



# The Value of Real-Time Visibility and Predictive Intelligence for Supply Chains

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# Big data analytics value proposition for supply chains



## Real-Time Visibility Enabled by Big Data and IoT

Ability to see the real-time movement of shipments and orders anywhere on the globe from foreign supplier to customer door, end-to-end across all modes.



Information and the ability to create actionable insight from massive amounts of data has become a key element in competitive differentiation.

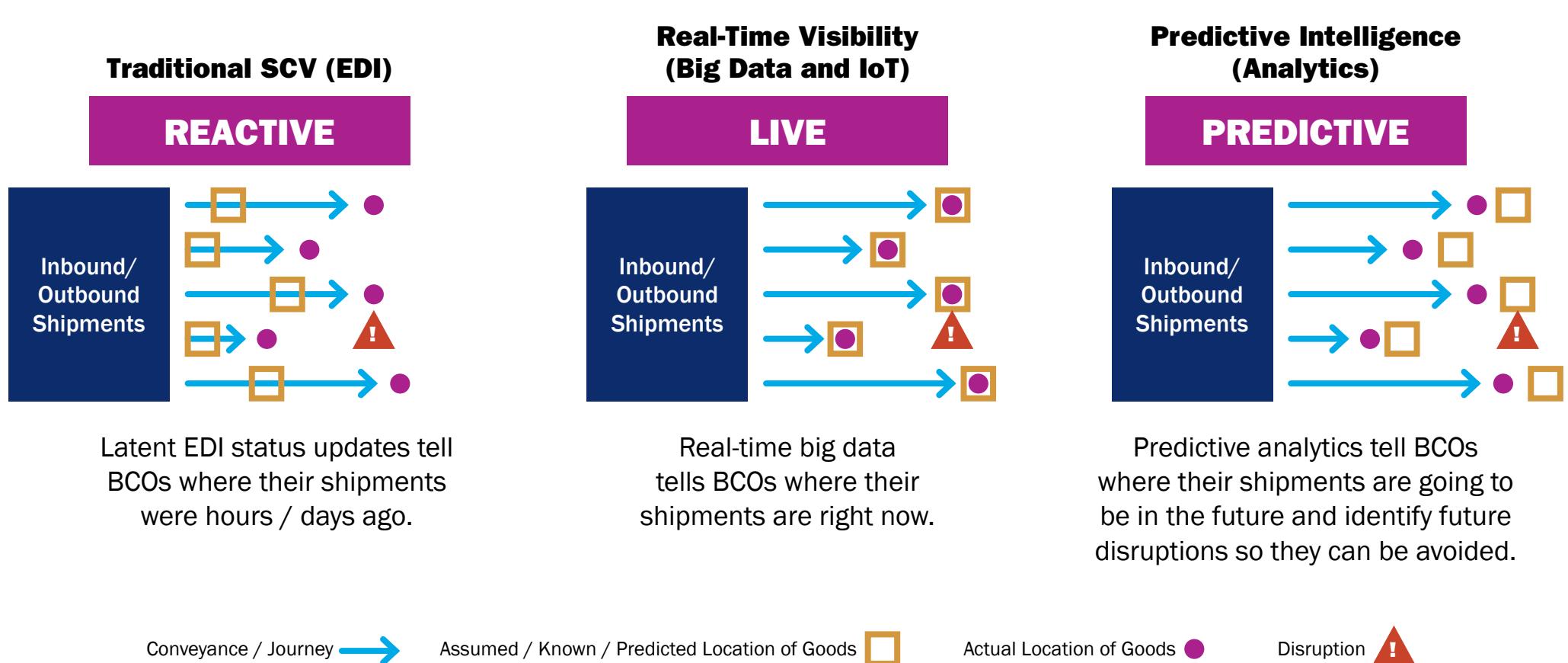


## Predictive Intelligence Enabled by Analytics

Ability to predict and avoid supply chain disruptions from external events such as weather, port congestion, road traffic, natural disasters, human behavior, etc.

IDC Prediction: By 2020, organizations able to analyze all relevant data and deliver actionable information will achieve an extra **\$430 billion in productivity benefits** over their less analytically oriented peers.

# Innovative technologies enable real-time visibility and deliver predictive intelligence



# Supply chains must look beyond traditional EDI based visibility towards real-time actionable insight and predictive analytics

EDI for in-transit shipment tracking is ok, but for true real-time visibility supply chains must move beyond EDI and leverage the tremendous value of the Internet of Things (IoT).

