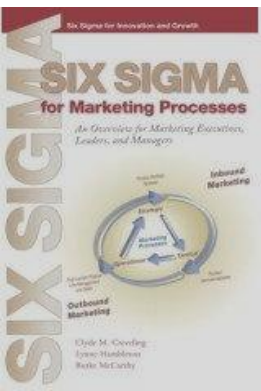
Hold the Gains

Control Plan • Measurement • Validation

DMAIC Six Sigma aims to reduce Variance within each step of process

Lean Objectives

- improve overall customer perceived value
- Increase productivity & profit / reduce costs
- Eliminate waste & bottle-necks
 - Transport, Inventory, Motion, Wait time, Over-production, Processing, Defective product
- Warehouse Operations / Manufacturing buffer
 - Cross Docking is “Lean”
 - Reduces cost per unit shipped
 - Provides faster lead times to customers & retailers
 - Reduces warehouse space requirements
 - More accurate shipments



Internal Challenges: Customer Perceived Value & Alignment

- lean aims to improve customer perceived value
- Understanding customers value is difficult

Hyundai / Kia

- Focus on Safety
- Improve Reliability
- Provide Longer Warranties
- Develop Different Personalities (Positioning)
 - Hyundai “refined & confident”
 - Kia is “exciting & enabling”
- Strengthen Dealers
- Stress Value

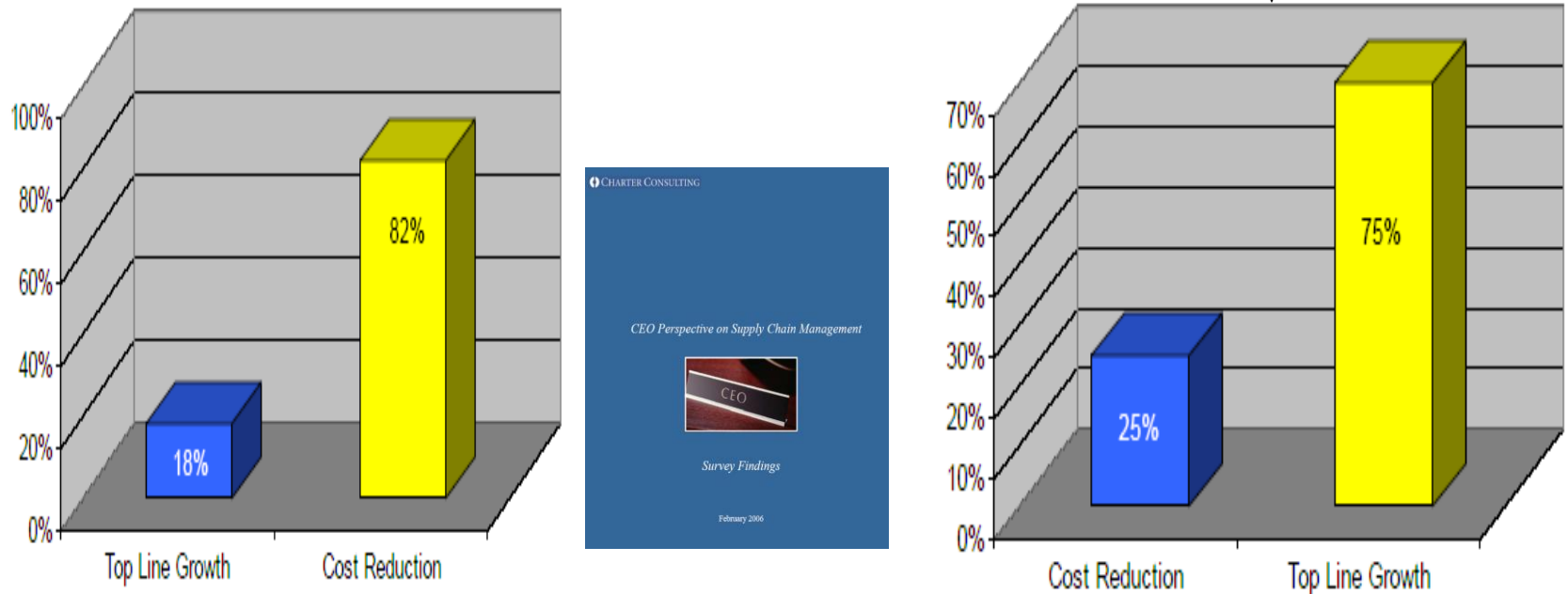


4 % Share of Us Auto Market & gaining 2002-2005



“Hyundai is now the most successful car company in the U.S.” Time 3/4/09

Supply chain initiatives not aligned with corporate strategy.



Source: Warehousing Education and Research Council (WERC) Survey

Initiatives to drive more profitable revenue growth via distribution and order fulfillment are seldom considered. That's a significant missed opportunity.

Strategic Challenges

- Changing Consumer Behavior
 - More buying from companies they trust with shared values
 - Customer touch points managed to ensure positive brand experience
 - Healthy lifestyles: demand fresh natural nutritious food no preservatives
- Corporate Social Responsibility
 - Companies expected to act, not react, *e.g. remove excess salt*
 - Operations sustainable & robust
 - Reduce Water & Energy consumption (carbon footprint)
 - Safe & Fair Work environment

Warehouse (DC) Challenges

Current State:

- Rising Operating Expenses 36 %
- Customer need Faster order turn-around 36 %
- Support increase sales / same staff & space 35 %
- Increasing Demand / Supply fluctuations 33 %
- Proliferation of SKU's, sizes, packaging 25 %

Source: Aberdeen Survey of 250 Warehouse Executives 2009

Future State:

- Perishables must move with more speed, accuracy, & security to retain value
- Less dwell time: short shelf life product must arrive within expiration date
- Must be tracked from field of origin to disposal



Airless Tires: no more flats, air valves, air compressors at gas stations, repair kits...

