

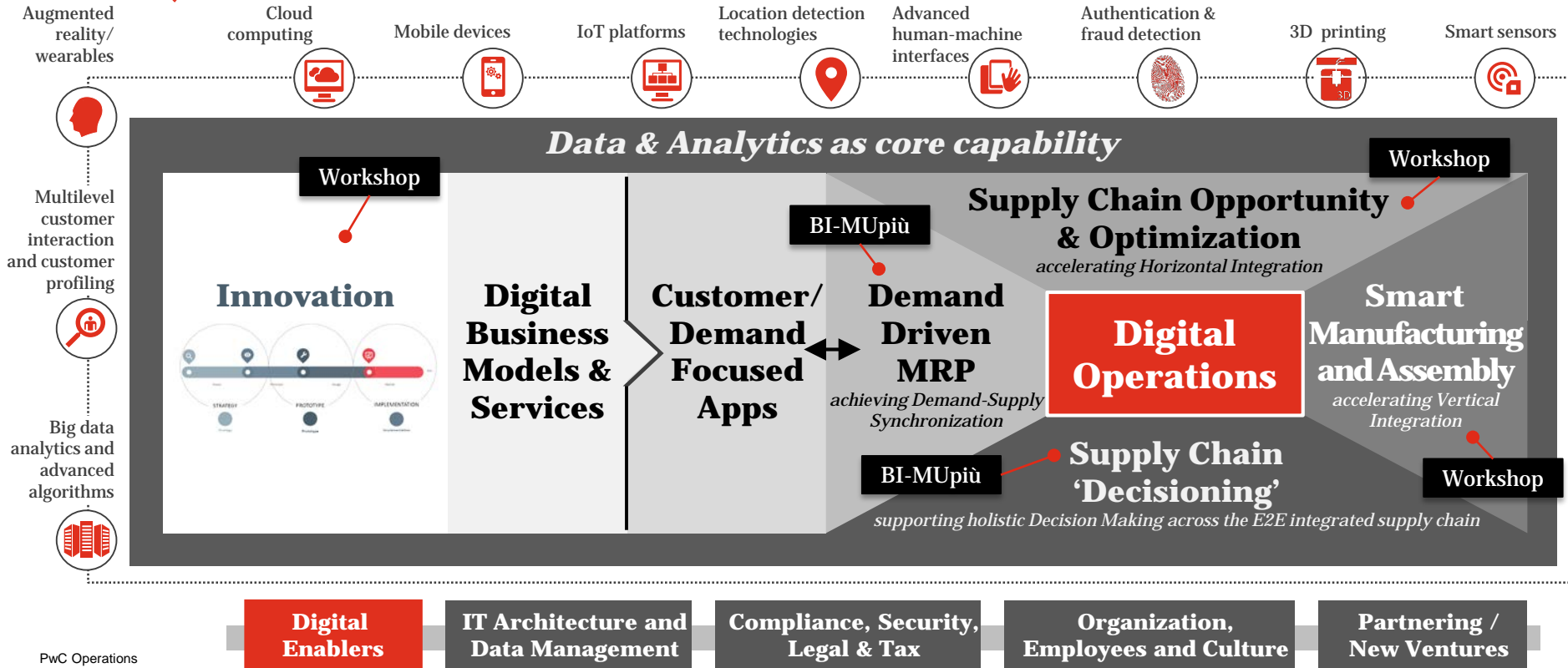
PwC

Supply Chain 'Decisioning'

Katerina Petta, Senior Manager



We are present at BI-MU 2018 with our offering on Innovation and Digital Transformation for Industrial Operations



Fact (broadcast): Running supply chains has never been so difficult

FINANCIAL TIMES

US-China tariffs in charts: global supply chains at risk

Trump wants 'reshoring' of industry, but he may get higher costs instead



© Bloomberg

Lucy Hornby and Archie Zhang in Beijing, JULY 5, 2018

US tariffs that come into effect on Friday on \$34bn of goods produced in China are just the first step in a long strategy meant to untangle the US manufacturing supply chain from the country that is increasingly seen as a geopolitical rival.

The Guardian International edition

US to hit EU with steel and aluminum tariffs, report says

Europe will be excluded from global tariff exemptions amid increasing trade friction, the Wall Street Journal reports



▲ A steel producer in Germany. The EU has been critical of the Trump administration's decision to impose tariffs on dozens of trade partners in March. Photograph: David Hecker/EPA

The Trump administration is reportedly planning to impose import tariffs on European steel and aluminum after finding no satisfaction in its effort to win trading concessions on the issue.

