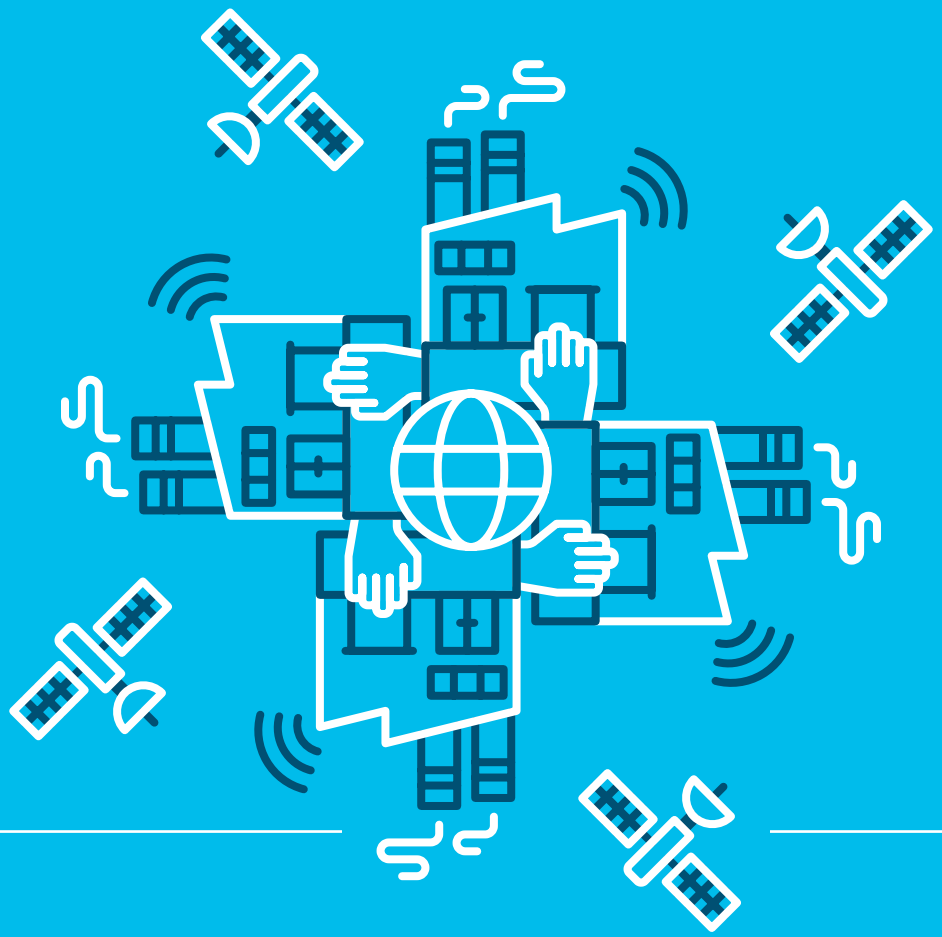


Manufacturing & Collaboration Technology:

How to Drive Production and Streamline Processes

Modern manufacturing requires collaboration

To meet customer demands,

manufacturers must align their supply chains and production resources. This ensures they can deliver when it counts.

To bring new products to market,

they must connect research and development (R&D) efforts from engineering teams with ideation and new product introduction (NPI) work from teams across the organization.

To keep everything up and running across multiple locations,

maintenance, repair and operations (MRO) personnel must work together to expand the reach of their institutional knowledge.

For many years, enterprise offices have taken full advantage of unified communications architectures. They align voice, messaging and video conferencing to boost productivity, reduce costs and drive growth.

Now, manufacturing is starting to adopt the same collaboration technologies. Successful implementation can help them overcome key business challenges, including:

Geographically Dispersed Teams

Today, there can be significant distance between individual manufacturing sites. Often, it's no longer a matter of getting in your car (or even on a plane) and easily traveling among them. Globalization and strategic alignment efforts mean that teams are often dispersed over a variety of locations.

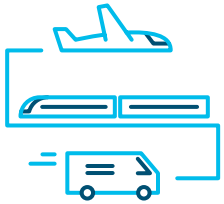
A product can be engineered in one location, produced in another, and then shipped and stocked somewhere else. With these conditions, it's easy to foster costly communications gaps among dispersed teams.

Workforce Transitions

Manufacturing is currently in a transition phase. While companies are adding digital equipment and Industrial Internet of Things (IoT) technology, most sites still have a mix of legacy equipment. However, many of the personnel who understand the equipment are starting to reach retirement. This means that someone with deep institutional knowledge may not always be available at each site. At the same time, uptime is critical. It's no longer feasible or cost-effective to send a top expert out to every site anytime something happens.

