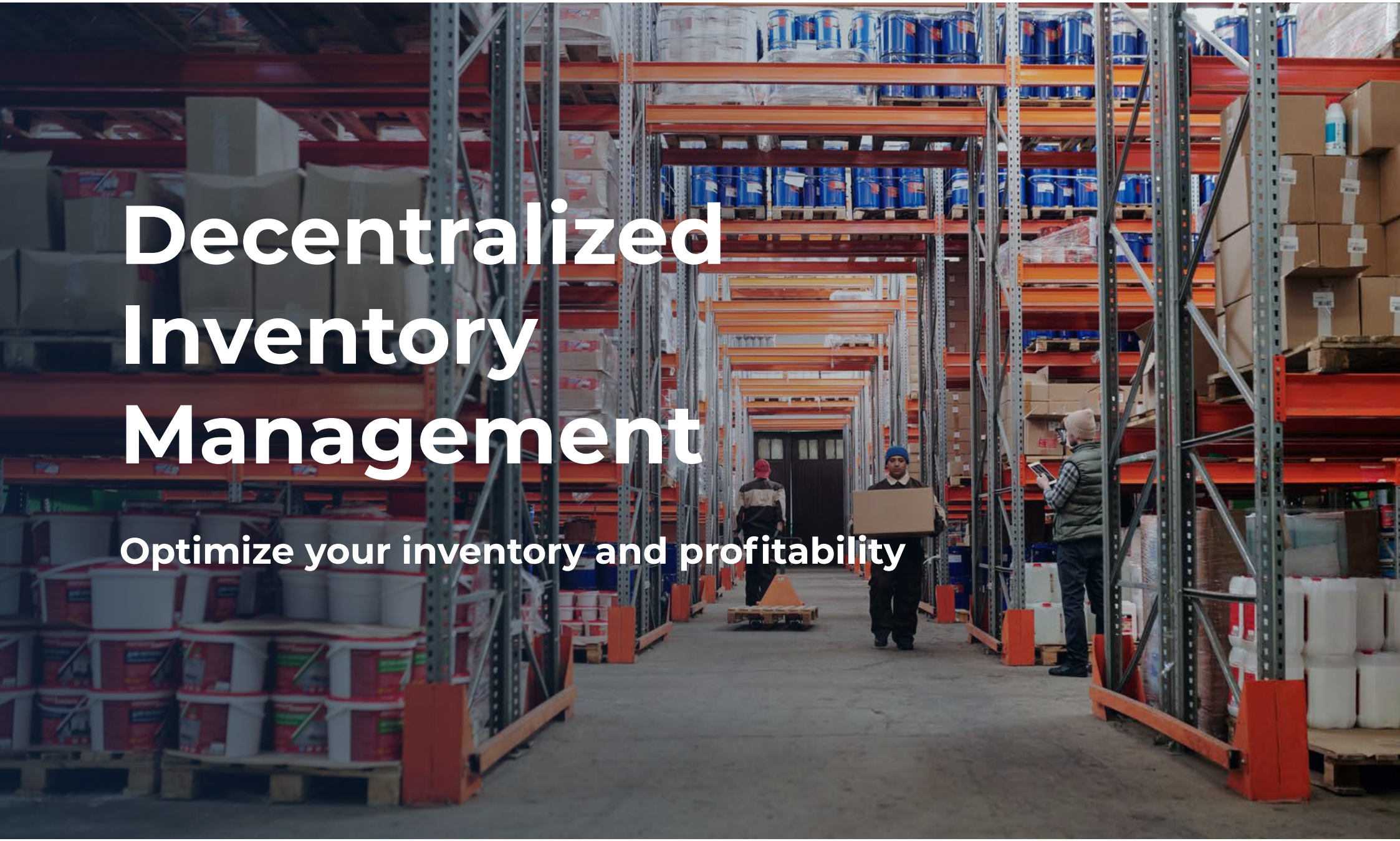
UNOVA



# Decentralized Inventory Management

## Optimize your inventory and profitability

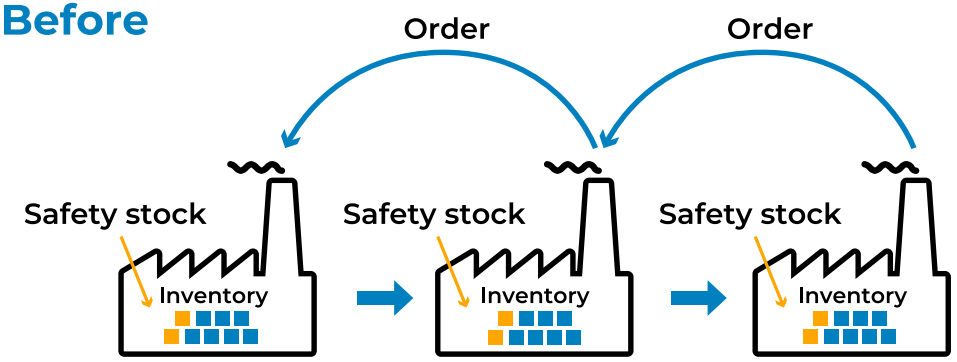
# Decentralized inventory management

**The goal of any supply chain is to make sure the product is available for the end consumer to purchase. Every step in a supply chain keeps a level of inventory and safety stock to prevent stock-outs. In this document, we will discuss why companies keep safety stock or high inventories, what the costs are, and introduce decentralized inventory management.**

## Why companies keep safety stock

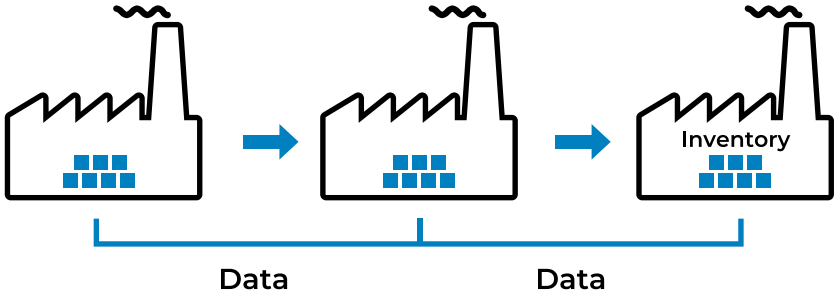
**Safety stock inventory,** also known as buffer stock, is the extra inventory you order. It's the stock you need for when the inevitable happens. Whenever demand is greater than expected or there's a delay from your supplier, safety stock ensures a customer doesn't walk out the door empty-handed and disappointed.

## Before




The lack of real-time data about your customers' inventory or the inventory of your customers' customers or maybe even the customer of the customer of your customer makes it **difficult to predict or anticipate demand fluctuations.** Without real-time data, one can only guess, which results in high inventories.

## After



# Cost of keeping safety stock inventory

when keeping high inventory:

1. High Storage cost
2. Opportunity costs of lost sales
3. Spoilage costs
4. High working capital requirement (WCR)

**Storage cost** refers to the amount of money spent on the storage or holding of inventory.
Storage cost would be a subset of inventory carrying costs, which includes cost that are not limited to;

- Equipment Maintenance
- Warehouse Utilities
- Material Handling
- Security Personnel
- Building Maintenance

Reducing storage costs has a direct impact on the income statement and thus the profitability of a business. Proper inventory management and in turn supply chain management is critical to stay competitive.

