

e2open®

INDUSTRY BRIEF

Automotive Industry

Major industry evolution to electrification,
autonomous driving, and technological advancement
meets a world of unprecedented global disruptions



State of the automotive industry: evolution in the midst of disruption

Consumer demand for electric vehicles (EVs) is growing, and the U.S. government has set goals for EVs to reach 50% of all sales by 2030 — all of which requires a shift in the industry.

Automotive industry experiences challenges with new complexities



Chaotic supply and demand

The obstacles auto industry leaders are facing due to unpredictable supply and demand have led to the need for more resilient supply chains. For instance, the challenges stemming from both product and labor shortages are unprecedented. Semiconductor shortages plague the industry and competition for chips grows as more and more products continue to get “smarter” and for the foreseeable future, the demand for chips will continue to outweigh supply. Beyond chip shortage, the overall picture of your supply risk across all parts, materials, labor, logistics, and regulatory impacts is often blurry at best.

Supply shortages slow (or stop) production

Shortages have slowed or stopped production altogether and left vehicles sitting in lots awaiting components. This problem isn't completely solved by further extending the supply chain to new suppliers. Besides the issues involving semiconductors, companies struggle with disruptions caused by weather, rubber shortages, difficulties getting

products out of ports, and lack of trucking resources. With the growing demand for EVs coupled with the need to accelerate EV sales, automotive manufacturers are closely examining every link in the supply chain, determined to increase control to secure a supply of batteries and manage the challenges of logistics.

Siloed planning and over stocking

With semiconductor, parts, and material supply uncertainty, many manufacturers and suppliers throughout the supply chain overcorrect by holding more stock than necessary because they can't see inventory across the network. If this is true for your organization, rebalancing your inventory can take millions of dollars out of your supply chain and free that capital for better use. Inventory optimization is a strategic supply chain improvement area that manufacturers can implement today to reach the right balance point. Without a collaborative planning process, automotive supply chains will not be able to reach this level of inventory optimization and build plans may be realistic — or not.



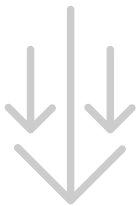
Challenges of delays that threaten customer loyalty

Delays that impact your ability to keep production lines moving also impact the ability to get vehicles to the end customer and threaten customer loyalty. Automotive manufacturers need to see where delays are happening, understand the business impact and true timing of the delay so they can make good business decisions to adjust to the disruptions they cause. Unplanned errors with due diligence, regulatory compliance, and global trade can not only add to delays, but the penalties come with high cost. Customers who cannot find the car of their choice, often make a different choice — loyalty is harder than ever to maintain.

Need for visibility, control and collaboration

Automotive manufacturers can gain much-needed visibility and control when they modernize their business with a connected supply chain. Imagine your suppliers and trading partners — thousands of organizations across all tiers and ecosystems — connected, exchanging information, working collaboratively and securely in real time to build a resilient supply chain. You're in the driver's seat when you take on today's complexities and gain control in the face of today's challenges by future-proofing your supply chain.

Complexity issues call for a more connected supply chain



Structural Challenges of Today's Supply Chains

NOT Integrated	Disconnected processes, systems, applications, and data
Poor Data	Late, inaccurate, and incomplete data leading to indecision
Siloed Decisions	Misaligned priorities leading to disconnected and uninformed decision-making
Reactive	A series of hasty decisions and delayed responses resulting in poor outcomes

The Modern Supply Chain

Integrated	Unified supply chain technology platform and interconnected partner network
Harmonized	Timely, accurate, and complete data enabling decision grade insight and information
Connected Decisions	Real-time decision-making capabilities and automated responses
Proactive	Business transformation and a supply chain working together as one

What if you had
a connected
supply chain?



e2open[®]

Supply Assurance

Can you fully measure your supply risk?

Meeting your production plan and delivering products to customers depends on every part, from every supplier — and their suppliers — at your production line when you need it. Automotive industry supply chains rely on thousands and thousands of suppliers across multiple tiers. With the introduction of electric vehicles (EVs) in the past years, new and additional suppliers enter the picture.

Minimize risk with a connected and collaborative multi-tiered supply chain.

Few industries compare with the automotive industry when it comes to the many tiers of suppliers that make up a very complex supply chain. Connecting thousands and thousands of suppliers may sound daunting — but it is doable today and it is critical to minimizing supply risk. Once connected, your ability to see, plan, and act together in a collaborative way brings countless opportunities to realize supply assurance.

Collaboration and orchestration across every tier of supply and manufacturing with e2open help ensure businesses have the right tools to boost supply availability, manage product costs, and reduce risk through a holistic view and AI-based decision making.



