The Savvy Leader's Guide to Building an Intelligent Supply Chain

Make intelligent choices for the future

I.
Introduction

Redefining the supply chain for a new era

In the late 1950s, MIT professor Jay Forrester invented the Beer Game, a simple table game that simulates the incredibly complex task of getting a product from factory to consumer.

In the Beer Game, every link in the supply chain is a small business. If one link in the chain fails, everything can come crashing down domino style. Decades later, that core idea remains essentially unchanged. In Forrester's simulation, which does not allow communication between participants, there was often frustration among the players at the realisation that they could only control their small segment of the supply chain.[1] And the same is true today when different facets of a distribution network are unable to communicate with each other effectively and efficiently.

Supply chains of the 20th century grew more sophisticated in response to this conundrum, propelling enterprise resource planning (ERP) systems that grew ever more connected until they governed the entire enterprise. These systems did indeed enable businesses to become much more efficient, but as they evolved in complexity, the systems themselves became monolithic, unable to match the increasing speed of modern industry, including the pressures of razor-thin margins and customers now accustomed to immediate gratification.

By 2023, at least 50% of large global companies will adopt AI, advanced analytics and IoT in supply chain operations. This will result in industry shifts causing large revenue increases or cost savings.[2]

– Gartner

50%

Unlike the silos of the Beer Game, today's global business climate demands a more intelligent approach through connectivity and a free flow of data, but one that is simultaneously nimble and customisable to the needs of each individual industry and business, both large and small.

This new cloud-based system, the intelligent supply chain, harnesses software as a service (SaaS), machine-based learning, AI and IoT, ensuring that real-time data is continuously – and seamlessly – shared across the entirety of a company's supply chain, from the convenience store fridge to the trucking company, and all the way back to the brewery's teams that manage hops inventory and maintain bottling equipment.

87%
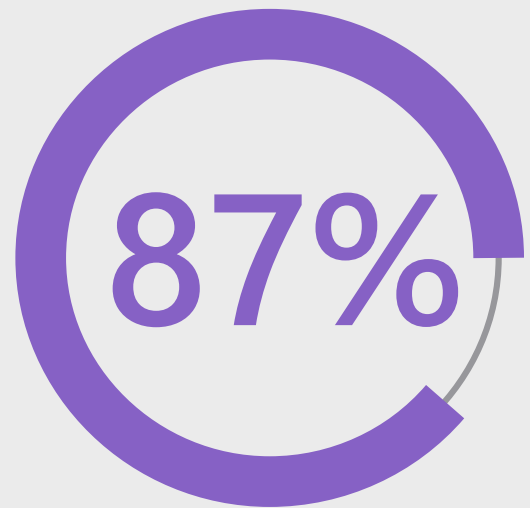
of enterprise manufacturers say they have at least one IoT project in the learning, proof-of-concept, purchase or use phase.[3]

– Microsoft

II.
What makes an intelligent supply chain?

Improve your supply chain with real-time insights

As you assess your ERP's challenges and opportunities, it's important to take a comprehensive view. All too often, different experts examine each part of the supply chain independently – recall the Beer Game's 'small businesses' – and don't recognise major inefficiencies across all business units. Are your systems siloed? A siloed system means siloed data. This lack of visibility into metrics and performance impacts everything from inventory control and fulfilment to employee productivity and future forecasting.

An intelligent supply chain that can deliver integrated, real-time metrics removes the guesswork because it constantly re-evaluates the ebb and flow of your company's product distribution system. These actionable insights can optimise the effectiveness of your supply chain, with even small improvements boosting the bottom line.

80%

of manufacturers expect that improved factory connectivity will help them increase output.[4]

– Hennik Research

Get 24/7 inventory awareness

With the increased speed of technology, available inventories can change at a moment's notice. Small market shifts can result in a sudden increase in demand, and if your supply chain isn't intelligent, you may be left without adequate inventory, resulting in missed sales.

Successfully juggling orders and shipments requires in-the-moment visibility into inventory. Supply chain inventory visibility (SCIV) applications are designed to monitor what's happening across a supply chain, allowing companies to keep track of global inventory while also having a backup plan for when things go awry.[5]

