OCTAVE

BROCHURE

Why your project needs a digital supply chain

Exploring the benefits of moving your construction project from document-centric to data-centric



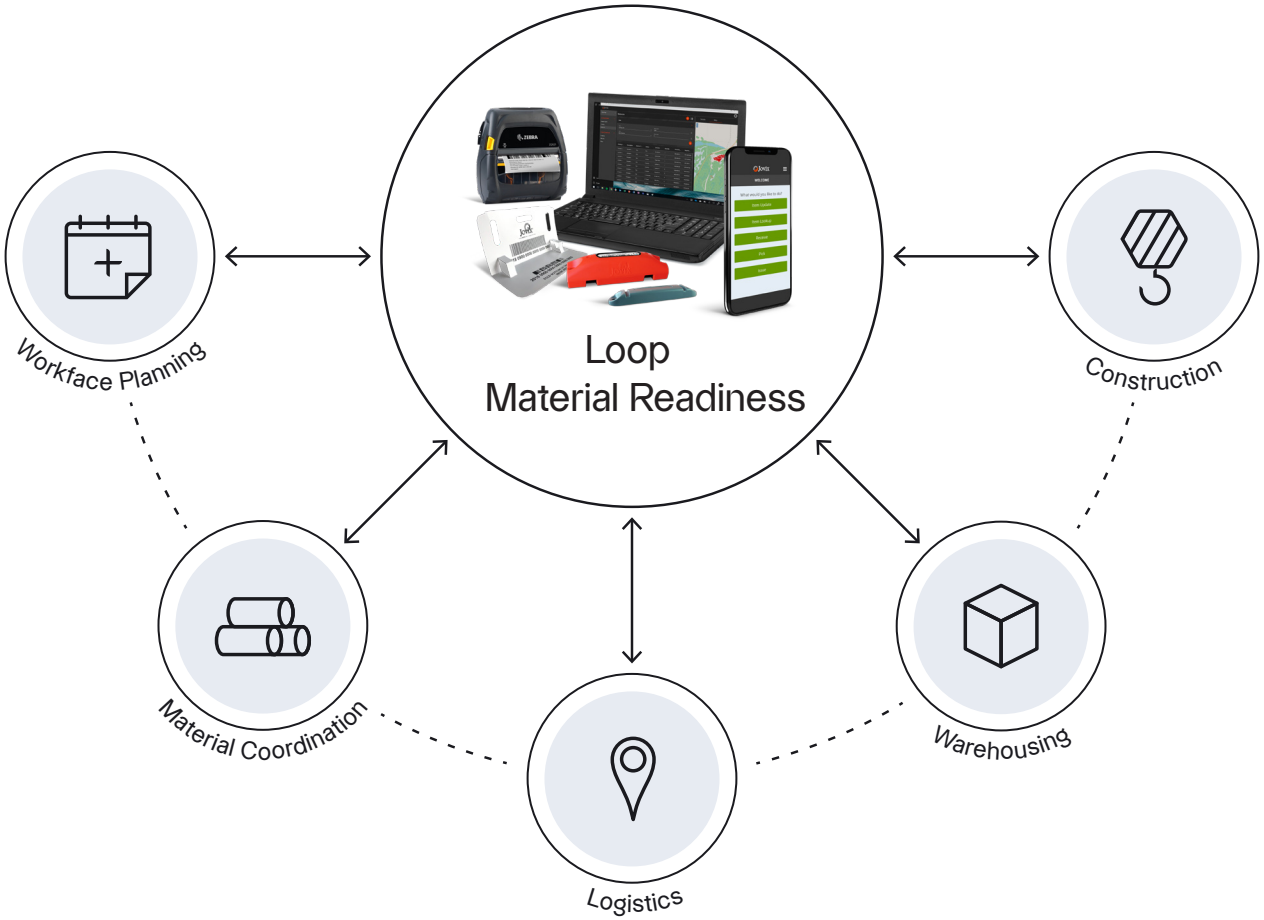
The digital supply chain

It relies on expertise, collaboration and execution.

The Digital Supply Chain (DSC) is best defined as transforming the traditional exchanges of information from document-centric to data-centric, as it relates to the construction supply chain.