An announcement to drop the EU from a tariff exemption of 25% on imported steel, and 10% on aluminum, could come on Thursday, according to the Wall Street Journal.

LA DRE ITALIA

ATTUALITÀ | PARLAMENTO | POLITICA | POLITICA ECONOMICA | DOSSIER | BLOG

Nei primi sei mesi 2018 produzione metalmeccanica in crescita ma i volumi sono inferiori del 22,1% rispetto a pre-2008




Nei primi sei mesi 2018, la produzione metalmeccanica ha registrato un incremento del 4,6% rispetto al 2017 ma i volumi realizzati risultano ancora inferiori del 22,1% rispetto al periodo pre-recessivo (1° trimestre del 2008). È quanto emerge dalla Agenzia Indagine congiunturale sull'industria metalmeccanica italiana elaborata da Fedemeccanica, e pubblicata oggi, 25 settembre. Sulla base delle previsioni, il report giunge alla conclusione che la fase espansiva dovrebbe proseguire anche nel corso del trimestre successivo ma il maggior aumento atteso risulterà più contenuto rispetto al recente passato. «Più inquieto Assosteel la forza delle imprese per dare forza ai Paesi», che significa dare anche "più lavoro" è il messaggio-manifesto che lancia Fedemeccanica anche in vista della prossima autunno.

Sulle prospettive a breve pesano dati, Brexit e Iran «dalle prospettive a breve» ha sottolineato il vice presidente di Fedemeccanica Fabio Antoni - possono inoltre le incognite relative alle dinamiche geo politiche internazionali che generano un clima di incertezza (dazi e possibili insospettimenti delle guerre commerciali, Brexit, Medio Oriente e Iran).

"Short term outlook is weighed down by tariffs, Brexit and Iran", 25 September 2018

SUPPLYCHAIN.DIVE Deep Dive | Options | Data | Library | Events | Jobs | Topics



Supply chains of steel: How tariffs will disrupt downstream manufacturing

AUTHOR: Deborah Abbott, Editor in Chief

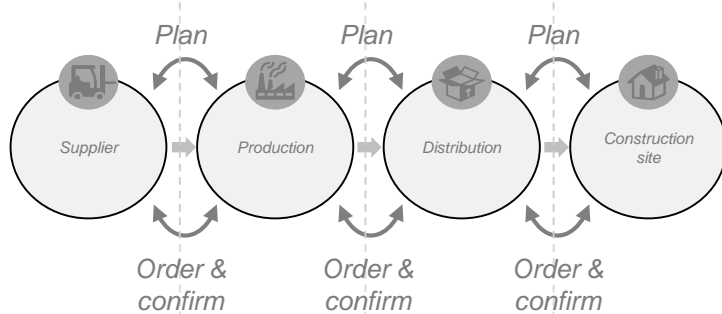
When President Trump announced the steel and aluminum tariffs on March 8, those workers cheered. Many others, however, scratched or shook their heads, concerned about how the tariffs will impact the supply chain for downstream manufacturers. Some are concerned about adequate availability of domestic steel and the increased pricing of both domestic and imported steel products, especially since so many specialty steel products are not made in the United States.

PUBLISHED: March 27, 2018

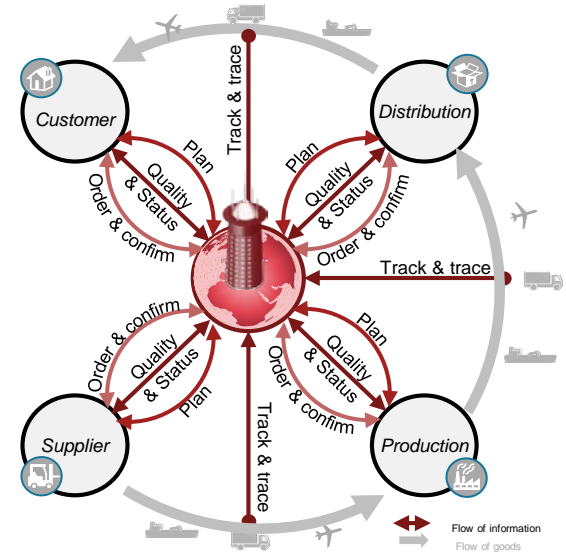
Hard truth #1: Linearity is no longer relevant (yet we base our business decision-making on linear thinking)

From linear models, with defined consequences and siloed information, to interconnected environments, where even minimal change ripples across the whole ecosystem. Forward-looking supply chains plan towards this transition.

