



Inventory Management

A Guide for
Entrepreneurs



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Why is inventory management important?

Most businesses need inventory to run smoothly. But it's a challenge to know how much to carry and where to put it. Holding too little can cost you time and sales; too much and you tie up your cash and floor space, and risk seeing inventory become obsolete, spoiled or damaged. Optimization allows you to find the right balance.

2

Assess the situation

Optimizing your inventory starts with evaluating the processes you are using now and measuring your current results. Once you have a clear picture of your situation, you can choose key performance indicators and targets. They will keep you on track to make improvements that will pay off in better cash flow and a more productive business.

3

Take action

Having understood your current state and where you want to go, you'll be ready to start optimizing your inventory management processes. This includes introducing rigorous classification and management systems. From there, you can monitor your performance while making constant improvements.

Why is inventory management important?

Finding the right balance

What to buy? How much to buy or produce?
Where to store it? These are the basic questions of inventory management and the answers can be simple or complex, depending on the characteristics and size of your business.

However, the goal of inventory management remains the same. You want to achieve satisfactory customer service levels while keeping inventory costs within reasonable limits. To do so, you must balance supply, demand and service.

What is inventory?

Inventory is any item or resource unit that is:

- deployed into the transformation process (raw materials)
- created in an intermediate stage (work in progress)
- output from the transformation process (finished goods)
- goods you may purchase and distribute (finished goods)

3 typical symptoms of poor inventory management

① Lack of control

A surprising number of businesses use antiquated, inefficient systems to purchase, track and replenish inventory. The result is costly errors, customer complaints, lost sales and cash flow problems.

② Misalignment among teams

Divergent inventory goals among internal teams can lead to damaging conflicts. For example, it's not unusual for the sales, purchasing and finance teams to all be working with different demand forecasts. This leads to poor customer services and higher costs for your business.

③ Lack of space

Poorly managed inventory can lead to disorganized storage areas and a lack of space. The consequences can be serious, including being forced to rent or buy additional space unnecessarily.

Why is inventory management important?

Mismanaged inventory creates costly waste

Your goal is to create a lean, efficient, profitable business and that means eliminating waste of all kinds throughout your organization. Mismanaged inventory is a key form of waste.

