

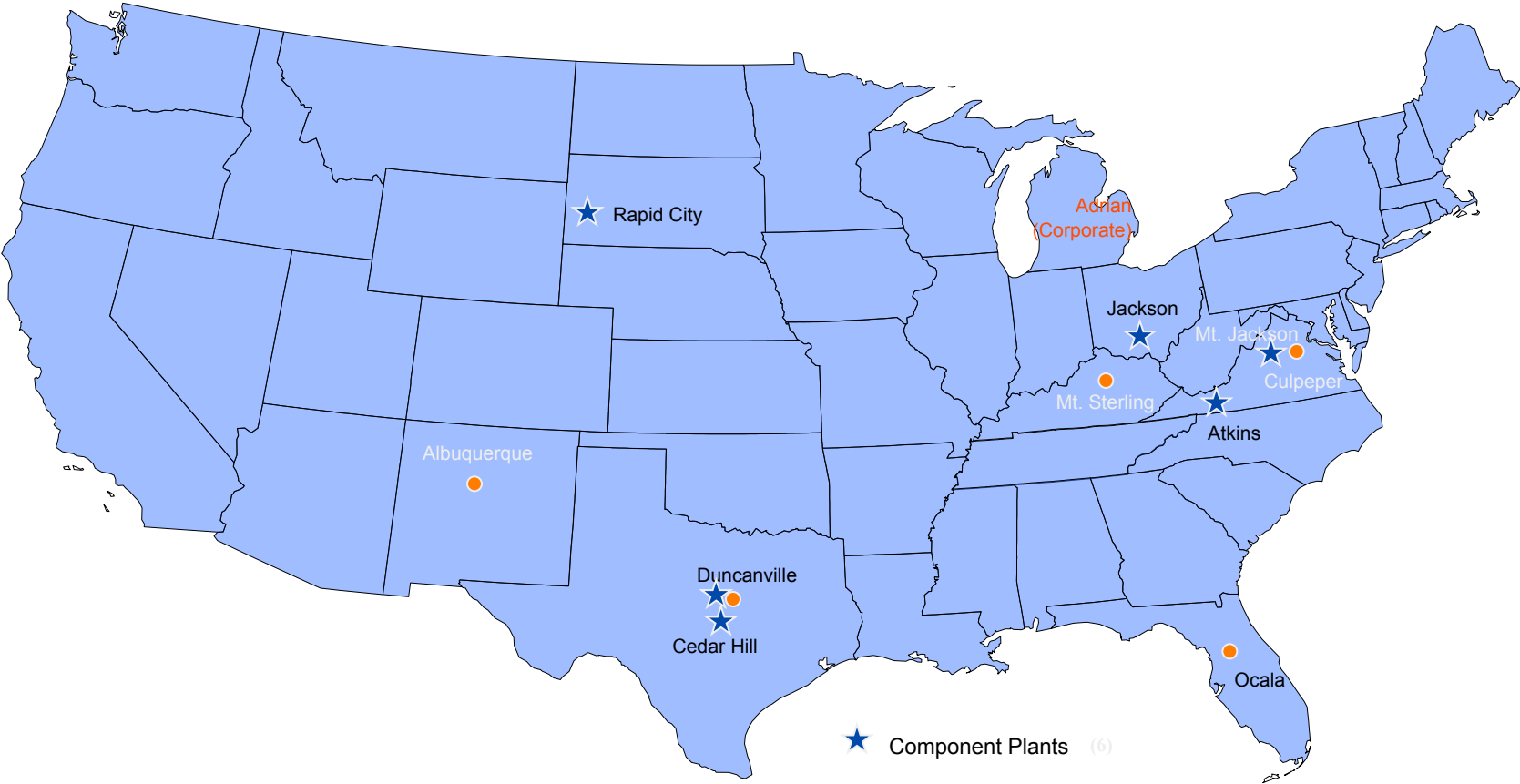


QualityCabinets. | Merillat.

Welcome to

MASCO
Builder**Cabinet**Group

Masco BCG Manufacturing Locations



★ Component Plants (6)

● Assembly Plants (6)

Atkins, Virginia (Door Plant)

- Plant Type: Component
- Primary Brand: Merillat
- Size: 278,320 Sq. Ft.
- Hourly: 260
- Salaried: 20
- Primary Operation:
 - Coped Veneer Panel Doors
- Secondary Ops:
 - Lumber Drying
 - Rough Mill
 - Drawer Fronts
 - Frame Stock
 - Finishing (Doors, Drawer Fronts)
 - Mitered Doors



Atkins, Virginia (Panel Plant)

- Plant Type: Component
- Primary Brand: Merillat
- Size: 140,610 Sq. Ft.
- Hourly: 127
- Salaried: 6
- Primary Operation:
 - Veneered Door Panels
- Secondary Ops:
 - Veneered Accessories
 - Finishing (Frames, Doors, Drawer Fronts, Accessories)