Supply Assurance Realized

- **Effective collaboration** helps you develop trust and confidence, leverage economies of scale and create a more agile, responsive, and efficient supply network.
- **Streamline and manage direct sourcing and procurement** for all supply tiers with unmatched visibility, control, and collaboration.
- **Proactively aligning supply with demand** by collaborating with suppliers ahead of time improves productivity and supply assurance while reducing lead times and risk.

Collaborative Build Planning

Is your build plan created with (or without) your partners?

So much of delivering on your plans depends on production that takes place outside your four walls. Often, plans are developed at disparate points in the supply chain without knowledge of other planning processes.

Build stability into your supply chain by planning collaboratively with partners.

Modern outsourced supply chains call for a different kind of planning that goes beyond your enterprise to include all tiers of channel, distribution and supply ecosystem partners. Connected and holistic planning is differentiating companies, empowering them with quick, informed and effective decisions that help them achieve service levels, maximize financial performance, capture growth opportunities and predict material shortfalls.

Jaguar Land Rover embraces a collaborative 'outside-in' mindset, recognizing that the most critical data and insights come from beyond their enterprise. The journey is as much about changing behaviors and collaborating with suppliers as it is about technology.

With a shift to a connected supply chain, the benefits to automotive manufacturers are endless.

- Improved forecast accuracy, detection, and response to disruptions and overall service levels
- Reduced inventory and carrying costs, planning cycle times, and cost of supply and distribution
- Feasible, optimized, constraint-aware plans and increased planner productivity



Automotive manufacturers can overcome supply chain volatility and complexity through holistic planning with e2open which leverages field-proven technology and real-time market realities to ensure accurate demand, supply, and inventory plans.

UK's largest automotive manufacturer shifts to a collaborative digital supply chain model. Central to Jaguar Land Rover's vision is e2open's orchestration platform connecting planning, operations, and all partners to efficiently and sustainably delight customers.



Optimized Stock and Inventory

Are you spending more capital in safety stock and inventory levels across your multi-tier supply chain than necessary?

When shortages stop production lines — and many automotive manufacturers have experienced that level of disruption recently — the solution may include large safety stock levels. Every supplier — and their suppliers — are attempting to minimize their risk and uncertainty around meeting their commitments. The amount of capital tied up in inventory at each tier can be duplicative, expensive, and potentially unnecessary.

See exactly where safety stock is located across all tiers of your supply chain and optimize to ensure productive use of capital while building supply confidence.

Automotive manufacturers and suppliers do whatever they can in these complex times to meet their target service levels, resulting in excessive costs and unproductive working capital. With cross-ecosystem optimization, they can reduce inventory by mathematically determining the required target levels for materials and finished goods at all stocking locations in the extended supply chain. Automotive manufacturers using optimization technology realize benefits that build supply chain stability.

Keep production lines moving with e2open by helping ensure proper safety stock and inventory optimization — gaining results in increased efficiency, lower carrying costs, and reduced working capital, all of which impact the bottom line.



Optimized Stock and Inventory Realized

- **Simultaneous optimization of inventory across all tiers** and supplier locations, improving decision-making which balances service, cost, and flexibility — and boosts stability in your automotive supply chain
- **Demand and supply volatility measured directly** over specific lead times for each part or material, resulting in more accurate inventory targets
- **Automated recommendations for both minimum and maximum stock levels** taking in data from your entire supply network

Informed Logistics Management

What is the impact of logistics delays on your business?

Real-time visibility into shipments is just the beginning. Knowing the business impacts of each delayed shipment, evaluating corrective measures, and taking action based on data helps balance cost and customer service.

Gain insight into the impacts and respond appropriately when delays reverberate across your supply chain.

The inherent and increasing complexities of international logistics make disruptions — and resulting delays — ever more likely. But not all delays are equal, and not all warrant the same response. It is important to determine whether the delay impacts downstream processes before deciding the best course of action.

Transportation planning today includes the growing need to understand and measure the environmental impact of your organization's logistics activity. What if you could proactively make logistics decisions to move vehicles, components, and parts and materials, understanding up front the impact of your choices environmentally, while also minimizing costs and time?

Automotive manufacturers can transform their logistics planning with e2open to optimize transportation spend in an environment of escalating costs while proactively supporting your organization's environmental goals.