The DSC includes work process integration throughout the entire project execution. In the same way aspects of EPC construction have moved upstream (i.e., modular construction), the DSC program moves digital creation of inbound asset information upstream and enables suppliers to publish asset data at the point of origin. This functionality removes data entry from the project site and transfers ownership back to the supplier (or the original source of information) about the material and equipment being supplied. This improves project visibility into the physical structure of materials arriving at the jobsite and provides a better understanding of the supply chain, translating into a deeper understanding of constructibility.





What's the value of a digital supply chain?

The value of utilizing auto-ID (RFID/barcode labels) is well documented. By increasing the auto-ID footprint on the project and moving this work upstream, the downstream benefits of transactional efficiency gains and improved material control are optimized. A solid DSC program is not limited to the use of auto-ID hardware and software but also includes supplier integration instructions, contract requirements language and requirements compliance monitoring to ensure that supplier participation is achieved.

The DSC opens a direct line of engagement with suppliers, resulting in tighter integration of supplier information. Having suppliers tightly coupled into the project's work plan allows for a healthy environment as well as an ease of information sharing between all parties.

Octave Loop Material Readiness digital supply chain experience

650+ Jobsites

500+ Suppliers

100+ Projects

25 Countries

6 Continents

Oil and gas mega-project with global supply chain

Project: Future growth/wellhead management in Kazakhstan; began July 2017

VALUE: $42B

Description: Increasing existing capacity by 300,000 barrels/day

Loop Material Readiness *(formerly Jovix)* **scope:** Supplier tagging; mod yard receiving; picking and issuing; mod ship-loose barcode and RFID tagging; site receiving, mobile devices and printers

Loop Material Readiness users: 250

Suppliers: 25

Tags: 200,000

Chemical project in Texas

Project: Chemical project began in April 2018 and Loop Material Readiness went live in November 2018.

VALUE: $2.4B

Description: Single largest capital investment in company's history; Once complete, plant will produce 1 billion lbs./yr. of propylene oxide and tertiary butyl alcohol

Loop Material Readiness scope: supplier tagging before shipment release; general contractor receiving and material visibility; data aggregation of material sub-items and spare parts to complete AWP BOMs

Loop Material Readiness users: 105

Suppliers: 99

Tags: 115,000

Refinery project in low-cost labor market

Project: Oil refinery project in Kuwait; began November 2017

VALUE: $23B

Description: New 615,000 barrels/day

Loop Material Readiness scope: supplier tagging; receiving; picking and issuing; mobile devices and printers

Loop Material Readiness users: 60

Suppliers: 200+

Tags: 225,000

Canadian LNG project with global supply chain

Project: Liquefied natural gas

VALUE: $40B

Description: Building two LNG trains to liquefy and sell on international market

Loop Material Readiness scope: supplier tagging; receiving; picking and issuing; three gate readers; one vehicle-mounted reader; one drone-mounted reader; mobile devices and printers; mobile app

Loop Material Readiness users: 450

Suppliers: 200+

Tags: 300,000

"Our project's ability to now translate available inventory to construction and fulfill prioritized scopes of work or re-plan based on accurate material availability has improved the way business is done by increasing productivity and eliminating duplicated efforts, temporarily lost materials and the need for re-procurement."

Project materials manager



Why utilize digital supply chain professionals?

Implementing DSC technology, coupled with Loop Material Readiness Professional Services, simultaneously connects and maintains the concept of transitioning from status quo practices to new and improved strategies and best practices to achieve consistent end results. Loop Material Readiness provides a centralized, cloud-based platform with native iOS and Android™ mobile apps. This platform ensures all construction teams across each location have adequate materials ready to fabricate or install, while eliminating non-productive time spent.

Loop Material Readiness software from Octave, coupled with our DSC services, provides project teams with a modern approach to materials management, including the ability to: your project.

