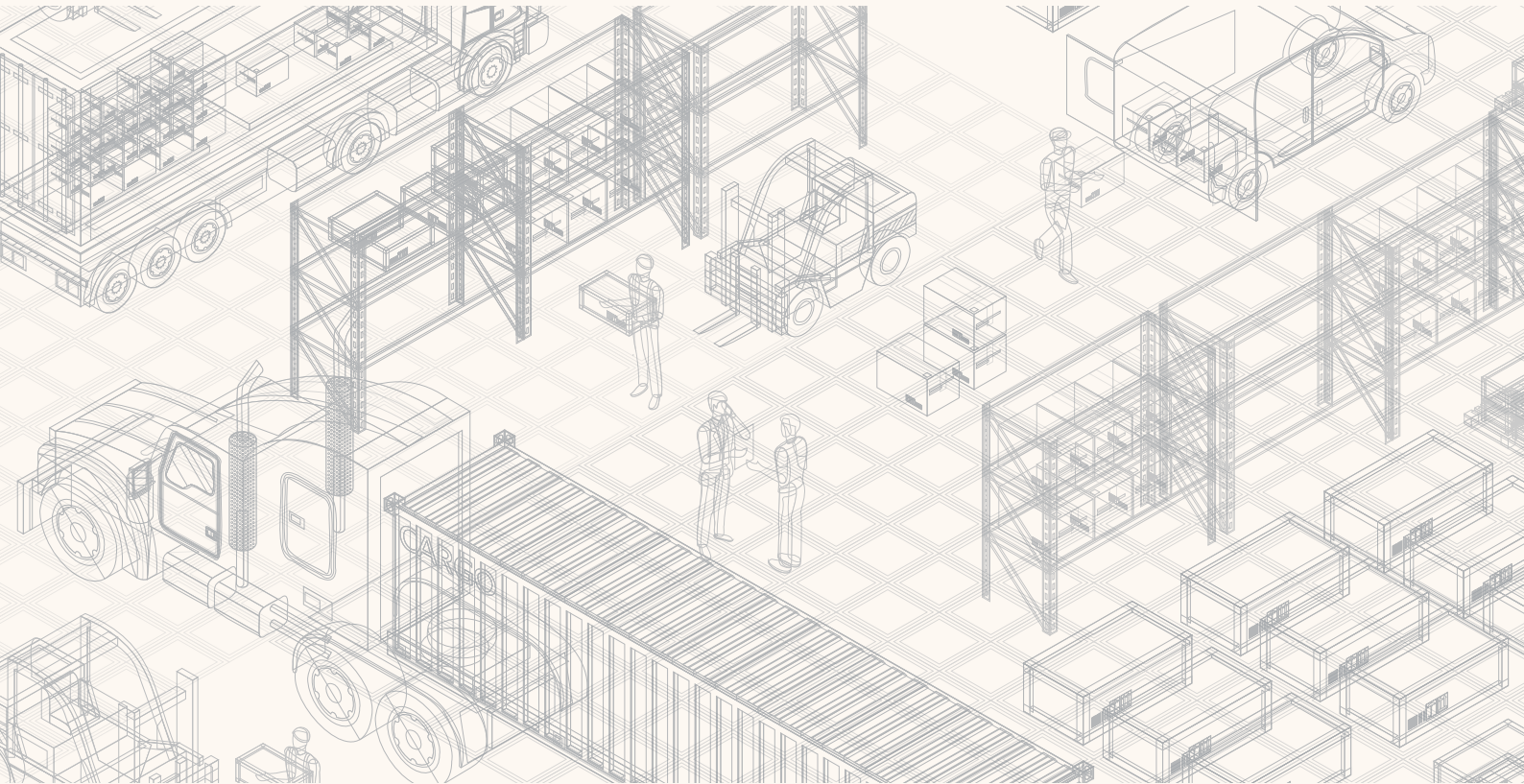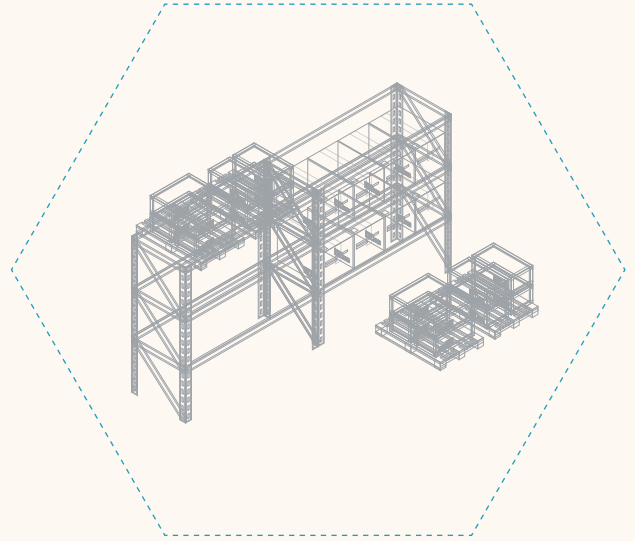# VERITICO

/ STOCK

VERITICO
/ STOCK

Supplies. They are a burden on trading companies, tying up capital and taking up space in the warehouse. Yet, at the same time, full warehouses are an essential element of your Supply-Chain. Without inventory, you can't cover the differences in supply and demand and you can't respond flexibly to your customers' demands. So, in the end, the winner is always whoever can deliver and sell the goods.

There's a fine line between dead stock and a healthy inventory that supports your business goals. Striking that balance for every item is not easy. To manage your inventory well, you must not only correctly estimate demand and monitor the reliability of your suppliers. You also need to order the right quantity of goods at the right time. This is difficult even when having only 100 items, but what if you have tens of thousands? And you sell them through a network of hundreds of brick-and-mortar stores? And the requisite e-shop?