Informed Logistics Management Realized

- Logistics planning, booking, shipping, real-time tracking, and settlement capabilities across **all transport modes — ocean, air, rail, road and parcel**
- **Shipping made easy**, with simplified tendering, optimized use of capacity and containers, streamlined payment, and **reduced carbon impact**
- **Optimized transportation spend** in today's environment of escalating costs through access to an extensive global carrier network via a **single platform**
- **Visibility to track goods in motion** to their final destination, understanding the business impact of delays so you can take the appropriate corrective action



Minimized Compliance Risk

Are you confident your organization is guarded against the high costs and brand risk of regulatory non-compliance?

In an era of heightened security, determining whether individuals, companies, or organizations are restricted or banned from conducting international business is critical, because the cost of non-compliance is high and automotive manufacturers can't risk denigrating the value of their brand.

Streamline regulatory compliance screening of all business partners, suppliers, contractors, and customers against official denied parties and politically exposed persons' lists.

In a global industry like the automotive industry, companies must determine if a partner, customer, or contact involved in a transaction is a restricted party. With hundreds of lists worldwide, manually screening is time-consuming and error prone, increasing your chance of running afoul of regulations and incurring significant consequences.

Savings with Duty Management

How effectively are you utilizing available trade agreements to minimize duty obligations?

Manufacturers must implement a trade agreement program with processes that require collaboration with suppliers to gather crucial data — and in an industry like the automotive industry with a vast, multi-tier supplier network, automation with secure communications and collaboration tools is required.

Capture the full potential of trade agreements with the processes and technology that help automotive manufacturers attain low-cost, multi-country sourcing.

Using trade agreements effectively can bring automotive manufacturers great benefit but using them effectively requires deep compliance expertise. Importantly, it also requires a rich regulatory database, connections to the rest of the supply chain and platform with robust capabilities for global compliance execution.

Results with Dealer Marketing

Is your dealer marketing budget getting you the ROI you should expect?

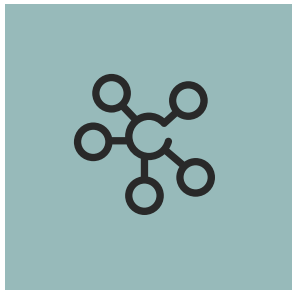
With all the work you put into cultivating customer loyalty, once again, business partners outside your enterprise — in this case, your dealers — contribute to meeting your revenue and profitability goals and represent your brand.

Optimize dealer marketing programs to get the most out of your marketing spend and protect your brand.

Dealer marketing funds can be automated, tracked and measured to promote a strong ROI on that investment. Programs designed to properly incentivize dealers help ensure mutual success.



Why e2open?



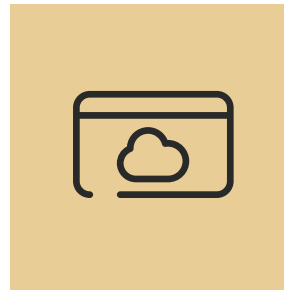
Network

All Ecosystems & Tiers
Always Connected
Trading Partners



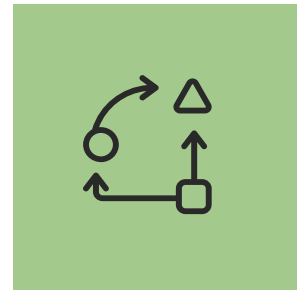
Data

Uniform Decision Grade
Harmonized, Timely,
and Complete



Applications

Unified & intelligent
Holistic Decision Making



Process

Multi-tier & Multi-Enterprise
End-to-End Process
Orchestration

End-to-end visibility and control have long been key challenges to making better business decisions. While the supply chain itself is inherently connected, the processes are inherently siloed. This is due to disparate data sources and disconnected processes and systems across vast supply chain networks.

Enter the pandemic. In a relatively short period of time, we've witnessed unprecedented disruptions in demand, supply and logistics. What was a fairly free-flowing, demand-driven process, became restricted and supply-constrained. Factory shutdowns. Supply disruptions.

E2open is a world-leading provider of networked, cloud-based supply chain technology and services focused on providing supply chain resiliency during supply and demand volatility.

The company's connected supply chain platform and multi-enterprise networking technologies represent a unifying and composable system — a system giving you the ability to see, forecast, act, and advance in the most informed and intelligent manner, optimizing making, moving and selling across the entire value chain when certainty isn't certain.

The combination of an integrated end-to-end platform, best-in-breed applications, and harmonized decision-grade data from a holistic network of four ecosystems comprised of over 400,000 enterprises provide a single source for real-time insight and actionable information across the entire supply chain.

Connected processes and systems provide a secure connection to this decision-grade network data, empowering companies with the visibility and capability to optimize efficiencies and manage supply chain volatility in real time. All of this enables suppliers, manufacturers, transporters, and fulfillment channels across the supply chain to operate as one, optimizing supply, demand, and delivery efficiently and sustainably while the world we live in is in constant motion.