Maintaining timely and accurate inventory information across warehouses, stores and third-party shipping companies is central to keeping customers satisfied. Without it, delivering the right product at the right time at the best price is impossible.[6]
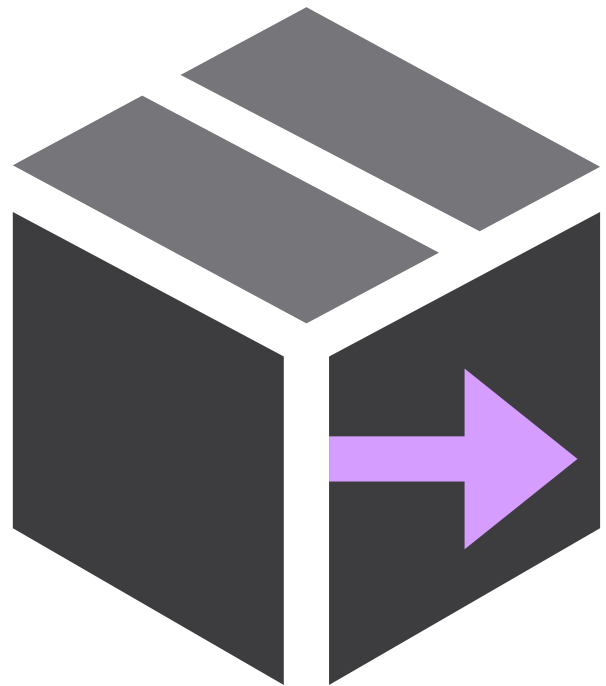
Increase efficiency with instant metrics in production planning

Nowhere is a real-time, 30,000-foot view of your supply chain more critical than in production planning. With an intelligent supply chain, production planning results in accurate resource allocation for materials, determination of product mix, employee scheduling and production capacities. And all of this happens in real time – not over hours or days – so your production plan can reflect current supply chain metrics and quickly pivot as necessary. Companies gain increased efficiency with intelligent and actionable insights that improve accuracy, resulting in higher product quality as well as a reduction in costs and waste. An ERP solution that provides a unified experience by connecting systems through the cloud is critical to optimising your operations.

Optimise fulfilment to satisfy customers

Providing customers with the products they want quickly requires optimisation of fulfilment that moves inventory in an efficient fashion. For a company with multiple distribution points, a modern ERP automatically determines where an item should ship from based on factors such as geolocation, inventory and sell-through rates.[7] The system can also improve shipment-to-order KPIs, ensuring that when a customer orders multiple items, they're sent in a single shipment.[8] Menial tasks like invoicing can be accomplished better, faster and cheaper through automation, freeing employees to focus on more strategic work.

Boost uptime with IoT and predictive maintenance

All too often, maintenance throughout the supply chain is an afterthought – a necessary, ongoing evil that's just the cost of doing business. But maintenance can have an enormous impact on overall productivity. In fact, Deloitte Insights reported that poor maintenance strategies reduced a plant's capacity by 5 to 20%.[9] Technology can slash the downtime associated with broken-down conveyor belts and forklifts with missing parts. How? IoT and mixed reality can handle planning and predicting asset management tasks that will keep machines running and

make them last longer. Simply put, you don't wait until something is broken to start the process of ordering a part while the machine sits idle. Predictive analytics, smart parts and IoT sensors detect when something is near failure and proactively start the process of taking care of it.[10]

Poor maintenance strategies can reduce a plant's capacity by

5%–20%

– Deloitte Insights[9]

Resolve issues proactively with AI and machine learning

Artificial intelligence and machine learning are buzzwords for good reason. Every single supply chain leader surveyed in a 2017 study agreed on the increased importance of advanced supply chain analytics in the next two to three years – and over two-thirds of them viewed it as critical.[11]