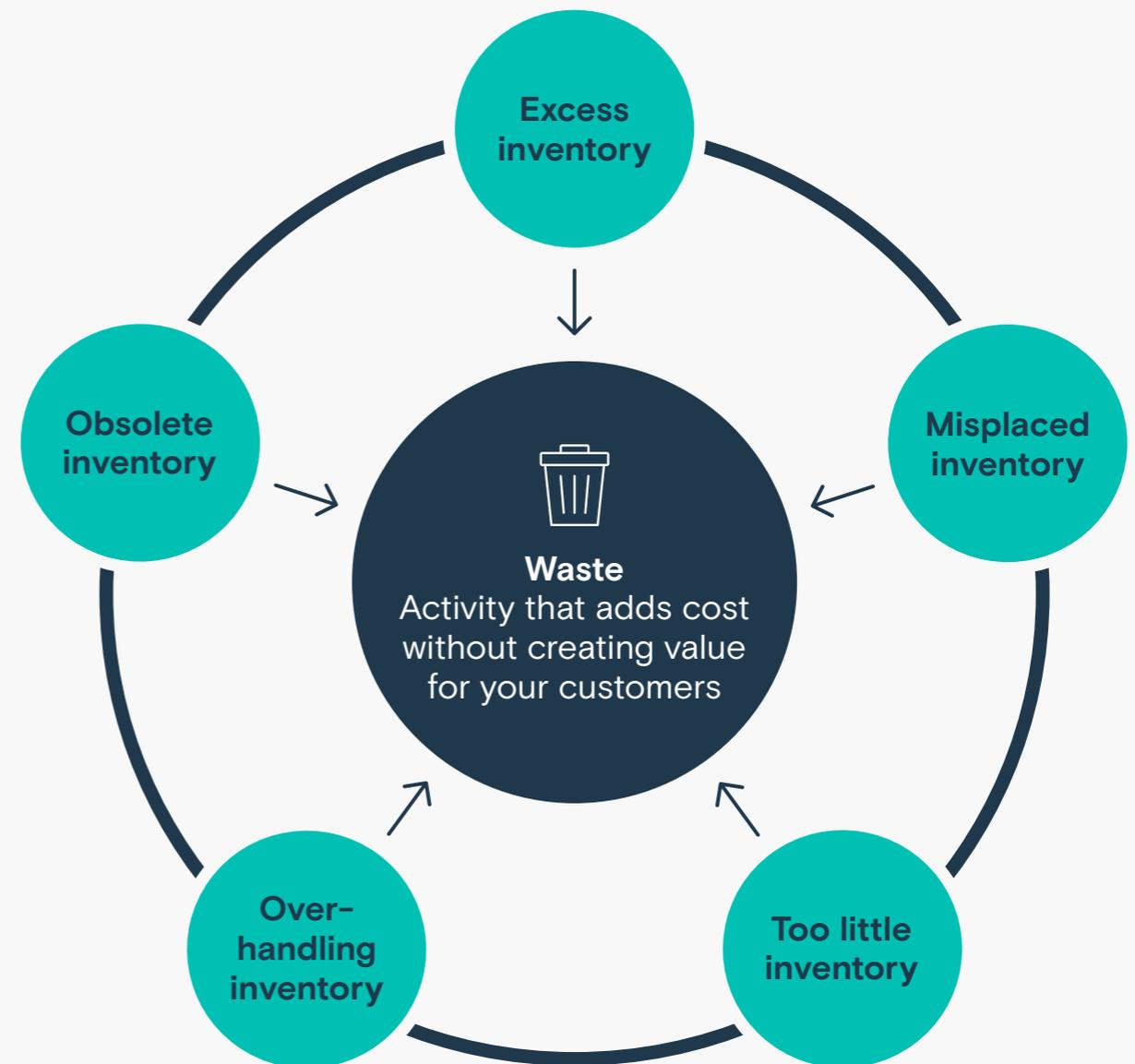
Excess and obsolete inventory takes up precious space and ties up your capital. As well, too much stock may be hiding other forms of waste, including excessive lead times, supplier issues or frequent production delays.

Other forms of inventory waste include running out of stock (stock outs), misplacing items and overhandling of inventory.



A source of financial risk

Inventory is accounted for as a current asset on your balance sheet. Unlike other assets such as cash or real estate, inventory depreciates over time. If not properly managed, this can create an important loss of value for your company as inventory becomes obsolete, spoiled, damaged or stolen.



Why is inventory management important?

The benefits of well-managed inventory



Match supply and demand

Good forecasting, healthy supplier relationships and rigorous purchasing and planning practices ensure you're buying and/or producing the correct amount of inventory to meet future customer demand. This capability is especially crucial for growing companies.



Boost cash flow

Inventory represents cash sitting on a shelf. Good inventory management allows you to reduce the amount of cash tied up in stock and minimize the danger of obsolescence or spoilage.



Increase productivity

Strong inventory processes and well-organized storage areas will save time and production lost to errors, unstocked and misplaced or stolen items. This will result in increased profitability for your organization.



Improve customer service

Fewer inventory errors and shortages means more reliable service, happier customers and a growing number of sales!

Assess the situation

What are your current inventory practices?



Five questions to help analyze your inventory management practices

- ① What do you currently have in inventory?**
How many stock keeping units (SKUs) do you have? In what quantity and how many days' worth do you have on hand? How long has it been in stock? What is its value?
- ② Who is responsible for inventory management?**
Is staff trained in inventory management best practices?
- ③ What processes and systems are you using to manage inventory for each category?**
Do you classify your inventory according to frequency of usage or sale?
- ④ Are you currently experiencing service issues?**
Are you able to meet customer demand rapidly and at the right cost?
- ⑤ How do you monitor your inventory management performance?**
Do you set objectives? Do you have key performance indicators (KPIs)? Is the total cost of ownership considered when purchasing discounted goods?

Assess the situation

Choose KPIs and targets

KPIs allow you to monitor your most important inventory management priorities.