E2open — the value is in our name — an open supply chain ecosystem of record, from planning to execution to sales and fulfillment, providing you next level supply chain efficiencies and a roadmap to business transformation at a pace that is right for you.

E2open. The Connected Supply Chain. Moving as one.™

Network Architecture

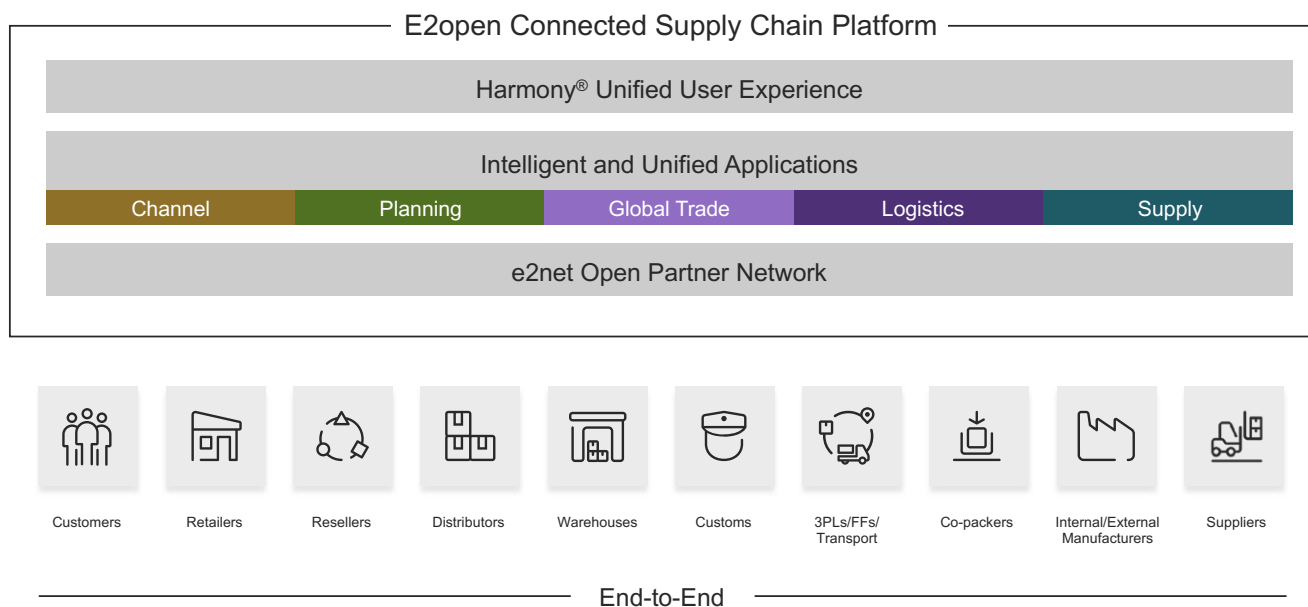
Supply chains are complex. They are global. And they are outsourced to hundreds, if not thousands, of partners to make, move and sell goods around the world. Consider the hundreds, thousands, even millions of hand-offs testing the integrity of a company's supply chain everyday — suppliers, manufacturers, transporters, and fulfillment channels.

While supply chains are connected in theory, oftentimes the processes and data for true connection are not. Organizations are often siloed, and supply chain technology purchases frequently follow this fragmentation. This lack of coordination creates the environment for disconnect and therein incomplete and inaccurate data and information. Time and again, the structural challenges of today's supply chains lead to indecision or uninformed decision-making. These hasty decisions and delayed responses often lead to inadequate business outcomes.

What if you had a single source for real-time insight and actionable information enabling automated response and better decision making across the entire value chain? What if you had a solution that brought together all aspects of the extended supply chain while addressing supply chain volatility, disruption, excess cost, and waste?

Imagine an open, end-to-end cloud-native platform, with best-in-breed supply chain applications, and harmonized, decision-grade data from the world's largest multi-enterprise network. A multi-tier network of suppliers, manufacturers, transporters, and fulfillment channels all connected through business processes and uniform data.

The following architecture visual represents the connected supply chain platform from e2open.



Moving as one.™

The world's largest network

Clients oftentimes expand the capability of their supply chain technologies one point solution at a time. E2open embraces that mindset, but advocates for the progression to include complete connectedness through an open platform. The connected supply chain platform from e2open provides access to hundreds of thousands of trading partners across four ecosystems (demand, supply, global trade, and logistics).

The value of access is only as good as the data that is traded. Harmony® from e2open, normalizes this vast amount of data into a single source of truth, guiding the supply chain through potential volatility.