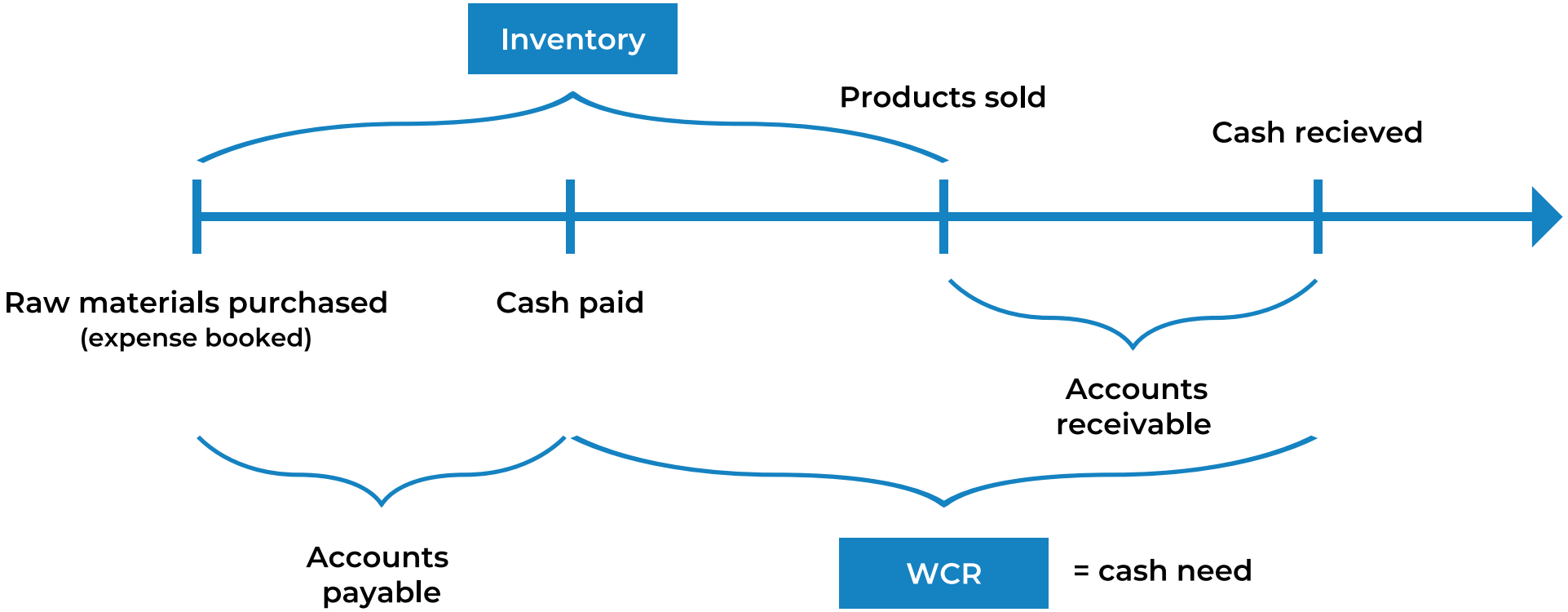
**Opportunity costs of lost sales**
Keeping a safety stock of 20% means not selling 20% of the inventory. By not selling this inventory companies lose out on a lot of potential revenue.

A leaner and more streamlined supply chain can result in increased sales and additional customers.

**Spoilage costs**
In many cases keeping too much inventory leads to a large percentage of the product passing expiration dates.
Reducing waste and in turn increasing profitability is a priority for companies to be competitive in the market.

**Working Capital Requirement** is the amount of money needed to finance the gap between disbursements (payments to suppliers) and receipts (payments from customers). Almost every company must incur expenses before obtaining the fruits of his labor (the payment of customer invoices).

