The SMB's Guide to Inventory Optimization Software

An EazyStock Guide to Optimized Inventory Management

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The 'What?' and 'Why?' of Inventory Optimization

Businesses large and small are currently faced with turbulent and challenging marketplaces - and the future sees no let-up. Economic, political and social factors continue to drive change and uncertainty, and organizations are feeling the strain.

When we focus on the supply chain, globalization, product complexity and high service demands are contributing to the problem. Many businesses are finding it difficult to provide the service levels that customers demand (in terms of stock availability and delivery expectations) without carrying excess stock to protect against increased supply risk, longer global lead times or fluctuating demand.

The result is 'non-working' capital tied up in products sitting on warehouse shelves, risking obsolescence. While this is problematic for larger organizations, small- and mid-sized business (SMBs) often feel the pinch more, as they need to keep their cashflow moving and the balance sheet strong to stay competitive.

Traditional ways of managing inventory, used by most Enterprise Resource Planning (ERP) or Warehouse Management Systems (WMS) fail to address this problem. This is because they manage inventory using a linear, rules-based approach and, like it or not, today's global markets follow non-linear patterns.

There's no denying that ERPs and WMS are great for tracking SKUs, reporting on stock levels and managing orders – all linear inventory management functionality. But they simply don't have the capabilities to help companies optimize their inventory. More and more businesses are therefore turning to inventory optimization software to help them deal with challenging market dynamics.

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Introducing Inventory Optimization

Inventory optimization is the concept of balancing high service levels with the lowest possible inventory investment. It allows businesses to ensure product availability while reducing inventory costs and minimizing the risk of excess stock. This is done by forecasting demand and managing supply variables while dynamically adjusting stock rules and inventory parameters.

Inventory optimization software is used to calculate what stock to order and when to order it, how much stock to carry and where it should be placed throughout the supply network. Rather than a linear, rules-based approach, these solutions use a probabilistic, statistical approach that takes into account multiple factors impacting demand and supply variability – down to SKU level.

For many businesses, both large and small, inventory optimization is one of the fastest and most straightforward ways to improve bottom line profitability. Many EazyStock customers find that they lower their inventory costs by at least 30% while at the same time increase their fulfillment capabilities by a similar percentage.

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The Rise in Popularity of Inventory Optimization Software

Inventory optimization software is growing in popularity.

Large, enterprise-level businesses have been investing in inventory optimization software for many years to improve their service delivery and bottom line. Now with EazyStock, SMBs can also take advantage of the same technology.
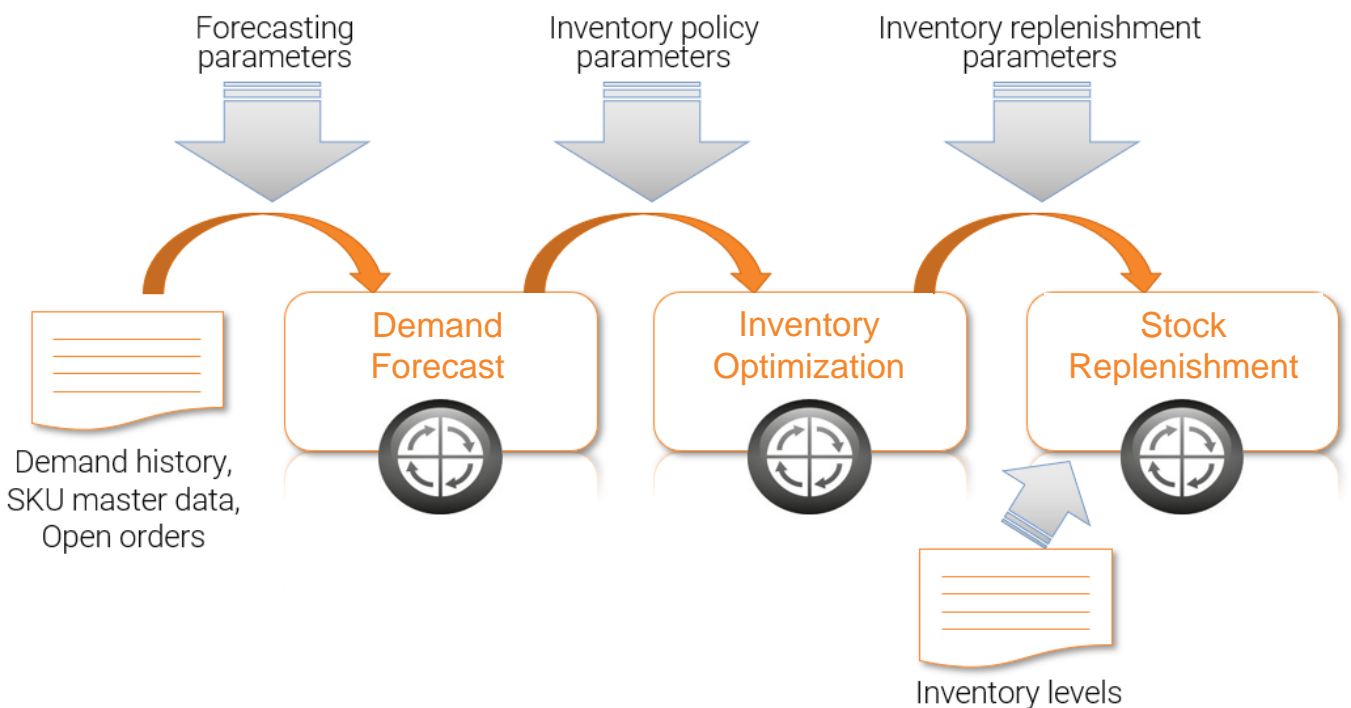
EazyStock is an ERP add-on, designed specifically to provide SMBs with inventory optimization capabilities. It's a cloud-based system, so it's easy to implement and offers a fast ROI. We deliver EazyStock using a 'software as a service' (SaaS) commercial model, meaning it's a low-risk financial option with little upfront capital investment.