They should be specific and measure different areas of focus: service level, inventory levels and inventory accuracy. We generally suggest tracking at least one KPI for each area of focus to balance the efforts.

For each KPI, set a target that is challenging but not impossible to achieve. Once you reach your targets, you can set new ones in a continuous cycle of improvement.

Common inventory management KPIs

Service level

Fill rate ratio measures the percentage of customer orders that were filled in a given period with inventory on hand without back orders, stockouts or lost sales.

Fill rate



Orders shipped in full

Customer orders placed

or

Service level ratio measures the percentage of orders that are fulfilled on time.

Service level



Demand fulfilled on time

Total demand

Common inventory management KPIs (continued)

Inventory levels

Inventory turnover ratio measures the number of times inventory has turned over (been sold and replaced) during a year.

$$\text{Inventory turnover} = \frac{\text{Cost of goods sold}}{\text{Average inventory}}$$

or

Days of inventory held measures your inventory management efficiency and is helpful in coordinating purchasing, production and sales teams.

$$\text{Days of inventory} = \frac{\text{Average value of inventory}}{\text{Cost of goods sold}} \times 365$$

Inventory accuracy

Inventory accuracy ratio measures the precision of your inventory data by comparing actual stock on the shelf to what is recorded in your database.

$$\text{Inventory accuracy} = \frac{\text{Actual inventory count}}{\text{Recorded inventory count}}$$

or

Warehouse space utilization ratio measures how efficiently you are using your warehouse capacity as well as the amount of space you have left for storage.

$$\text{Warehouse space utilization} = \frac{\text{Amount of space used}}{\text{Total available space}}$$

Create an inventory performance dashboard

Now that you've chosen KPIs and set targets, you're ready to create an inventory management dashboard. A dashboard allows your team to continuously track how you're doing compared to internal goals and initiate fact-based actions.

Example of a simple inventory dashboard

	Initial	Current	Target	Status*	Action required
Inventory level	\$2,000,000	\$1,800,000	\$1,600,000	●	<input type="checkbox"/>
Inventory turns	4.0	4.5	5.0	●	<input type="checkbox"/>
Fill rate ratio	85%	88%	97%	●	<input checked="" type="checkbox"/>
Inventory accuracy	90%	92%	98%	●	<input checked="" type="checkbox"/>
# of SKUS	10000	10200	9800	●	<input checked="" type="checkbox"/>
Obsolescence Value of inventory that hasn't moved in 2 years	\$100,000	\$50,000	\$25,000	●	<input type="checkbox"/>

*Based on deadline and progress



Avoid information overload

You don't want to track too many KPIs on your dashboard. Select the four or five that are most relevant for your business. When you have achieved your targets for those KPIs, you can move on to others. Collecting and recording too much data will overwhelm employees and lead to the dashboard not being used.

Take action

Identify gaps and look for quick wins

Once you have analyzed your current state, you can evaluate where there are gaps between what you are doing now and best practices. This will lay the foundation for an action plan, including quick-win projects that will deliver the best results in the shortest time.



Take action

Savings from inventory optimization

There are many, often hidden costs related to holding too much inventory. In this example, we see how these costs add up.

In our example, the business sells goods costing \$8 million a year ¹. The business was originally holding \$2 million of inventory ² at any one time, meaning that the business had four inventory turns ³ per year. By reducing its inventory levels by 20% ⁴ and adding one inventory turn per year ⁵, the business can protect its cash flow and reduce its financing costs. This free cash flow can then be invested elsewhere, for example in additional production capacity, resulting in major gains on opportunity costs. Storage, handling, obsolescence, loss and damage, and insurance costs are all similarly lowered, amounting to total savings

of \$100,000 a year ⁶. The percentages shown below are industry averages. Every business should take a look at their expenses to get a clear idea of their true holding costs.

What's more, this example only looks at holding costs and does not include ordering costs and shortage costs. In short, taking the time to optimize your inventory management is an investment that can very easily pay for itself.

