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Thriving in the Cold: Achieving Low TCO in a Freezer Warehouse

Presented by:
Swisslog Logistics Automation
Presenters

Ray Jennings
Vice President
Primus Builders

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Sudarsan Thattai
Chief Information Officer
Lineage Logistics
Agenda

• Designing for Density - Primus
• Automating for Productivity - Swisslog Logistics Automation
• Managing for Efficiency - Lineage Logistics
• Bringing it All Together
Designing for Density

Randy Jennings, Vice President, Primus Builders
About Primus

• Multi-service engineering & construction management

• Niche Markets:
  - Distribution
  - Food Processing
  - Medical Device Sterilization

• Specializations:
  - Processing & Bulk Handling
  - Self Perform Thermal Construction
  - Temperature Controlled Environments
Key Trends in Cold Storage

Growing Demand

SKU Proliferation

Labor Challenges
Reaching New Heights

• Increasing building height is key to lowering costs
• Save on power consumption, increase storage density and reduces overall costs.
• Requires automated solutions for storage and retrieval
Enabling Automation

- Building designs today must be automation friendly
- Facilities are becoming more complex through integrated solutions
Enabling Automation

• Building design considerations impacted by automation
  – Footprint
  – Height
  – Energy
  – Damage
  – Safety
Maintaining Efficiency

• Thermal envelope is one of the key elements of a passive or a low energy facility. The purpose of the thermal envelope is to prevent heat transfer from interior of a facility to its exterior in winter and vice versa in summer.

• Air doors for control of heat transfer….with automation solutions the cubic footprint is minimized.
Automating for Productivity

TJ Fanning, Vice President
Swisslog Logistics Automation - Americas
About Swisslog Logistics Automation

• Robotic, data-driven and flexible automated solutions

• Consulting, concept studies, project implementation, and technology implementation

• State-of-the-art WMS with integrated automation control

• Extensive food and beverage experience, including cold storage automation.

• Over 2,000 customer deployments
The Value of Automation
Example: deep-freeze warehouse with 17,000 pallets

Labor 100,000 pal p.a.

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<thead>
<tr>
<th></th>
<th>Manual</th>
<th>Automated</th>
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<tbody>
<tr>
<td>Footprint</td>
<td>500%</td>
<td>-400%</td>
</tr>
<tr>
<td></td>
<td>375%</td>
<td>-275%</td>
</tr>
<tr>
<td>Energy p.a.</td>
<td>140%</td>
<td>-40%</td>
</tr>
<tr>
<td>Roof and Wall</td>
<td>130%</td>
<td>-30%</td>
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<tr>
<td>Cube</td>
<td>125%</td>
<td>-25%</td>
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Manual Automated
Automation solutions
Reliable Operation in Cold Storage
Focusing on user experience
Reliable Operation in Cold Storage
Focusing on user experience

IO Status

Mimic IO

On board Camera
Reliable Operation in Cold Storage

- Cold-resistant lubricants
- Ease of maintenance
- Quick disconnects for components
Operating for Efficiency

Sudarsan Thattai, Chief Information Officer, Lineage
About Lineage

• $5B+ in real estate value
• 40% of real estate value on West Coast
• Modern warehouse network (average age 17 years)
• Largest automated temp-controlled network in the world
• 2,000+ customers
• Over 2.9M cubic meters of automated capacity
Rates Change with Demand

[Diagram showing rate changes over time, with peaks on 07/18, 07/21, and 07/22, and troughs on other days.]
Bringing it all Together
Key Takeaways

- Collaboration across partners is key to optimize total cost of ownership
  - Building costs
  - Labor
  - Operating costs
- Automation is essential to achieve density and limit worker exposure to harsh conditions
- Effective energy management requires managing demand and consumption
For More Information

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Or, visit ProMat Booth #S1212