With VERTICO STOCK, you don't have to do those necessary calculations. Just connect it to your information systems and set up your business strategy. Veritico STOCK does all the calculations of forecasts, standard deviations, quantiles and other statistics for you. Your buyers will then just receive order suggestions that respect your business strategy and you will see in clear reporting how your inventory is working for you. As a result, and over time, your inventory will get thinner and the availability of goods will increase. To put it quite simply - you buy less, you earn more.
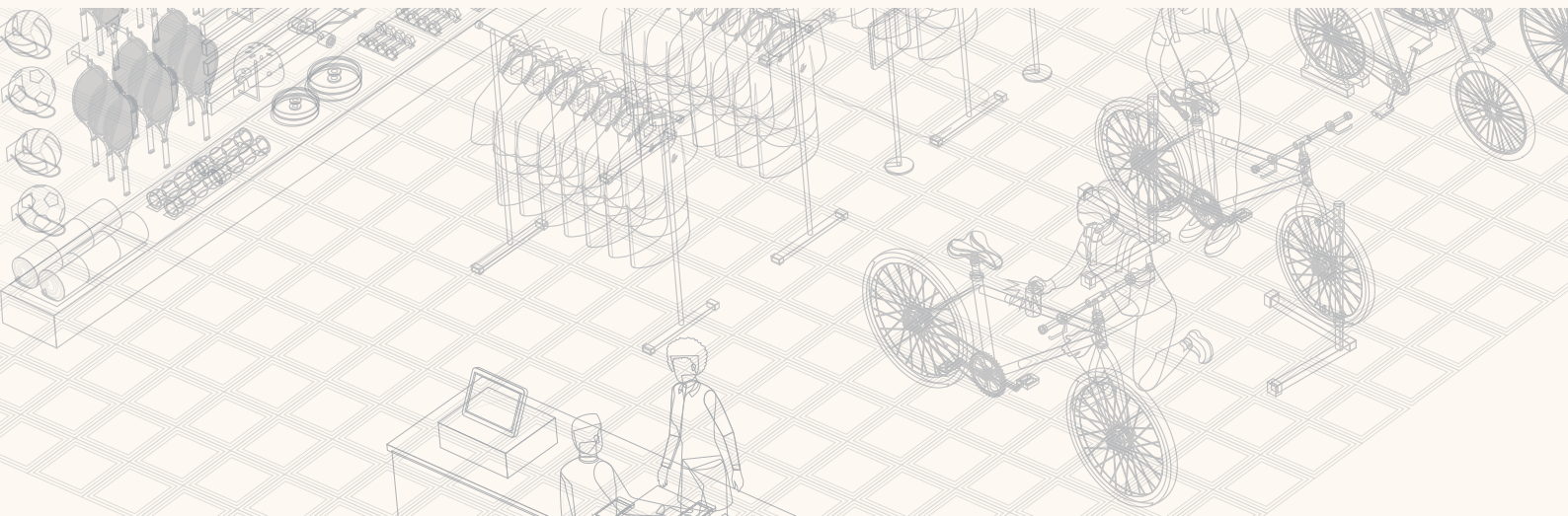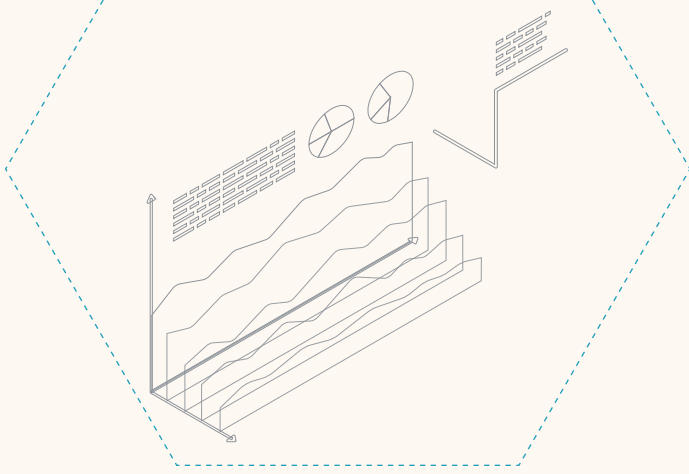
SALES FORECASTING & DEMAND PLANNING

**Knowing what your customers want before they do**

Customers today expect a wide range of products and immediate availability. A key function is an effective Inventory Management that can react to changes in demand and optimize orders throughout the entire Supply Chain. One of the inputs to Inventory Management is the Sales Forecast, a plan of what will sell tomorrow, next week, next month or next quarter. Creating an accurate Sales Forecast is not a trivial task and Gartner research proves it. According to Gartner, it is the variability of sales and the quality of Demand Forecasting that are the biggest barriers to implementing an S&OP process in Supply Chains.

The factors influencing buying behavior are very diverse and change dynamically over time. VERITICO can take these into account and at the same time react quickly to the current situation, abnormalities and non-standard purchasing behavior. Sales system automatically forecasts always at the lowest possible, but still safe level, thus avoiding unnecessary overstocking. And it is the automation of the entire process that is the main benefit of the VERITICO solution.

Master Data Management is crucial for the most accurate Forecast. From bad inputs, it's hard to achieve high quality outputs.

First, data preparation takes place. The time series of historical transactions are cleaned of data that could skew future Sales Forecasts:

- Outliers, or deviations from normal, both at the level of months and individual sales transactions.
- Promotional or other marketing sales.
- Stockouts, i.e. situations where a company stops selling due to a lack of stock. The system identifies this situation and replaces the reduced sales with the expected forecast, as if the stockout had not occurred at all
- Irrelevant sales, so-called 'leapfrog' transactions, both upwards and downwards (for example, due to the collapse of your competitor or a fashion trend).
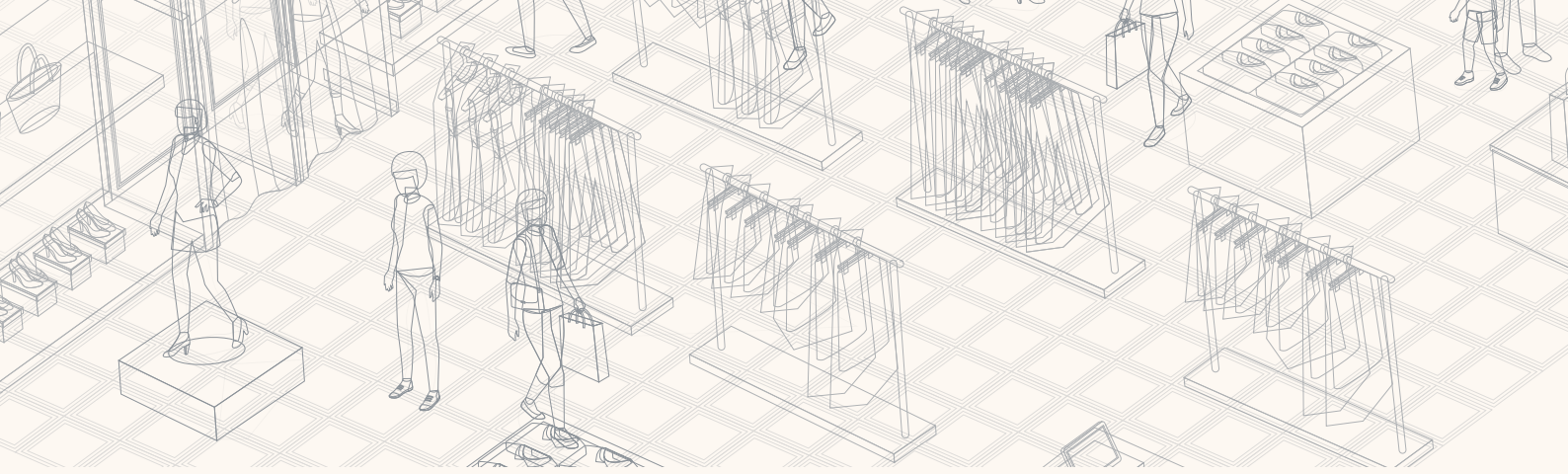
CHOOSING A FORECASTING METHOD

The alpha and omega of good management is the knowledge of detail. Each item behaves a little differently and the optimal Forecasting method for it needs to be determined. VERITICO works with 80 (!) different Forecasting methods based on the principles of mathematics, statistics, heuristic algorithms or artificial intelligence (neural networks, genetic algorithms). These methods are applied to each item and at each point in the Supply Chain (warehouses, central and regional DCs, stores) and the most appropriate one is selected for each item. This is the method with the lowest possible prediction error. The system calculates the prediction error by successively covering the time series and comparing the predicted quantity with the actual quantity sold at the covered sections.

