

A Formula for a Digital Future: Connected Manufacturing for CPG



WHITE PAPER

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In the world of manufacturing, consumer packaged goods (CPG) is an extremely competitive sector. Customers can easily switch from one brand to another as options grow wider every day. Prices are becoming more aggressive, and the market is highly saturated.

The old success models will only get you so far. Cutting-edge technology and processes are now one of the few ways to turn unpredictable consumers into loyal fans and repeat buyers.

In a 2021 State of Smart Manufacturing report, 83% of surveyed manufacturers say the pandemic made adopting smart manufacturing technologies and processes a priority—but many are still in the very early stages of adoption.

Given the current environment, it's no longer a question of "if" your CPG plant should move toward connected manufacturing, but a question of "when." Do you want to be ahead of the curve and transition to a smart environment according to your own plan and timeline—or scramble to catch up after other companies exploit the advantage?

While it may seem like a big (and possibly unnecessary) leap forward from where you are now, history makes a startling prediction: The manufacturers that adapt to disruptions are the ones that will succeed. (Can you imagine a manufacturer choosing not to use electricity or computers?) Those that opted out of changing when the industry demanded it eventually closed their doors. Eventually, the same will hold true for connected manufacturing: It will be impossible to thrive without it.

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How Connected Manufacturing Reduces CPG Costs

The value of connected manufacturing offers big savings potential in terms of:

- **Inventory management** - Connected manufacturing can improve the inventory planning process and fill rates to reduce costs.
- **Labor productivity** - Reduce non-value-added manual effort, such as recording output, maintenance data, etc. Connected manufacturing also helps identify productivity concerns in real time so action can be taken.
- **Machine downtime** - By monitoring machine health, status and performance 24/7, you'll know when things are running smoothly—and when they aren't. The right people can be notified about problems right away before they lead to lost revenue.
- **Throughput** - Connected manufacturing can help you better and more accurately track production, pinpoint and eliminate bottlenecks, and tweak processes so you produce more products with existing resources and in the same amount of time.
- **Scheduling accuracy** - With accurate data, managers and supervisors can make educated, confident and timely decisions.
- **Communication** - Connected manufacturing can reduce the potential for conflict and confusion on the shop floor, which negatively affects productivity. It can also enable secure remote access to make it faster and easier to share information with remote workers and third parties.
- **Employee enablement** - Systemize experiential knowledge of existing employees and reduce training demand on new employees to better navigate employee churn.
- **Risk management** - A well-designed OT network not only helps you get the most from your assets, but also protects them from cyber threats.

These enhancements translate to reduced expenses and better cost control, which boost competitiveness.

Realities and Challenges of Connected Manufacturing

With the long list of benefits associated with connected manufacturing, and the significant amounts of money that can be saved in making this change, why aren't all CPG plants quickly moving in this direction? Put simply, it's easier said than done.

Especially in this environment, when competition is raging, labor is hard to find and supply chain disruptions are prevalent, it's difficult to focus on the future. The priority is on getting products out the door as quickly as possible.

Because of this, workers often manually pull necessary data from four or five sources. This makes it challenging to get up-to-date analytics for things like daily standup meetings. It also leaves everyone working in reactive vs. proactive mode. This way of working doesn't leave much time to plan for the future.

Not only is each CPG plant different, but each production line is different, too. Some follow discrete manufacturing principles while others are process manufacturers or use mixed-mode production (a combination of both). Some CPG plants run multiple products per line per day while others don't.

As a result, in every situation, the devices and systems that need to be connected—and the data that needs to be captured from them—is different.

For example, some CPG plants have no connected machines or equipment at all while others have a mix of old and new. This means their paths to connected manufacturing will be unique.

Many plants also lack a segregated and secure OT network. As they continue to add unmanaged devices to their network, conflicts with the IT network and team arise.

The challenges of connected manufacturing deployment all come down to this: your workforce. The burden of upgrading to modern equipment, centralizing data and making analytics more accessible relies on your plant workers to make it happen—and they simply don't have time.

The Value of Partnering with a Third Party

If your in-house team doesn't have the time, knowledge or resources to prioritize connected manufacturing, then how can you move your CPG plant forward? By removing the burden from your workers and placing it elsewhere.

Finding a trusted third-party partner that specializes in start-to-finish connected manufacturing solutions can bring expertise to your plant in areas where most CPG workers lack proficiency. A true partner will take on that work for you and bring new perspectives to the table.