- Plan for materials
- Centralize communications and collaborations regarding material status and availability
- Report on material status and availability
- Execute proper material flow to the workface

Implementing a DSC, supported with Digital Supply Chain Coordinators, addresses the following common project challenges:

- Tight vendor coupling to actual work execution (RAS communication, vendor documentation, etc.)
- Reduction in manual data entry
- Reduction in overages, shortages and damages (OS&Ds)
- Increased visibility into shipment organization
- Reduction in temporarily misplaced materials at the jobsite and throughout the supply chain
- Automated status updates throughout the supply chain via RFID gate readers
- Increased visibility into work package constraints (CWP at planning level and IWP at workface level)
- Integration of third-party logistics
- Reduction in workface disruptions due to “short issue” of work package

How to use digital supply chain professionals



Loop Material Readiness Digital Supply Chain Professionals specialize in monitoring data-centric workflows, enhancing communication and collaboration and improving visibility into material flow to construction at each point in the DSC. The DSC Team ensures the Loop Material Readiness platform is used to capture data about material location and availability digitally, and in real time, which enables more consistent and efficient communication and collaboration across multiple project team members. With coordinated efforts over the entire supply chain lifecycle, the Digital Supply Chain Coordinator (DSCC) connects digital data to physical material movement. As a result, the project has the real-time, actionable information needed to make informed decisions. We call this material readiness.

The Digital Supply Chain Team's responsibilities include:

1. Strategy development - Developing a DSC doesn't happen overnight. The strategy must be developed at a corporate level and incorporated in all future supply chain methods for project execution. The Loop Material Readiness DSCC aids in creating strategies at corporate and project levels to prepare organizations for the transition to a DSC execution model. With a focus on efficiency gains and maximizing productivity, our team develops an execution plan that covers the what, how, who, and when.

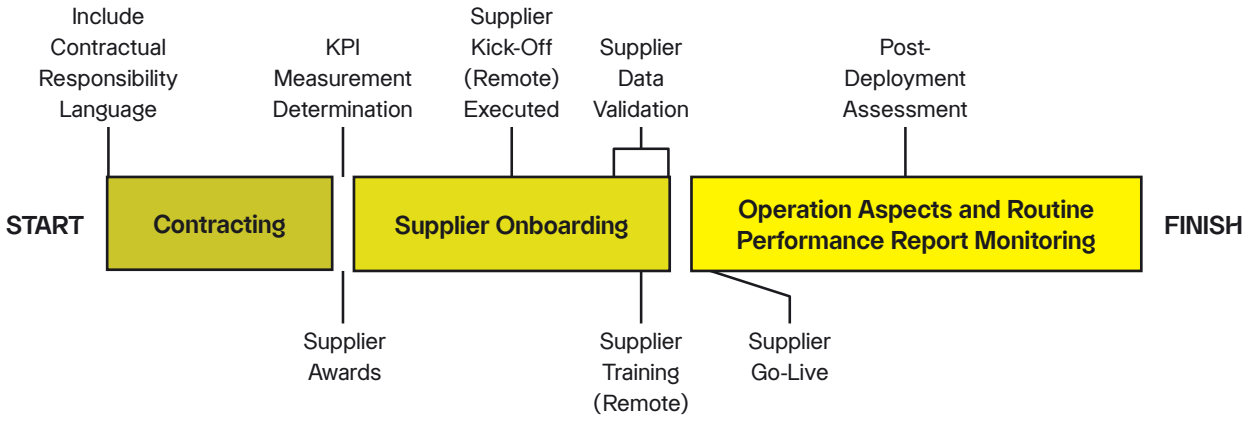
2. Implementation - The on-site DSCC is responsible for a smooth implementation of the Loop Material Readiness system and is accountable to the client's Site Material Manager for day-to-day outcomes. The DSCC is there to maximize the value of the system and work processes, beginning with upstream supplier tagging and ending with construction crews having the right material, in the right condition, at the right time...every time.

3. Project sustainment - While the project is underway, our team maintains cross-departmental coordination to advise and direct priorities, based on readiness. Our dynamic industry requires accurate and informed decision-making with both quick responses and thoughtful change management control.

4. Continuous development and improvement - The Loop Material Readiness DSC Team operates with a forward- thinking mindset to anticipate and mitigate change. As scopes of work evolve and create shifts in demand, the supply chain infrastructure must be synchronized and fluid. We focus on building and maintaining the program with a very dynamic mindset while collaborating with project departments and teams to build infrastructure for short-term and long-term successes.

