



# DISRUPTING BUSINESS MODELS

## DIGITAL SUPPLY NETWORKS

Dramatic advances in computing memory and processing are spurring entrepreneurs to develop innovative new digital technologies and capabilities. These technologies, including new sensors and artificial intelligence (also called machine learning and cognitive computing), create the foundation for analytics and a conversion between the physical and digital worlds, transforming traditional, linear supply chains into connected, intelligent, scalable, customizable, and nimble supply networks. The Deloitte Digital Supply Networks offering helps companies and business leaders capitalize on this opportunity, create competitive advantage, and compete to win.

Supply chain complexity continues to grow, driven by increasing customer and consumer requirements and preferences, greater expectations of and accountability for product and supply chain transparency and performance, and a corresponding need for a broad ecosystem of suppliers.

Traditionally, organizations structured their supply chains around siloed functions such as planning, sourcing, manufacturing, or distribution. However, to thrive under increasing supply chain complexity, many companies are eliminating these boundaries and creating integrated, connected, end-to-end networks that are “always-on.” This requires reconfiguring supply chains to integrate innovative and disruptive technologies and capabilities that align with overall business strategy.

“

**ALWAYS-ON SUPPLY NETWORKS  
CAN DRIVE ENTERPRISE-  
WIDE VALUE & ENABLE  
COMPETITIVE ADVANTAGE.**

”

### How we can help

The Deloitte Digital Supply Networks offering helps senior executives, including CEOs, CIOs, and supply chain leaders, identify and realize new supply network opportunities while managing their inherent complexities. Together with ecosystem partners, such as Singularity University, GE Digital, and Kinaxis, we immerse clients in the most forward-thinking perspectives on the future of supply chain, including artificial intelligence, advanced robotics, additive manufacturing, and the Internet of Things.

Business leaders can build and reconfigure digital supply networks as competitive differentiators that support the overarching business strategy, unlocking new levels of performance, improving operational efficiency and effectiveness, and creating new revenue opportunities. Our practice offers deep industry knowledge in all functional areas of supply chain, coupled with robust end-to-end, cross-functional supply chain experience. Powered by our capabilities in digital and supply chain analytics and guided by our leadership in strategy and innovation, we bring the right blend of strategy, operations, and technology to deliver truly innovative, digital, and disruptive new supply chain models.

We also offer in-house tools that can help enable your digital supply networks, including:

- **D-ICE:** an intelligent content extraction application that uses advanced optical character recognition, machine learning, and natural language processing techniques to quickly and reliably extract data from contract documents.
- **RapidResponse®:** integrated demand and supply planning platforms enabled by an alliance with Kinaxis.
- **Cognitive Spend Analytics:** a spend analysis tool that employs a suite of cognitive or intelligent process auto-mation tools to dramatically reduce middle and back office costs.
- **The Deloitte Greenhouse™ Experience:** a digital lab where we help clients address specific business challenges using group dynamics, behavioral science, design thinking, strategy, and innovation theory.
- **Inventory Analytics:** an inventory classification, verification, and analytics solution that enables higher service levels for inventory investments by creating and managing smart inventory targets, modeling what-if scenarios, and identifying root causes of excess or insufficient inventory.
- **Random Forest:** an open source machine learning algorithm that provides predictive, deep learning analytics which facilitate dramatic improvements in areas such as supply chain planning, manufacturing operations, and sourcing programs.

We help organizations transform their supply chains by addressing two key areas:

**Strategy.** We help companies create supply network strategies and engage with ecosystem partners that allow the realization of their business vision and aspirations (Figure 1). These strategies may differ by business unit, product, and trade channel. We also help clients explore the “art of the possible” through digital supply network immersion sessions.

**Execution.** Once the strategy is in place and/or an accretive digital solution is prioritized and chosen, we build, pilot, and deploy the solution(s) using an agile approach. Digitizing the supply network may involve building digital threads that run through each of the existing supply chain nodes, blurring the lines between traditional functions, products, and divisions. We develop and execute on roadmaps that consist of a series of rightsized, rapid “sprints” to quickly deliver incremental value while we continuously iterate and improve.

Digital supply networks enable companies to compete on:

**Speed.** Achieving faster time to market can decrease risk, improve cost, and create competitive advantage.

**Agility.** Adapting rapidly to changing demand drives faster time to market and helps increase customer satisfaction.

**Quality.** Competing on quality allows for premium pricing, but also requires distinct capabilities to manage associated costs.