A duel of methods is run every day on each item, regardless of what the results were yesterday. In general, AI works better for items that sell in the millions. For the less common ones, good old math does the trick.

increasing   seasonal   sporadic   large drop

decreasing   new   variable   promotional
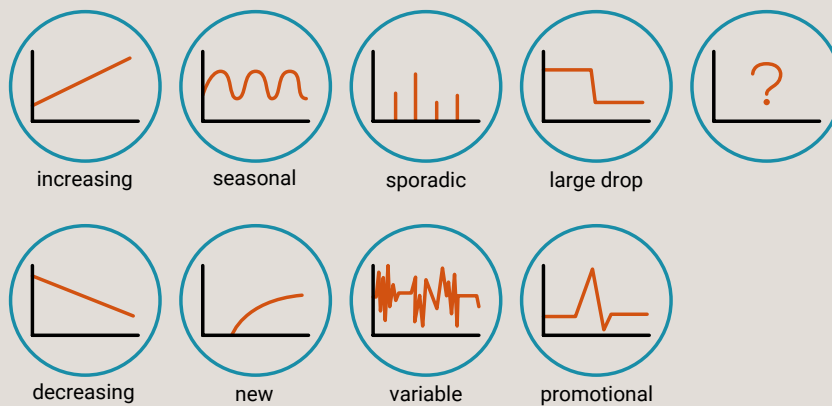
Pic. 1: *What Sales History Can Look Like*

HOW IT ALL WORKS

The question of future demand is no longer looking into a crystal ball. Thanks to using data and smart systems, it's rather a REAL peek into the future. What do you see in yours?

ANALYZING AND CLEANSING SALES HISTORY

1

+ Data collection and analysis
+ Data cleansing from:
  - Extreme sales,
  - Promotional sales,
  - Irrelevant sales,
  - Sales failures.

CHOOSING A FORECASTING METHOD

2

History

102x
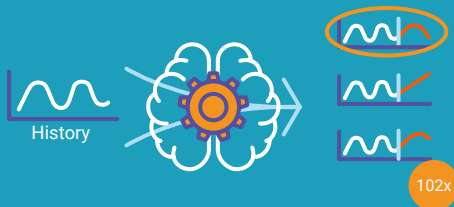
+ Forecast sales of current and promotional goods
+ Demand Sensing

FORECAST ADJUSTMENT (DEMAND PLANNING)

3

+ Adjustment of sales plan according to:
  - Corporate and product strategy,
  - Marketing action plan
  - Market data, competitor data, etc.

In the third step, Forecast is being cleaned. This process is called Demand Planning. It can be partially automated, but it definitely requires inputs from other users. Here, the Forecast is adjusted according to information about new product launches or marketing plans. Similarly, according to new trends that did not exist in history, various market forecasts need to be determined according to marketing studies. These changes can be set for individual products, entire categories or even the entire store. This is used, for example, when closing/opening a competitor, opening another branch, etc.

At the end of this phase, Forecasts are created for different time periods - for months, weeks or days. Usually, it is the daily decay that provides the best insight when balancing overall capacity and resources. A detailed Forecast of Sales is generated both at the individual item level and upwards, i.e. by aggregating to sales categories, sales channels, territories, etc.

OTHER APPS

Demand Sensing

A system functionality called the "Demand Sensing" is peacefully sleeping most of the time, and the "Regular Forecast" does not interfere. However, as soon as it detects that the demand for a certain item is differing significantly in the last few weeks from the long-term Sales Forecast, the Forecast for the near term is modified and changed accordingly. These changes can occur for a variety of reasons, whether it be competition, seasonality or crisis situations. Demand Sensing is particularly useful for fast moving and high elasticity goods. When sales increase rapidly, you can flexibly react to changes in demand, avoid having empty shelves, and thus no lost profits and no dissatisfied customers.

Quick response by reducing/increasing orders when sales suddenly change due to various situations (crisis, season, etc.).
Increasing the availability of goods for the customer, or reducing the risk of overstocking.
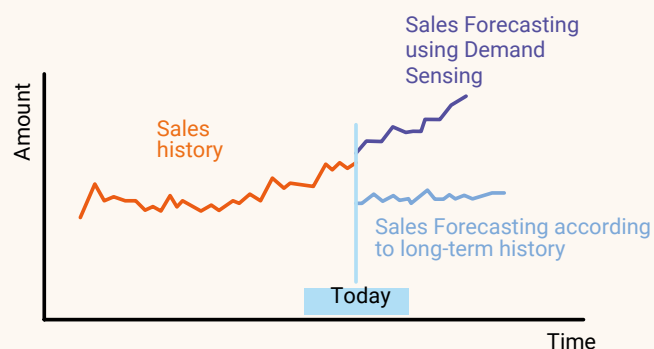
Pic. 2: *Sales Forecasting using Demand Sensing*

Refinement of Forecast Promotion sales by up to 15%.
Increased availability of promotional merchandise and reduced overstock after promotion.
Automated 80% of the process.

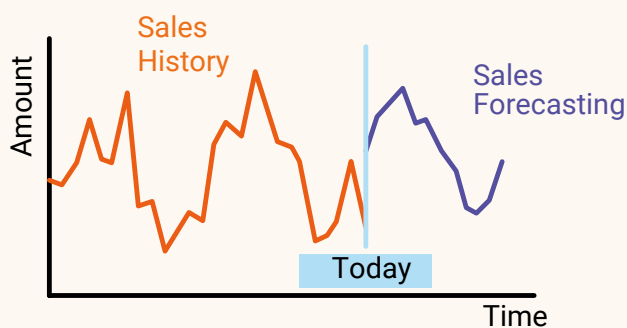### Promotion Planning

The purpose of this Forecasting is to estimate the amount of products that will be sold during the ongoing and future promotions. The calculation is based on sales data during past promotions. For each type of promotion, Demand Sensing will determine the distribution of the effect of its strength into individual days of sales and incorporate the expected effect into the Forecast.

