The Next Normal of Manufacturing

Connecting Factories
to Modern Manufacturing

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CONNECT

Uncover possibilities and take action

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> *Manufacturers worldwide face shifts that they must be prepared to capitalize on or risk the competitive consequences.*
>
> **Gartner** [1]

Like no time before, the manufacturing industry is under extreme pressure to innovate and evolve.

The COVID-19 pandemic disrupted manufacturing in a way few other events have, exposing vulnerabilities caused by overseas trade, resource scarcity, and labor shortages.

Modern technology may have helped alleviate the pain by providing predictive insights and options to mitigate risk. But many manufacturers lacked next-generation capabilities like artificial intelligence, machine learning, and the Internet of Things.

On top of pandemic disruptions, new challenges have emerged for manufacturers in recent years. These include:

- Achieving the visibility and connectivity required to identify and act upon risks and opportunities as early as possible

- Turning data into analytical and predictive power

- Optimizing capital equipment using combined real-time insights spanning both structured data (such as IoT) and unstructured data (tribal knowledge)

- Replacing processes that are outdated, labor-intensive, and prone to error

Over the last two years, the manufacturing industry experienced disruption that went far beyond the walls of their facilities.

Navigating pre-existing challenges and the complex problems that come with a supply chain crisis is a monumental task.

So where do manufacturers even start?

Connecting Intricate Supply Chains

> *Now more than ever, organizations are counting on an efficient and capable supply chain to remain competitive and open for business.*
>
> **Satya Nadella** CEO, Microsoft [2]

Pre-pandemic, most companies viewed the supply chain as a "necessary evil," a way of getting products to customers as cost-effectively as possible. But that's only possible if nothing goes wrong. And, as the pandemic showed, things do go wrong, sometimes catastrophically wrong, and the result is a disconnected supply chain.

It didn't take long for events to spiral out of control. When supply chain disruptions delayed or thinned out supply availability, manufacturers lacked adequate backup solutions. Getting products or supplies cheaply was no longer a priority when manufacturers couldn't acquire enough supplies to meet demand.

And without supplies, inventory tanked.

We all know what happens next. Without inbound inventory, products go out of stock, and there's nothing for consumers and businesses to buy. As sales revenue declines, companies don't hit earnings targets. And if they don't hit targets, they must make tough choices that impact people's livelihoods.

In an increasingly inter-connected world, one break or change in the supply chain can have a massive, multi-million-dollar impact.

But as manufacturers and suppliers know well, the pandemic is only the latest in a string of challenges. Increasing demand, rising costs, natural disasters, and ever-shifting global politics all threaten the global supply chain. To succeed in turbulent times, manufacturers must build supply chain resiliency.

Visibility. Connectivity. Resiliency.

A resilient supply chain ultimately comes down to visibility and connectivity. New technologies like artificial intelligence, machine learning, and the Internet of Things can dramatically improve visibility across the end-to-end supply chain. As a result, companies can quickly identify, and even predict, supply and demand issues and resolve them accordingly. They can also proactively identify and capitalize on opportunities to optimize supply and demand. And in times of chaos, this ability can make or break a business.

Take container tracking, for example. Even before the pandemic, tracking overseas shipments was a headache for many manufacturers. Attempting to hold or expedite a shipment due to changes in demand only added to the stress.

Innovations like MCA Connect's Intelligent Container Tracking™ enable manufacturers to capitalize on opportunities and mitigate risks, creating an agile supply chain. Companies can use this solution to track containers; automate manual, error-prone, and time-consuming processes; streamline supplier communication; and view real-time updates and reports.

> *90% of all manufacturing supply chains will have invested in the technology and business process necessary for true resiliency by the end of 2021, resulting in productivity improvements of 5%.*
>
> **Futurescape**
> Wolrdwide Manufacturing Predictions[3]

Benefits of an agile supply chain

Between pandemic disruptions, supply chain shortages, and the rise of new technology, the time for smart manufacturing is now. Manufacturers with a modern, agile supply chain can:

See
abnormalities and issues in an instant, respond accordingly, and even start to predict them.