Objective

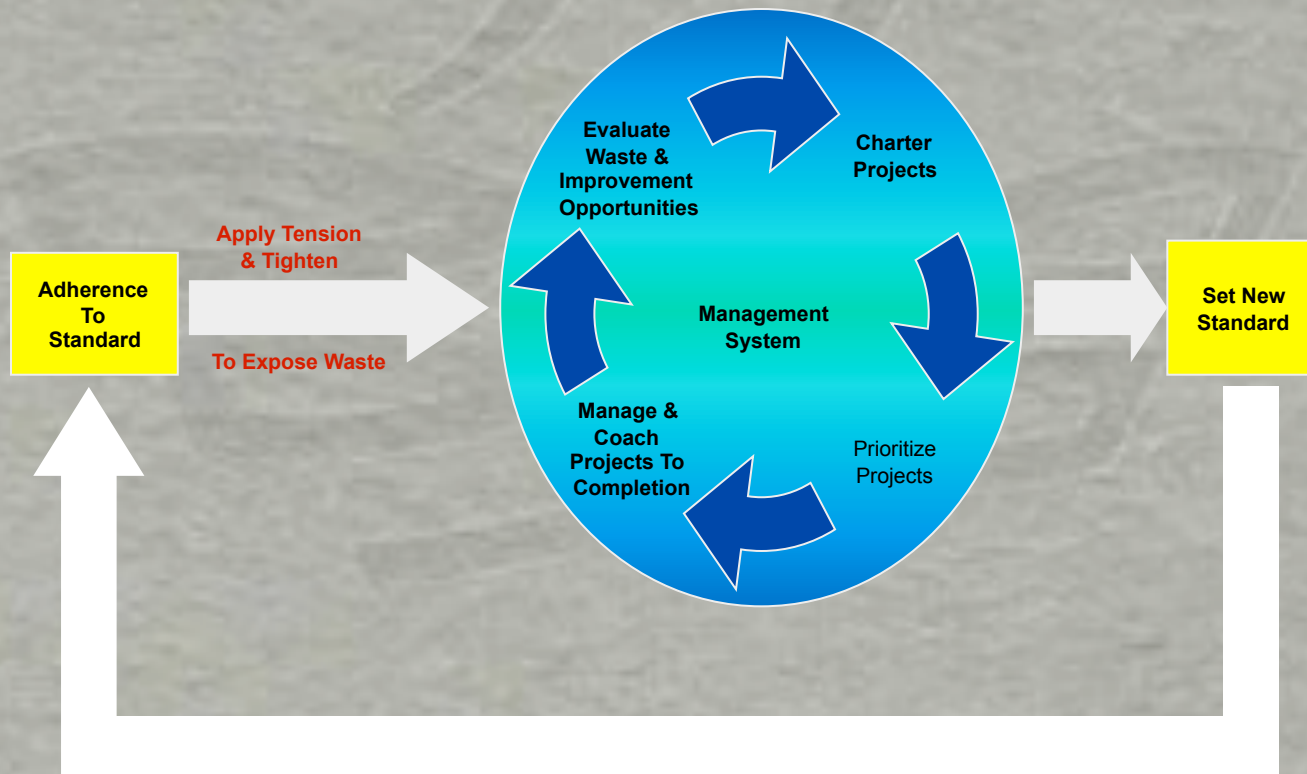
To build a lasting system and culture that drives continuous improvement in the value stream of the organization, while developing leaders for the future.

*Culture is more important than the short term results –
Continuous Improvement is part of the BCG DNA*

BCG Continuous Improvement Philosophy

resetting and sustaining

The setting of standards aimed at waste reduction with participation by all.



BCG Production System – “Lean House”

Masco BCG Production System Manufacturing Philosophy *For Continuous Improvement*

Customer Satisfaction

What:
Achieving the best quality, lowest cost, and shortest lead time in the industry while delivering 100% complete / on time.

Tools used:
Management By Planning (MBP)
Daily Accountability Meetings
Quality Management System
Cost of Quality
System Assessment (ISO-14001)

In-Station Process Control

What:
Capability to identify, eliminate and prevent defects within station.