Season planning

VERITICO solution can automatically identify seasonal progression, and thus adjust an adequate Sales Forecast accordingly. Seasonality can be identified from sales charts by a yearly recurring "wave" in demand. According to the type of waves, the so-called "off-season" is distinguished, which is governed according to the seasons and its seasonal onset depends on the weather. An example of this would be fans, whose demand starts with the arrival of tropical heat in summer. On the other hand, there is a "peak season", which is governed by holidays and cultural events - Christmas, "back to school", etc. These types of seasons have a gradual onset and a well-defined end. An example of an article is school supplies at the start of a school year in September.
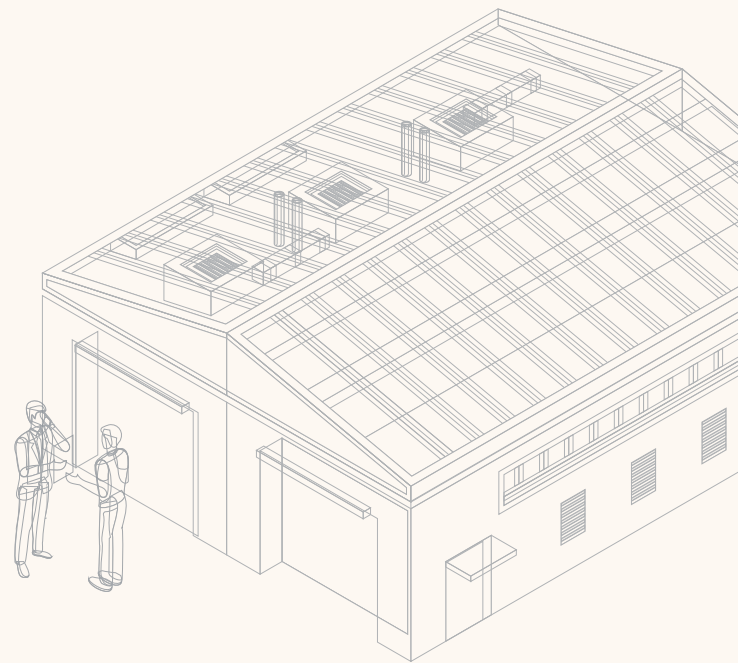
**Effective Seasonal Planning** = correct timing of the beginning and duration of the season.

Accurate Sales Forecasting with taking seasonal trends into account.

Optimal Plan Preparation for production and warehouse capacities and resources according to expected Sales Demand and in accordance with the business plan.

Pic. 3: *Season Sales Forecasting*

Sales prediction by product life cycle

New products are part of every company's product portfolio. Their automated management is quite difficult, as there is an insufficient history for statistical processing. VERITICO solution plans future sales of a new product based on the similar historical behavior of its predecessor, or it takes into account the sales of the entire category to which the new product belongs. In this way, other factors such as seasonality are captured, and the customer finds the new product on the shelf as soon as it is launched, and in optimal quantities.
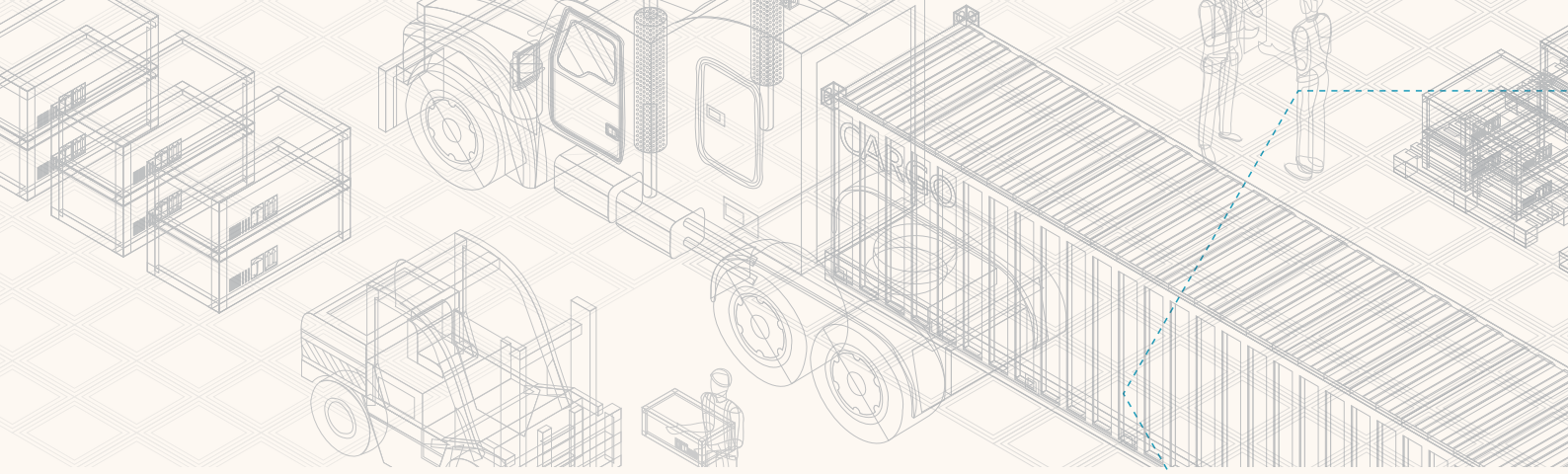
EVALUATION AND BENEFITS

Sales variability and the associated Forecast accuracy is also an important aspect for Inventory Management strategy, as seen in the matrix below. With high sales and high variability at the same time, Inventory Management is extremely important and needs a lot of attention (using sophisticated software is essential for business sustainability). But what it means for you, is that you can leave the Forecast to VERITICO software and trust it completely.
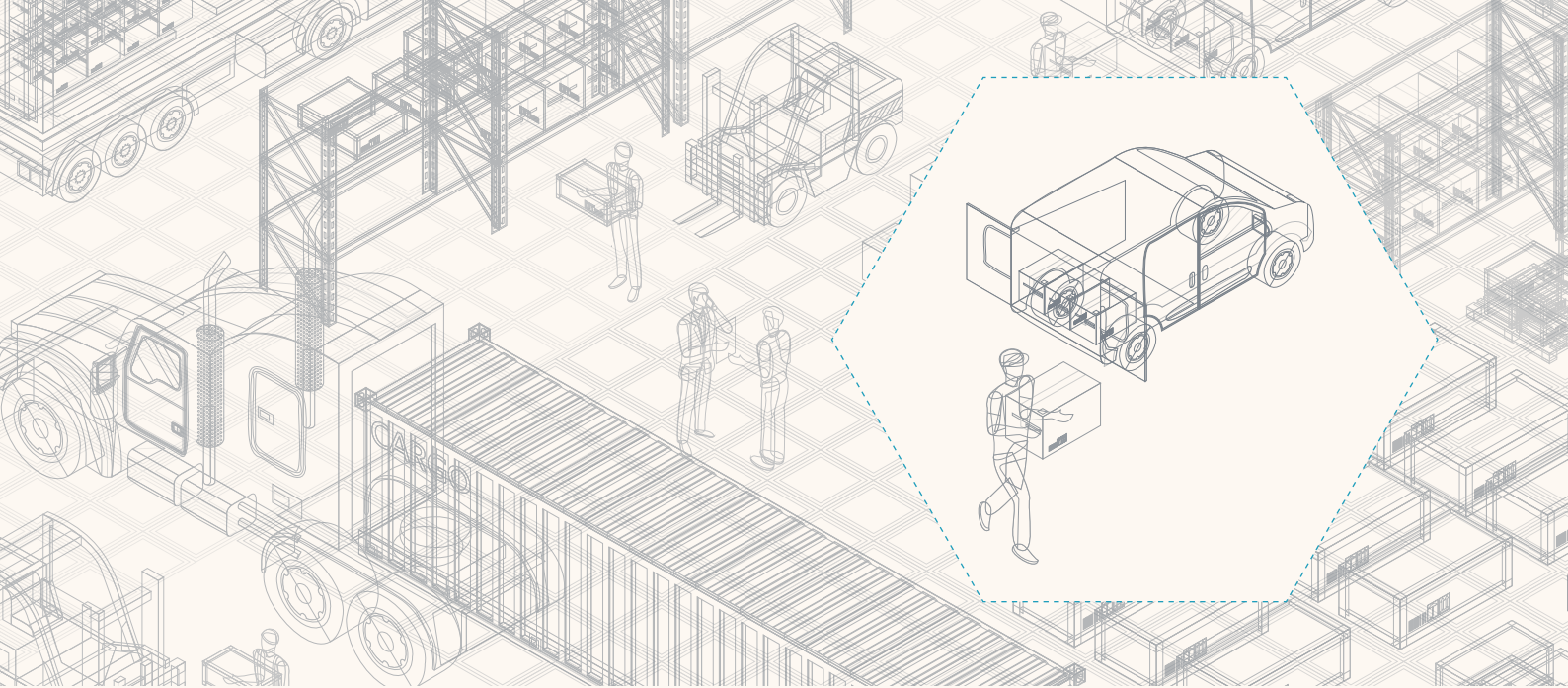
Forecast Accuracy is a control factor that can reveal to what extent we accurately predict future sales. VERITICO can work with this error and not look at Forecast as a 100% certainty, but for items with a higher error, an optimal safety stock is set.