Automate
actions to proactively mitigate risk and capitalize on opportunities.

Monitor
velocity on their shop floors and automatically adjust shift schedules.

Consolidate
the elements that make up Overall Equipment Effectiveness - availability, performance, and quality - and intelligently apply them to optimize production plans.

Adjust
schedules and material requirements automatically based on employees, shift attendance/capabilities, and certifications.

The proof is in the numbers. Global consultancy Bain & Company found that investments in supply chain resilience can deliver a **15% to 25% improvement** in plant output, a **20% to 30% rise** in customer satisfaction, and a **20% to 60% improvement** in forecast accuracy with advanced analytics. [4]

Case Study

Leading technology company revamps manufacturing

One of the world's most well-known technology companies built their brand on providing custom configuration and low prices. Today, the company provides electronics and security products to thousands of customers around the globe.

However, this successful model created unique challenges. The company struggled with complex infrastructure and inefficient, disparate manufacturing processes across multiple facilities.

Additionally, a shift in consumer demand from configure to order to standard configurations forced the global company to transform their manufacturing operations. For help with these complex projects, the company partnered with the experts at MCA Connect.

The MCA team helped the technology giant and its subsidiaries develop a comprehensive roadmap for their manufacturing transformation. They did this by pulling the highest-value projects forward and methodically layering more sophisticated solutions atop a sound foundation.

Accelerating time-to-value with MCA's industry solutions, ManufacturingCONNNECT™ and DataCONNECT™, the electronics manufacturer achieved:

40% reduction of IT support costs

99.99% uptime

40% reduction in the cycle time of a unit

62% reduction in non-value-added time

Overall, a streamlined manufacturing process across global facilities

Transforming the modern supply chain doesn't just increase business stability and resilience. It also gives companies more control, agility, and scale, paving the way for growth, even in times of turbulence.

And what could be more valuable than that?

Connecting People to Real-Time Operating Data

> *The leading indicator of digital transformation success is an organization's ability to turn data into analytical and predictive power.*
>
> **Satya Nadella** CEO, Microsoft [5]

Data is an integral part of an agile supply chain. Without it, companies can't uncover issues, measure failure or success, or make informed decisions. However, a surprising number of manufacturers struggle to leverage their data.

Microsoft's Vice President of Manufacturing Industry, Çağlayan Arkan, reports that most companies aren't even using one percent of their data, let alone extracting net-new value from it. [6]

But why?

Big data challenges

Big data is inherently challenging. By definition, it's so large, fast, or complex that companies can't rely on traditional methods to process it.

Overwhelmed by its complexity, many companies don't know how to gather, store, or analyze their data. Companies know it contains valuable insights, but without a clear way to leverage the data, these insights may as well be unmapped buried treasure. Even companies that rely on traditional methods of reporting may require a full day of processing to find the insights they need.

And that's a problem. Manufacturers that can't efficiently pull strategic insight from their data risk missing out on big benefits.

Forbes reports that manufacturers using big data to monitor production lines, mitigate risks, and share information across the value chain can: [7]

increase production by
25%

reduce downtime by
45%

Case Study

MCA Connect helps manufacturer create foundation for strategic insight

A company in Austin, Texas, designs and manufactures high-quality products for the military and law enforcement. The company turned to MCA Connect for help after encountering unexpected issues with their new ERP system.

Ultimately, the manufacturer didn't realize their existing data warehouse wouldn't work with their new system. As a result, they couldn't access their data without using expensive outside consultants.

To solve the problem, MCA Connect's Managed Services team worked side-by-side with the company to stabilize the system. The team also worked to build a strong foundation, creating disciplined testing and upgrade processes.

Leveraging MCA Connect's propriety solution, DataCONNECT™, MCA created a robust modern data platform. By building a solid foundation, user issues steeply declined and the company's ERP platform runs smoothly and effectively.