Tools used:
Poka-Yoke (Mistake Proofing)
First Piece Check
Need To Know Books
5S / Visual Management
Standard Containers
Operator / Machine Separation
Control Charts (SPC)
Pre-Production Kaizen

Equipment Reliability

What:
Quality Output, Up Time, Long Life

Tools used:
Total Productive Maintenance (TPM)
Equipment Standards
Overall Equipment Effectiveness measurements (OEE)
Infrared / Harmonics
Lean Equipment Design

Work Teams / People

What:
Customer focused (external and internal) aimed at continuous improvement

Tools used:
Team Leader Structure
Glass House
Job Instruction Training
Job Relations
Job Methods
Job Safety
Safety FMEA

Just-In-Time

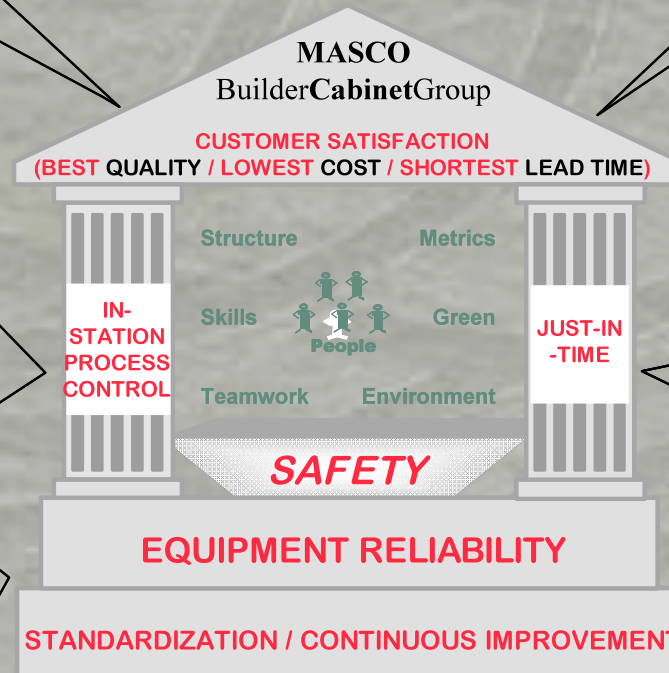
What:
Deliver the right product, at the right time, in right quantity to the right place

Tools used:
Level Production / Heijunka
Single Piece Flow
Pull Systems
Cut Direct
Setup Reduction
Custom Shops
Sequential Picking / JIT Delivery
Conveyance (Line Side)
Conveyance (Out of Cycle Work)
Product Postponement
Value Stream Mapping

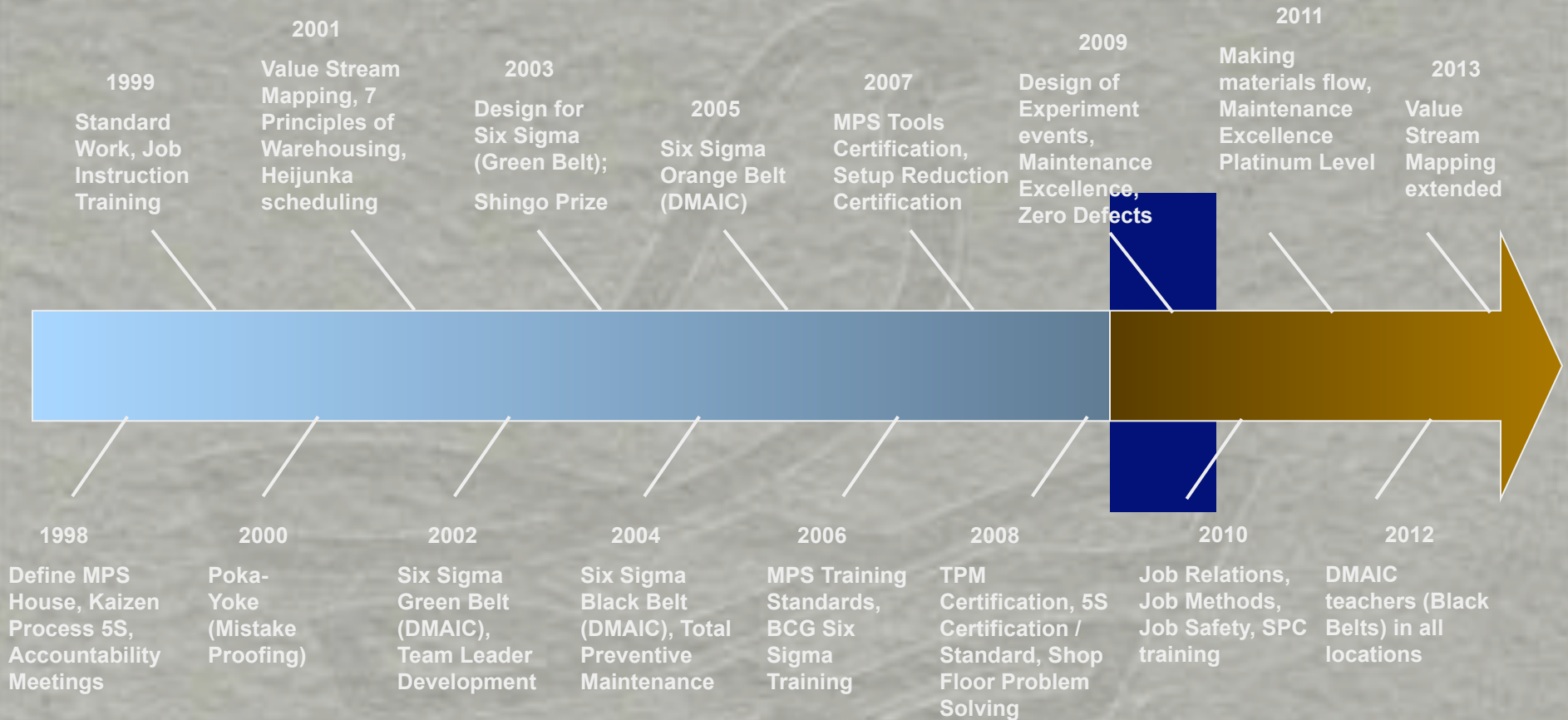
Standardization / Continuous Improvement