Traditional supply chain model



Connected Supply Chain Ecosystem



Key attributes of the Connected Supply Chain Ecosystem

Companies will need to figure out how to develop their own connected ecosystems, which reflect the need for speed, cost, visibility, and integration.

Common “plug and play” platform for seamless collaboration

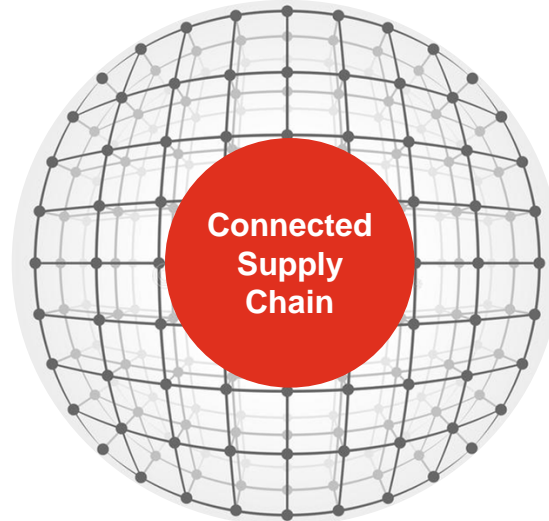
Sharing of assets

Real-time visibility – throughout the ecosystem

Distributed management and control

Alignment and integration of physical and information flows

Dynamic, adaptive ecosystems



Inherent traceability and secured chain of custody

Predictive, market led innovation and fulfilment; driven by end-customer needs

Individualized offerings

Dynamically tailored business streams

End-to-end throughout product and service lifecycle

“Digital equivalents” at eco-system, offering and transaction level

Convergence of products, services and customer experience

Hard truth #2: VUCA is the new normal

(yet we seldom consider “what-if” in our decision-making systems)

Volatility — *Uncertainty* — *Complexity* — *Ambiguity*

Circumstance

Before

Today

Supply chain complexity

Low. Linear, vertically integrated, domestic chains.



High. Global, complex, mostly fragmented chains.

Product life cycles

Long. Measured in years.



Short. Measured in months.

Customer tolerance times

Long. Measured in weeks/months.



Short. Measured in days/weeks.

**Product complexity/
customization**

Low. Few options or custom features.



High. Complex systems and microsystems, lots of configuration and customization.

Product variety

Low. Few variants.



High. High number of product types in catalogue.

Long lead time parts

Few. Most parts domestically sourced.



Many. Extended supply chains with remote sourcing.

Forecast accuracy

High. Due to less, variety, longer life cycles, high customer tolerance.



Low. Combined complexity of above items.

**Pressure for leaner
inventories**

Low. With less variety and longer cycles, penalties of building inventory positions were minimized.



High. Request to support a more complex demand and supply scenario with less working capital.