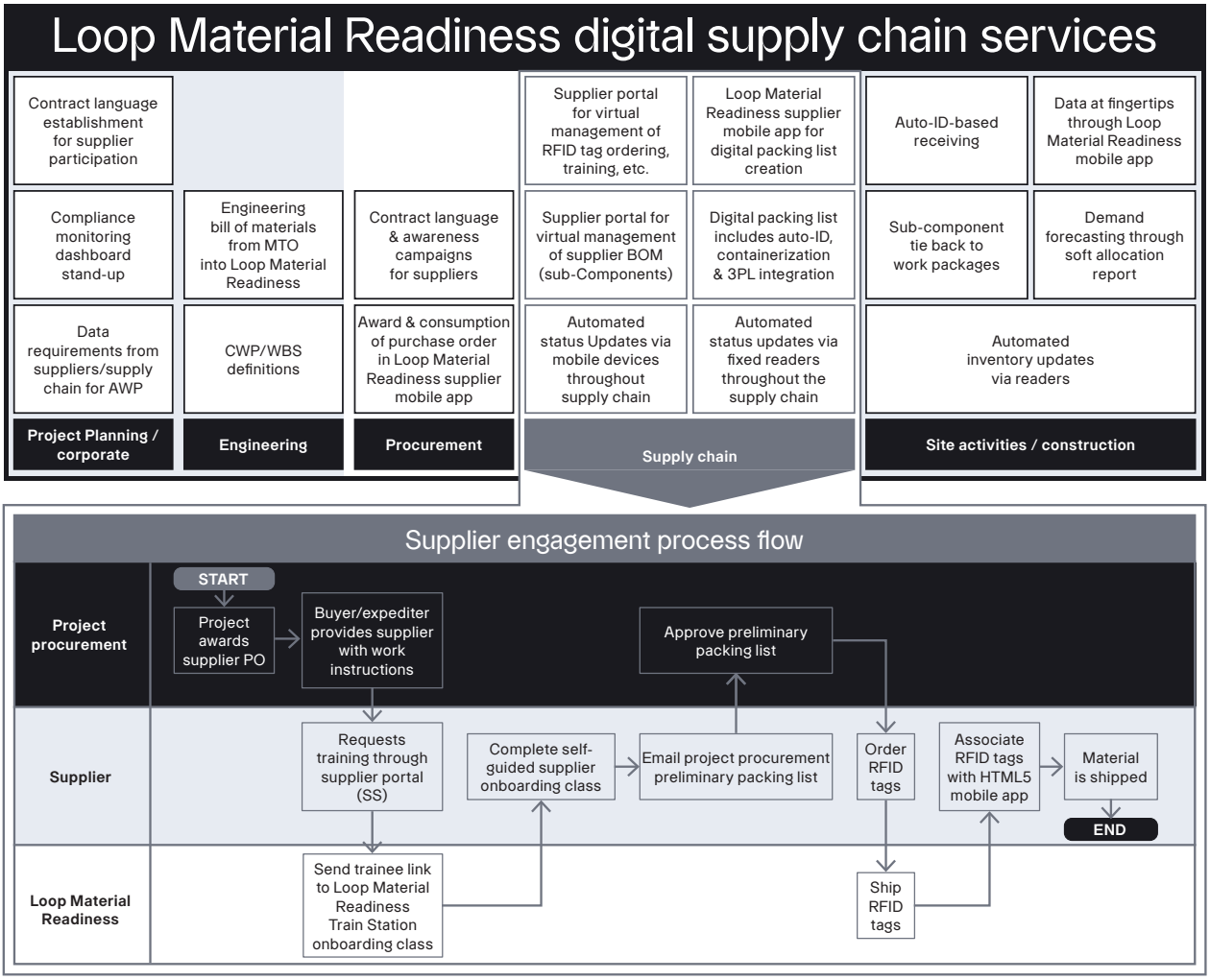
How to integrate suppliers into a digital supply chain

The Loop Material Readiness DSC Program has been developed to increase visibility and data control for project supply chains. As part of an implementation, we work with a project team to develop a comprehensive DSC Program for the enterprise. Let's look at a high-level overview of the supplier engagement process.



