Applications Segmented by Subdivisions

Presented by:
AGVS Industry Group
Presenters

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29 Years Guiding the Industry

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Vice President
Sales & Marketing
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25 Years Guiding the Industry
Who We Are

• Group of leading AGV system and component suppliers
• Mission: To promote growth and effective use of automatic guided vehicle systems (AGVS) in manufacturing, warehousing, distribution and other key markets
Objectives

• “What will attendees be able to DO as a result of attending your seminar that will make a difference for their business?”

• Examples:
  • “Identify the symptoms and root causes of sub-optimal processes”
  • “Use the xyz checklist for implementing and evaluating a new process”
  • “Determine readiness for automating your new process”
• Retail and eCommerce
• Automotive
• Food and Beverage
The Challenge in Retail and eCommerce

• There are only three keys to growth. Save time, save money, and sell more. While most businesses focus on the third ingredient, the irony of high-volume ecommerce is that selling more can be its own worst enemy.

• The problem is dead simple: people don’t scale. Even more painful … people are costly. Neither of those statements undercut the value of people. If anything, they reinforce it. People are the most valuable resource and what they need is time.
The Solution for Retail and eCommerce

• Automation ➔ Simply put, ecommerce automation is the combination of software, processes, and mindsets that allow multiple roles within an ecommerce organization to:

  » Reduce manual workloads and redundant tasks
  » Simplify front and backend workflows
  » Eliminate the patchwork of multiple, disconnected apps
  » Scale for growth quickly and efficiently
Retail / eCommerce Use Case #1: Third Party Logistics Provider

- Faster order processing
- Faster re-availability of returns
- Increased efficiency through automation and better working conditions
Business case:

<table>
<thead>
<tr>
<th>Background</th>
<th>Provider for contract logistics and transport services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective</td>
<td>Return handling for 3PL customer with an automated Goods-to-Person solution</td>
</tr>
</tbody>
</table>

The solution:

<table>
<thead>
<tr>
<th>System</th>
<th>Material flow</th>
</tr>
</thead>
<tbody>
<tr>
<td>75 bots</td>
<td>Storage and buffering of returns</td>
</tr>
<tr>
<td>800 racks</td>
<td>Picking at 5 Goods-to-person workstations</td>
</tr>
<tr>
<td>5 Pick</td>
<td></td>
</tr>
<tr>
<td>Stations</td>
<td></td>
</tr>
</tbody>
</table>

| WMS and controls | Interface to WMS | Fleet management |

Customer benefits:

- Faster order processing and higher quality
- Faster re-availability of returns
- Increased efficiency through automation and better working conditions
- Use the low ceiling height
Automotive
The Challenge in Automotive

• In 2019, automation is already a serious consideration where automotive manufacturing is concerned. Human labor is costly and unpredictable, whilst selectively implemented industrial automation helps automakers eliminate human errors and ensure precision work. By all indications, the end goal for most automakers is a fully automated factory floor, rife with the most cutting-edge technologies.

• The movement of heavy loads creates a huge concern when it comes to safety. Safety is the number one priority automotive, as it is for any industry.
The Solution for Automotive

• Automation → Automation in the automotive sector offers huge advantages! These advantages include:

  » Increased operational efficiency through the JIT delivery of parts to production lines
  » Correct deliveries
  » 24/7 usage and maximum system availability.
  » Reduced product damage
  » Continuous confirmation of the whereabouts of each load
  » Increased operator safety.
Automotive Use Case #1: German Automobile Manufacturer

- Just In Time (JIT) Delivery
- Labor Savings
- Higher Efficiency and Order Accuracy
**Business case:**

<table>
<thead>
<tr>
<th>Background</th>
<th>Manufacturer of German automobiles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective</td>
<td>Eliminate errors and improve order accuracy – overcome issues with labor shortages.</td>
</tr>
</tbody>
</table>

**The solution:**

<table>
<thead>
<tr>
<th>System</th>
<th>Material flow</th>
<th>ERP and controls</th>
</tr>
</thead>
<tbody>
<tr>
<td>28 bots</td>
<td>Parts to assembly</td>
<td>Interface to ERP</td>
</tr>
<tr>
<td>90 transport tables</td>
<td>Residuals back to buffer storage</td>
<td>Fleet management</td>
</tr>
<tr>
<td>24 Handover Stations</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Customer benefits:**