What:
The setting, resetting, and sustaining of standards aimed at waste reduction with participation by all.

Tools used:
Standardized Work / Standardized Work Audit
5S / Visual Management
DMAIC / Six Sigma Problem Solving
Kaizen Blitz Events
Shop Floor Problem Solving
Takt Time / Cycle Time Charts



BCG CI Strategy



Continue Establish CI Pace

The Results of Lean Manufacturing

<i>Company</i>	<i>Quality</i>	<i>WIP Reduction</i>	<i>Ship On Time</i>	<i>Equipment Uptime</i>	<i>Quoted Lead Time Reduction</i>
<i>Merillat Atkins</i>	<i>72%</i>	<i>87%</i>	<i>99.7%</i>	<i>99%</i>	<i>5 days ⇒ 8 hrs.</i>

- **Freed up 200,000 sq. feet of floor space**
- **Added 3 additional species of product: hard maple, soft maple and cherry**
- **Average lot size went from 200 down to 20 pieces**
- **Quadrupled the number of SKU's to 18,000**
- **Plant capacity doubled with no capital**
- **Reduced CTS Veneer inventory by 950,000 ft.**

Accomplishments

- Capacity
 - Core business
 - Nationally distributed product
- Inventory turns
 - Cut direct
 - No finished goods inventory
- Quality
 - Standard Work
 - Poka-Yoke
 - Six Sigma
- Glass House
 - Conduct standard work audits daily.
 - Graphical display of measurable.
 - Team problem solving.
- Standard Environment
 - A place for everything.
 - Beginning of shift audit system.
 - Parts delivery system (carts).

Masco Builder Cabinet Group (Typical acceptance of the MPS)



The Pile-On Vision

“Program of the Month”

No Traction!!



STANDARDIZATION / IMPROVEMENT EVOLUTION

People - Equipment - Processes

PEOPLE & PROCESSES

PEOPLE & EQUIPMENT

**STANDARD WORK
AUDITING**

**EQUIPMENT
STANDARDS**

**STANDARD WORK
FOR IMPROVEMENT**

**SET-UP REDUCTION
(SMED)**

**JOB INSTRUCTION
TRAINING TO STANDARD WORK**

**TOTAL PRODUCTIVE
MAINTENANCE**

5S

WORKPLACE ORGANIZATION

Six Sigma @ Atkins

- Began in 2002
- 55 Juran Certified Orange Belts
- 10 Juran Certified Green Belts
- 1 Juran Certified Black Belt
- 20 Projects per year

Kaizen Event

- People System
- A Cause, Not a Job
- Three to Five Days
 - Training / Data Collection / Solution
 - Implementation
 - Monitor to Sustain
- Frequency - Quantity leads to Quality

Kaizen

- 293 Kaizen events from 1999 to YTD
- 492 Different Participants
- People System
- No one loses their job!!!!!!

Where did we begin?

5S Is The Foundation



Before



After

Kaizen



Kaizen Example – Manufacturing



Kaizen Example – Branch Warehouse



7 Principles of Warehousing – Vertical Storage



One Pass Aisles / Vertical Pick



Heijunka



The Results of Lean Manufacturing

- WIP reduced by 80%
- Implemented the Atkins Cart System

Atkins Cart System (ACS)

Before



Before



After



- Removed 2,360 ft. of conveyor
- Reduced WIP from 180,000 pcs. to 13,000 pcs. 93% improvement

Implement Vision

- Steering Team
- Value-Stream Mapping
- Future State - 3 month timing
- Kaizen Bursts

Top-Down Mandate Examples

- “100 Poka-Yoke devices by the end of the year” per plant
- “30 Kaizen events this year” per plant
- “20 DMAIC projects this year” per plant

Next Steps

- Benchmark
- Revise Next Future State
- Mix in Top-Down Mandates
- Increase Kaizen Event Pace (Drive to the shop floor)
- Continuously Improve -- Do it again!

The key to our Success...is our People!!!





THANK YOU