HARD benefits

⬆ **Increased Item Accessibility** for the customer up to 99%+

⬇ **Reduction of Forecast error rate** by 20-25 %

Reduction of Working Capital in Stock by 20%

SOFT benefits

Automatic Sales Forecast Calculation

High reliability of Sales Forecast based on advanced mathematics, AI and consultants' expertise and experience.

Support in Sales and other S&OP processes.
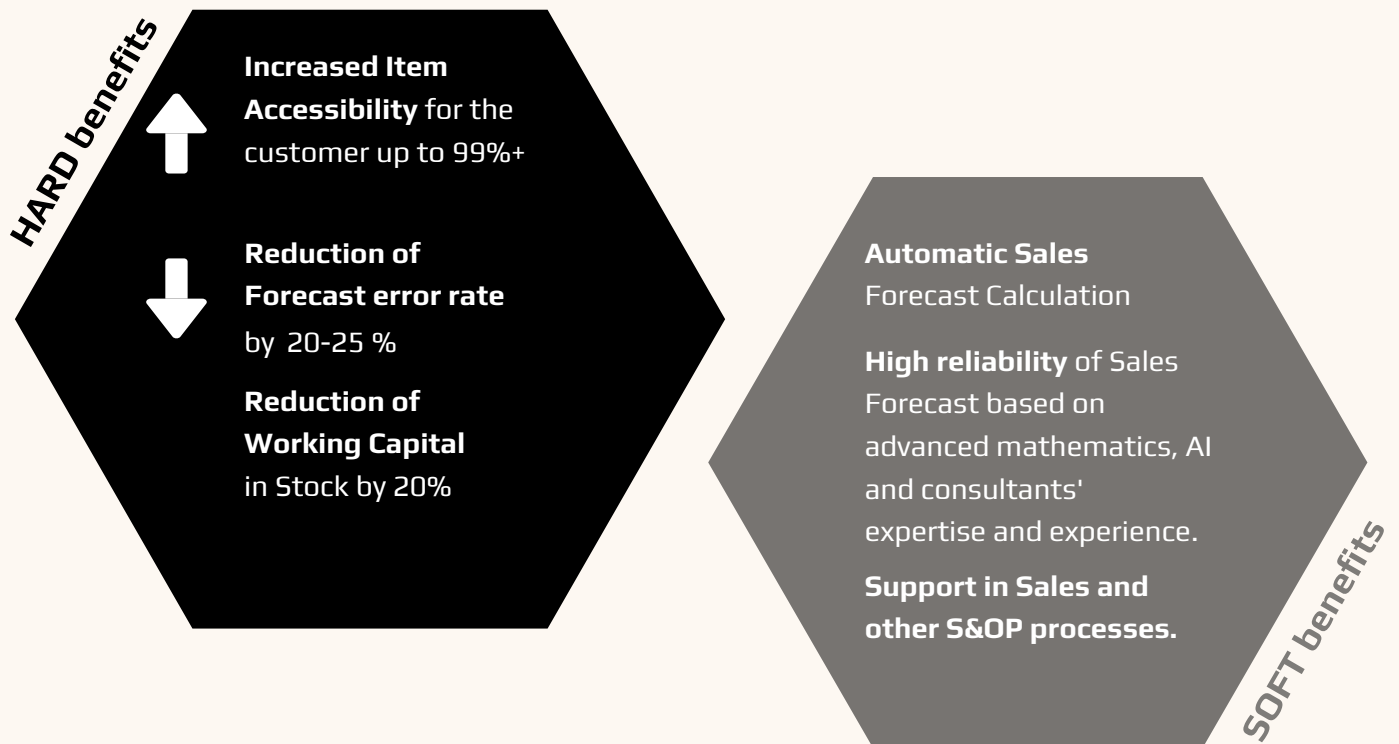
INVENTORY MANAGEMENT & REPLENISHMENT

Your inventory exactly where it belongs

Automated Inventory Management that can react to changes every day in Demand and optimize orders throughout the Supply Chain, is the alpha and the omega of every successful retailer. It comes to the crunch once the most accurate Sales Forecast is calculated. The decision is then how to get the goods to the customer at the right TIME, at the right PLACE and in the right QUANTITY.

VERITICO STOCK can centralize Inventory Management. This means that it is able to manage inventory from one location based on the customers' demand across all sales channels through orders going to the supplier. In each cell of the Supply Chain, it can hold the optimum level and structure of inventory that reflects the importance of the product range based on demand and/or corporate strategy. This ensures you sell what customers really want and you get rid of the "dead stock" in your warehouses. You will increase the availability of items to customers and reduce your total inventory. Last but not least, you will speed up and automate the entire inventory management and ordering process, freeing up human and financial resources that you can use elsewhere. The end result will be increased prosperity for your company and competitiveness.
Who would resist that?

INVENTORY MANAGEMENT

Within Inventory Management, goals are set for the defined Inventory Management indicators and to achieve them, action steps are then implemented. The key is to be able to divide your product portfolio into segments according to the chosen methodology and to manage their inventory according to the target availability of items.