Interested? Read this white paper to find out more about inventory optimization software, the value it can add to your business and how easy it is to implement.

The Key Features of EazyStock

This diagram illustrates the three main processes carried out by EazyStock and the inputs needed to get up and running and ready to optimize your inventory.

Forecasting parameters

Inventory policy parameters

Inventory replenishment parameters

Demand Forecast

Inventory Optimization

Stock Replenishment

Demand history, SKU master data, Open orders

Inventory levels

Let's look at each in more detail:

1. The data upload

The transfer of data from your ERP (or other business systems) to EazyStock is done via a simple FTP connection. Raw data is exported into EazyStock, where the optimization calculations take place, and then the data is simply fed back to your ERP for purchasing activity to begin.

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2. Demand forecasting and forecasting parameters

When EazyStock is initially set up, forecasting parameters are fine-tuned to account for the demand variables of your business and its marketplace. EazyStock then calculates future demand forecasts while also taking into consideration:

Seasonality

By reviewing historical sales data, seasonal patterns are identified so forecasts can be adjusted accordingly. This helps prevent shortages during your peak seasons and expensive surpluses as demand tails off.

Trends

EazyStock calculates trends for each SKU and, when deemed significant, adjusts demand calculations to ensure forecast accuracy.

Promotions

Special offers, discounts and long-term price drops all impact the overall demand for your products. These qualitative factors can easily be manually added to the forecast.

Forecast Sensitivity

Some marketplaces are more dynamic than others. EazyStock can, therefore, be configured to weight forecasts on more recent demand data (for industries that are fast moving) or to consider longer historical demand periods (for industries where trends change more slowly).

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An item's product lifecycle and consequential demand type