Today, the company enjoys:

Full visibility into supply chain, open orders, and inventory levels

The ability to create efficient production schedules to meet high market demands
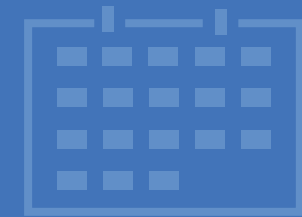
Reports and dashboards that guide decision making at every level, from the executive team to frontline workers

Improved delivery times and better supplier relationships

We learned that the right software isn't enough. Having a partner with both ERP and business analytics capabilities is what we needed to succeed.

IT Director

Big data challenges

As the manufacturer learned, data challenges can seem overwhelming, but the right partner can help companies think big, start small, and move fast on a roadmap to analytical and predictive power. Manufacturers that properly leverage their data can:

Reduce the risk of supply chain disruptions by gaining full visibility into supply chain, open orders, and inventory levels

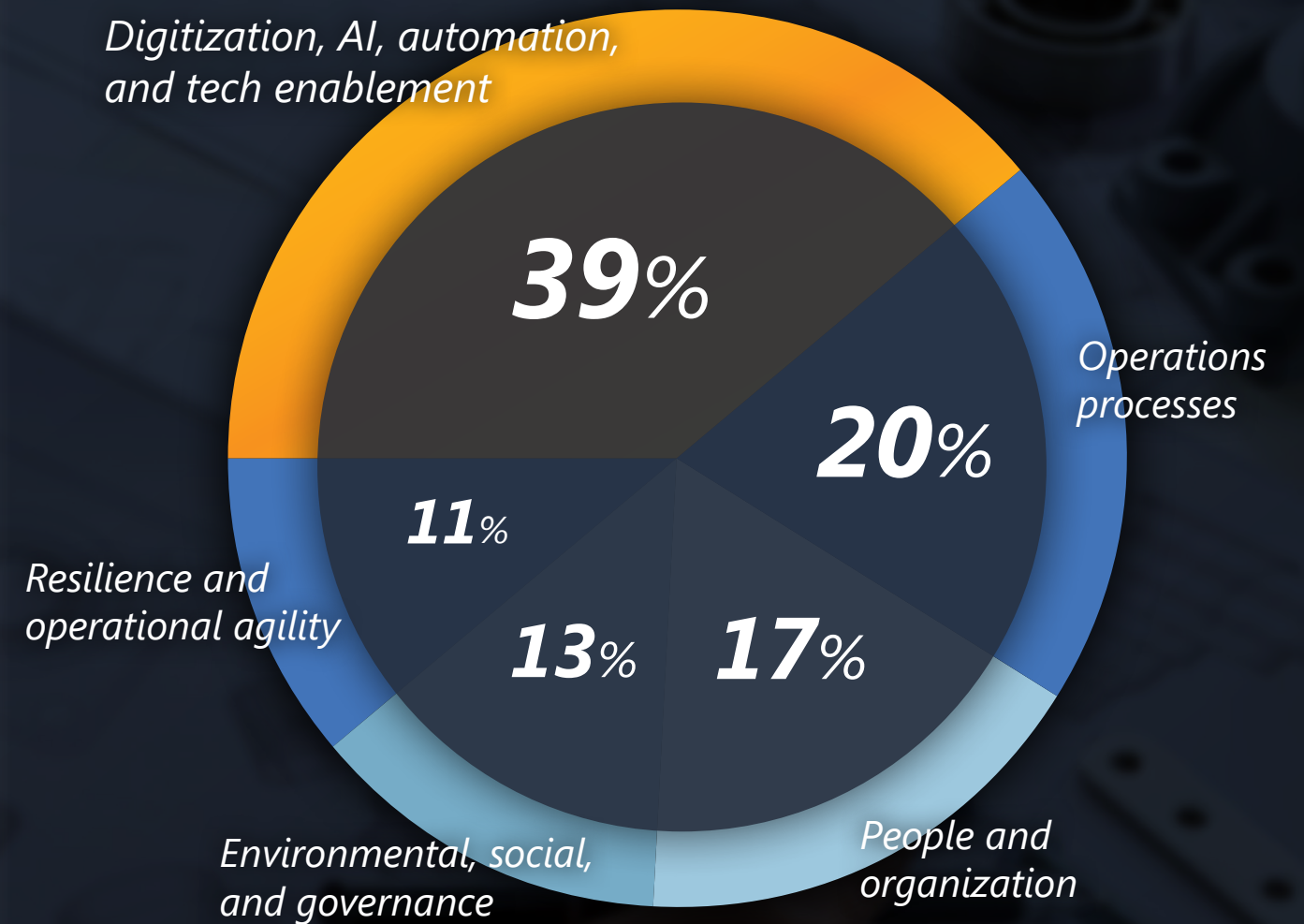**Increase production and reduce downtime with monitoring and predictive analytics**