Product Portfolio Segmentation

Whether you operate in brick-and-mortar, e-commerce or retail and wholesale, you should know which products are key and profitable for you. ABC segmentation is a practical application of the Pareto rule - the theory claiming that 20% of items make up 80% of sales. Our system is able to identify the different criteria to divide the assortment according to the performance of each item into four basic categories of A, B, C, D. For each of the segments, a specific item availability rate can then be set so that key items of segment "A" have the highest possible availability and, conversely, the items of the lower segments are available only to such an extent that their transport and storage do not unnecessarily burden the logistics flow.
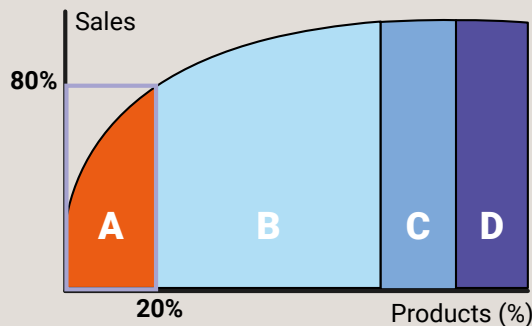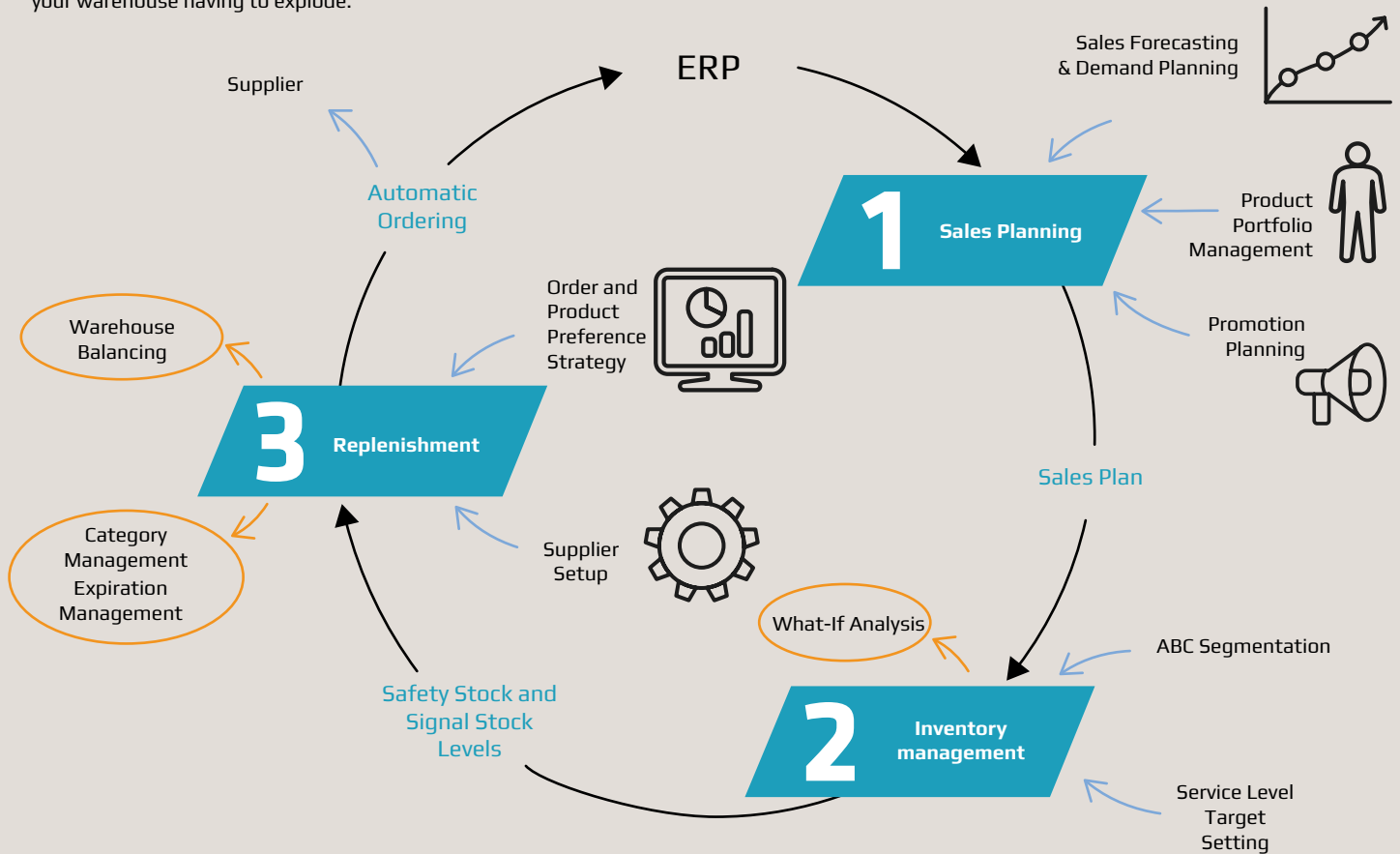
Take a closer look at the chart and you'll see that Category A comprises only about a fifth of all products, but about 80% of the revenue. Category B contains most of the products, but only about a fifth of your total revenue. Category C represents no or almost no revenue. Category D is dead stock. For this basic but important analysis, the ability to see the portfolio as a whole on one screen and in real time is beneficial. The life cycle of each item significantly affects the outcome of the ABC segmentation. ABC segmentation can be managed either centrally or separately, e.g. at individual branches, and even according to differently set KPIs.

KPI

+ Profit
+ Sales
+ Frequency of Sales of Sold Goods
+ Price Elasticity Level
+ Product Life Cycle Phase
+ Combination of the Criteria etc.

How it all works

A hundred people, a hundred different tastes… and you're supposed to have them all in stock! Luckily, there is a way to satisfy the majority of your customers without your warehouse having to explode.

ERP

Supplier

Automatic Ordering

Sales Forecasting & Demand Planning

1 Sales Planning

Product Portfolio Management

Promotion Planning

Order and Product Preference Strategy

Warehouse Balancing

3 Replenishment

Category Management Expiration Management

Supplier Setup

Safety Stock and Signal Stock Levels

What-If Analysis

Sales Plan

2 Inventory management

ABC Segmentation

Service Level Target Setting

OTHER APPS

Setting the Service Level

We use the results of the ABC segmentation to set an essential parameter called the Service Level. You must have heard of it, because it is a number that determines the desired level of availability of goods. It is the control parameter of the entire Supply Chain. A 100% availability level means that out of 100 customers who want to buy a product, 100 will be satisfied. 50% means that every second customer goes home without the product. You can adjust the level by segment to different sales channels.
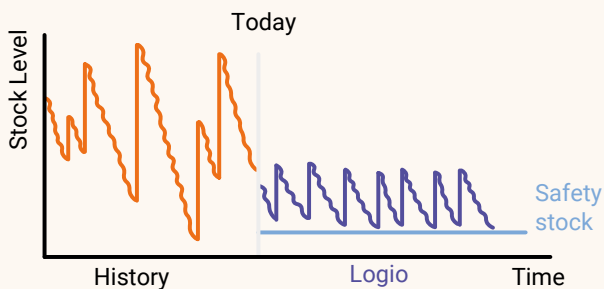

Pic. 4: *Inventory Management Centralization*

Calculating the Safety Stock

The safety stock is designed to cover non-standard sales requests and ensures that the set service level is maintained for the end customer. Ideally, sales will not rise above its value, i.e. it is held in extra stock compared to expected sales as an insurance against unexpected fluctuations. Its amount is calculated automatically based on the degree of variability in sales, the magnitude of the prediction error and the supplier's error (in quality and delivery time).

The Supply Chain changes dynamically over time and is constantly evolving. For effective Supply Chain Management, it is important to ensure that the Supply Chain is connected to create a harmoniously aligned network, and that the individual links in the network work together as much as possible. Only then will the flow of goods be smooth and waste-free.