Current inventory situation				Effect of inventory optimization	
Costs of goods sold	¹ \$8,000,000			Costs of goods sold	\$8,000,000
Inventory level	² \$2,000,000			Inventory level reduction of 20%	⁴ \$1,600,000
Inventory turns	³ 4			Inventory turns	⁵ 5
	Holding costs	% of yearly cost (Market average)	Annual cost	Annual cost with inventory optimization	
Opportunity cost	5% to 15%	10%	\$200,000		\$160,000
Financing cost	1% to 5%	2.5%	\$50,000		\$40,000
Storage space cost	1% to 5%	2.5%	\$50,000		\$40,000
Handling cost	1% to 5%	2.5%	\$50,000		\$40,000
Obsolescence cost	1% to 5%	2.5%	\$50,000		\$40,000
Loss and damages	1% to 10%	2.5%	\$50,000		\$40,000
Insurance	1% to 5%	2.5%	\$50,000		\$40,000
Total	11% to 50%	25%	\$500,000		\$400,000
				Recurrent savings	⁶ \$100,000
				One-time savings	\$400,000

The ABC classification system

A simple way to get a clear picture of your inventory is to complete an ABC analysis. The system is based on the Pareto Principle, which dictates that about 20% of items will account for 80% of your company's usage. Use ABC analysis to decide how to improve your performance. The objectives for inventory turns and service level should be defined accordingly.

Category A items

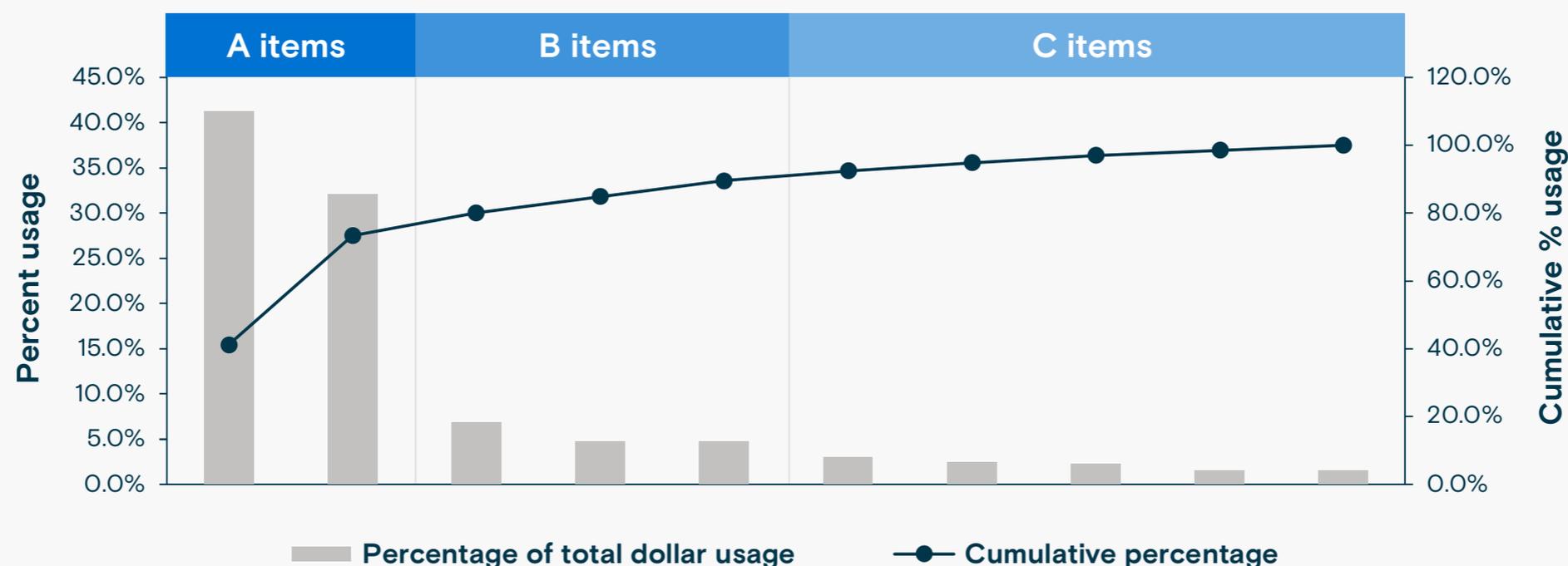
The 10-20% of items that represent 70-80% of annual usage. You can't afford to run out of these bread and butter items.