Every product has a lifecycle, and its demand will be different at each stage. For example, when a product is first introduced to the market it's demand will likely follow a positive trend as sales increase, until it hits maturity, as sales and demand stabilize. From there, demand might get more erratic and then move into a negative trend before becoming a dying and then obsolete product.
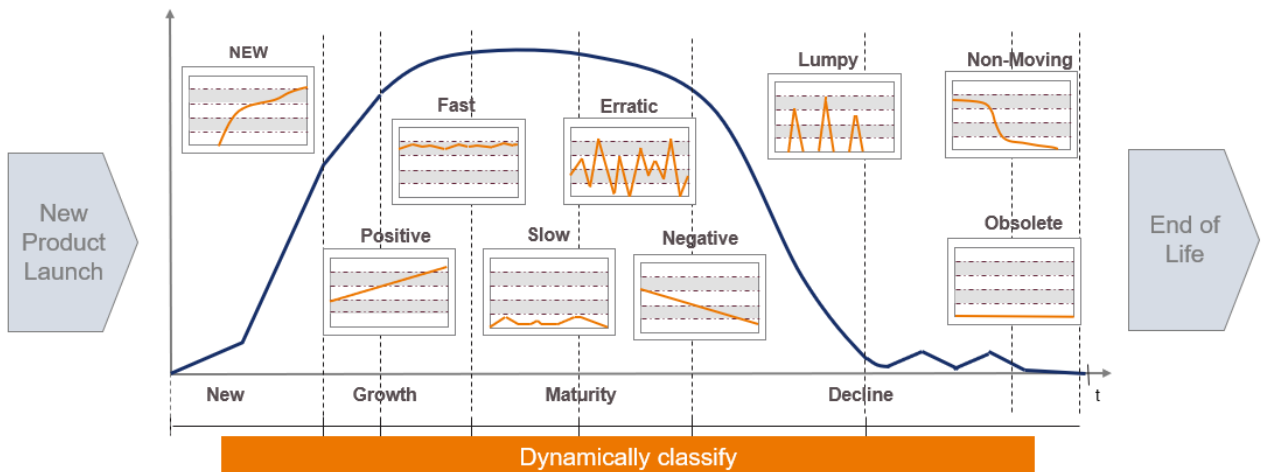

Diagram: Product lifecycle and EazyStock demand types

EazyStock constantly tracks an item's position along the product lifecycle and then assigns the relevant 'demand type.' Demand types are important as they dictate the type of statistical algorithm that EazyStock uses for forecasting. For example, a different algorithm is used to forecast demand for a product with 'lumpy demand' (with a high deviation from its mean average demand) to a product with 'fast demand' (with very little deviation).

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As products move along their lifecycle, the system will update the demand types and the corresponding algorithms in order to keep forecasting as accurate as possible.

In summary, by taking such a wide range of demand variables into account, EazyStock produces more accurate forecasts than the simple, moving average calculations, often used by ERPs and WMS.

3. Inventory optimization and inventory policies

With the forecasting machine up and running, EazyStock then moves on to recommend the optimum quantities of each SKU that should be stocked in your warehouse.

A traditional way of calculating stocking policies (often used by ERPs and WMS) is to use a simple ABC analysis model. This is where items are classified based on their value to the business, so 'A' items that make the most money are stocked in higher volumes than lesser-performing 'B' and 'C' goods.

With inventory optimization software, stock classification is much more advanced. EazyStock bases stocking policies on a number of key criteria:

The Value of Annual Usage (VAU) of each SKU - this takes into account sales volume as well the unit cost of the product.

How often each SKU gets picked - this distinguishes high volume products with many requests (1000 requests for 1 unit) from high volume products with low requests (2 requests for 500 units).

The demand volatility of each SKU – EazyStock automatically segments items based on their demand volatility behavior and, therefore, how easy their demand is to forecast.

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The result is the ability to create a number of inventory policy matrixes, each based on a different demand type. With 81 varying stock / no-stock rules in each matrix, they provide a much deeper level of detail, allowing businesses to make much more informed stocking decisions than if they were using a simple ABC analysis framework.

Picks class		A1	A2	A3	A4	B1	B2	B3	C1	C2	Sum of picks
						VAU class					
P0	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	0
P1	1	☐	☐	☐	☐	☐	☐	☐	☐	☐	365
P2	2	☐	☐	☐	☐	✓	✓	✓	✓	✓	348
P3	3	✓	✓	✓	✓	✓	✓	✓	✓	✓	333
P4	4	✓	✓	✓	✓	✓	✓	✓	✓	✓	320
P5	5	✓	✓	✓	✓	✓	✓	✓	✓	✓	563
P6	7	✓	✓	✓	✓	✓	✓	✓	✓	✓	755
P7	11	✓	✓	✓	✓	✓	✓	✓	✓	✓	1,923
P8	25	✓	✓	✓	✓	✓	✓	✓	✓	✓	4,522
Sum of picks		331	1,202	1,211	1,833	677	661	928	444	1,842	9,129

Diagram: Example of an inventory policy matrix

During the set-up phase of EazyStock, the team will work closely with you to decide on stock/no stock items and fine tune the inventory policy matrixes, based on the unique characteristics of your product portfolio.