Transactional friction

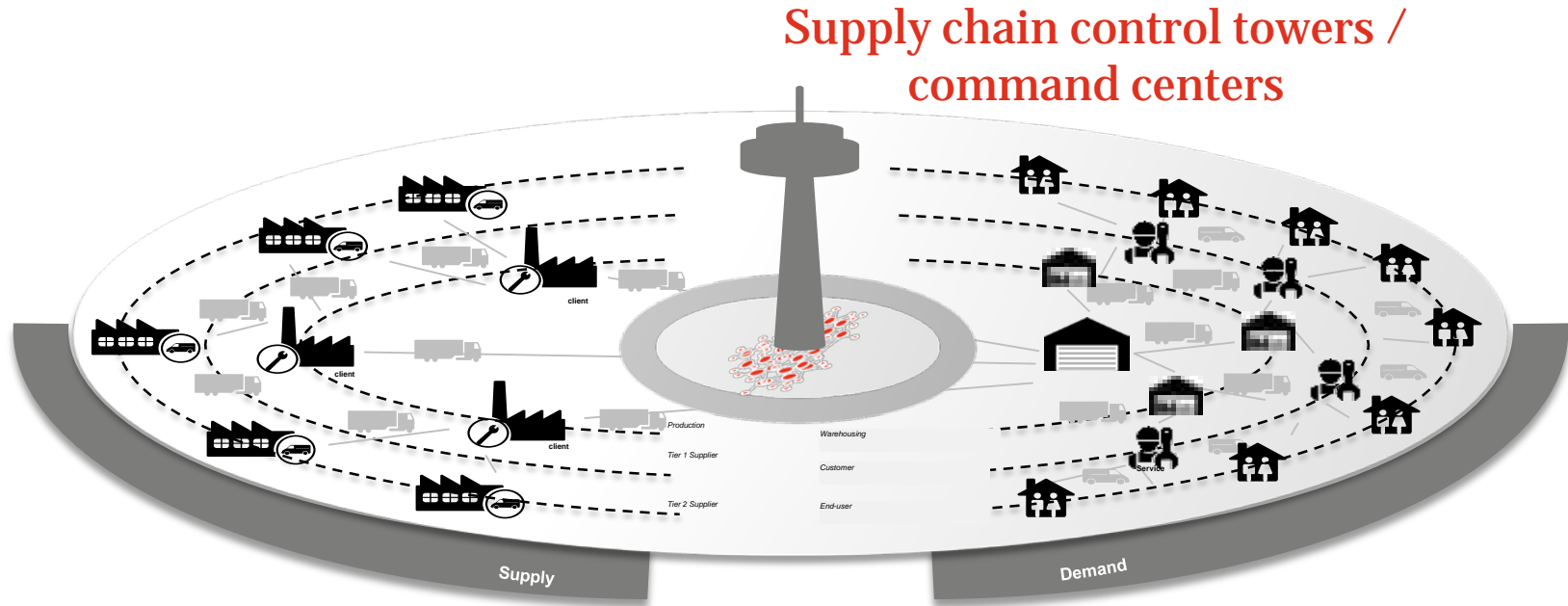
High. Limited choice of suppliers and customers. Building the base through exhaustive and expensive effort.



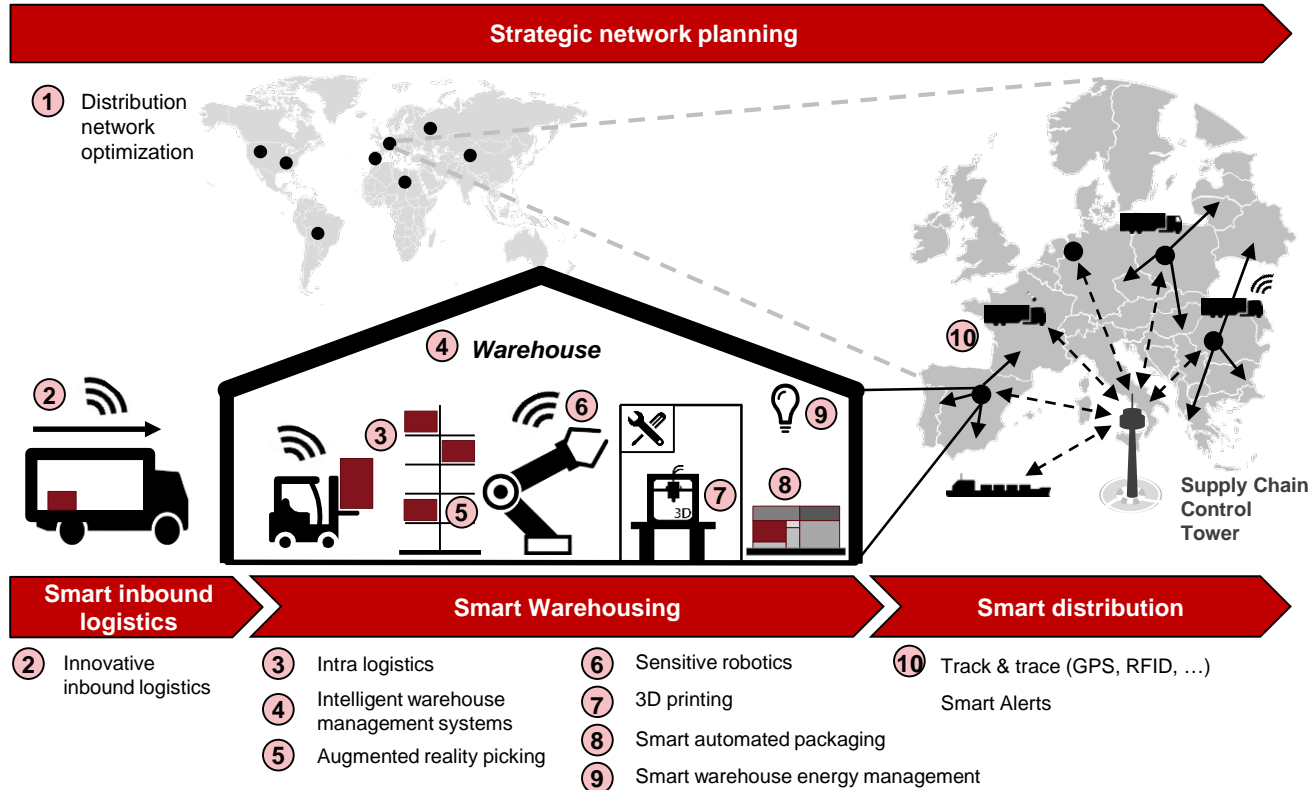
Low. Choices are digitally available and overwhelming.