**Cost.** Driving cost out of the supply chain provides the ability to reduce the price of a product, material, or service.

**Service.** Meeting customer demand in terms of quality, specifications, or customization drives customer loyalty.

**Innovation.** Investing in cutting edge R&D results in innovative, new products able to capture attention and market share.

## WITH A CONTINUOUS FLOW OF INFORMATION FROM THE PHYSICAL TO THE DIGITAL WORLD CONSTANTLY DRIVING ACTIONS AND DECISIONS, THE DIGITAL SUPPLY NETWORKS NEVER SLEEP – THEY ARE “ALWAYS-ON”.

### Creating enterprise value

Digital supply networks can be a powerful competitive weapon that adds value across the entire enterprise. Not only can they help reduce costs and improve asset efficiency, they can enable growth in new markets, help capture new audiences, and create a focus on service that drives loyal and repeat customers. Smart products connected to a digital supply network offer new opportunities as they capture data and insights that can be monetized across the network.

The Deloitte Digital Supply Networks offering can help turn your supply chain into a competitive differentiator by working with your team to potentially achieve results such as:

#### Increased revenue:

- **Reorders and refills.** Smart packaging, applications and data can be combined, either automatically or with minimal intervention, to push reorders and refills.
- **Marketing effectiveness.** Targeted marketing, combined with data from inventory and competitive pricing, can facilitate dynamic discounting.
- **Direct connection to customers.** Increased access to customers can drive sales at the precise point of consumption, for example ordering groceries directly from the refrigerator.
- **Value of data.** Gathering, packaging and selling data from existing customer bases can open up new channels of revenue.
- **Speed to market.** Effective use of product lifecycle management accelerates every step from product development to delivery and enables innovative products to reach customers more quickly.

#### Improved margins:

- **Cost of R&D.** Rapid prototyping can lower the cost of R&D.
- **Cost of raw materials.** Digital advances can help identify substitute materials, or can connect buyers to alternate lower-cost sources.
- **Cost of quality.** Increased visibility and monitoring can decrease cost of quality. For example sensors can identify root errors and drive process improvements that dramatically increase first pass yields.
- **Cost of service.** Digitally gathering data from products and/or users and sending it to remotely located, skilled technicians decreases the cost of service and the cost of transportation of service technicians.

- **Cost of transportation.** Automated warehousing robots and driverless trucks utilize analytics and dynamic routing to improve efficiency and reduce accidents and errors.

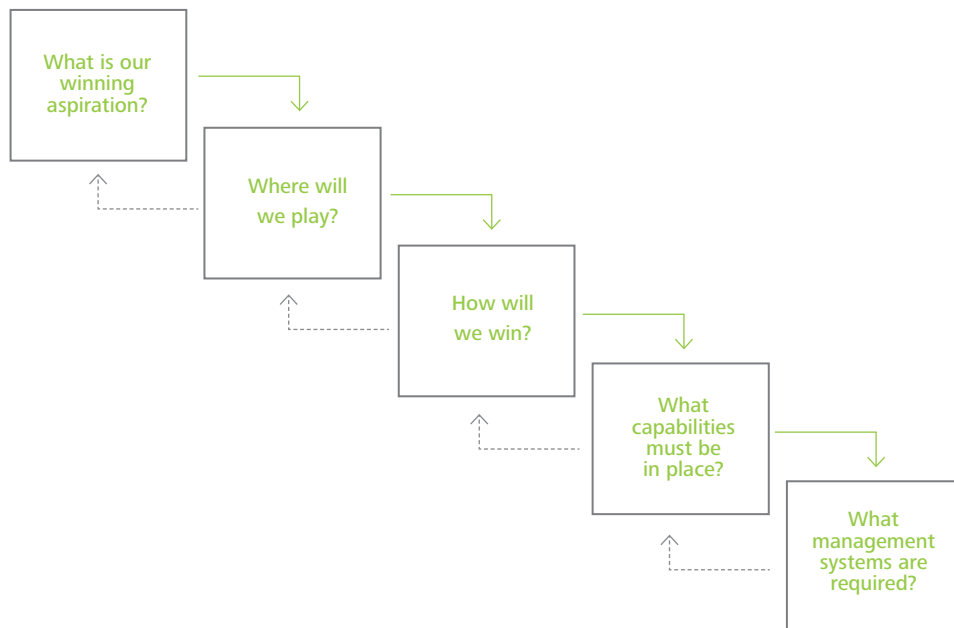
#### Greater asset efficiency:

- **Idle assets.** The sharing economy can be leveraged for high cost and under capacity assets. For example, a company that only operates two shifts per day could sell its third shift to another company.
- **Supply chain downtime.** Predictive maintenance can maximize performance and reliability of manufacturing devices.
- **Idle workforce.** Sensor-enabled labor monitoring can optimize workforce assignments and scheduling.
- **“Click-to-ship” time.** Automated inventory management can dramatically increase supply chain efficiency.
- **Error propagation.** Augmented Reality can assist in maintenance and reduce error propagation and rework costs.