- Ocean Freight EDI often has days of latency between transmissions
- Road Freight EDI has hours of latency
- Air Freight is transmitting on departure and arrival, but not real-time in-transit
- In addition to latency, EDI does not capture true behavior and can miss unscheduled route changes

The proliferation of IoT devices across supply chains has created the opportunity for supply chains to connect, in real time, to multiple sources of the data to obtain a real-time accurate view of assets in motion.

**Real-time visibility provides real value in the supply chain such as:**

- Improved understanding of actual supply chain behavior and model against real activity
- Reduced transit lead time
- Reduced buffer stock
- Improved supply chain planning
- Enabled use of dynamic routing
- Improved downstream scheduling accuracy
- Improved customer service
- Reduced cost
- Extended definition of “inventory on-hand” to include incoming shipments



The IoT is enabling companies to deliver on the promise of real-time visibility with **real-time analytics** for the supply chain at a reasonable cost!



# IoT deployments deliver real supply chain results

## Know where shipments are in real time to:

- Rapidly respond to change
- Achieve up to 99% ETA accuracy
- Improve warehouse and labor productivity by 10%-30%

## Provide better customer service to:

- Increase customer loyalty
- Reduce customer service costs
- Increase sales
- Improve customer service (OTIF) by up to 2 percentage points

## Gain real-time visibility of inventory to:

- Improve inventory utilization
- Reduce buffer stock by as much as 20%
- Leverage inventory in-transit as available

## Real-time supply chain visibility can:

- Reduce expedited freight costs between 5% - 50%
- Reduce transit related lead time buffer
- Reduce excess inventory and related costs

## % of executives citing performance improvements from IoT across specific business areas

**44%**

**Shipment Tracking**

**42%**

**Inventory Availability**

**37%**

**Improved Customer Service**

**32%**

**Overall Supply Chain Visibility**

# Real-time visibility into in-transit assets enables retail supply chains to improve

The retail industry has been going through a period of drastic transformation as digitally connected customers increasingly demand a high mix of products available for near immediate fulfillment across a range of fulfillment methods, at times demanding last-minute product and delivery changes, in a transformative and highly competitive environment.

Leveraging IoT and advanced analytics in the logistics function of the retail supply chain enables retailers to adapt to disruption and deliver value such as:

- Improve customer service by quoting accurate ETAs and consistently meeting promised delivery dates
- Allocate inventory in-transit within short product life cycle environments (fast fashion)
- Accurately predict ETA of shipments to improve downstream operations
- Improve cross-docking capabilities
- Deliver on dynamic routing
- Improve overall inventory management
- Drive revenue and sales
- Gain complete supply chain view, including risk, supplier behavior, and external forces impacting their ability to deliver



## 72% of retail supply chain executives

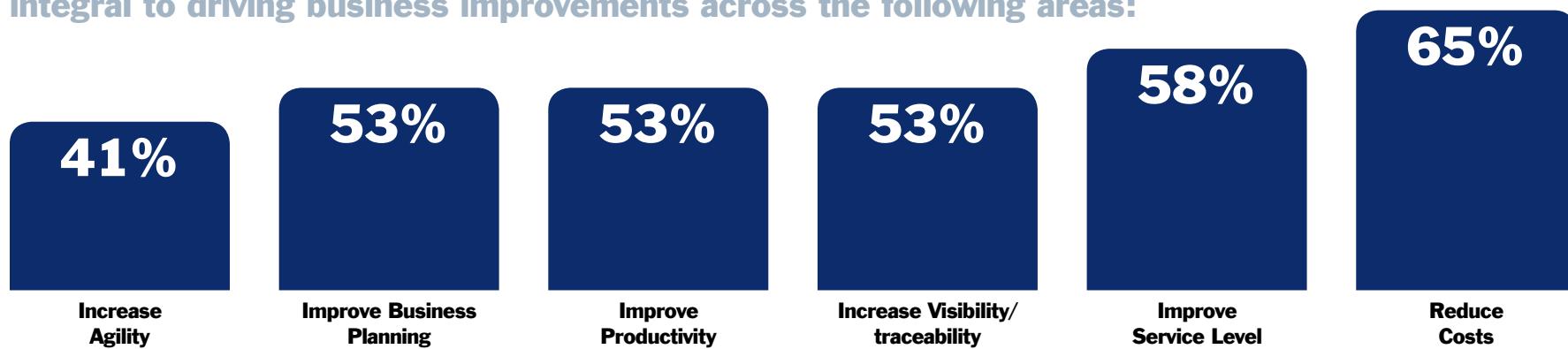
believe IoT is important or very important to how they run the supply chain of the future.