Order Fulfillment as Competitive Strategy

Cargill Meat Solutions...Wichita, KS

- Goal: sustained profitable revenue growth
- Aligned supply chain initiatives to achieve strategy
- Defined success metrics based on what customers value: cold, clean, correct, on-time
- Define current & desired state process capabilities
- Identified major gaps and prioritized box handling
- What If ?

Ask yourself: what IF?

Stack usage
Do not duplicate

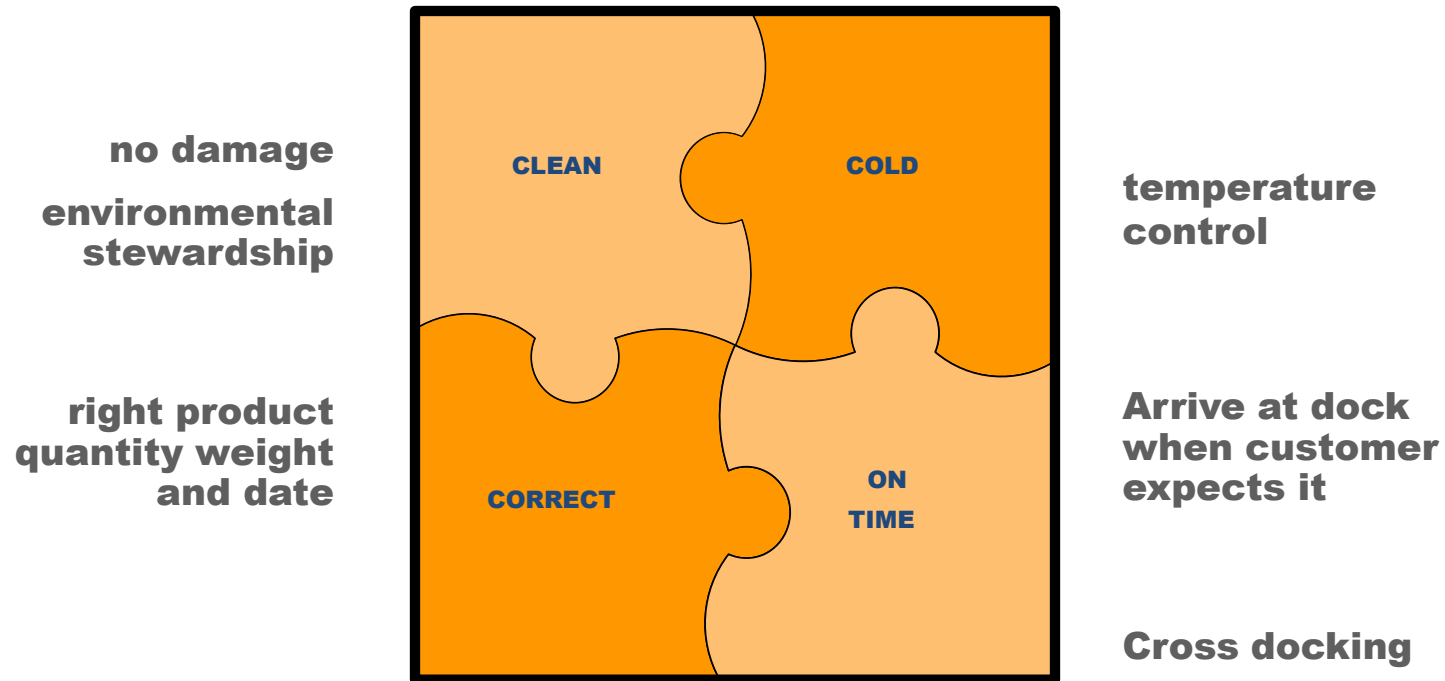
What **IF** your distribution center could become the model for quality, value and efficiency within your organization?
It can. We can help you make it a reality.

Customized best of class solutions
volorem auguro enim delis ex eu
feu facillore min etueras senit, vulla
corper adio dolore et verit augait,
sequipusto ex ex euis nit eros
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RETROTECH INTELLIGENT ORDER FULFILLMENT SYSTEMS | F

Critical to Quality

Customer Perceived Value Attributes



Project achieved cost reduction and top line revenue growth by design.

Automation Projects have delivered more speed, accuracy, safety, traceability with less energy, labor, space, damage

Automation to “Lean” Gravure Process

- Armstrong Linoleum
 - Space Constrained, Damage, Ad Hoc Storage
 - Production Bottlenecks & Delays
 - Customer Defections
- Automated Storage & Retrieval System (ASRS) Result
 - Optimized use of existing space
 - 100 % visibility & control of Inventory (RFID)
 - Reduced damage, labor, production outages
 - Improved On-Time Manufacturing & Deliveries

Automation to “Lean” Printing Process

- Quebecor
 - Handling variable size cylinders damage, ad hoc storage, labor intensive and time-challenged process
- Automated Storage & Retrieval System (ASRS) Result
 - Signatures stored on pallets retrieved in proper sequence
 - Increased productivity, throughput speed, accuracy to help meet customer requirements.
 - Reduced cost less time and labor needed to locate, retrieve, and sequence outputs for assembly & bindery