#### Meeting shareholder expectations:

- **Geographic responsiveness.** Increased connectivity enables rapid responses to unexpected issues, such as natural disasters or supplier shutdowns.
- **Brand responsiveness.** Increased insight to customer concerns or issues enables fast responses to events like food contamination outbreaks.
- **Proactive risk mitigation.** Increased transparency demands proactive assessment of risks and fast response to customer demands.

Figure 1: Strategic Choice Cascade



## Achieving value faster

Cultivating a culture of innovation and ideation typically helps companies create value faster. However, large organizations with established structures, processes, and procedures often lack the nimbleness and mindset it takes to innovate at today's pace. Taking a different approach to innovation may require identifying areas around the edges of an organization that can provide enough leadership, oversight, and funding to enable innovation without disrupting the core.

An agile methodology, coupled with strong program leadership, drives innovation "sprints" that can add incremental value and enable quick wins. Rapid prototyping and frequent iterations allow you to fail fast, helping to reduce costs and increase the speed of transformative change.

## The big idea

New digital capabilities enable strategic supply networks that innovate to meet customer demand, directly linking the supply chain to the business strategy. Companies that embrace digital will be able to thrive. Those that don't will likely lose market share and may ultimately cease to exist.

## Learn more

To learn more about how the Deloitte Digital Supply Networks offering can help your business, visit <http://www.deloitte.com/us/digital-supply-networks>

This publication contains general information only, and none of the member firms of Deloitte Touche Tohmatsu Limited, its member firms, or their related entities (collective, the "Deloitte Network") is, by means of this publication, rendering professional advice or services. Before making any decision or taking any action that may affect your business, you should consult a qualified professional adviser. No entity in the Deloitte Network shall be responsible for any loss whatsoever sustained by any person who relies on this publication.

As used in this document, "Deloitte" means Deloitte Consulting LLP, a subsidiary of Deloitte LLP. Please see [www.deloitte.com/us/about](http://www.deloitte.com/us/about) for a detailed description of the legal structure of Deloitte LLP and its subsidiaries. Certain services may not be available to attest clients under the rules and regulations of public accounting.

Copyright © 2017 Deloitte Development LLC. All rights reserved.

Member of Deloitte Touche Tohmatsu Limited

# CONTACTS

## Adam Mussomeli

Principal  
Digital Supply Networks Practice  
United States Co-Lead  
Deloitte Consulting LLP  
+1 203 253 5101  
amussomeli@deloitte.com

## Doug Gish

Principal  
Supply Chain & Manufacturing  
Operations Service Line Leader  
Deloitte Consulting LLP  
+1 816 802 7270  
dgish@deloitte.com

## Kelly Marchese

Principal  
Federal Supply Chain Practice Lead  
Deloitte Consulting LLP  
+1 404 631 2240  
kmarchese@deloitte.com

## Toshihiro Fujioka

Partner  
Digital Supply Networks Practice  
APAC Co-Lead  
Deloitte Tohmatsu Consulting LLC  
+81 8043634769  
tfujioka@tohmatu.co.jp

## Stephen Laaper

Principal  
Digital Supply Networks Practice  
United States Co-Lead  
Deloitte Consulting LLP  
+1 312 513 7900  
slaaper@deloitte.com

## Steve Shepley

Principal  
Digital Manufacturing  
Enterprise Practice Lead  
Deloitte Consulting LLP  
+1 310 467 5887  
sshepley@deloitte.com

## Lance Younger

Partner  
Digital Supply Networks Practice  
EMEA Lead  
Deloitte MCS Limited  
+44 20 7303 6369  
lyounger@deloitte.co.uk

## Steve Dyson

Partner  
Digital Supply Networks Practice  
APAC Co-Lead  
Deloitte Touche Tohmatsu  
+61 7 3308 7385  
stdyson@deloitte.com.au