Supply chain logistics are uniquely suited to reap the benefits of machine learning. When the massive amount of data created by manufacturing processes meets computers that can process – and make decisions – with that data, it truly makes for a revolutionary time. Imagine being able to actually predict the future of your supply chain demands. With AI, this can be a reality, leading to reduced freight costs, improved supplier delivery performance and minimised supplier risk.[12] Optimisation of the management of raw materials and production is another key benefit of AI.
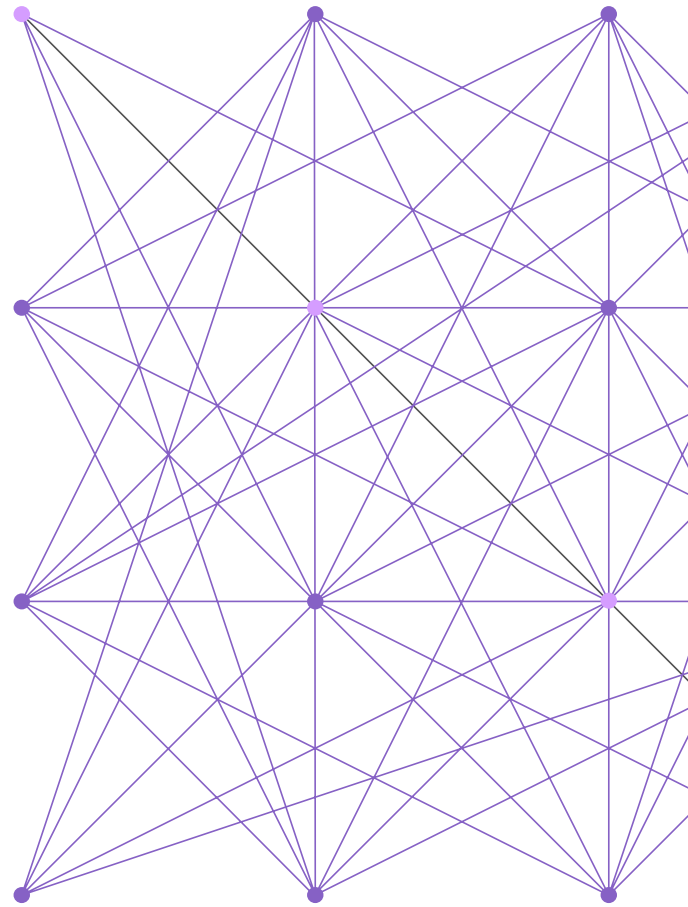
Augmented and mixed reality are also making their way into supply chain management. In warehouse operations, there's great potential to reduce costs in the picking process with wearable, vision-based, real-time object recognition and navigation devices.[13] These smart glasses are also put to use in the field for training and equipment maintenance. It's no wonder AR is increasingly used to aid in complex tasks: XMReality claims that remote technicians using AR make 50% fewer errors and improve the speed of problem-solving by 32%.[14]

Every single supply chain leader surveyed in a 2017 study agreed on the increased importance of advanced supply chain analytics in the next two to three years – and over two-thirds of them viewed it as critical.[11]

– The Hackett Group
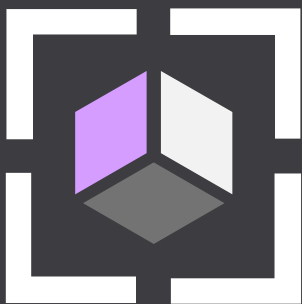
Ensure customer satisfaction with product delivery automation

In an era of high customer expectations around quick delivery and product quality, a seamless, automated supply chain is essential. Vendors must have a predictive overview of everything from production and inventory to shipping and profitability to ensure on-time delivery, product availability and, ultimately, customer satisfaction. The ability to continuously fill orders gives shippers the ability to keep up with round-the-clock shopper habits.

When a midnight shopper hits 'buy', it immediately initiates a process. The scan of a barcode on the package going out for delivery will automatically generate an email back to the customer letting them know the shipment details.[15]

Empower employees with end-to-end visibility

While a modern supply chain ERP may seem overly automated, what it truly does is free up employees to make better-informed decisions with real-time data and predictive insights. That's a formula for a greater return on investment, yet, according to the Aberdeen Group, just 20% of companies have end-to-end supply chain visibility.[16] This void presents an opportunity for a business to gain a significant competitive advantage. Companies with a modern supply chain ERP have cross-company visibility into equipment operation, inventory and production processes, empowering employees to be more collaborative. End-to-end visibility provides real-time communication.

By updating the status of a link in the supply chain and then automatically informing and updating other links, the process becomes more seamless. That arms your employees with intelligent information when they need it. It all adds up to being able to make quick responses to demand changes, handle disruption and generally outperform the competition.[16]

III.
How it all comes together for the customer

Build a customer-centric supply chain

Every link in the supply chain leads to the customer. According to IDC's FutureScape, 90% of industry growth will be driven by companies that have success engaging with customers.[17] Incorporating machine-learning technologies into the supply chain allows for smarter business processes and equips employees with key insights and predictive analytics, enabling businesses to effectively identify customer lifetime value, profitability and key buying trends. It elevates an old-school supply chain from just a mechanism for getting a product from one place to another into a multichannel delivery system that always puts the customer's experience top of mind.[17]

In turn, because of the efficiencies created by a modern ERP, manufacturers are able to decrease product costs and offer a better price. With the customer behaviour insights learnt throughout the process, companies are better able to forecast and respond to customer wants for future products and services.

A key component of a positive customer service experience is the transparent and fast delivery of products. In a MetaPack study, 54% of respondents said fast delivery was their first or second most important criteria when ordering. Customers want their goods delivered quickly and in good condition – and they want to know where their products are every step of the way.[18] Only a fully integrated, modern ERP can handle the personalised, end-to-end journey that customers demand in an age when they have more choices than ever. If a company fails them, the customer simply moves on; if it succeeds, they likely return.