Source: IDC 2016 Supply Chain Survey

# Advanced analytics and IoT are driving change and value in the manufacturing supply chain

The manufacturing industry covers a broad base of business, but what they all have in common is the increasing adoption of IoT and advanced analytics across the business. Greater than 68% of manufacturing supply chain executives agree that IoT will be important or very important to how they run the supply chain of the future.

**Manufacturing supply chain executives who agree IoT/advanced analytics are integral to driving business improvements across the following areas:**



Shipment tracking and inventory availability are the top two areas where manufacturing supply chains are delivering business value through IoT at **41.2%** and **40.3%**, respectively.

# Life sciences is ripe for digital transformation through the application of IoT and advanced analytics

Life sciences supply chains are incredibly complex having to manage robust distribution networks, complex regulatory requirements, product handling and storage, and security challenges among other complexities.

The life sciences industry, especially within the supply chain, is ripe for digital transformation and has the opportunity to deliver tremendous value through the application of IoT and advanced analytics as a lever to provide real-time in-transit visibility and predictive analytics. As life sciences companies leverage these modern technologies they can expect to:

- Improve route planning and transportation asset planning to more efficiently move temperature controlled and non-temperature controlled products
- Significantly improve inventory management
- Enhance traceability throughout the supply chain
- Reduce transportation related costs
- Drive downstream operational efficiencies



The life sciences industry, especially within the supply chain, **is ripe for digital transformation.**

# In addition to value creation, IoT and advanced analytics is a lever for risk avoidance in the supply chain

Supply chain disruption is frequent, expensive, and avoidable.

Supply chain disruption has caused  
**60% OF COMPANIES**  
to experience a 3% or greater increase  
in total supply chain costs<sup>1</sup>



3 OUT OF 4 COMPANIES  
SUFFERED SUPPLY CHAIN  
DISRUPTION IN 2015

**\$56 BILLION**  
value of goods stolen, lost, and  
damaged globally due to supply  
chain disruption in 2015



**\$7 BILLION**  
the cost to U.S. retailers in 2015 as  
a result of West Coast Port Delays



Supply chain exposure to **risk can be reduced**  
with real-time visibility and predictive intelligence

# IDC supply chain risk and resiliency maturity distribution across stages

40% of companies surveyed are responsive while **only 4% of companies are predictive** relative to supply chain risk and resiliency.

Top performers are those companies capable of predicting and avoiding supply chain disruptions.



Ad Hoc

**3%**

Siloed

Conflicting, often opposing, ability to effectively assess risk and respond cohesively



Opportunistic

**29%**



Repeatable

**40%**



Managed

**25%**



Optimized

**4%**

Reactive

Limited ability to assess and identify risks means that disruptions are often a "surprise" resulting in suboptimized responses

Responsive

Ability to assess risk is improved, but still not comprehensive, resulting in average performance versus competitors

Proactive

Comprehensive risk assessment and active risk mitigation provides a competitive advantage versus competitors

Predictive

Best-in-class risk assessment and resiliency allows the business to "win limited available opportunities" when disruption occurs

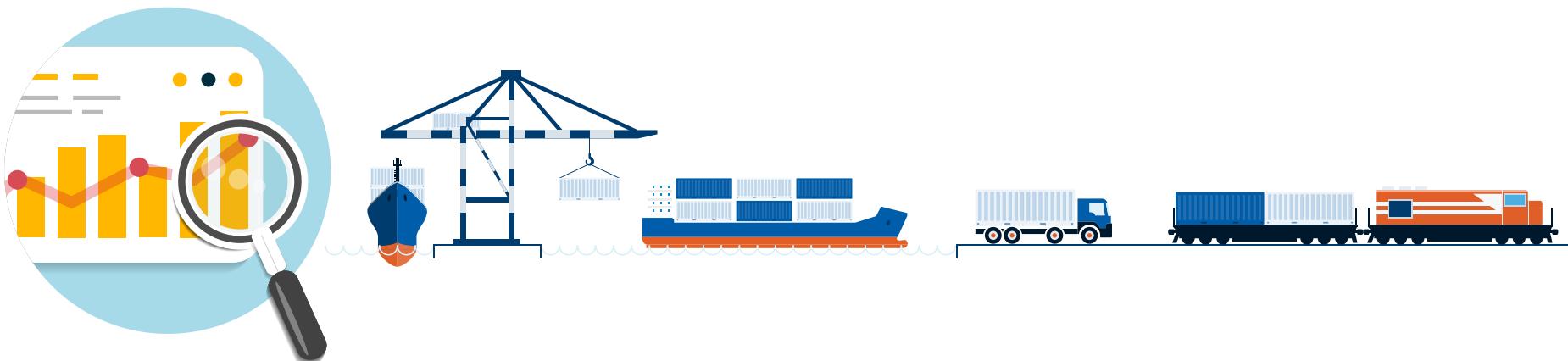
# Predictive intelligence enables supply chains to avoid disruptions rather than respond to them

