



## DIGITALIZATION: A FRESH IDEA FOR THE FRUIT AND VEG SUPPLY CHAIN

FINDING A DIGITAL SOLUTION TO THE FOOD WASTE PROBLEM

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The cost of global food waste and loss is estimated to be [\\$940 billion a year](#). For businesses, this represents a significant proportion of shrinkage in retail supply chains and it has a direct impact on companies' triple bottom lines. There could be a great opportunity here for cost savings and to reduce environmental and social footprints, but making this happen remains a complicated problem, requiring solutions at all levels of the supply chain.

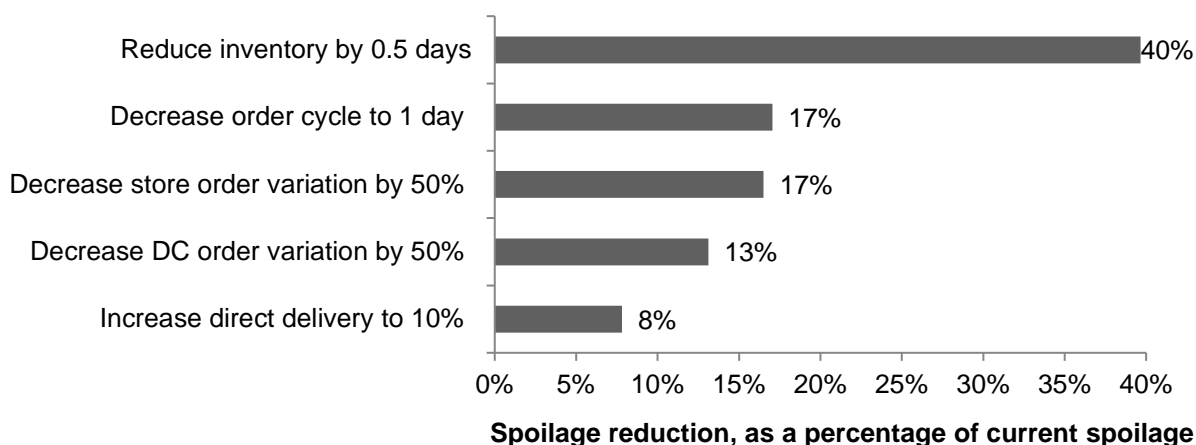
Fresh fruit and vegetables are a challenging retail category because of the very short product lifetimes. To identify drivers of spoilage, we examined the supply chain of Migros, Switzerland's largest grocery retailer with [27.4 billion Swiss Francs in sales and a market share above 20%](#). Its fruit and vegetable sales account for more than 10% of total supermarket sales in the country. It's a highly competitive product group that generates shop flow, requires high availability and specialized infrastructure. Plus, its portfolio must change with the seasons.

In terms of sales, best-practice retailers have spoilage levels of [between 3% and 5%](#). Migros is among these best-practice retailers but for such a large operator, even these small spoilage levels have a significant impact on its annual profit in the fresh fruit and vegetables category.

Our in-depth analysis was based on roughly half a million data points of 100 fresh products on a day and store basis. It revealed three major drivers for spoilage:

- 1] Excess inventory
- 2] Order cycles and variation
- 3] Longer delivery lead times

The best way to reduce spoilage is to reduce the inventory in stores (see the graph below). A half-day reduction would reduce overall spoilage costs by 40%. Smoothing both store and distribution center (DC) orders by 50% would improve spoilage costs by 30%. Increasing the order frequency to daily would reduce spoilage costs by 17%. And reducing delivery times by one day in 10% of deliveries could reduce spoilage by 8%.



### How can businesses achieve these reductions in spoilage costs?

Employee training and incentive schemes can go some way to reducing order cycles and making other improvements in freshness and shrinkage performance. The greatest potential, however, comes from supply chain digitalization to match demand with supply.

We recommend three main areas for digital development to address the major drivers of spoilage we identified in our study: data management; integrated collaborative forecasting; and product tracking.

## 1] Data management

This is essential for better ordering, establishing adequate inventory levels and enabling transparency within firms. The longer it takes to get hold of information, the harder it is to create accurate demand forecasts. Here are three steps for digitalizing supply chain data:

- Get accurate historical data. High-quality demand forecasting depends on this, plus it helps to reduce excessive ordering or unmet demand. This historical data can then be integrated into ordering tools to make ordering easier and to increase transparency.
- Use live point-of-sale (POS) data (but only after you are assured of the accuracy of the data). Accurate, live POS information can help decrease information lead time, so your supply chain can become more responsive to fluctuations in demand.
- Automate orders. Historical data coupled with live POS data create an opportunity to automate orders in real time. This allows companies to overcome issues related to order batching, which often causes excess inventory and spoilage in perishable product supply chains. Automation has a substantial potential here because ordering activities often take up considerable time and resources.

## 2] Integrated collaborative forecasting

This addresses high order variation caused by rationing and shortage gaming, and long transportation lead times. Integrating data systems for collaborative forecasting increases visibility, and reduces the risk of overstock or stock-outs along the supply chain. The benefits of visibility of supply chain partner forecasts can further extend to the physical chain, allowing for shorter delivery lead times because deliveries don't need to be as flexible.

## 3] Product tracking

This means having digital records for the entry and exit of products at each stage of the supply chain. It can help ensure a 'first in, first out' policy for fresh products, which will decrease inventory age – and therefore reduce shrinkage due to spoilage. Shrinkage rates represent up to 15% of sales in major retailers.

Digital supply chain solutions, therefore, provide enormous potential for accurate demand forecasting and better inventory management. However, the improvements do not come for free in this high-paced category. Product yields, volatile prices, fragmented suppliers, specific supply chain configuration, as well as perishability and quality issues, all mean that the value drivers are diverse and category-specific.

Before implementing new digital solutions, it is vital to interview individuals along the entire supply chain and analyze existing data to work out what business impact those solutions might have.

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Reference:

*Mervegül Kirci, Olov Isaksson and Ralf W. Seifert, 2016. Managing Perishability in the Fruit and Vegetable Supply Chain.*

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