Time to Market Pressure

New product introduction (NPI) has always been important to manufacturers. In fact, it's estimated that new products account for nearly half of all discrete manufacturing revenue.[1] However, manufacturers are under pressure to get their products to market faster than ever before. The alignment of communications between remote production, engineering, and decision makers increases efficiency in today's demanding market conditions, and supports quicker transitions from prototyping to full-production runs.



Complex Supply Chains

Today's market requires more alignment between manufacturers and their suppliers. In any manufacturing effort, numerous companies may support the development, production and movement of products. The result is a series of complex interdependencies between vendors and suppliers. In these conditions, any lack of alignment can cause delays and affect delivery.

1. If you build it, will they come? Overcoming the talent crisis in manufacturing.

How Collaboration Technology Benefits Manufacturers

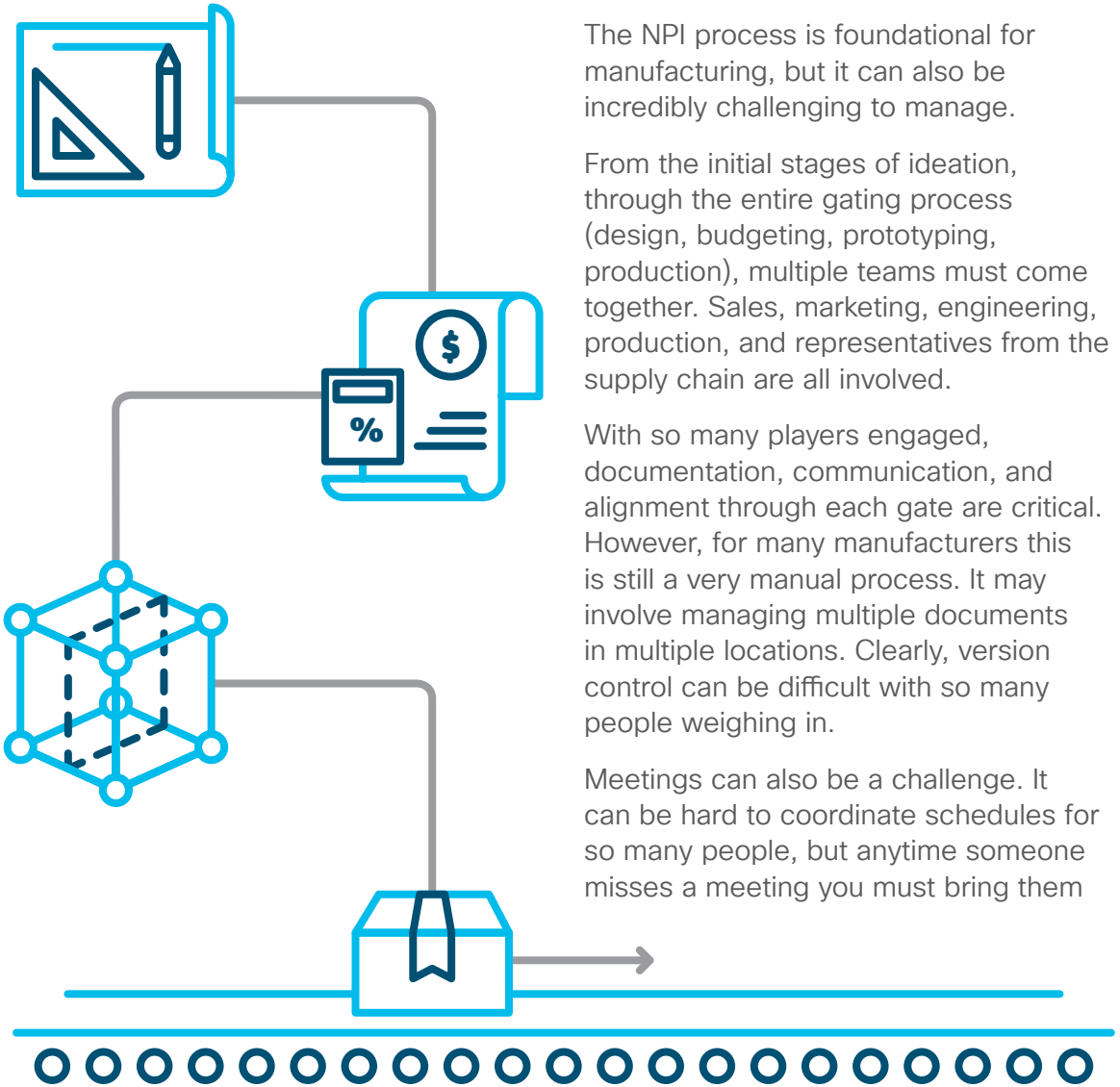
Collaboration technology can help manufacturers overcome each of these challenges, particularly when integrated into the following areas:

