ABOUT EMC

Who We Are: EMC is a global company that provides solutions to help our customers store, manage, protect, and analyze their information

Our Value to Customers: We help customers avoid the risks and reduce the costs associated with managing information, while fully exploiting its value for competitive advantage

How We Deliver Value: [Diagram showing Information Infrastructure, Store, Protect, +Intelligence, Virtualize & Automate]
EMC’S NORTH CAROLINA PRESENCE

Apex Manufacturing
EMC’S NORTH CAROLINA PRESENCE

- Plant opened in 1981
- 388,000 ft\(^2\) on 140 acres
  - 307,000 ft\(^2\) of manufacturing floor space
  - 81,000 ft\(^2\) of engineering lab space and offices
- Lean Six Sigma manufacturing
EMC’S NORTH CAROLINA PRESENCE

- Integration and Test
  - Atmos
  - Avamar
  - Centera
  - ECS Nile
  - DLM
  - DCA
  - VNX, VNXe
  - Data Domain
  - Recover Point

Apex Manufacturing

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WHAT DOES THAT MEAN?
PRODUCTS SUPPORTED

**STORAGE**
- EMC VNX
- Centera
- VNXe

**DATA PROTECTION**
- Data Domain
- RecoverPoint
- Avamar
- DLM

**CLOUD**
- ECS
- Atmos

**BIG DATA**
- DCA

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ELECTRONICS = LOTS OF CORRUGATED
ELECTRONICS = LOTS OF FOAM

• Expanded Polypropylene and Polyethylene
• Recyclable – just not economically feasible in its expanded form
• We have LOTS of it
EMC APEX ZWTL TIMELINE

- 2006
  - Corrugated
  - Office Paper
  - Pallets

- 2007
  - Film
  - E-waste

- 2008
  - All Paper
  - Bottles/Cans

- 2009
  - Compost

- 2010
  - Foam
  - Misc Plastic
  - Small Metal

- 2011
  - Packaging Reuse
  - WTE

- 2012
  - ZWTL Goal

- 2013
  - ZWTL Goal

- 2014
  - ZWTL Goal

- 2015
  - ZWTL Goal
APEX WASTE STREAM ANALYSIS

2015 Total Apex Manufacturing Waste Stream – 4035.5 Tons

- Recycle: 82.21%
- Reuse: 15.74%
- Compost: 0.36%
- Landfill: 0.04%
- RMR
- Iron Mtn
- Avnet
- Atlas & Rand
- Avnet
- Brooks
- Ecoflow
- Republic
- Misc Trash
- Bottles & Cans
- Corrugated
- Densified Foam
- Film
- Metal
- Plastics
- Pallets
- Paper
- Ewaste
- Pallets
- Corrugated
- Ewaste
- Cafeteria
- Solder & Fluorescent Lamps
- Cafeteria, Restroom & Non-Recyclable Trash

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REDUCE: APEX PAPER USAGE
(IMAGES PRINTED)

Images Printed

<table>
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<th>Images Printed per Unit</th>
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<td>Target</td>
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Lean Six Sigma Black Belt Project
Lean Six Sigma Green Belt Project
APEX PAPER USAGE REDUCTION (IMAGES PRINTED)

• Oracle Paper Reduction Black Belt Project 6S02220
  – Reduced printing by 706k sheets per year
  – $93k in annual savings (printing, storage, and labor costs)
• Printer default settings changed to duplex
• Communication and awareness through metrics
• Green Belt Project 6S03866 (after ERP system change to SAP)
  – Reduced printing by 510K sheets per year
  – $19.4K reduction in printing costs per year
REDDUCING SCRAP, PACKAGING, PAPER TAGS

• Cabinet Side Skin & Trim In-Process Scrap Reduction Green Belt Project 6S02073
  – 83% reduction in trim panel scrap
  – 44% reduction in side skin scrap
  – $30k per year in hard savings

• Clariion Cabinet Ramp Reduction Lean Kaizen LK00616
  – Eliminated 2692 plywood ramps per year
  – $111k per year in hard savings

• Cable Bundling Lean “Just Do It” Project
  – Eliminates separate packaging for cables by tying cables inside cabinets
  – $4k per year in labor and material savings

• Electronic Failure Tag Black Belt Project 6S01892
  – Eliminated printing of 492k paper tags per year
  – $69k in annual savings (materials, labor costs)
REDUCE: CONES RATHER THAN LABELS OR PAPER
REUSE: PARKING LOT RENOVATION

• Completed during the summer of 2008
• 100% of materials reused on site
  – 2700 cubic yards of asphalt (used as base for new paving)
  – 3908 cubic yards of soil
• Reclaimed 2.6 acres of “green” space
• Added employee walking path
REUSE: PACKAGING INITIATIVES

• Reverse Logistics Packaging Reuse Lean “Just Do It” Project
  – Reuses good packaging from field returns
  – $678k in material savings for 2009

• Cabinet Packaging Reuse Green Belt Project 6S01690
  – Implemented a return process for cabinet brackets
  – Saves approximately 22k metal brackets per year from going to landfill
  – $250k per year in hard savings
REUSE OF PALLETS AND CABINET BRACKETS
REUSABLE DRIVE HANDLING EQUIPMENT
REUSABLE PACKAGING / TOTES
REUSABLE DOOR AND TRIM CRATES
ZERO LANDFILL
(REDUCE, REUSE, RECYCLE)

Lean Six Sigma Green Belt Project & Packaging Reuse

Tons Per Unit

Tipping Weights
Target
Tons Per Unit

<table>
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<tr>
<th>Years</th>
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EMC APEX WASTE STREAM

2010

- Recycle: 79.6%
- Landfill: 15.97%
- WTE: 4%
- Reuse: 0.4%
- Haz & Univ: 0.04%

2015

- Recycle: 82.2%
- Landfill: 0.04%
- WTE: 1.64%
- Compost: 0.36%
- Reuse: 15.74%
- Haz & Univ: 0.02%