'Decisioning' implies the need for a holistic decision-making capability across the E2E integrated supply chain

The elements are in place now to truly enable functionality like smart control towers, which drive strategy and resolution not just monitoring and alerting.



The need for a digital twins, smoothly integrated among them...

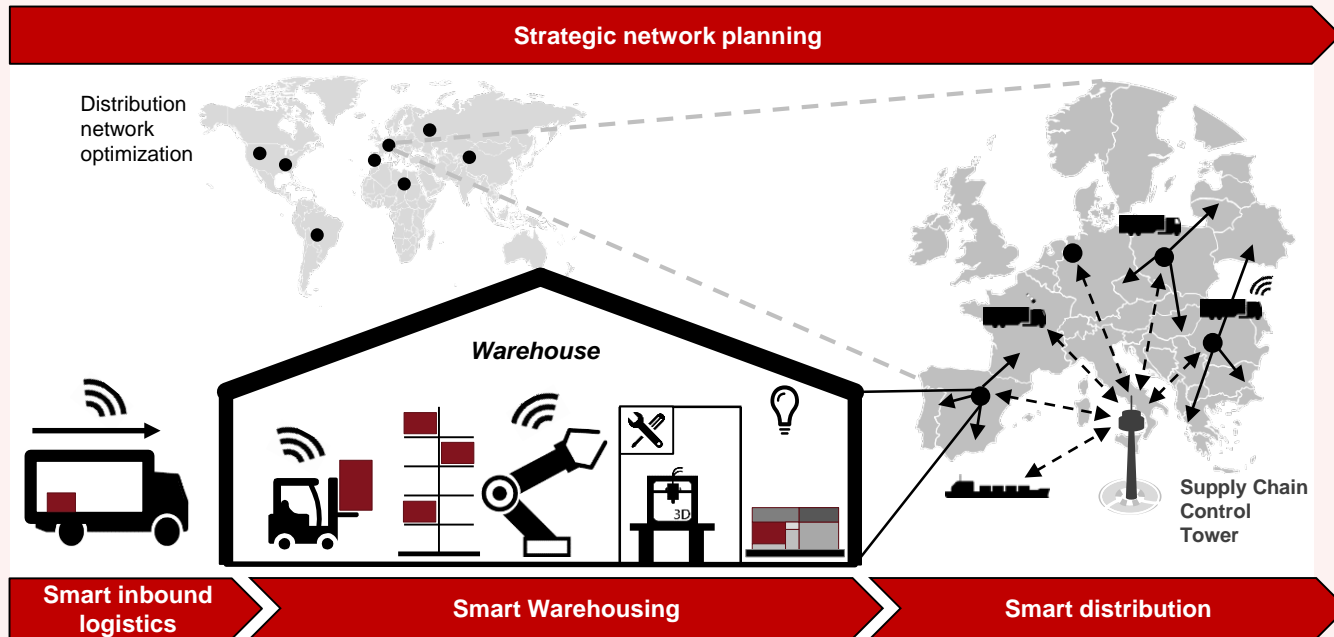


... and where optimization objectives are approached concurrently, not sequentially









- sourcing decisions
- site rationalization
- hub number and positioning
- source-destination lane setting
- mode selection
- route selection

- product path decisions
- cost-to-serve optimization
- supply-demand balancing
- capacity allocation
- outsourcing
- asset utilization