01. | Improving New Product Introduction (NPI) Processes

02. | Supporting Remote Maintenance Repair and Operations (MRO)

03. | Enhancing Industrial Internet of Things (IoT) Efforts

1. Improving NPI Processes with Collaboration Technology



The NPI process is foundational for manufacturing, but it can also be incredibly challenging to manage.

From the initial stages of ideation, through the entire gating process (design, budgeting, prototyping, production), multiple teams must come together. Sales, marketing, engineering, production, and representatives from the supply chain are all involved.

With so many players engaged, documentation, communication, and alignment through each gate are critical. However, for many manufacturers this is still a very manual process. It may involve managing multiple documents in multiple locations. Clearly, version control can be difficult with so many people weighing in.

Meetings can also be a challenge. It can be hard to coordinate schedules for so many people, but anytime someone misses a meeting you must bring them back up to speed. This can contribute to delays in meeting NPI timelines – something that's no longer acceptable in today's fast-moving business climate.

Collaboration technology can help manufacturers overcome these challenges. It can transform the NPI process from a rigid, linear process to a flexible one that engages multiple experts across several locations.

Often, virtual collaboration starts with simply creating a virtual team space that allows users to collaborate on ideas and documents in real time. Once you create the room, all team members can access the latest information. If someone misses a meeting, they can log in to see the current stream of feedback from colleagues and pick up right where they left off.

If something isn't clear, users can use instant messaging to communicate in real time. This quick collaboration is often much more efficient than trying to track someone down in person or on a call.

These tools can also transform the meeting experience. With digital whiteboarding, teams can meet, sketch out ideas, annotate, and discuss situations in real time. And, they can save that documentation as part of a continuous workstream, so no one ever has to hunt down meeting notes.

Another benefit of this technology is that it works across multiple platforms. Users can access their NPI information via mobile, tablet, cameras, laptop, or teleconference screen. This increased flexibility is critical for manufacturing employees – who may not always work from a desktop computer.

All of these advancements help improve a manufacturer's speed to market, creating a competitive advantage.

3 Ways to Integrate Technology into Your NPI Process

While many manufacturers have worked to improve and fine-tune their NPI processes, they haven't always aligned the process with the technology to drive better collaboration and speed time to market. Some use cases to consider:

1 Videoconferencing and real-time whiteboarding

Multiple teams can now come together and talk through design and development. This often involves complex details that can't be articulated on paper alone early in the gating stages. Collaborating via email or phone isn't efficient and can lose nuance. Having the ability to share technical drawings while annotating them in real time can help teams creatively while speeding the ideation and production processes. Integration of videoconferencing with messaging platforms also ensures that documentation and discussions during meetings can be saved in a central location.

2 Real-time messaging

Email has often been the de facto way for teams to communicate. The problem with email is that it's how lots of other communication comes in, beyond NPI projects. This means emails can be missed, or lost among threads that are hard to navigate and keep up with. The average company will likely lose a quarter of its productivity due to inefficient processes and internal bureaucracy.

A messaging platform offers a better alternative and can support real-time threads. All files and messages are located in the same space for better project management. Meetings and calls can also be integrated to ensure a consistent thread throughout the project gates. A messaging platform can help ensure that product management and marketing are aligned through the various gates toward a product launch.

3 Visibility into prototyping and production

As small production runs begin within a factory cell, it's inevitable that operators and engineering will have to fine-tune outputs that will drive smooth production runs. It's not realistic to have engineering teams and production teams flying back and forth across locations during this ramp up. Having the ability to conference in with teams and view the outputs in real time can ensure quicker resolution of issues, improved prototypes, and quicker transition to full-scale production runs.

Aligning your existing gating process and your technology can address many aspects within the product can help drive an improved NPI process and team communication, while helping boost creativity, lower costs, and reduce the risk associated with new products.

Read more from Eric Ehlers' blog post:
How can technology improve your NPI process?

2. Leveraging Collaboration Technology for Remote Maintenance

For manufacturers, downtime is the enemy. While advances in technology are improving overall equipment effectiveness (OEE), the reality is that equipment stills malfunctions.