- Just-In-Time (JIT) delivery of line-side components
- Higher efficiency in process
- Increased safety throughout assembly area
- Improved accuracy in orders
- Labor savings
Automotive Use Case #2: German Automobile Manufacturer

- Reduction in Production Costs
- Increase in Competitiveness
- Labor Savings
Business case:

<table>
<thead>
<tr>
<th>Background</th>
<th>Tier one supplier of components for various automobile manufacturers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective</td>
<td>Reduce logistics costs while improving its competitiveness with other suppliers</td>
</tr>
</tbody>
</table>

The solution:

<table>
<thead>
<tr>
<th>System</th>
<th>Material flow</th>
<th>ERP and controls</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ 7 Fork AGVs</td>
<td>▪ Parts to assembly</td>
<td>▪ Interface to MES</td>
</tr>
<tr>
<td>▪ Pallets and Containers</td>
<td>▪ Empties back to manufacturing</td>
<td>▪ Fleet management</td>
</tr>
<tr>
<td>▪ Stacking and Unstacking</td>
<td>▪ Waste handling</td>
<td></td>
</tr>
</tbody>
</table>

Customer benefits:

- Reduction of dangerous forklift traffic
- Higher efficiency in process
- Increased safety throughout production area
- Increased competitiveness in market
- Labor savings
Food and Beverage
The Challenge in Food and Beverage

• What is the consumer really good at? Changing their mind. More than ever, Food and Beverage companies need to be flexible in their operations as Super Bowl specials and last minute SKU pushes can wreak havoc if the manufacturer is not set up to handle such a dynamic process.

• As havoc ensues, safety is compromised.
The Solution for Food and Beverage

• Automation → Automation creates a discipline within the process and can bring many more advantages, such as:
  » Reduced product damage
  » Cost-effective movement of materials
  » Improved safety in work area
  » Ability to overcome labor shortages and turnover
  » Flexibility
Food & Beverage Use Case #1: Beverage Provider

- Reduced Supply Chain Cost
- Reduced Damage
- Improved Reliability
### Business case:

<table>
<thead>
<tr>
<th>Background</th>
<th>Soft drink and beverage producer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective</td>
<td>Reduce supply chain costs</td>
</tr>
</tbody>
</table>

### The solution:

<table>
<thead>
<tr>
<th>System</th>
<th>Material flow</th>
<th>ERP and controls</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 Fork AGVs</td>
<td>Production line to warehouse</td>
<td>Interface to WMS</td>
</tr>
<tr>
<td>Conveyor P&amp;D</td>
<td>Warehouse to shipping onto truck</td>
<td>Fleet management</td>
</tr>
<tr>
<td>Block Stacking</td>
<td>Warehouse to end of line</td>
<td></td>
</tr>
<tr>
<td>Standard Selective Rack P&amp;D</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Customer benefits:

- Reduced Labor Costs
- Improved Productivity
- Reduced Product Damage
- Reduced Facility Damage
- Improved Efficiency
- Improved Safety
Food & Beverage Use Case #2: Sports Beverage Provider

- Reduction in Production Costs
- Increase in Competitiveness
- Labor Savings
### Business case:

<table>
<thead>
<tr>
<th>Background</th>
<th>Manufacturer and provider of sports beverages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective</td>
<td>Reduce labor and automate repetitive, mundane tasks</td>
</tr>
</tbody>
</table>

### The solution:

<table>
<thead>
<tr>
<th>System</th>
<th>Material flow</th>
<th>ERP and controls</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 Fork AGVs</td>
<td>Production line to warehouse</td>
<td>Interface to WMS</td>
</tr>
<tr>
<td>ATL Functionality</td>
<td>Warehouse to shipping onto truck</td>
<td>Fleet management</td>
</tr>
<tr>
<td>Highbay Warehouse capability</td>
<td>Warehouse to end of line</td>
<td></td>
</tr>
</tbody>
</table>

### Customer benefits:

- Reduced Labor Costs
- Improved Productivity
- Reduced Product Damage
- Reduced Facility Damage
- Improved Efficiency
- Improved Safety
- Improved Flexibility
- Improved Accountability
Key Takeways

• AGVS are versatile and provide benefits to a vast array of industry segments

• New technology and emerging markets are driving new business cases for AGVS.
For More Information

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