

Continuous Improvement at Flint Group North America Packaging Operations

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Topics

- Flint Group North America Packaging Operations
- Our Mission and Strategy
- Our Improvement Strategy
- Our Results



The Operations



Flint Group Packaging Operations

- What We Do:

- Develop, produce and deliver liquid packaging ink for United States and Canada printing markets



- Facilities

- 3 Manufacturing Centers
- 16 Service Centers
- 2 Product Development Labs

- Employees

- Product Development - 11
- Manufacturing – 146
- Quality - 24
- Shipping - 35
- Office – 26

- 2009 Manufacturing Activity

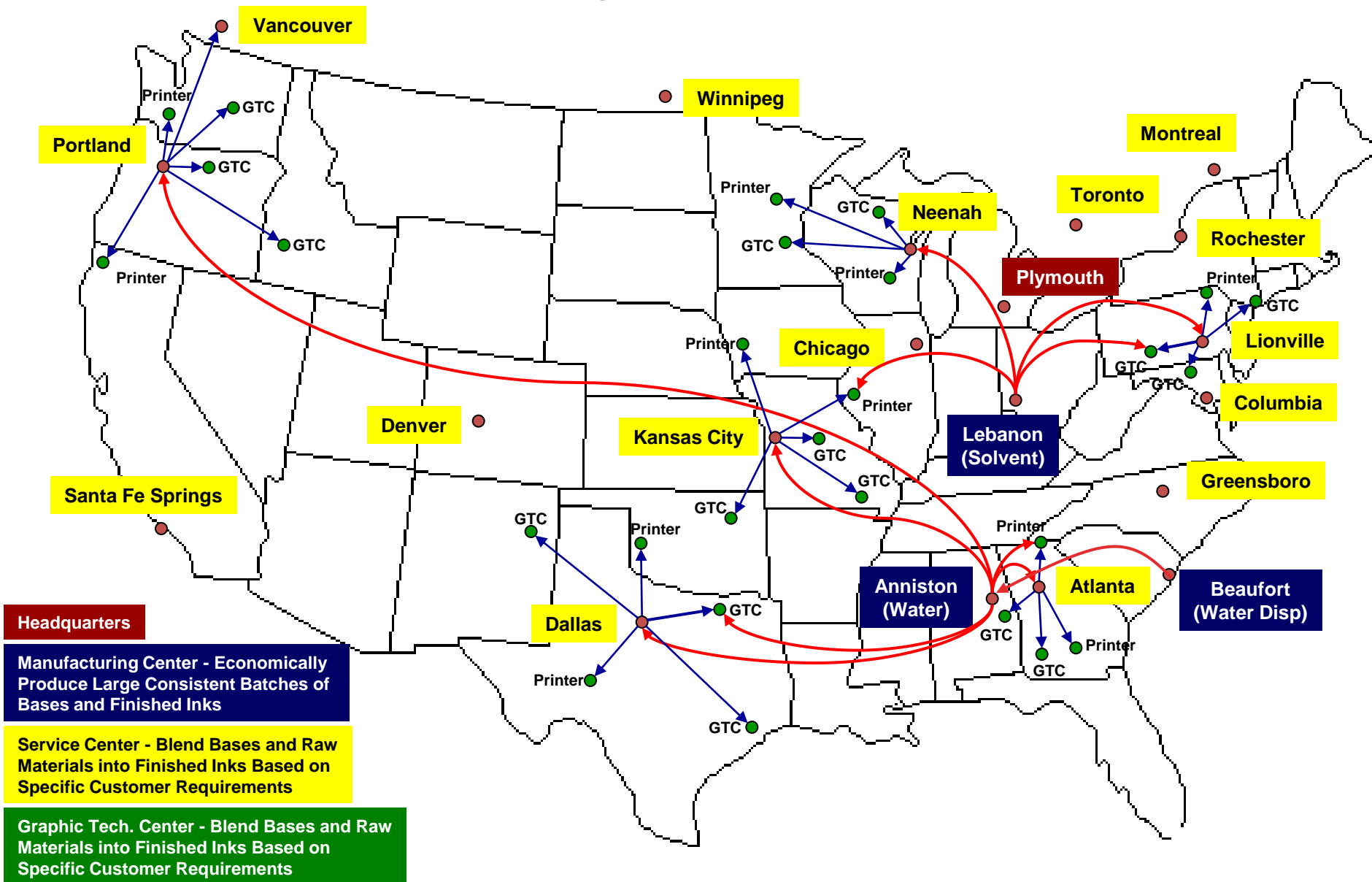
- 93,300,000 pounds
- 77,700 batches

- 2009 Shipping Activity

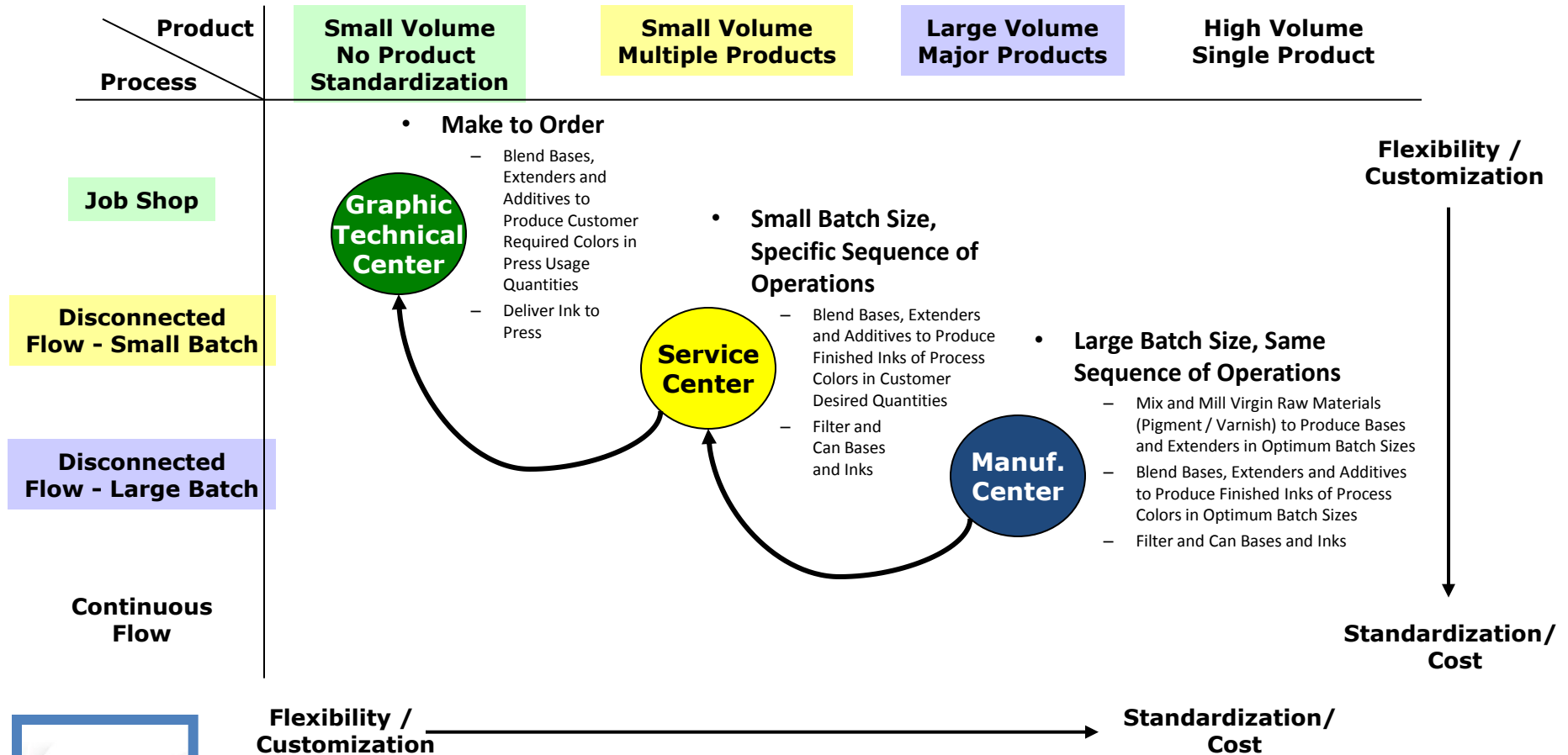
- 102,000,000 pounds



Facility Locations



Supply Chain Strategy



The Mission and Strategy



Operations Mission

- Our Mission is to be the Supplier, Employer and Customer of Choice by Providing World Class Printing Inks and Services.
We will:
 - Provide a Safe and Respectful Work Environment
 - Provide a Timely Response to All Needs and Always Deliver Product on Time
 - Produce the Most Consistent and Highest Quality Products and Services