WCR = Accounts receivable + Inventory – Accounts Payable

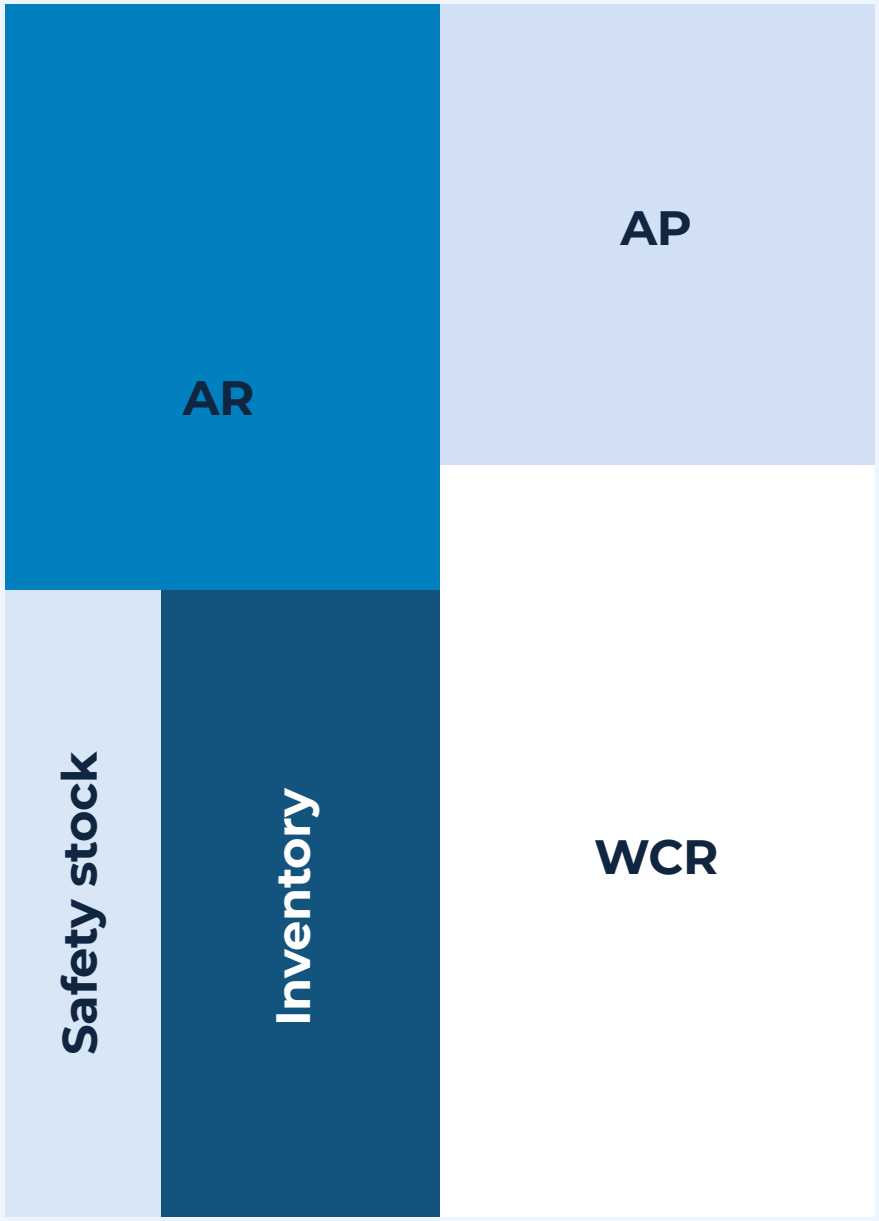



High working capital requirement results in the need for more cash which means higher liabilities. Capital always has a cost. Therefore, reducing WCR has a **direct impact on a company's profitability and liquidity.**

## Increase enterprise value

If all companies achieved cash flow management best practices, 4.9 Trillion dollars could be released, according to PWC.

Active working capital management is an extremely effective way to increase enterprise value. Optimizing working capital results in a rapid release of liquid resources contributing to an improvement in free cash flow and thus to a reduction in overall borrowing and capital costs. Optimizing working capital leads to an effective increase in enterprise value or Economic Value Added (EVA).



**€1.2 trillion**

excess working capital tied up on global balance sheets

**3.8% decrease**

in Days Payables Outstanding

**9.4% increase**

in Global Working Capital

**8/18**

sectors have improved working capital

# Poor working capital management (WCM) has led to the demise of many businesses

WC is a sensitive determinant of liquidity and profitability, which are two factors that stagnate a business to failure or death when ignored (Buchmann & Jung, 2016; Javid, 2014).

Poor WCM is still a critical business issue across the globe (Arunkumar & Ramanan, 2013); it led to 92% of business failures in the U. S., 96% in Canada, and 76% in Australia, particularly in small firms (Shafique, et. al., 2007).

WC variables are negatively related to profitability, and profitability can be increased through a reduction of inventory levels below the benchmarks per industry (e.g., Arunkumar & Ramanan, 2013).

In the UK, inefficient WCM has cost UK businesses about £125bn (PWC, 2012).

## 92% Of business failures due to pour WCM

Companies that are able to exploit digital's benefits will lead the way in unlocking cash and creating more value. Digital enablers are now sufficiently accessible and flexible that they should be a standard tool for accelerating working capital improvement.

# Improving WCR position

A company's WCR position can be improved by

1. lowering accounts receivable
2. lowering inventory
3. increasing accounts payable

Lowering accounts receivable is a difficult thing to do as you need a way to convince your customer to pay faster. Increasing accounts payable means, you will pay your suppliers later meaning they would have higher WCR.