For example, most companies would aim to reduce their stock levels of items with high VAU and low pick frequencies in order to reduce the risk of building up excess stock of high-cost SKUs.

The next stage is for EazyStock to calculate a target service level matrix, similar to the one on the following page.

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As you can see, for every inventory segment, EazyStock calculates a recommended target service level (as a percentage). Service level is another term for 'product availability' and is the probability of not getting a stockout.

Picks class		DG	A1	A2	A3	A4	B1	B2	B3	C1	C2
P0	0	N	94.00%	95.00%	96.00%	96.50%	97.00%	97.50%	98.00%	98.50%	99.00% ⓘ
		L	70.00%	70.00%	70.00%	70.00%	70.00%	70.00%	70.00%	70.00%	70.00%
		S	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00% ⓘ
P1	1	N	94.00%	95.00%	96.00%	96.50%	97.00%	97.50%	97.10%	80.00%	99.45% ⓘ
		L	70.00%	70.00%	70.00% ⓘ	70.00% ⓘ	70.00% ⓘ	70.00%	70.00%	70.00% ⓘ	98.40% ⓘ
		S	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	99.25% ⓘ	99.80% ⓘ
P2	3	N	94.00%	95.00%	96.00%	96.50%	97.00%	97.30%	97.00%	97.40%	99.40% ⓘ
		L	70.00%	70.00%	.00%	60.00%	60.00%	70.00%	93.00%	95.00% ⓘ	99.00% ⓘ
		S	90.00%	90.00%	90.00%	90.00%	90.00% ⓘ	97.50% ⓘ	99.25% ⓘ	99.95% ⓘ	
P3	5	N	94.00%	82.50% ⓘ	9	96.50%	97.00%	91.00%	97.20%	99.10%	99.65% ⓘ
		L	70.00%	70.00%	7	70.00%	70.00%	82.50% ⓘ	93.50% ⓘ	97.50% ⓘ	99.60% ⓘ
		S	90.00%	90.00%	90.00%	90.00%	90.00%	95.00% ⓘ	98.80% ⓘ	99.75% ⓘ	99.95% ⓘ
P4	7	N	94.00% ⓘ	95.00%	91.00% ⓘ						
		L	60.00% ⓘ	70.00%	70.00%						
		S	90.00%	90.00%	90.00%						
P5	10	N	92.50% ⓘ	95.00%	96.00% ⓘ						
		L	70.00%	70.00%	70.00%						
		S	90.00%	90.00%	90.00%						
P6	15	N	95.00% ⓘ	97.40%	98.50%						
		L	70.00%	70.00%	70.00%						
		S	90.00% ⓘ	90.00%	90.00%						
P7	24	N	97.80% ⓘ	99.45%	99.75% ⓘ						
		L	70.00%	70.00%	70.00%						
		S	99.90%	90.00%	90.00%						
P8	47	N	99.90% ⓘ	99.90% ⓘ	99.96% ⓘ						
		L	70.00%	70.00%	70.00%						
		S	90.00%	90.00%	90.00%						

Picks class		DG	A1	A2
P0	0	N	94.00%	95.00%
		L	70.00%	70.00%
		S	90.00%	90.00%
P1	1	N	94.00%	95.00%
		L	70.00%	70.00%
		S	90.00%	90.00%

Diagram: Example of a target service level matrix

Service level is an important fulfillment Key Performance Indicator (KPI) that shows how well demand is being fulfilled.

Typically, EazyStock sets higher service level targets for products that are picked more frequently and have a lower VAU. But the team will help you find a balance between the capital you have to invest in stock versus your fulfillment targets.

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4. Stock replenishment and inventory replenishment parameters

During implementation, EazyStock's replenishment parameters are configured to reflect the demand dynamics of the market in which you operate, accounting for variables such as seasonality, speed of innovation and demand volatility.

With replenishment parameters set for each SKU, these are combined with the inventory policies and target service levels, and altogether they determine the algorithms that EazyStock uses in its replenishment calculations.

Here lies another key difference between traditional ERP/WMS systems and EazyStock. While the former will often use rules-based methodology to calculate replenishment, EazyStock turns to statistical algorithms that take into consideration supply and demand variables.

