MRF Operating Challenges

Kurt Schmitz July 31st 2018
About Pratt
Pratt Industries Overview

• $2.5 Billion fully integrated, privately-held packaging company

• Recycle 2.4 million tons of recycled materials annually
  – ~40 million trees saved annually

• 5th Largest U.S. paper and packaging company – 7,000 employees

• Largest 100% Recycled corrugated packaging company in North America
Pratt Industries Overview

• 4 – 100% Recycled Paper Mills
  – Soon to be 5… Wapakoneta, Ohio!
  – Mainly use RESIDENTIAL Mixed Paper and OCC
  – Mills CONSUME ~10 million pounds/day of recycled paper

• 68 factories in North America

• 13 Recycling Plants
Close-the-Loop Integrated
Pratt...a true “Circular Economy” company
Our Customers
Pratt Industries is known by the companies we keep
PRATT INDUSTRIES OUR FOOTPRINT

Next Paper Mill
Materials Manufacturers and Trade Orgs want to “HELP”

• “Wish-cycling”

• Everybody wants to be seen as “sustainable”

• Big push to put more “in the bin”
Not “Helping” but “Hurting”

WISHFUL RECYCLING
“Single-Stream did not exactly work out as planned”

“American Recycling is stalling, and the big blue bin is one reason is one reason why”

- Processing costs underestimated
- Contamination underestimated
- Volume declines worse than expected
- Wear and tear/R&M underestimated
  (plastic bags, glass, etc.), at MRFs, and rest of supply chain (Mills)
- Commodity price volatility worse than expected
Single-Stream Distress

For example...many cities seeing DECLINING recycling rates; especially within single-stream

Example: Major Midwest City that went Single-Stream

<table>
<thead>
<tr>
<th>Year</th>
<th>Recycling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>11.08%</td>
</tr>
<tr>
<td>2015</td>
<td>10.23%</td>
</tr>
<tr>
<td>2016</td>
<td>9.09%</td>
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And...this number includes their contamination and residue
Single-Stream Distress

Recent statements from Recycling Industry CEOs/COOs (not Pratt)

“...we’re still committed to recycling for customers that are willing to pay... company is being more strategic with its decisions. This includes avoiding long-term contracts with decreasing value over time, closing unprofitable facilities...”

AND

“...absolutely will never go back to the old style of doing business in recycling as long as I am breathing...”
The NET Result: Contamination!!

• Most cities report 20%+ contamination
  – But many cities report 30-50%
• Ruins good commodities - devaluation
• Adds unnecessary expense/processing costs/energy use
• Takes a much longer, costlier trip to landfill
• Distorts Recycling Rate
• China now says...”Enough is Enough”
Major (Top 10) USA City Recyclables Characterization

**Major City Recyclables Characterization**

- Residue: 26%
- Paper: 38%
- Glass: 26%
- Plastic: 7%
- Metal: 3%

**Major City Recyclables Characterization**

- Metal: 6%
- Plastic: 15%
- Paper: 79%

% of Marketable tonnage
Rejects from our Paper Mill
Rejects from our Paper Mill – Heading to Landfill

Thousands of Tons per Week!!
Cost of Single Stream Recycling

• Most Municipalities have enjoyed high commodity prices, therefore enjoying revenue from their recyclables.

• Now, most Municipalities are realizing that there is a cost associated with recycling and have to budget for that cost.
Economics of SS Processing

• The combined value of commodities from Residential Single Stream is less than the cost to process.

• Contamination levels in inbound Single Stream hinders MRF operators in producing QUALITY products to market.
Re-Tooling Today’s MRF

• MRF design in the past 10 years has been around processing the most VOLUME and not necessarily producing the best QUALITY end product.

• Add labor for quality control.

• Slowing down the tons per hour through the MRF to reduce bourdon depth of material on conveyors. (You can’t QC what you can’t see).

• Adding Technology to existing systems. (Optical Sorting, Robotics).
Factors/Trend in Recycling

GLASS

Needs a better solution than single-stream
China

So, as our recyclables have become more contaminated, China has said:
‘...What we now face is the contradiction between unbalanced and inadequate development and the people’s ever growing needs for a better life”, Mr. Xi said. He added “improving people’s lives included reducing pollution....
China

• China Ban...Never an issue of “IF” it would happen, but “when”

• Ministry Enviro Protection driven, not economic
  – No longer wants our garbage
  – Goal to improve “local” China collections

• Mixed Paper = BANNED
  – All other grades = 0.5% Prohibitives

• We did it to ourselves
China closes the door, prices crash

The average price paid to recyclers for a ton of mixed paper in the Pacific Northwest and across North America has plummeted in the last year.

$100 per ton of mixed paper

**REGIONAL AVERAGE**

$77.50

JULY 18
China announces new bans on imported recycling, including mixed paper.

$75

**NATIONAL AVERAGE**

$97.50

JAN. 1
Import ban takes effect.

$5

MARCH 1
0.5% contamination limit takes effect.

$5

Source: RecyclingMarkets.net

EMILY M. ENG / THE SEATTLE TIMES
Recyclable or Not; all brands “making their case” to be included in curbside recycling.

CONTAMINATION!!!
We Can Fix This!!

The Pendulum went too far one way; and now it needs to go all the way back to the other side – equilibrium will be found.
Shift in Global Commodity Consumption

- Pratt Industries building new mill in Wapakoneta, OH
- Multiple announcements of mill conversions and startups of idled mills to consume recovered fiber.
- Export shift to non-China countries.
- In short, there is a re-balancing of consumption globally.
Things to do Now
1. If dual-stream, stay dual-stream
2. Don’t focus on tons or percentages.

Focus on quality vs. quantity

High recycling rates, with low quality will result in eventual demise of a program
3. Glass Solutions

– Not in Single-Stream
– OK in dual-stream
– Separate collection and drop-off programs
4. Plastics - #1 and #2 will still have markets – Focus on those, and eliminate #3 -7; unless you have a dual-stream program where all plastics are ok.
Focus on QUALITY not QUANTITY!
Thank You

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