- transportation optimization
- multi-echelon optimization
- safety stock considerations
- service level considerations
- unplanned events simulation
- risk mitigation



'Decisioning' underlies the need to handle sophisticated, multi-objective, impactful business scenarios - with system, cadence and repeatability

Network Design 	Product Flow-Path Optimization 	Supply-Demand Balancing 	M&A Rationalization 	Greenhouse Gas Emissions Analysis 	Transport Optimization 	Safety Stock Optimization 	Scenario Simulation 
<p>A "classic" modelling problem that includes general mode selection, sourcing decisions and site rationalization</p>	<p>High-SKU count analysis focused on individual product path decisions such as distribution centers used and mode selection</p>	<p>Models pre-production and inventory placement to prepare for seasonal demand or site un-availability planning</p>	<p>Quick analysis that combines two similar networks into a single cohesive supply chain plan</p>	<p>Measures CO2 implications of network design, including cap and trade and aggregate emissions limits</p>	<p>Optimizes to design shipping routes for pooled inbound, pooled outbound, or for periodic shipments</p>	<p>Multi-echelon safety stock calculations to meet customer demands at a designated service level, from DC to component suppliers</p>	<p>Tests supply chain designs to make sure they will function as planned in the face of real world variables and business needs</p>
<ul style="list-style-type: none"> • How to profoundly review my network? • How many hubs & where? • Who should source each destination? 	<ul style="list-style-type: none"> • How much does it cost to serve each destination? • Which distribution hubs should I be using? 	<ul style="list-style-type: none"> • Do I have the right balance of capacity? • Where should I make each product? • Should I be outsourcing production? 	<ul style="list-style-type: none"> • How to overlay and integrate two different networks? • How to evaluate best common asset use? 	<ul style="list-style-type: none"> • How to include CO2 emissions in my network variables? • How to optimize for least environmental impact? 	<ul style="list-style-type: none"> • How many routes/assets do I need? • What if I change del. frequency? • Can I combine in/out-bound shipments? 	<ul style="list-style-type: none"> • How much inventory do I need? • Where should I stock each product? • How to trade off working capital/ service level? 	<ul style="list-style-type: none"> • How will my supply chain be affected by an unplanned event? • Which course(s) of action to take to mitigate risk?

'Decisioning' changes the way partners collaborate organizationally and accelerates digital integration

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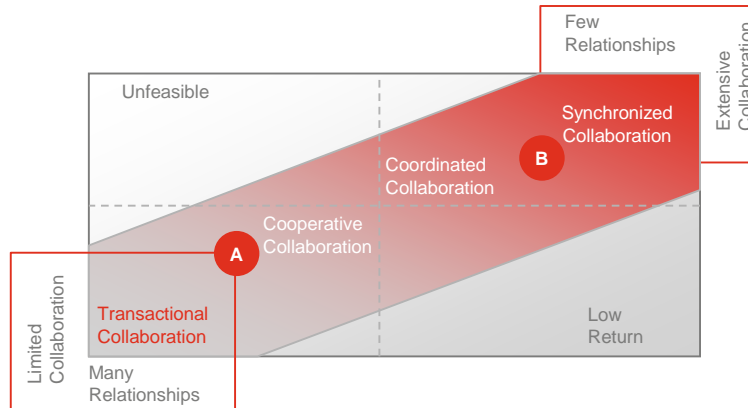
Traditional Business

- Conflicting objectives
- Internally focused
- Bureaucratic and hierarchical
- Encourages command and control
- Focus on own company
- Cost reduction and transaction focused
- Information is filtered and delayed as it progresses through the organization
- Information comes in multiple data sets
- Supply chain opportunities are identified for the firm – not across the chain

Supplier Customer

Adversarial relationships between buyers and sellers...Price reduction – the key metric by which success has been measured

Build the right collaborative model...



...and adapt your organization and processes to it

B

Collaborative, Holistic Decision-Making

- Common objectives across organizations
- Focus across the supply chain
- Non-bureaucratic and hierarchical
- Manage to improve the overall supply chain
- Win-win
- Total cost of ownership approach
- Information is widely shared and transparent
- Information is part of the closed loop system
- Opportunities are jointly developed

Supplier Customer

Business Management Sales Prchs Business Management

Quality Quality

SC Planning SC Planning

Marketing Marketing

Finance Finance

To learn more about Supply Chain Decisioning...

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