Uncover valuable insights by identifying problem spots and areas of opportunity

Drive continuous improvements with reports and dashboards that guide decision making at every level

Gain a competitive advantage by saving time, money, and resources

Manufacturers that don't innovate risk falling behind. IDC predicts that by 2023, 50% of all supply chain forecasts will be automated using artificial intelligence, significantly improving accuracy. [3]

Data is a critical way to pull ahead of the competition. Many manufacturers see digitization, AI, and automation as **top drivers of productivity and profitability** for the next three years. [8]

Digitization, AI, automation, and tech enablement

39%

Operations processes

20%

11%

Resilience and operational agility

13% **17**%

Environmental, social, and governance

People and organization

In a time of seemingly constant disruption, insights and intelligence can make all the difference in the world. Forward-thinking companies are seizing the opportunity to proactively transform their manufacturing and supply chain across planning, production, inventory, warehouse, and transportation management.

Connecting People, Workflows, and Machines

> " *Ideas are a commodity. Execution of them is not.*
>
> **Michael Dell**
> Founder, Chairman and CEO,
> Dell Technologies [9]

According to Gartner, companies that blend well-established physical capabilities with emerging digital innovation are those that achieve supply chain digital transformation. However, more than half of organizations haven't actively started to build a roadmap for this transformation. [10]

And that's a problem.

While goals provide focus, a clear strategy and execution plan is the key to successfully achieving them. To successfully implement new solutions and meet objectives, manufacturers must craft a well-connected strategy around building an engaged workforce, optimizing workflows and machines, and creating solid business processes.

Building an engaged workforce

The first step to building an engaged workforce is ensuring workers know what success looks like and what it takes to get there.

Unfortunately, employees are so busy with day-to-day tasks they're often unclear about the company's mission, strategy, or growth plans. This is especially true if there's poor communication or a lack of transparency from above.

And when it comes to implementing widespread change, getting workforce buy-in is critical. On average, large IT projects deliver 56% less value than predicted and humans, not technology, are the greatest threat for project failure or sub-optimization. [11]

Optimizing workflows and machines

Internal issues like machine availability and performance issues can also undermine manufacturers' success. By connecting people to optimized workflows and machines, manufacturers can improve their overall equipment effectiveness, or OEE.

Capabilities like MCA's OEE CONNECT™ + Voice of the Operator™ help manufacturers capture tribal knowledge about shop-floor performance, aggregate equipment data in real-time, and surface key insights.