The topology of the distribution chain is important when setting up the Supply Chain and the hierarchy of the individual nodes (warehouses, branches). Using the topology, you can then set the optimal ordering regime and shipments so that goods are available on time and are not left on the warehouse shelves for unnecessarily long periods of time. As the number of channels grows, so does the complexity, which is used up to the maximum. With the help of VERITICO, it's turned to your advantage by efficiently setting up the flow of goods in a multi-channel sales operation. This leads to process optimization using synergies from sales planning to distribution, to a better customer experience and to a higher prosperity.

Order Automation - time saved by 50%, substitutability of buyers

Ordering goods, considering key sales factors, supplier constraints (container overloading, order consolidation, min. order size, etc.) and internal constraints (warehouse capacity, finances, etc.)

Optimal order setup and delivery **calendars**

Higher availability of goods for the customer up to 99%+ and reduced stock levels by 20%

Speculative Shopping Resolution Support

Pic. 5: *The Effect of Automatic Ordering on the Development of Stock Levels*

Purchase Orders

STOCK automatically suggests orders to suppliers or from the central warehouse to the branches. The signal stock, also known as the order level, serves as the base level for ordering goods. If the stock reaches this level, the goods must be ordered, so that stock out does not occur. This process takes place automatically and takes other inputs into account, which are: current available stock, orders on the way, customer orders, forecast of current and promotional sales, safety stock, order pack size, order periods, order and delivery calendars.

OTHER APPS

Multiechelon Optimization

A large network of branches or multiple levels of intermediate storage warehouses bring a large challenge of efficiently managing all flows. VERITICO can help you with planning your transport properly, allocating inventory and executing predispositions between branches. Your trucks will be better utilized and the availability of goods for the end customer will be increased.

Ability to manage inventory separately for different channels and customers

Efficient management of shipments to branches, redistribution between branches and back

Transhipment of goods for more efficient sales (exchange between branches)

Optimization of goods flow within your distribution network

Reduction of transport costs
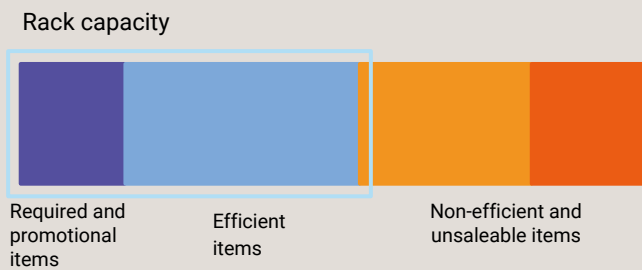
Capacity Management

Do you have a wide portfolio that doesn't fit into your shelves or in your warehouse? VERITICO solution optimizes not only the total inventory, but also the mix of individual items while maintaining a maximum budget or volume. VERITICO identifies products without commercial potential, so that only those that make a profit go on sale or are of strategic importance. It can also manage individual products according to sales channels (brick-and-mortar, e-commerce, export, etc.) and take multiple parameters in decision-making into account (from sales, profitability, frequency of sales to the expected sales development of individual products). This will ensure optimum breadth and Supply of each category for final customers.

Optimally designed portfolio for sales channels with respect for corporate constraints

Meeting the company's strategic objectives
(increase profit/sales, etc.)

Reduction of turnaround time, reduction of dead stock and depreciation.

Optimal investment in the purchase of goods

Rack capacity

Required and promotional items

Efficient items

Non-efficient and unsaleable items

Pic. 7: *Capacity Management*

Today

Stock level

Max. sales value taking shipping into account

History

Logio

Time

Pic. 8: *Expiry Management*

Reducing depreciation of expired goods

Reduction of discounted goods sales

Dispatch control according to shelf life

Sales discount management

Expiry management

Fresh meat, dairy, fruit, vegetables and many more products are characterized by a short shelf life. VERITICO solution takes the expiry date into account so that you can keep the optimum amount of stock to be shipped, sold and consumed without exceeding the expiry date. Reduce waste, improve margins, reduce losses and the end consumer always gets fresh goods.

Warehouse Balancing/Load Balancing

When designing the orders for branches or suppliers, large fluctuations in operational logistics requirements arise. The goal is to eliminate operational peaks in and out of the warehouse to values that best utilize the resources in logistics. One day, it is planned to pick 4,500 orders; the next day, it's only 2000. If there are not enough proposed orders, the system will "look" at the purchasing Forecast of branches or suppliers and replenish them in the future. If, on the other hand, there are a lot of proposed orders, the system will "cut" the orders with the lowest risk of impact on profit and sales and move them. This will even the loadout of receiving and shipping over time.

Smoothing out the flow of goods through the central warehouses, considering capacity constraints - resource optimization and warehouse capacities, even utilization of receiving and shipping

Efficient direct **Supply** or Supply to a distribution warehouse according to the cost of Supplier's financial and unit limits

Efficient Season Management (Christmas logistics, etc.)

Logistics cost **savings**

Supplier ratings

Are your suppliers bothering you because they don't comply with contract terms? If you want to see how they are meeting supplier deadlines or how the quality of their deliveries is, take a look at the report. You can use it to negotiate with your suppliers to better build your supplier-customer relationships.

**Overview and evaluation of relationships** with individual suppliers

Basis for improving contractual conditions (price reduction or performance improvement) or supplier changes