The supplier engagement plan is a critical component of the DSC Program. Supply chain practitioners use the supplier engagement report within Loop Material Readiness to proactively monitor supplier tagging process, digital packing list quality and program compliance by visualizing the total scope of work for each supplier on the project in near real time. By monitoring variances in planned vs. actual RFID tags applied, as well as supplier tagging progress against forecast supplier shipment dates, supply chain practitioners gain upstream visibility into the health of the DSC Program and can resolve data quality or tagging issues before materials arrive at the jobsite.





Digital supply chain benefits

Gaining efficiencies with enhanced productivity across departments by minimizing typical pain points, including:

- "Data as a deliverable" service - Assurance that data is provided by the supplier and assuring the data is accurate and timely in the proper format. Ensuring data is treated as vital as the widget being produced
- Sub-component/supplier bill of materials correlation to work packages - Reduction in field-level constraints
- Accurate forecasting and management of RAS dates for suppliers
- Streamlining processes by building effective communication and coordination plans across project teams and locations
- End-to-end DSC ownership with assurance of the following:
  - » Suppliers will have all necessary auto-ID
  - » Suppliers will be adequately trained
  - » Suppliers will be fully informed (prior to Purchase Order issuance) of all requirements
  - » Supplier participation will be automatically monitored through Loop Material Readiness Insights

Loop Material Readiness remote supplier onboarding, training and support

The Loop Material Readiness Training is a virtual Learning Management System (LMS) tailored for each project, including remote training capabilities for multiple locations, contractors, suppliers, etc.

- Identify the various roles of Loop Material Readiness users, and generate appropriate training criteria for specific roles
- Shadow users and conduct on-the-spot training to correct any identified deficiencies
- Provide a detailed training plan for Loop Material Readiness users that requires participation and confirmation of knowledge acquisition to ensure user proficiency
- Certify Jobsite Coordinators through an all-encompassing Loop Material Readiness Training Program, when directed by the client
- Develop a transition plan when the DSCC is to de-mobilize and a Client Coordinator is to take over the Loop Material Readiness system managementEnsure ongoing adoption of the Loop Material Readiness continued training

The contractual requirement for suppliers to participate within a DSC Program creates additional focus on the supplier's quality control program. Enforcing a DSC Program in which suppliers must tag assets with either RFID or barcodes allows for greater visibility and precision through digital packing list creation. The increase in focus on supplier data quality improves accuracy, which can be monitored through digital reporting metrics to quickly analyze a supplier program's health.

A DSC Program promotes the digital assignment of all assets to a parent tag and/or work plan (CWP/IWP). This prevents an environment of unmanaged "ship-loose", which often leads to inefficiencies regarding proper management of the assets. Additionally, being able to understand all components related to CWP and/or IWPs prevents improper issuing of assets to construction crews. Correctly issuing IWPs keeps crews productive and Foremen/Superintendents in the field managing work rather than chasing missing materials from incomplete issuances.



"I was surprised at how user-friendly and simple the process of RFID-tagging was with the mobile application. The online training ensures even new team members are familiar with the process, and the training material is always there for us to reference."

Supplier,
utilizing Loop Material Readiness mobile
and Loop Material Readiness Train Station

In summary

The aim of the Loop Material Readiness Digital Supply Chain is to incorporate suppliers into project execution, bringing focus to cost reduction and schedule risk by digitizing the coordination of materials throughout the supply chain and across all project departments and locations.

Next steps

If you're interested to learn more about the Loop Material Readiness DSC Program and how Digital Supply Chain Professionals can greatly improve your next project, we would love to talk.

Learn more at **octave.com**

Loop Material Readiness is an award-winning material readiness application designed specifically for construction. By digitizing and automating the manual, paper-based data collection of construction's past, Loop Material Readiness provides real-time visibility to all stakeholders throughout your supply chain. Employing a combination of web-based server software, mobile devices and smart RFID tags and barcode labels, Loop Material Readiness removes impediments to productivity and ensures workers have the materials they need to spend more time on tools.

About Octave

Octave is a leader in enterprise software, turning data into decisive action and intelligence into your edge. Our software solves for and simplifies complexity, from the design and build to operations and protection of people, property and assets – for any scope, at any scale. For decades, we've partnered with customers to sharpen performance, elevate efficiency, and amplify results. From factory floors to entire cities, our solutions are tuned to scale up what's possible from day one onward.

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