- Everyday We will Challenge Ourselves to Do Better
 - What Can We Do Differently?
 - How Can We Do it Differently?



“Are we better today, than we were yesterday?”

Our Principles for Improvement

- Think Process and System
 - Attack the process not the person
- Be Flexible in the Use of Method and Tool
 - Six Sigma, Lean, Root Cause Analysis, Kaizen, Kepnor – Tregoe, TQM, QFD, Re-engineering, TRIZ, etc.
- Action
 - Success is measured by action on the process not by creating charts, calculating numbers, nor writing or presenting results
- Think Statistically
 - React to the variation in data appropriately



Operations Management Process

World Class
Safety Quality Delivery
Cost Productivity Inventory

Define-Measure-Analyze-Improve-Control

Consistency:

- Statistical Thinking
- Standardization
- Process Measurement
- Visual Management
- Control Plans
- Auditing

Waste Reduction:

- Value Stream Mapping
- 5S / Housekeeping
- Error Proofing
- Quick Changeover
- RCA / PPS / Kaizen

Variation Reduction:

- MSA
- SPC
- CP/CPK
- DOE

Flow:

- Pacemaking
- Pull / Pull Signals
- Production Smoothing
- Cellular Layout
- Batch Size Reduction
- TPM

Root Cause Analysis - Lean - Six Sigma



Implementation