Let's look at some examples of EazyStock's replenishment functionality:

Safety stock levels

This is the stock used to cover any uncertainty in demand and supply during your lead time (once cycle stock has been used up). Many ERPs use a rules-based approach to calculate cycle and safety stock. For example, they hold a certain number of weeks cycle stock based on historical average demand and then add a few more weeks of safety stock, just in case.

In comparison, EazyStock uses statistical algorithms to consider important factors such as service level, forecast accuracy and lead time variability. Since each SKU in your inventory has a unique demand pattern, it will adjust safety stock levels accordingly.

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Reorder alerts

Most businesses (and ERP/WMS systems) will reorder either when they hit a fixed date or when stock drops to a specified level. Both methods fail to consider demand and supply variations.

In order to do so, EazyStock factors in demand forecasts (so ordering mirrors customer demand), safety stock levels (so stockouts can be avoided) and supplier lead times (so supplier holidays or busy periods are covered).

Recommended order quantities

The three traditional ways to set reorder quantities are either by ordering a regular fixed amount, varying the amount to hit a min/max capacity or using the Economic Order Quantity calculation. But again, the calculations are one-dimensional and do not reflect supply and demand dynamics.

Instead EazyStock automatically generates daily order proposals that consider demand forecasts, inventory policies, safety stock, current stock levels, reserved stock, goods-in-transit and back-orders.

In addition, they also account for any contractual constraints imposed by the supplier, such as maximum and minimum order quantities, so the optimal order quantity is always suggested.

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With all the above replenishment calculations set up, ultimately EazyStock provides a list of items and quantities to reorder. You can then decide whether to review the orders (which you may do for high priority, slow moving items) or simply automate the ordering process (which you may do for faster moving, low value items where the risk of excess stock is low). The orders can then be imported back into your ERP system for processing.

EazyStock will continuously analyze your stock to ensure each SKU falls into the correct demand type (based on its behavior) and the appropriate area of the inventory policy matrix so it's subject to the correct inventory policy and replenishment parameters.

Benefits of EazyStock

We've covered the fundamental functionality of EazyStock so now let's look at some of its key benefits.

At a strategic level EazyStock can help businesses make more informed inventory management decisions.

While some businesses may be looking to increase stock turnover and free up capital associated with high stock levels, others may want to reduce their number of stockouts and improve their service levels. But, in many cases, management is looking for a balance between the two.
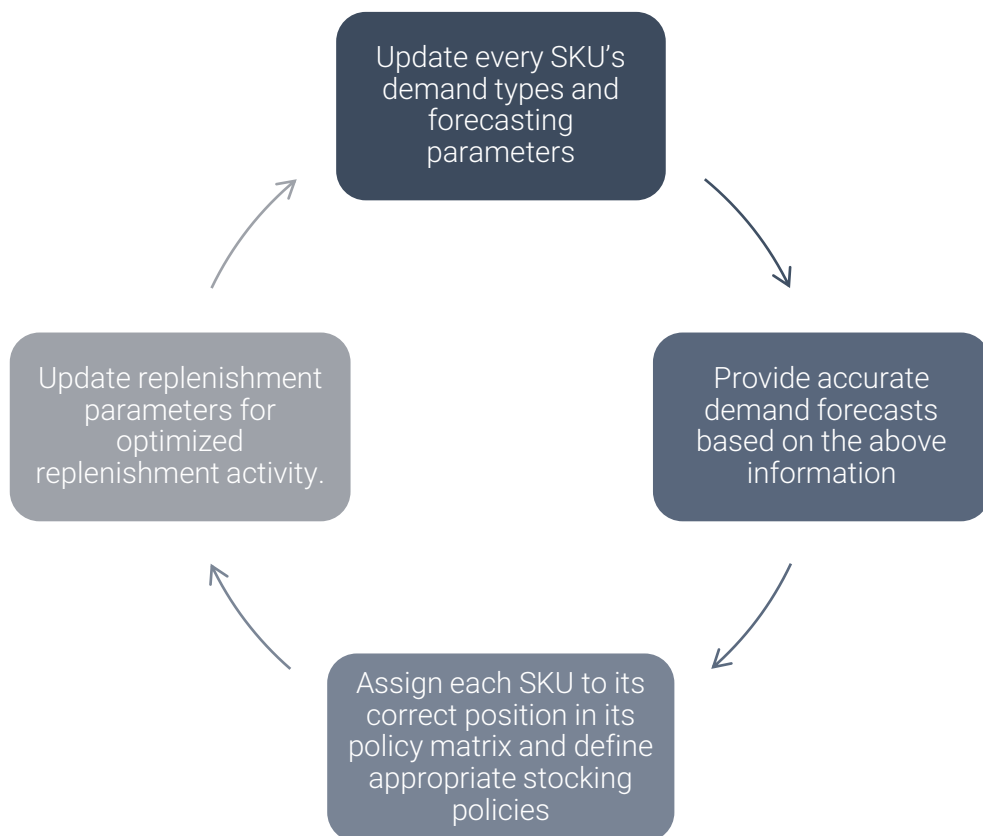
EazyStock allows users to test out their optimization strategies, helping them understand the trade-off implications between further lowering or increasing inventory levels and the consequential effect on product availability and investment.