They can also provide a fresh eye as they conduct a holistic evaluation of your environment. Look for a partner that spends time analyzing operational assets and data, OT devices and IT integration. Once they understand your goals, objectives and current processes, they can also identify exactly where to start in order to see the fastest—and biggest—impacts.

Are You Ready for Connected Manufacturing?

While connected manufacturing will ultimately become the best way forward for CPG plants, the timing of this transition is important. It doesn't have to happen all at once, and it doesn't have to be a painful process.

Belden's experience with managing connected manufacturing projects across a wide variety of CPG plants—big and small, future-forward and outdated—has helped us identify the best time to begin exploring your journey toward connected manufacturing.

Do you need to:

- Gather more data for better decision-making?
- Support collaboration and remote work?
- Maximize the time and capabilities of your existing team?
- Reduce human error?
- Collect data faster—with confidence that it's correct?
- Reduce downtime and improve reliability?
- Find new ways to get more done with minimal capital investment?
- Do a better job at retaining customer loyalty?

If you answer "yes" to one or more of these questions, then those flags signal to you that it's time for a change.

Your Connected Manufacturing Roadmap

Once you've walked yourself and your team through that list of questions and determined your timeline, the hardest part becomes this: How do you get started? Our simple roadmap will help you understand what you need to do.

Step 1: Set Some Goals

First, start by identifying and mapping out your objectives. Deciding how to approach connected manufacturing—and which technologies you'll use to make it happen—is much easier when you have specific results in mind. Do you need to free up your workers to focus on strategic initiatives? Do you want to improve quality and reduce the number of mistakes? Do you need to boost throughput by 20%?

Step 2: Build Internal Support

Next, it's time to get the right people on board. In order for the shift to connected manufacturing to be a smooth process for your CPG plant, everyone has to understand and believe in the investment—and understand what type of return they'll experience. For leaders, this means presenting the challenges that connected manufacturing will address and explaining the financial, time and resource benefits of resolving those challenges. For workers on the floor, this means explaining that connected manufacturing isn't taking over their tasks—it will make their jobs easier and more enjoyable. Describe how they'll benefit from these performance gains.

Step 3: Recruit an Expert

Finally, do your research and find the right partner—one that can lead your connected manufacturing project from start to finish. Look for trusted experts that will hold discussions with key stakeholders and walk the plant floor with you, audit and assess what you have, analyze your network to see what it can handle, help you break down IT and OT silos, ensure vendor-agnostic data aggregation and even talk through funding options and expectations for ROI.

Belden: Your Connected Manufacturing Specialist

We can make your CPG plant's digital transformation journey simple and stress-free. Although our roots are in OT, we also know and understand IT. We're fully staffed with a team of in-house digital transformation experts and solutions consultants.

Your connected manufacturing project starts with conversations to help us understand your operations, needs, challenges and goals in terms of connectivity and data quality. We want to see and hear about how your plant works—the good, the bad and the ugly.

From there, we begin our analysis. We take a close look at your current operations and data availability, as well as your network and cybersecurity strengths and deficiencies. Once we've completed our analysis, we walk you through our findings and present you with a workflow assessment and digital maturity report that outlines your best opportunities to increase value—and where you should start in order to see these benefits.

We'll also help you identify necessary hardware, provide recommendations to establish a properly segmented OT network for better operations and security, and present a holistic view of implementation costs and what you can expect in terms of a return on your investment.

Finally, we'll get as specific as making recommendations about cabling and connectivity so you have everything you need to extract data, convert protocols so your devices can communicate, and aggregate the information in a central location—no matter the age of your equipment.

When you're ready to move forward, we can help implement your connected manufacturing solutions by coordinating with other partners as needed and managing your project from start to finish.

Together, we can build a blueprint that acts as your guide to meeting your CPG plant's goals.

Ready to take the next step? Our team is ready to help. Visit belden.com/cpg to learn more.

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About Belden

Belden Inc. delivers the infrastructure that makes the digital journey simpler, smarter and secure. We're moving beyond connectivity, from what we make to what we make possible through a performance-driven portfolio, forward-thinking expertise and purpose-built solutions. With a legacy of quality and reliability spanning 120-plus years, we have a strong foundation to continue building the future. We are headquartered in St. Louis and have manufacturing capabilities in North America, Europe, Asia, and Africa.

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