CI Implementation

Function	Strategy	Techniques	Resources
Operations Management	<ul style="list-style-type: none"> •CI Philosophy 	<ul style="list-style-type: none"> •Champion Awareness 	<ul style="list-style-type: none"> •Mgmt Expertise •Division CI Manager
Manufacturing Center	<ul style="list-style-type: none"> •Create Consistency •Eliminate Waste •Improve Flow •Reduce Variation 	<ul style="list-style-type: none"> •Root Cause Analysis •Lean Manufacturing •Six Sigma 	<ul style="list-style-type: none"> •Mgmt Expertise •On-Site CI Expert •Associate Awareness
Service Center	<ul style="list-style-type: none"> •Create Consistency •Eliminate Waste 	<ul style="list-style-type: none"> •Root Cause Analysis •Lean Manufacturing 	<ul style="list-style-type: none"> •Mgmt Expertise •Associate Awareness
Graphic Technical Center	<ul style="list-style-type: none"> •Create Consistency 	<ul style="list-style-type: none"> •Root Cause Analysis •Lean Manufacturing 	<ul style="list-style-type: none"> •Mgmt Expertise •Associate Awareness
Product Development	<ul style="list-style-type: none"> •Reduce Variation 	<ul style="list-style-type: none"> •Six Sigma 	<ul style="list-style-type: none"> •Mgmt Expertise •On-Site CI Expert •Associate Awareness



