THE PARADIGM SHIFT
What’s Wrong With Our Financials?

SERDC
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Recycling is source separated from trash
OCC is large and flat
Fiber is 2 dimensional, mostly newspaper
Containers are 3 dimensional
Containers are bottles and cans made of one material
MRFs are sources of net revenue
Markets accept what MRF’s produce
THE PARADIGM SHIFT

INBOUND COMPOSITION → MRF → COMMODITY MARKETS

$ QUALITY DEMANDS
THE PARADIGM SHIFT

SHIFTING CONSUMER BEHAVIOR AND NEW PACKAGING DESIGNS ARE CAUSING A SIGNIFICANT CHANGE IN THE COMPOSITION OF WASTE STREAMS PROCESSED BY MRFS
THE PARADIGM SHIFT

QUALITY STANDARDS HAVE INCREASED AT THE SAME TIME THERE HAS BEEN A SIGNIFICANT DECREASE IN THE PRICES IN THE GLOBAL MARKET
Increased online consumption of news and media has significantly reduced the amount of newspapers and magazines available to recycle.

Aluminum and metal containers are becoming thinner and lighter, requiring more units and effort at the MRF to collect and sort the same metric tonnage.

Manufacturers are seeking out and using flexible composite plastic packaging, instead of paper or glass. These materials are difficult to recycle, if they can be recycled at all.

From a combination of “wishful recycling”, carelessness, and lack of knowledge, contamination has risen over 50% in 2 years.
CONTINUING DECLINES IN THE VOLUME OF NEWSPRINT GENERATED FOR RECYCLING BY U.S. CONSUMERS HURTS MRF OPERATING EFFICIENCY
Electronic consumption of news has significantly reduced newspaper circulation and recycling.

Daily & Sunday paper circulation to U.S. households fell from 70% to 32% from 1990 to 2013.

Source: EPA, American Forest and Paper Association, Communications Management Inc.
WHAT REPLACES NEWSPRINT?
CHANGING PARADIGM – CARDBOARD IS NOT ALWAYS LARGE AND FLAT
CHANGING PARADIGM – PAPER IS NOT ALWAYS FLAT SHEETS
ONGOING PLASTIC CONTAINER SOURCE REDUCTION (LIGHTWEIGHTING) BY THE LARGEST CONSUMER PRODUCT COMPANIES REDUCE PLASTIC AVAILABLE FOR RECOVERY
RECYCLABLES WEIGH LESS

• Many packaging types are thinner and lighter than in the past
  o Newspapers reduce paper sheet 10-15% in 2000s
  o 2 liter soda bottle weighs 25% less than in 1970s
  o PET water bottle weights down 32% 2000-2008
  o Aluminum Cans 17% lighter than in 1990
  o Milk jugs (HDPE) 30% lighter than 1980
THIS MEANS FAR MORE UNITS TO SORT TO MAINTAIN SAME WEIGHT OF RECYCLING
FLEXIBLE PACKAGING IS GAINING POPULARITY WITH CONSUMERS, BUT THESE CONTAINERS ARE NON-RECYCLABLE AND MUST BE SORTED OUT TO LANDFILL WHEN THEY REACH THE MRF
“VIRTUALLY NONE OF THESE FLEXIBLE PACKAGING MATERIALS ARE RECYCLABLE ANYWHERE IN THE WORLD”

– Natural Resources Defense Council
CONTAMINATION ON THE RISE

For every 100 tons that come to a ReC MRF, 15 tons end up in the landfill.

50% increase in 2 years!
CONTAMINATION ON THE RISE

• Wishful Recycling
• Carelessness
• Lack of education/knowledge
• Out of sight, Out of mind – covered carts on the rise
• Complicated and differing guidelines – Good enough is the victim of the perfect?
THE LOADS COMING IN NOW AVERAGE 16% CONTAMINATION

— WASTE MANAGEMENT SUSTAINABILITY REPORT (2014)
DANGEROUS CONTAMINATION

• Risk to Employees
  • Medical wastes – diapers, syringes, fluids, risk of blood borne pathogens
  • Hazardous materials and chemicals – solvents, pool chemicals, HHW that makes it into recycling
  • Explosion and fire hazards – propane cylinders, gas cans, ammunition, batteries
  • Cut/puncture hazards – needles, knives, scrap metal

Lack of care in households for what goes in the recycling container
DANGEROUS CONTAMINATION

• Risk to Plant Equipment
  • Appliances
  • Auto parts
  • Construction debris
  • Wires, hoses, cables, chains
  • Textiles and clothing, carpet
  • Tarps, swimming pools
BAGS, BAGS, EVERYWHERE
PLASTIC BAGS ARE A MULTI-MILLION DOLLAR PROBLEM
MOST CONTAMINENTS MUST BE REMOVED BY HAND. THAT’S THE CURRENT STATE OF THE ART.
QUALITY
MARKETS FOR SUB-STANDARD QUALITY HAVE DRIED UP
OPERATION GREEN FENCE
ISRI PAPER STANDARDS UNDER REVISION
COMMODITIES

Average ACR = $108

Oil futures suggest slow commodity price growth

AVERAGE COMMODITIES VALUES CORRELATED WITH OIL

ACR and oil prices* appear to be correlated over the last decade and long dated oil future contracts indicate slow growth in prices over the next four years

* Past performance is not necessarily indicative of future results
THE OLD PARADIGM

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THE NEW PARADIGM

Recycling is increasing less separated from trash

OCC is sometimes large and flat, but also 3D and small

25% of Fiber is now 3 dimensional, much less newspaper

Containers are thinner, lighter, flatter, less rigid, and more diverse in materials

MRFs are sources of cost

Markets have strict quality requirements
COSTS

MRF FINANCIAL PERFORMANCE HAS SUFFERED DUE TO THE CUMULATIVE NEGATIVE EFFECT OF STREAM COMPOSITION CHANGES ON PRODUCTIVITY & COMMODITY VALUE
SUMMARY
NEW PARADIGM DEMANDS CHANGES

• MRF Design and Operation
• Packaging design for recyclability
• Reduce contamination in inbound
• Recognize the new economic realities
THANK YOU