2×

Between 2018 and 2020, the number of companies servicing demand from multiple distribution centres will double.[19]

– Forrester

IV.
Why Microsoft Dynamics 365 Supply Chain Management?

When selecting an ERP, you'll want a system that will fit the current needs of your business and also grow with it.

Microsoft Dynamics 365 Supply Chain Management combines the best of the old and new worlds of ERP because it's completely scalable, flexible and intelligent.

Instead of having to start from scratch, you'll be able to build a modern supply chain with modular solutions, turning on and off key components as needed, working seamlessly with your existing systems and integrating software like Microsoft Office 365 and hardware like HoloLens.

Dynamics 365 enables you to move beyond best-guess planning and reactive firefighting.

With continuous predictions and proactive execution, a connected and responsive supply chain will improve collaboration and better deliver on customer demands. It will enhance control and efficiency with complete visibility into warehousing and transportation, while reducing transportation costs and driving greater customer satisfaction with decreased delivery time and increased accuracy. And you'll also decrease downtime in a connected factory where equipment is monitored using IoT and machine learning for best next-step actions.

Dynamics 365 Supply Chain Management promotes smarter business processes because it's infused with artificial intelligence and Microsoft Power BI, a system that provides 360° analytics for your entire company.

From a flexible, scalable warehouse management system to built-in forecasting using Azure machine learning, Dynamics 365 leverages the power of Microsoft's trusted cloud and security. Named the leader of Nucleus Research's ERP Technology Value Matrix, Dynamics 365 can be deployed and onboarded rapidly, ensuring quicker time to value.

Request a demo of Dynamics 365 Supply Chain Management

Empower your employees to make smarter decisions faster with a tool that's modern, unified, intelligent and adaptable. Allow your workers to find, sort, visualise and use information easily through an intuitive interface. Boost their productivity and efficiency with end-to-end visibility and the ability to do business nearly anywhere, anytime, with Dynamics 365 Supply Chain Management.

Resources

[1] Peter Dizikes, 'The Secrets of the System', MIT News Office,
May 3, 2012.

[2] Kasey Panetta, 'Gartner Predicts 2019 for Supply Chain Operations',
Gartner, December 17, 2018.

[3] Microsoft, *IoT Signals: Summary of Research Learnings 2019*,
July 25, 2019.

[4] Hennik Research, Annual Manufacturing Report 2017, 2017.

[5] 'Supply Chain Inventory Visibility', Gartner Glossary, Gartner, accessed
November 12, 2019.

[6] Allison Manetakis, 'Without Inventory Visibility, There Is No Perfect
Order', *Multichannel Merchant*, February 6, 2017.

[7] Ian Goldman, 'Optimizing Fulfillment: From Any Store to Any
Customer', *Retail Info Systems News*, September 23, 2014.

[8] Deborah Abrams Kaplan, 'To Optimize Fulfillment, Logistics Have to
Play Along', *Supply Chain Dive*, November 27, 2018.

[9] Chris Coleman, Satish Damodaran, Mahesh Chandramouli and Ed
Deuel, 'Making Maintenance Smarter', Deloitte Insights, May 9, 2017.

[10] Gary Brooks, 'How Predictive Analytics Will Change the Supply Chain
of Tomorrow', *TDWI Upside*, January 19, 2018.

[11] Sanjiv Mahajan, Sandip Saha and Alfonso Macias, *Analytics: Laying
the Foundation for Supply Chain Digital Transformation*, The Hackett
Group, November 2017.

[12] Louis Columbus, '10 Ways Machine Learning Is Revolutionizing Supply
Chain Management', *Forbes*, June 11, 2018.

[13] Holger Glockner, Kai Jannek, Johannes Mahn and Björn Theis,
Augmented Reality in Logistics, DHL Trend Research, 2014.

[14] Softeq Development Corporation, 'Industrial Augmented Reality (AR)
Boosts Equipment Maintenance, Field Service and Staff Training', *IoT For
All*, June 21, 2019.

[15] Ryan Duguid, 'How Automation Is Transforming the Supply Chain
Process', *Manufacturing.net*, September 7, 2018.

[16] University of Limerick, 'End-to-End Visibility Is Key to Supply Chain
ROI', accessed November 12, 2019.

[17] Robert Johnson, 'Comment: Supply Chain Should Be an Important
Customer Experience Channel', *Supply Chain Digital*, September 19, 2018.

[18] MetaPack, 2018 State of Ecommerce Delivery, 2018.

[19] Forrester, Master Digital Supply Chain for Age of the Customer
Operations Excellence, July 9, 2018.