IPRO 345
Improving food processing with process mapping techniques

Background
Land O’ Frost is a third generation family owned company manufacturing deli meats. They have been in the industry for over 50 years and business is booming. They offer turkey, ham, beef, and chicken products. They have dedicated themselves to continually improving their current product offerings and are constantly searching for new products to meet the needs of their consumers.

Purpose
There are two functions in the production process: Formulation and Packaging. Formulation is a complex process with many variables. This IPRO team will study the formulation process, identifying all inputs, mapping the production process, observing activities and working to identify improvements.

Organization

<table>
<thead>
<tr>
<th>Name</th>
<th>Major</th>
<th>Year</th>
<th>Skills</th>
<th>Assignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Matti Alemayehu</td>
<td>Chemistry</td>
<td>Sr.</td>
<td>Chemical analysis</td>
<td>Inquiry of electronic eye &amp; metal alloys</td>
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<tr>
<td>Amegasse, Pierre-Paul</td>
<td>Chemical Engineering</td>
<td>Sr.</td>
<td>Research</td>
<td>Verification of process Map</td>
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<tr>
<td>Hogan, Michael</td>
<td>Computer Science</td>
<td>Sr.</td>
<td>Programming</td>
<td>Company tool analysis</td>
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<tr>
<td>Isoda, Mitchell</td>
<td>Applied Math</td>
<td>Sr.</td>
<td>Statistical analysis of data</td>
<td>Company tool analysis</td>
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<tr>
<td>Mick, Emily</td>
<td>Chemistry</td>
<td>Sr.</td>
<td>Time management</td>
<td>Company tool analysis</td>
</tr>
<tr>
<td>Torres, Edgar</td>
<td>Computer Science</td>
<td>Sr.</td>
<td>Programming</td>
<td>Metal alloy research &amp; company schedule</td>
</tr>
</tbody>
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Key Areas
- People
- Equipment
- Materials
- Measurements

Final Suggestions
scheduler:
- Create a new system for scheduling, such as a computer program.
corporate:
- Create a quiz to ensure workers understand the information presented to them in training.
receiving:
- Install an electric eye device, like in garage doors, to respond when materials are placed too close to the wall.
grinding:
- Use fewer tools.
- Every tool should be welded.
- Policies concerning tools should be implemented requiring tools be examined before they are used.
- Tool breakages should be tracked, and tools should be discarded preventatively according to these records.
- Use a cleaning device, wrapping process, or cover to better monitor the material when it is being dumped into the grinding machine.
mixing:
- Revise the plant layout by organizing according to product or line rather than process.
curing:
- Use a computerized tracking system when arranging the curing room
stuffing:
- Explore the capabilities of magnets more thoroughly to resolve the issue concerning closures that hold the legs of deli meat together.
- Replace outdated equipment. This includes purchasing new machines on the market that are faster, as well as searching for automated alternatives.
staging:
- Use flexible rack system to accommodate more shelves when smaller log sizes are used.
oven:
- Measure efficiency based on equipment capacity rather than man hour potential.

Conclusion
IPRO teams in the future can continue investigating new solutions to the problems we have identified, as well as identify new problems. We were not able to research every idea we had or identify every problem present. There is more work to be done to help the Formulation process at Land O’ Frost become as efficient as possible.