## Benefits of Predictive Disruption Avoidance:

- Reduction in lost sales revenue
- Reduction in expedited freight
- Improvement in cycle times
- Improvement in customer service
- Reduction in safety stock
- Reduced exposure to disruption
- Enables rapid response
- Reduced lead times
- Optimized transportation routing
- Improved downstream planning and operations

## Accurate Real-Time Visibility Enables Predictive Response:

- ✓ Leverage big data and advanced analytics to predict when and where disruption may occur
- ✓ Select routes predicted to be free of disruption upfront
- ✓ Re-route assets in-transit to avoid predicted disruptions that are unfolding in real time
- ✓ Re-plan downstream operations to account for predicted late arrival of goods in transit

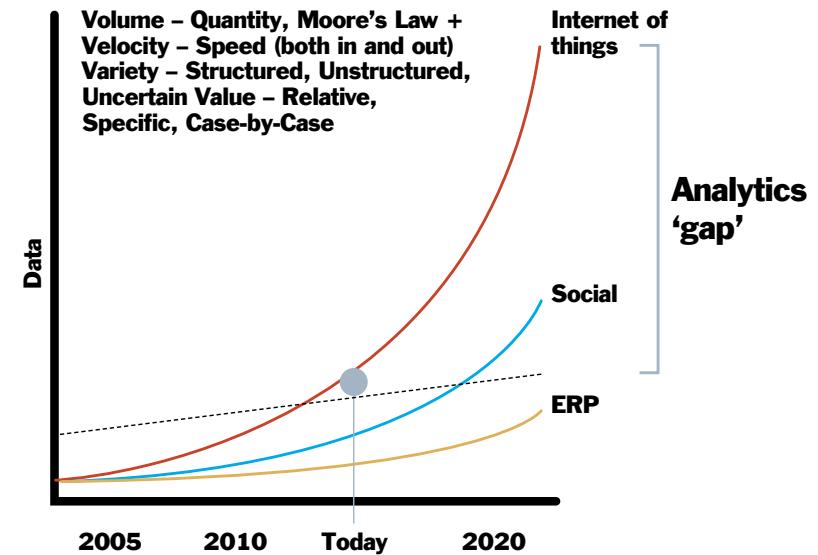


# The IoT will fundamentally alter supply chain management. Is your supply chain ready?

IDC forecasts over 29.5 billion IoT connected end points by 2020. For supply chains, this creates an abundance of data points from which to conduct advanced analytics and gain predictive insights. Companies that effectively utilize advanced analytics on top of IoT data will significantly outperform their peers that do not over the coming years.

44.6% of companies are researching/evaluating, purchasing, and/or upgrading IoT and sensors for supply chain orchestration in 2016.

69.3% of supply chain professionals view the IoT as important or very important to the supply chain of the future.



IoT is not just about the data, it's about the ability to draw **predictive actionable insights** through advanced analytics.

# Essential guidance for embarking on your IoT and advanced analytics journey

- 1** While IoT and advanced analytics must be part of the long-term strategy, start small and near term in order to build the business case for a more robust long-term plan.
- 2** Identify use case-driven quick win opportunities where IoT, big data, and advanced analytics can deliver quantifiable business value.
- 3** Evaluate purpose-built IoT applications capable of delivering rapid results that have proven use case examples and can help build the case for future investment.
- 4** Leverage small-scale implementations of technology to prove the business case and help in securing funding and approvals for future strategy and planning.
- 5** Think of small-scale projects as learning opportunities and the building blocks to working towards evolving the business to meet the needs of tomorrow.
- 6** Remember, it is not all about the data but rather the ability to draw actionable intelligence out of the data.

