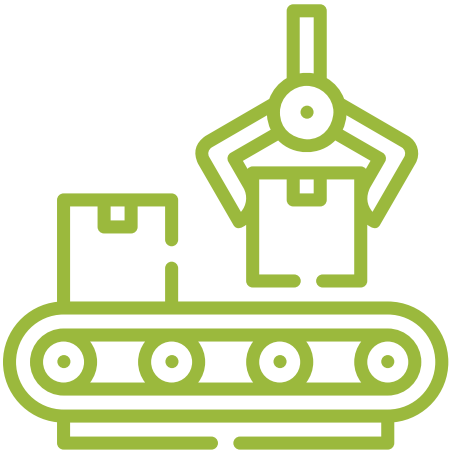
Logiscend

AN INDUSTRIAL IoT SOLUTION

6 Steps to Optimize Production Line Material Flow



Efficient material flow is crucial for optimizing production line performance and achieving higher productivity, lower costs, and improved overall efficiency. Whether you're running a manufacturing facility or any type of production line, streamlining your material flow can have a significant impact on your bottom line.

With that said, most of the solutions available today don't consider new technologies (like IIoT), require a significant investment in time and resources, create downtime and necessitate custom integrations or replacement of your legacy systems before you see any return or efficiency improvements. We believe that using a modular, process-based approach following these six essential steps will help you optimize your production line material flow and maximize your operational efficiency with both short and long term wins.

As you might expect, this article contains information that aligns closely with service offerings provided by Panasonic's Logiscend platform, but the overall approach and process should make sense for any organization looking to optimize their material flow systems.

STEP 1 Opportunity Assessment

The first step in optimizing material flow within your production line is to conduct a thorough opportunity assessment. This involves examining your current processes, equipment, and layout to identify areas where material flow can be improved. Here are some key aspects to consider:

- **Workflow Analysis:** Evaluate the sequence of tasks and processes involved in your production line. Identify any unnecessary steps or delays that can be eliminated.
- **Space Utilization:** Assess how effectively your workspace is utilized. Are there areas with underutilized space or overcrowded sections that hinder material flow?

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- **Inventory Management:** Review your inventory levels and storage methods. Overstocking or understocking materials can lead to inefficiencies.

- **Workforce Efficiency:** Examine the roles and responsibilities of your employees. Are there tasks that can be reallocated or automated to improve efficiency? How complex are the training requirements? Can your systems help workers be more efficient?

STEP 2 Identify Bottlenecks

Once you've completed your opportunity assessment, focus on identifying bottlenecks in your production line. Bottlenecks are points in the process where material flow is restricted or slowed down, leading to reduced throughput and longer cycle times. Common bottleneck causes include:

- Equipment breakdowns or maintenance delays
- Manual material handling
- Insufficient or inefficient transportation systems
- Poorly optimized process sequencing

Identifying bottlenecks is crucial because it allows you to target specific areas for improvement.

STEP 3 Develop Solutions

After pinpointing bottlenecks, the next step is to develop effective solutions. This involves brainstorming and collaborating with your team to come up with strategies to address the identified issues. Potential solutions may include:

- Upgrading or replacing outdated equipment
- Enhanced data collection with newer technologies
- Adding new functionality integrated with your existing systems
- Automating manual tasks
- Improving material handling and transportation systems
- Implementing lean manufacturing principles
- Optimizing production scheduling

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STEP 4 Modular Implementation & Testing

To minimize disruption to your production line, consider a modular approach to implementing your solutions. This means breaking down the improvement plan into manageable phases and implementing changes gradually. Test each module to ensure it effectively addresses the identified issues without causing new problems.

Testing is a critical step in the optimization process. It allows you to gather data and monitor the impact of the changes on material flow, productivity, and efficiency. Make necessary adjustments based on the test results before moving on to the next phase.

STEP 5 Monitor Results and Impact

Once you've implemented the solutions and completed the testing phase, it's essential to continuously monitor the results and their impact on your production line. Key performance indicators (KPIs) such as cycle times, throughput, and material handling costs should be tracked and analyzed regularly. Note: Traditional PLC devices potentially have data collection limitations and may require technology updates.

Regular monitoring enables you to identify any new issues that may arise and make further improvements as needed. Additionally, it provides data-driven insights to measure the return on investment (ROI) of your optimization efforts.