**The only way to improve the profitability of the overall industry (or every party in your supply chain) is by optimizing inventory management through data sharing!**

> **"We believe that on IT-level, supply chains are best managed as if they were just one company. By linking the data of the steps in the supply chain we believe in a system covering the chain."**

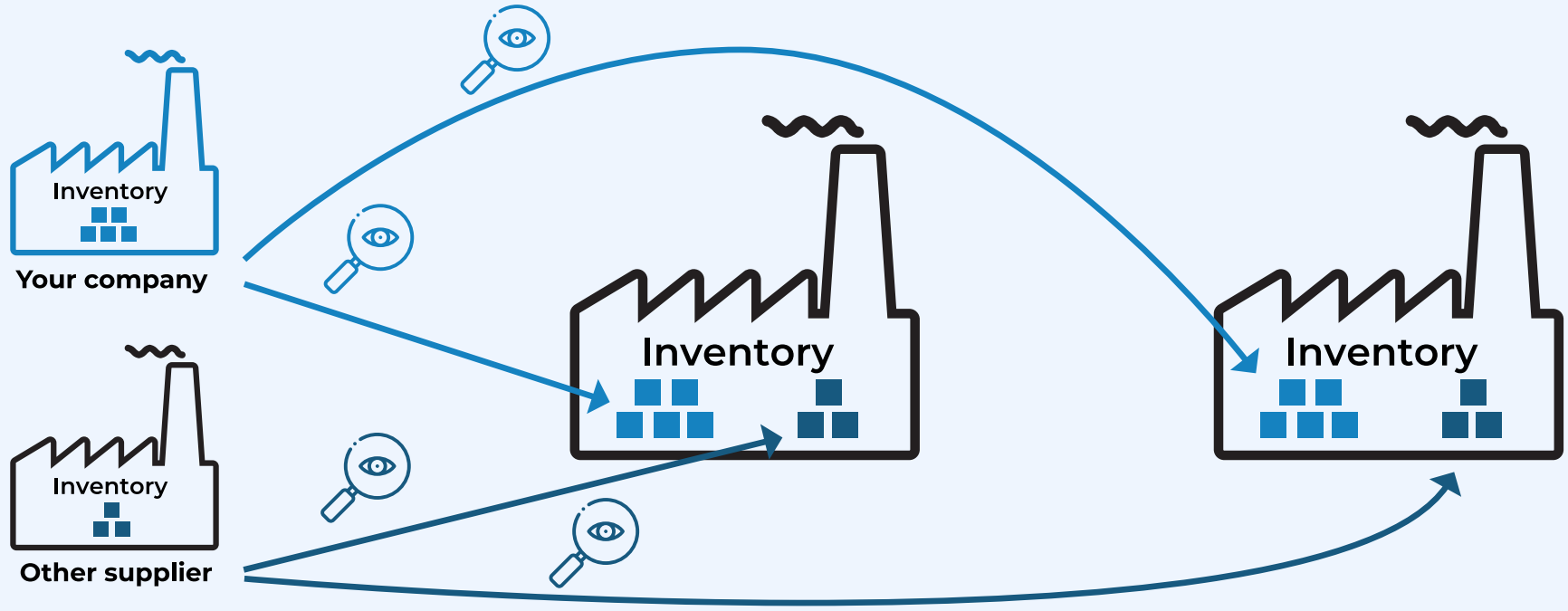

## The Unova decentralized inventory module helps you to release cash from working capital

- Keep **track of your own inventory** concerning each step in your internal production process.
- Have **real-time inventory data** of your product at your customer or anywhere further in the supply chain so you can **predict** when a new order will be placed.
- **Manage and share your inventory status** with supply chain business partners, eliminating the need for large inventories. Reduce costs and increase revenues by streamlining the process.
- **Reduce your working capital requirement** by optimizing your chain and share trusted data with your supply chain business partners

# Supplier specific inventory status sharing

By tracing each product and having it linked to each individual supplier it becomes possible to have supplier specific inventory status sharing.
This allows suppliers to be aware of the inventory status of their specific products while at the same time keeping privacy intact when it comes to your general inventory status.

You don't want suppliers to know the status of your total inventory. However, allowing a supplier to know how much of their product is left makes it possible to streamline deliveries. Each party can now reduce their need for safety stock and overall inventory. Releasing cash for everyone and increasing profitability and liquidity.