When it does, time is of the essence. You need to get things up and running as soon as possible.

Flying in expert resources to fix the problem can cost a company precious hours, or even days, of productivity. And, it racks up travel expenditures.

But having onsite resources try to resolve the issue isn't a good solution either. Workers engaging with equipment issues without proper knowledge or training can be a safety risk.

Today's collaboration technology offers the best of all worlds: expert resources made available to any site in real time. This means manufacturers can respond faster, improve worker safety and leverage expertise across the entire organization.

With the right tools in place, teams can quickly locate a remote expert, conference them in and resolve the issue. And, this isn't limited to in-house resources. Collaboration technology also allows outside suppliers or equipment manufacturers to quickly help their customers fix problems.

Some potential use cases:

- Using videoconferencing and high-definition cameras so that remote experts can view and resolve problems at the source of the issue without having to be onsite.
- Implementing secure mobile messaging apps for a connected workforce so key personnel can receive alerts about potential issues in the plants and communicate about them in real time.
- Installing smart boards in plants to provide better visibility into operations.
- Documenting and archiving common troubleshooting steps for re-use across the company. This can also promote workplace safety, through incident documentation and process improvements.

Collaboration technology can help teams respond faster to downtime, and provide the technical expertise needed to save time and protect the bottom line.

3. Integrating Collaboration Technology into the Industrial Internet of Things (IoT)

Advances in digital manufacturing promote better collaboration between man and machine. For example, in manufacturing settings, IoT technology enables more communication and insight into machine performance. This means machines can share real-time updates on production, and alert people to machine health issues.

Integration of those communications with collaboration technology opens up an array of transformative possibilities. Open-application programming interface (API) allows multiple technologies to connect and communicate with one another. With this technology, developers can enhance existing platforms and facilitate the secure exchange of data between machines and devices.

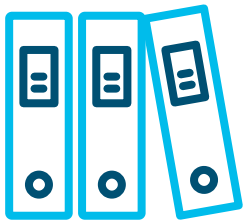
For instance, imagine how efficient the response could be if a machine had the ability to send out an alert to a messaging platform or interactive whiteboard when a problem occurs. The alert then triggers key personnel to connect in a designated incident response "room." Those users then communicate via calls, video conferencing, and chat as a means of mitigating the issue.

Or, imagine using augmented reality glasses to identify the precise location of an issue within a machine. When you combine the glasses with collaboration technology, the user can connect with remote technical expertise to walk them through resolution tasks.

With APIs, the IoT and collaboration technology, both scenarios are possible.

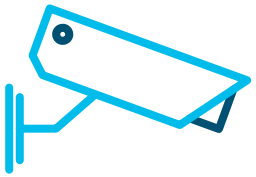
Bringing Collaboration Technology to Life for Manufacturing

To successfully deploy collaboration technology, keep the following considerations top of mind:



Change Management

Changing processes isn't just a matter of adding new technology. It's important to consider how the new technology will impact existing processes and workflow. Manufacturers should document all processes, and outline where the changes within the framework have occurred and where the technology now intersects. Without proper change management training on the process and technology, users might default to the old way of doing things. Documentation and training is key to ensuring proper adoption.



Security

When rolling out new technology within a manufacturing setting, it's critical to ensure these new tools don't compromise security. Collaboration technology involves multiple users and multiple devices engaging from multiple sites, often remotely. Remote access security measures are key. Additionally, collaboration enables the exchange of critical communications and knowledge sharing that could contain sensitive information or intellectual property (IP). Collaboration platforms should support end-to-end encryption to keep content safe.

Wireless

One of the core tenets of collaboration technology is that it needs to support mobile team communication. Wireless technology is commonplace within the carpeted space of an enterprise, but it's historically been more difficult to deploy it on the plant floor. However, today's industrial wireless technology is effective at supporting collaboration technology on the factory floor. As a first step, companies should ensure their industrial wireless infrastructure is robust and up to date so they can enjoy the full benefits of collaboration technology.

Read our Wireless Whitepaper

Conclusion

The benefits of collaboration technology are no longer limited to those who work in offices. This technology is mature and ready to help support manufacturing efforts.

From improving NPI processes, to MRO responses collaboration technology is an essential resource for improving productivity and ideation, streamlining operations, and supporting more uptime. With tremendous benefits on the table, the time is now for manufacturers to embrace collaboration technology.

Cisco helps manufacturers tap into the potential of collaboration technology.

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