CI Training

- **Champion Training – 2 Days**
 - Process and Statistical Thinking
 - Improvement Process
 - RCA Overview
 - Lean Overview
 - 6σ Overview
- **Awareness Training – 4 Hours**
 - Intro to Continuous Improvement Methods and Tools
 - Team Member Responsibilities
 - Supplemented by JIT training as needed
- **Lean Manufacturing – 1 Week**
 - Waste Reduction
 - Value and Value Stream
 - Production Synchronization
 - Flow
- **Six Sigma – 3 Weeks**
 - Process Measurement
 - Measurement Consistency
 - Process Stability and Capability
 - Design and Analysis of Experiments
 - Comparative Methods
 - Control Plans



Improvement Methodology

- Integrate all the “methods” into the Define-Measure-Analyze-Improvement-Control process
 - All Root-Cause, Lean and Six Sigma projects are framed in this methodology
 - For each step we identify what tools would be “helpful”

Measure the Current Process → Make a Change → Evaluate the Change → Implement the Success

- The process
 - Define: select and initiate the improvement activity
 - Measure: visualize, understand and quantify the current process
 - Analyze: understand the cause and effect relationships in the process and determine the root cause
 - Improve: generate, select, pilot and evaluate the improvement actions
 - Control: standardize the improvement and sustain the gains



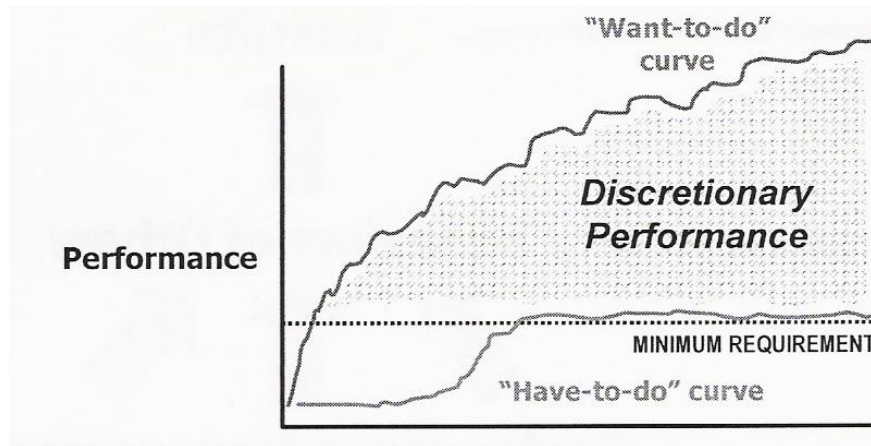
Improvement Implementation

- Establish Metrics
- Establish Goals
- Review Performance to Goals
- Reward Achievement



Creating a Culture of Continuous Improvement

- Our “operational definition” of a culture of continuous improvement is when our Managers provide discretionary effort to improve our Operations.
- To change our culture, we had to identify the **behaviors** desired for continuous improvement
 - Process and Statistical Thinking
 - Structured Problem Solving
 - Action on the Process
- To ensure these behaviors occurred we had to **set the stage** for the proper behaviors
 - Provide Training
 - Provide Coaching
 - Set Goals and Targets
- To attain this discretionary effort, we had to provide positive **consequences** to the desired behaviors
 - Positive, Immediate & Certain
 - Different for Everyone
 - The most effective consequence was the success of their efforts; their job became enjoyable – “*problems went away*”



Results and Learning



Results – 2005 to 2010

- Continuous Improvement Works:
 - **Safety** – TIR reduced 73%
 - **Delivery** – OTD increased 32%
 - **Quality** – FPQ increased 18%
 - **Productivity** – Lbs/MH increased 28%
 - **Inventory** – DOH reduced 32%
 - **Product Development** – FTR increased 43%



Improving our CI Process

- Avoid the battle of the “gurus and consultants”
 - Focus on the methods and the tools
- Provide everyone the methods and tools to improve
 - Make individuals responsible for results and give them the tools to make it happen
- Train the Leaders and Managers first
 - Obtain their commitment
- Celebrate every “improvement” – Create Positive Consequences
 - Recognize every effort, celebrate every success
 - Consequences are more important than anything else in implementation