Connecting data to improve efficiency and drive innovation is the way of the future. IDC predicts that by 2024, **40% of manufacturers will share data in their ecosystems** (partners, customers, suppliers), thereby improving OEE of their factory operations on average by 10%. [3]

And as some executives have already seen, this method of sharing data can pay off big. Dick Elsey, CEO of the High Value Manufacturing Catapult, reports:

> *We made the bold decision to have complete transparency of data. It was transformational. By being completely open, there was no need for heavy-handed oversight and governance, which would have disabled rapid implementation.*
>
> **Dick Elsey**
> CEO, High Value Manufacturing Catapult [12]

Creating solid business processes

To make the most of their people, workflows, and machines, manufacturers need efficient and streamlined processes. However, creating strong processes is complicated. Sometimes, unclear goals undermine a manufacturer's processes. Other manufacturers may have clear processes, but they're inefficient or outdated.

Unfortunately, many manufacturers don't know what's considered best practice, let alone the processes modern technology can support. Inefficient processes can lead to all sorts of waste, including time, money, and resources.

To reduce waste and get the most from their investment, manufacturers should periodically reevaluate their business processes, especially when implementing new technology. Investing in a new platform but reverting to the same old processes is a missed opportunity for improvement.

Case Study

Multinational automotive manufacturer streamlines process updates

Even world-renowned companies continuously work to optimize and streamline their processes.

One multinational automotive manufacturer's plant has over **280 assembly processes**, and at the time, documented each process in hardcopy books.

As a result, whenever the automotive manufacturer needed to update a step-by-step assembly process, they had to manually edit each of their hardcopy process books.

Because the 280 books contained five to seven pages each, or well over a thousand pages altogether, the updates took three to four weeks to complete and consumed an inordinate amount of employee resources.

After failing to implement a solution of their own, the automotive manufacturer turned to MCA Connect for help. MCA's expert team developed a customized Power App that digitized their process documentation and automated updates across processes.

This enabled the plant to:

Update processes in 30 minutes or less instead of three to four weeks

Rapidly adapt and optimize operations

Save a significant amount of time, enabling employees to focus on critical tasks

Eliminate ink and printing costs

In a time of seemingly endless disruptions, many manufacturers are adopting new technology, new processes, and new ideas. In short, they're innovating. Of course, innovative goals are meaningless if there's no clear way to achieve them.

A customized, quick-hit strategy, or **Connected Blueprint™**, can help manufacturers build resiliency, increase productivity, and streamline business processes, accelerating their digital transformation.

Connecting to a Modern Manufacturing Platform

> " *By YE24, following the COVID-19 pandemic, more than 30% of manufacturers will have changed their business models, compared with just 10% before the crisis.*
>
> **Gartner** [13]

To succeed in today's highly complex, interconnected world, manufacturers need to adapt and evolve and make critical connections.

They need to connect intricate supply chains to gain deep visibility, predict supply dates, and make decisions for improved agility and profitability.

They need to connect people to real-time operating data so they can uncover valuable insights and build

factories that meet the demand of future production forecasts.

They need to connect people, processes, workflows, and machines to empower employees to make quick decisions founded on strategies that deliver sustained results.

In the past, manufacturers pursued these goals weekly, or even monthly and quarterly. But the timeline has drastically changed. To stay ahead of

the competition, manufacturers must be quick and agile, able to see and respond to issues daily, even hourly. And that's something only a modern manufacturing platform can deliver.

Microsoft technology and MCA Connect's expert guidance converge to create a modern manufacturing platform. With it, manufacturers realize the benefits of continuous improvement, agile decision making, and intelligent execution - all tied to their key executive objectives.

Transform your business with a customized blueprint

As a manufacturer, you know you need to modernize your business. But you may not know where to start, or even what's possible. MCA Connect's industry experts developed Connected Blueprint™ to help manufacturers like you accelerate the journey to digital transformation.

Connected Blueprint™ isn't a one-size-fits-all approach. It's a quick-hit, strategy consulting engagement to uncover

opportunities, prioritize projects, and develop a connected execution plan in just four to six weeks. Our expert facilitators drive business conversations and help customers apply industry best practices to develop the business case and roadmap for Microsoft cloud adoption.

To navigate today's manufacturing and supply chain challenges with a Connected Blueprint™, contact us today.

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