Intelligent applications, informed through field-proven AI, provide a unifying capability across the entire value chain — Channel, Planning, Global Trade, Logistics and Supply. All applications and data are exposed through a single pane providing visibility across the entire supply chain.

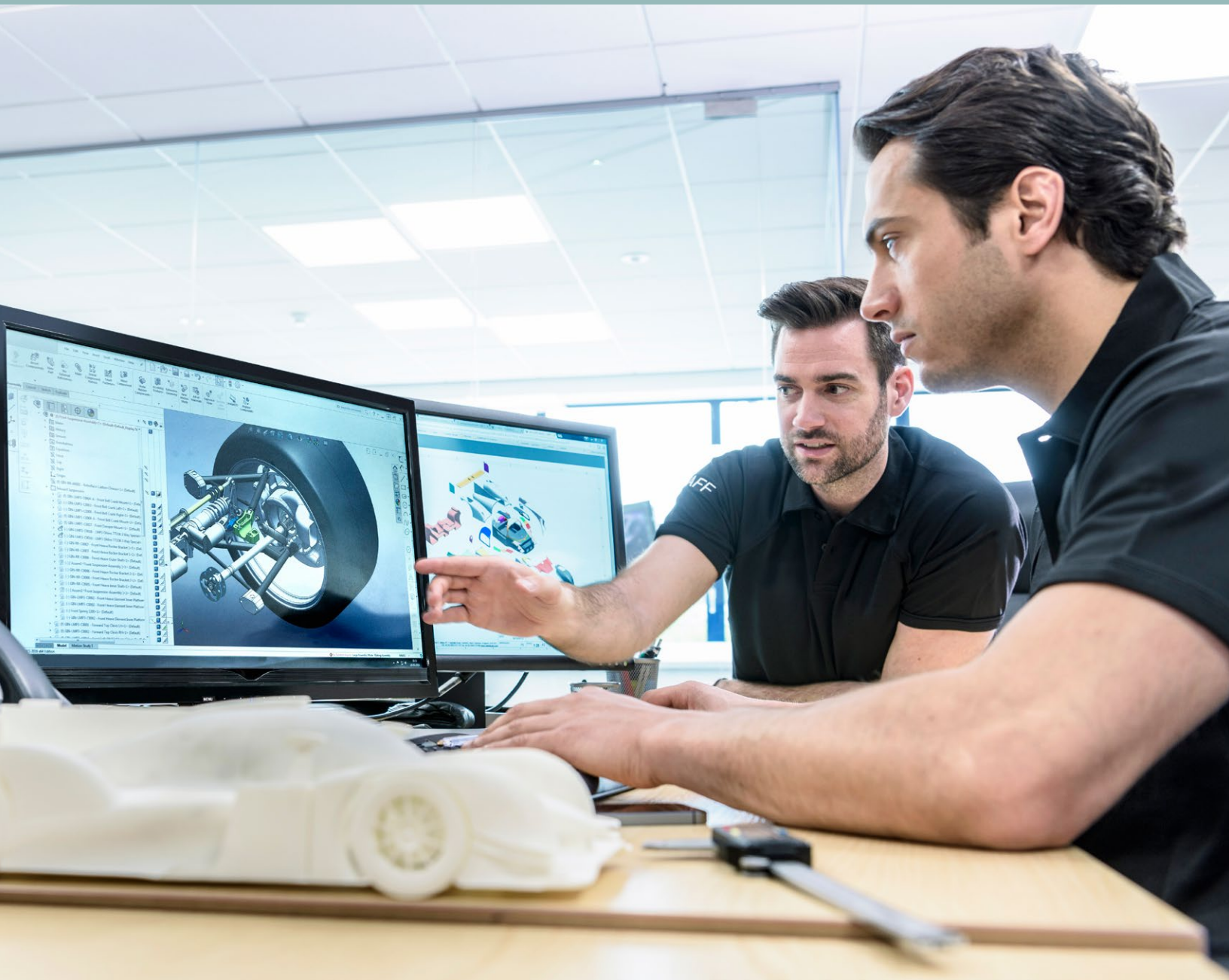
The world's largest network of interconnected partners



Key Benefits

- Unified supply chain technology platform and interconnected partner network
- Timely, accurate, and complete data establishing decision-grade information
- Real-time decision-making capabilities and automated responses
- Business transformation through a supply chain working together as one

With e2open, supply chain professionals gain better visibility, collaboration, and control supporting a connected supply chain, moving as one.



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Moving as one.[™]

Learn more at www.e2open.com/industries/automotive

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