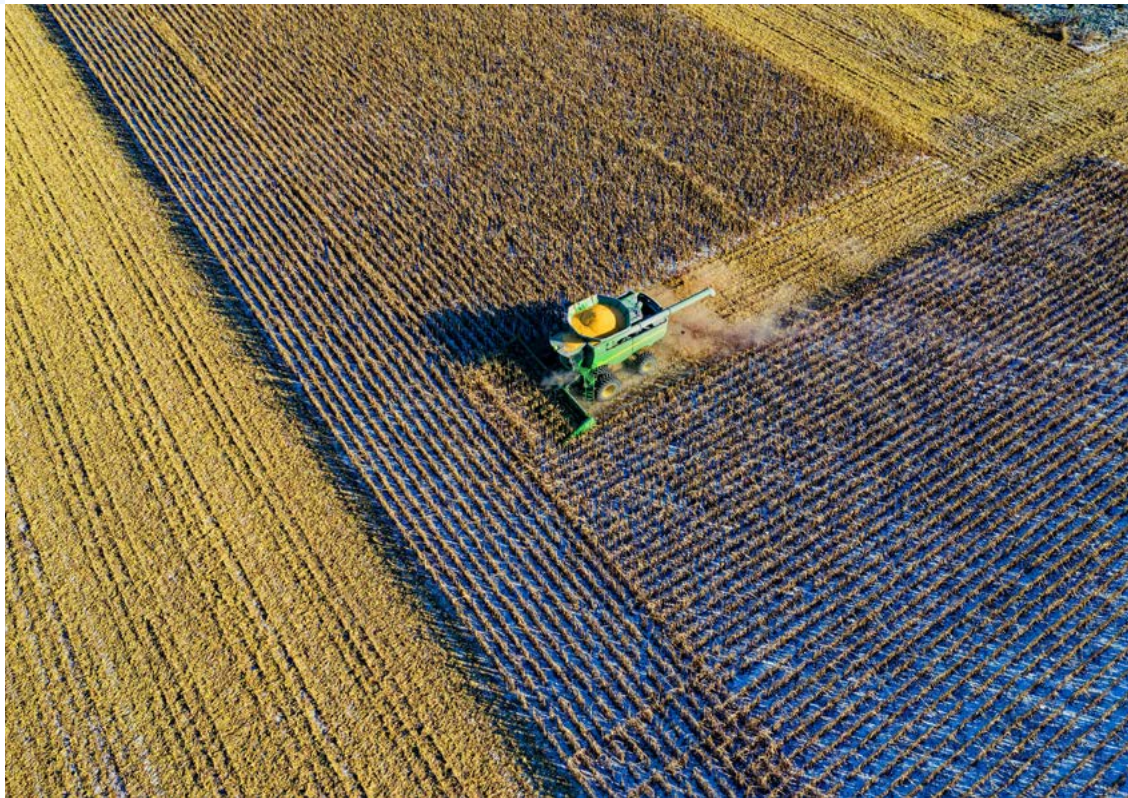
## Real-time demand forecasting

All food system participants can now know the **provenance, real-time location, and status** of their food products. Armed with better data, companies can develop more accurate supply and **demand forecasting** models, localize the sourcing of ingredients, and restructure contracts.

## 54% Blockchain adoption over next years

According to the 2018 MHI Annual Industry Report, **Blockchain adoption** in the supply chain industry only sits at five percent, but is **projected to grow to 54 percent by 2023.** The projected adoption is understandable, as Blockchain presents a way for manufacturers to proactively manage inventory and drive business growth with complete transparency and real-time data flow from source to shelf. The companies that choose to tap in now, will be ready to reap the benefits sooner rather than later.

The lynchpin to a Blockchain solution is the fact that the **data flows seamlessly** between parties in real time. Manufacturers can thereby gain instant **visibility into consumer-level demand** something they could not achieve before. As a result, they can more accurately forecast demand and proactively plan for manufacturing and replenishment, rather than simply react to stockouts. This ensures that they always have the right types of product and amount of stock to meet demand, with limited excess. It is in this sweet spot that they can optimize revenue and profitability, while eliminating the risk for lost sales and carrying costs.



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