STEP 6 Expand Implementation

With successful optimization modules in place and ongoing monitoring, you can consider expanding the implementation of your material flow improvements throughout your production line. This may involve scaling up the solutions to cover additional processes or production areas. A key advantage to a modular platform-based approach is that expansion tends to be less costly and can be implemented more quickly.

Expanding implementation is an iterative process that allows you to continuously fine-tune and enhance your material flow optimization efforts. As you expand, ensure that your workforce is trained and aligned with the new processes to maintain consistency and efficiency.

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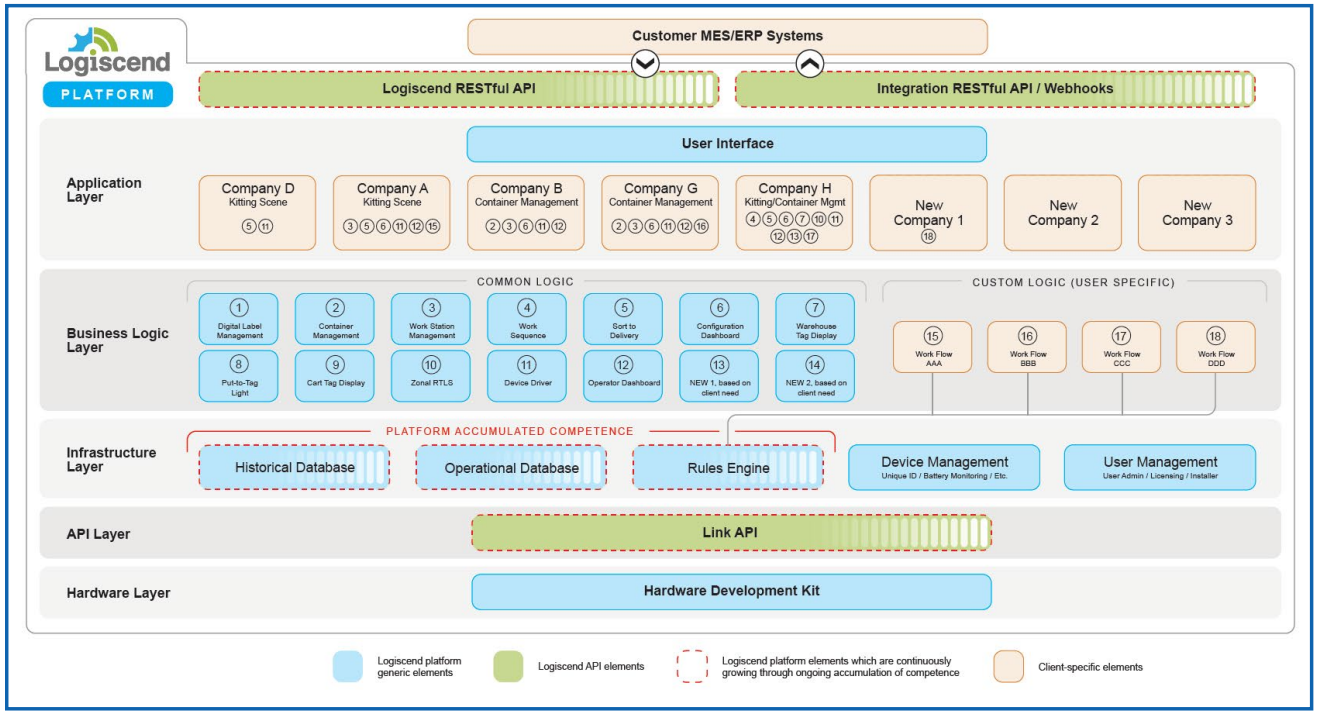
Panasonic Logiscend Platform

We have taken this six step approach with dozens of customers, and are excited to put our experience to work for you.

Optimizing material flow within your production line is a dynamic and continuous process that can yield significant benefits for your organization. The Logiscend Platform is a tried and tested solution with modular components that easily integrate with existing systems, provide long-term support through a SAAS implementation model, can be phased in without interrupting your current processes and provide detailed data points for analysis and continuous improvement.

https://logiscend.panasonic.com/logiscend-software-solutions-for-manufacturing/



Learn more about how we helped a major automotive manufacturer:

https://logiscend.panasonic.com/customer-success-story-increasing-production-accuracy/

Stay committed to ongoing improvement, and your production line will become a well-oiled machine capable of meeting the demands of today's competitive market.

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