Van Dyk Recycling Solutions
Evolution of Recycling Sorting Equipment
CT DEEP SWAC

Matthew Turis, Manager of Strategic Initiatives

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Delivering waste collection and processing solutions
Company Background

Van Dyk Recycling Solutions

• We deliver waste collection and processing solutions

• MRF Design and Build
  • Bollegraaf
  • Lubo
  • TOMRA
  • Walair
  • BeePro
  • Smicon

• Smart Collection
  • VConsyst
SIMS largest container plant in the world - 70 tph New York City containers (1000 tons per day, only 8 sorters)
Company Background

Major Cities Supplied

- NYC
- City Toronto
- State of Rhode Island
- Dallas
- Houston
- Los Angeles
- San Francisco
- Chicago
- Baltimore
- Philadelphia
- and more…

Delivering waste collection and processing solutions
New Products
New Products

Underground Waste Storage

• New initiative, taken on in 2018
• VConsyst, largest manufacturer of underground waste containers
• Cheaper collection in long run, more efficient routes, hygienic

Delivering waste collection and processing solutions
New Products

BeePro – Dust encapsulation system
New Products

Smicon – Source Separated Organics (SSO)
New Products

Test Facility
Norwalk, CT

- 18,000 sq. ft.
- Proof of concept for recyclers
- Lab for paper mills packaging/brand companies
- Lab for packaging engineers and environmental studies
Recycling Industry
Recycling Industry
Timeline Highlights

Delivering waste collection and processing solutions
Recycling Industry

From a linear to a circular economy

Linear economy

Raw materials
Production
Use
Non-recyclable waste

Reuse economy

Raw materials
Production
Recycling
Use
Non-recyclable waste

Circular economy

Raw materials
Production
Recycling
Use
Recycling Industry - Today

Paper is 50%-60% of the Residential Single Stream composition

Sample Pricings
2017 -> 2019

OCC: $150 - $240/ton -> $50 - $90/ton

ONP/Mixed: $90 - $120/ton -> -$15 - $10/ton
Recycling Industry - Today

Residential Recycling

Dual Stream vs Single Stream

From 2005-2014, went from 29% to 80% of US

Should we go back?
# Recycling Industry

## Societal wants ≠ Current market situation

<table>
<thead>
<tr>
<th>Wants</th>
<th>Reality</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Circular Economy</td>
<td>• Cheaper virgin materials than PCR</td>
</tr>
<tr>
<td>• Bans (bags, straws) &amp; EPR</td>
<td>• Anti-regulatory climate</td>
</tr>
<tr>
<td>• More products made with PCR (Euro 2030)</td>
<td>• National Sword &amp; secondary markets filled</td>
</tr>
<tr>
<td>• Less landfill</td>
<td>• Economics</td>
</tr>
<tr>
<td>• Recycling for free or cheap</td>
<td>• New normal, equal to waste</td>
</tr>
<tr>
<td>• Self-sustaining industry</td>
<td>• Dropping commodity prices</td>
</tr>
<tr>
<td>• WTE</td>
<td>• Cheap gas prices</td>
</tr>
</tbody>
</table>
# Recycling Industry

Societal wants ≠ Current market situation

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<td>Want to save the planet without paying more or changing habits drastically</td>
<td>Times have changed. We can recycle and recover more, but it’s a balance of legislation, money, and cultural shifts</td>
</tr>
</tbody>
</table>
Recycling Industry - Today

Sisyphus

Delivering waste collection and processing solutions
Recycling Industry

1) Screen improvements

440 screen - How it affects paper:

- Less cleaning time
- More production
- Better paper quality
- Less star wear
- Safer
Recycling Industry

Example

- City Carting, CT
- WM Avon - MA
- Republic Southfield - MI
- JP Mascaro - PA
- WM Elkridge – MD
- FCC Dallas – TX
- Waste Connections – TX
- Sanco – CA
- Recology - CA
Recycling Industry

2) Optical Sorters to improve paper quality

1. Feeding of unsorted material
2. Spectrometer scanner
3. Separation chamber
Recycling Industry

2) Optical Sorters to improve paper quality

Video from test center
Recycling Industry

Example

RIRRC – Paper Cleanup
Johnston, RI

- 40%-50% more OCC
- Paper higher quality
- Air-assist for more production
Recycling Industry

Example

Total Recycle – Flexible Packaging Recovery
Birdsboro, PA

- Cleaner paper
- Flexible packaging recovery
- Less labor
Recycling Industry

Example

USA Recycling – Commercial Single Stream
Bridgeport, CT

- Optical recovery of small browns
- Originally optical recovery of SOP
- Markets changed, now optical QC of paper
- Opticals allow for flexibility
Recycling Industry

3) Improvements in system designs
Plano, TX

“Positive Sort”
3 grades paper purity:
97.1% Low Grade
98.2 Medium Grade
99.1 High Grade
Thank you for your attention
Questions?