Higher level of availability of goods while minimizing tied capital in inventory

Quantification of insurance costs inventory taking into account reliability and timeliness of delivery
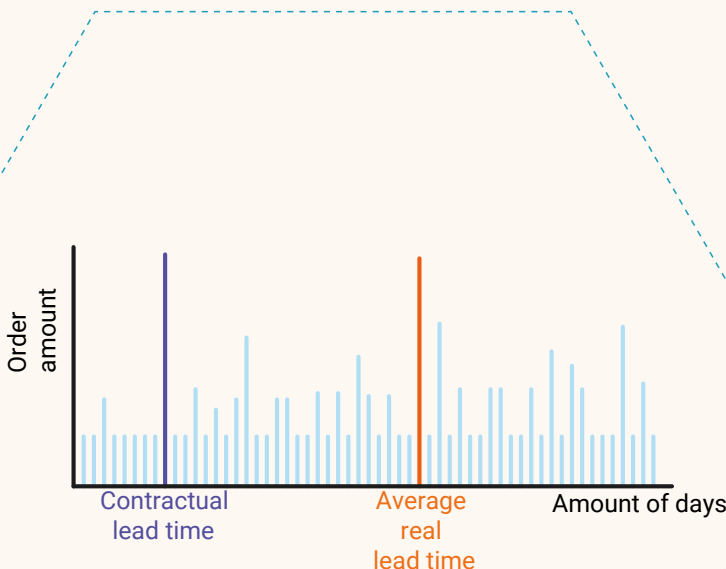
Pic. 10: *Supplier rating*
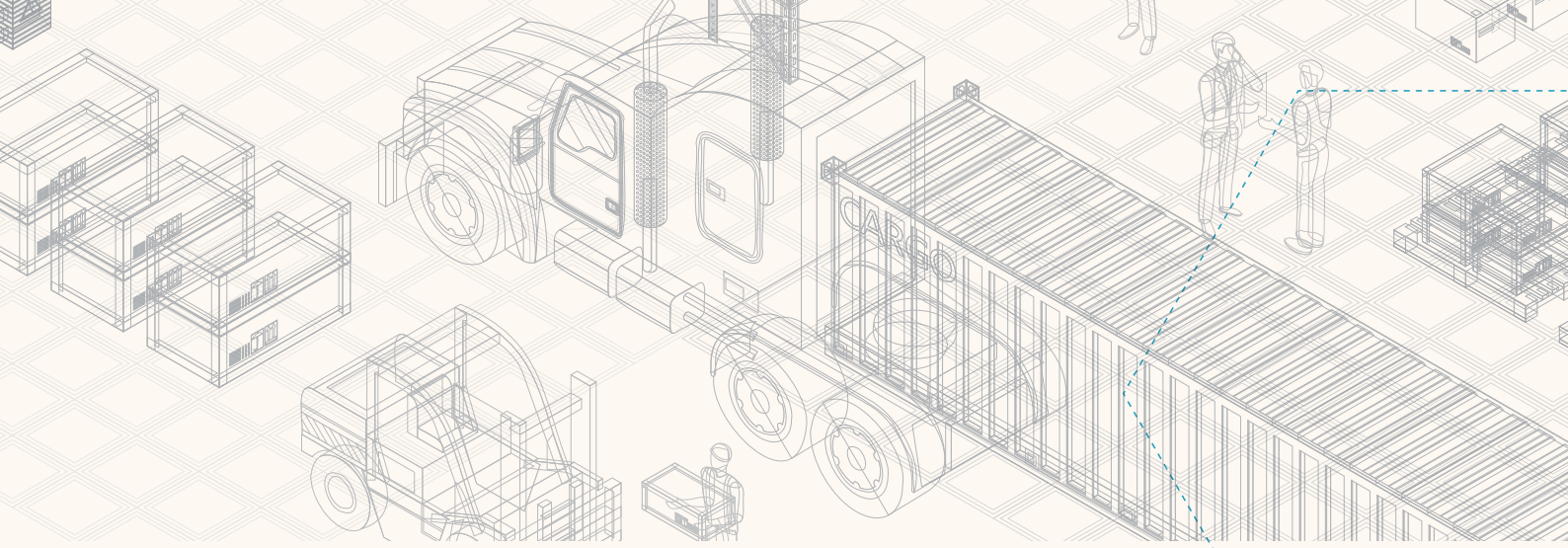
EVALUATION AND BENEFITS

Monitor and evaluate the quality of your Supply Chain and manage your inventory online, continuously and in one place. Simply check your mobile phone or tablet to see why you are not meeting key indicators, or which areas to focus on. Within the management dashboard, you can. VERITICO will tell you the current status of your processes, while using drill down menus to detect the specific causes of problems. It will accelerate your strategic and operational decisions based on hard data. You ensure remediate and prevent problems immediately.

HARD benefits

Increased Item Accessibility for The Customer up to 99%+

Reduction of Working Capital in Stock by 20%, Overstock Prevention

Reduction of Turnover Time by up to 10%

Order Automation = Time Saved by 50%, Fast Substitutability

Reduction of Stock Depreciation by 10-15%

SOFT benefits

Efficient Inventory Management across the Entire Supply Chain

Centralization of Purchasing and Ordering of Goods with Taking Supplier Constraints into Account

Optimal Inventory Structure According to Importance of the Assortment or by Company Strategy

Reduction of Losses (Depreciation, Revaluation, Sales and Expiry Losses)

Even Revenue Utilization and Dispatch

KPI

INVENTORY MANAGEMENT:

Forecast Accuracy, Inventory Value According to ABC Segmentation, Value of Excess Inventory, Inventory Turnover, Depreciation

REPLENISHMENT:

Availability of Goods, Lost Margin

PROMOTION MANAGEMENT:

Availability of Promotional Goods, Promoshare

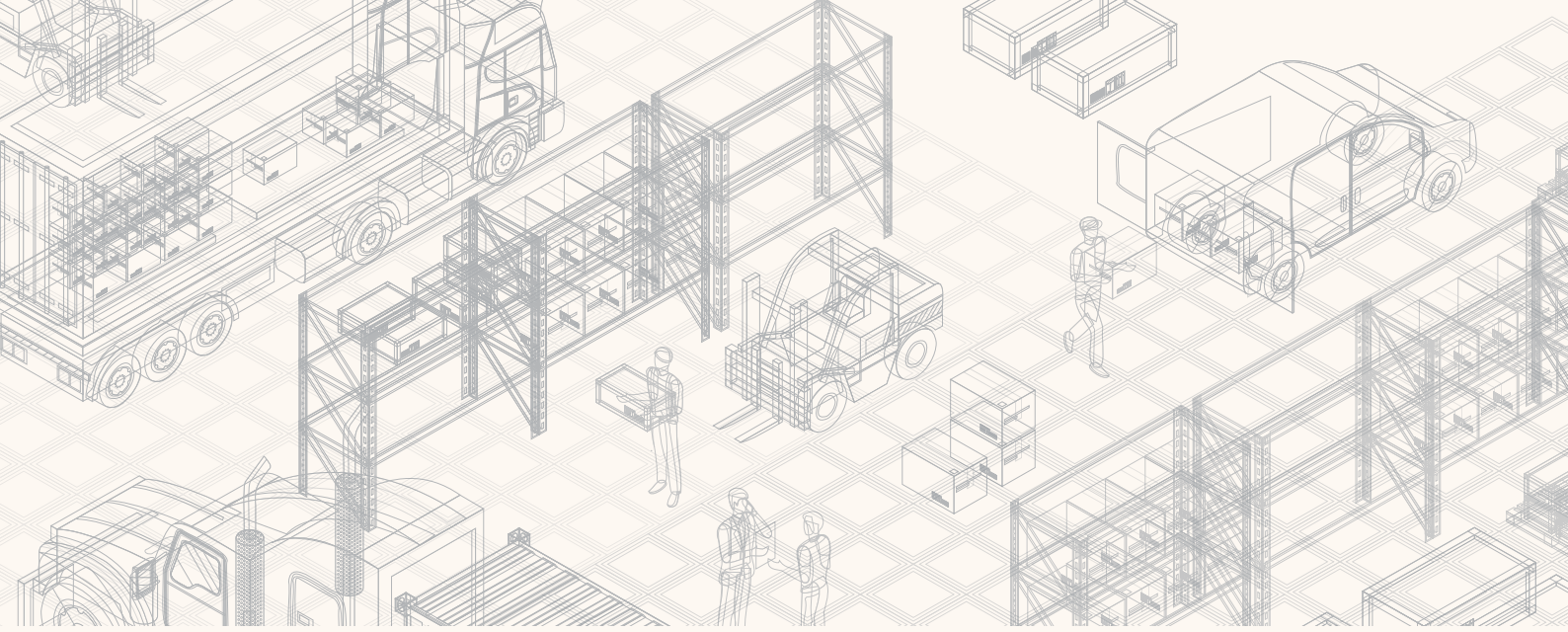## SALES FORECASTING:

Forecast Accuracy

STOCK Benefits

Optimal Structure and Stock Levels According to Company Strategy

Even Income Load and Dispatch

Centralization of Purchasing And Ordering of Goods

Automation Ordering = Saved 50% Time and Fast Substitutability

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