Whatever strategy you choose, EazyStock provides the insight and tools to optimize your stock to meet your objectives. With your inventory policies in place and service levels set, you'll have a strategy that then feeds down into day-to-day replenishment activities.

At a more tactical level, a key benefit of inventory optimization software is its ability to react to dynamic supply and demand variables.

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With a constant feed of sales data, current inventory levels and supplier information, EazyStock continually churns the numbers to:

```
Update every SKU's
demand types and
forecasting
parameters

Provide accurate
demand forecasts
based on the above
information

Assign each SKU to its
correct position in its
policy matrix and define
appropriate stocking
policies

Update replenishment
parameters for
optimized
replenishment activity.
```

This is a perpetual process so that your replenishment calculation engine (often in your ERP) receives optimized inputs that are always reacting to changing market dynamics.

The result is that the day to day running of your business is more efficient with reordering that meets the market's needs and prevents over-stocking. Inventory management teams no longer have to spend time 'fire-fighting' when goods go out of stock and costly backorders are a thing of the past. Instead employees have more time to focus on value-adding tasks.

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EazyStock as an ERP add-on

It's clear that EazyStock can enhance the inventory management capabilities of most ERP and WMS systems. But is it really that easy to get up and running?

Rapid implementation

The introduction of add-on software, such as EazyStock, should not disrupt your current business processes. Unlike many business systems, EazyStock does not process transactions which is a key reason for slowing down implementation projects. Instead, EazyStock takes the data from your existing ERP or business systems, establishes the optimal mix between inventory investment and service levels and passes the results back. Therefore the integration required is very quick to set up and EazyStock customers can be up and running within weeks of signing a contract.

Affordability

With the technical ability to connect via the cloud, you reduce operational costs and expenditure on hardware, software licenses and implementation services. In addition, the emergence of the Software-as-a-Service (SaaS) procurement model makes integrating EazyStock a low risk option with virtually no upfront capital investment.

Scalable and flexible

You can easily scale EazyStock up or down to meet the ever-changing demands of your business and ensure you get the most value from the application.

Easy user adoption and unrivalled support

EazyStock is a tool usually used by your stock control, inventory planning or purchasing teams. This means there's no epic training program needed for your entire workforce. EazyStock has a wealth of features, so our Customer Success Managers begin with the basics that add ROI from day one and then build up the functionality as users gain in confidence and ability.

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Delivering ROI

If your business finds it hard to meet its fulfillment targets, lower investment in inventory or prevent stockout scenarios, it's worthwhile investigating how EazyStock could help.

As an easy-to-implement ERP add-on, EazyStock will offer a wealth of additional functionality that will deliver ROI within months of implementation:

• By using advanced analysis and statistical algorithms to manage supply and demand variables, you'll consistently have optimal inventory levels to efficiently meet demand.

• In addition you'll be able to proactivity lower your stock levels, freeing-up capital and reducing excess stock and the risk of obsolescence.

• Finally, by automating your inventory planning and purchasing, you'll improve efficiency, free up your team's time for other valuable activities and have the tools to make more informed decisions

For a more detailed look at how EazyStock works, book a demo today.

Powerful Inventory Optimization
MADE SIMPLE

Book a free demo and learn how to optimize your inventory management!

info.eazystock.com/request-a-demo/

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