Category B items

The 30% of items that represent about 15-25% of annual usage. They are used less but still must still be kept in stock. Category B items should generally be priced with extra margin to ensure you have enough profit to cover the carrying costs.

Category C items

Low-volume items with high carrying costs. They will not make a large contribution to your bottom line but often represent 50% of the items in stock. Work to reduce this inventory.



Take action

Liquidate with a plan

Too often, companies are unwilling to dump excess or aged stock. This tends to clog up their storage space.

To start dealing with this problem, it's important to create an action plan, setting rules about what constitutes excess stock. For example, what is the maximum time an item can sit on the shelf before action is taken? Next, identify specific items for elimination, taking action first on the ones with the biggest gap between inventory amount and actual needs. Options include approaching suppliers to return items, offering sales reps incentives to sell them, liquidation, part interchange, donation or disposal.



Take action

Maintain disciplined control over inventory



Appoint someone to manage inventory

Especially in smaller companies, purchasing and inventory decisions are often left to employees who have other responsibilities and no formal inventory training. It's critical to assign a qualified person to be responsible for inventory. Besides day-to-day management, this person should also lead continuous improvement efforts.



Plan inventory levels

Purchasing inventory should take into account historical sales data and forecasts, supplier lead time, financial considerations, total cost of ownership and production or distribution requirements. Therefore, communication and coordination between teams is essential. Team leaders should meet regularly to discuss and revise inventory plans.



Introduce an inventory system

A simple way to manage inventory levels is by setting maximum and minimum numbers of items you need, then reorder accordingly. For example, you may set a maximum of 10 items and minimum of two, then reorder when you hit three because you have lead time of a week. Ideally, your system will be dynamic with reordering parameters for each item, based on sales volume, lead time and safety stock levels.



Maintain good tracking and a well-organized warehouse

Good inventory management relies on a high level of inventory accuracy. This means instituting reliable systems for labelling and tagging items as well as recording how much inventory you have, where items are located and when you received, picked and used them. Your warehouse needs to be well-organized with a naming system to identify locations, reserving best access for your "A" items.

Boost your efficiency with technology

① Tracking inventory

Inventory management software will track items through purchasing, receiving, production processes and sales. Warehouse management systems are a related technology that will track all inventory transactions related to inventory from receiving, picking to shipping. These technologies will let you know what you have in stock, what's been sold or committed to production, and what's been ordered. It also integrates with other systems, including accounting and point-of-sale software, to provide real-time visibility to sales, production and finance teams.

② Ensuring accuracy

Electronic data interchange (EDI) along with bar codes, near field communication (NFC) or radio-frequency identification (RFID) scanning will eliminate data entry errors during receiving and order fulfillment and help you maintain an organized warehouse.

③ Planning purchases

Digital inventory systems can make buying suggestions based on inventory on hand, preset minimum and maximum levels, orders that have already been placed and anticipated customer demand. For larger businesses, sales and operations planning software helps orchestrate a company's diverse operations, including inventory management. Note that in a production environment, a manufacturing resource planning (MRP) system is often used to plan inventory needs and set inventory levels.

④ Monitor supplier relationships

You can use software to track interactions with suppliers, including proposals, contracts, pricing and performance. Good monitoring allows you to identify the best suppliers provide performance feedback and ask for volume discounts, among other benefits. You may even be able to integrate your system with those of suppliers and your best customers to automate procurement and sales processes.



Data quality is key

Your technology systems are only as good as the parameters you set and the data entered into them. As summed up in the saying “garbage in, garbage out,” the quality of your system's outputs will be determined by the quality of the inputs.

Remember the human element

People are used to doing things in certain ways and change is never easy. That's why communication, training and a planned, deliberate approach to making improvements are prerequisites for winning the buy-in and participation of employees.

Put the emphasis on training

High-quality training is a must for ensuring employees cope well with change and make a smooth transition. Courses on inventory management are available in most regions, and formal learning opportunities should be accompanied by on-the-job training through mentoring and job shadowing.

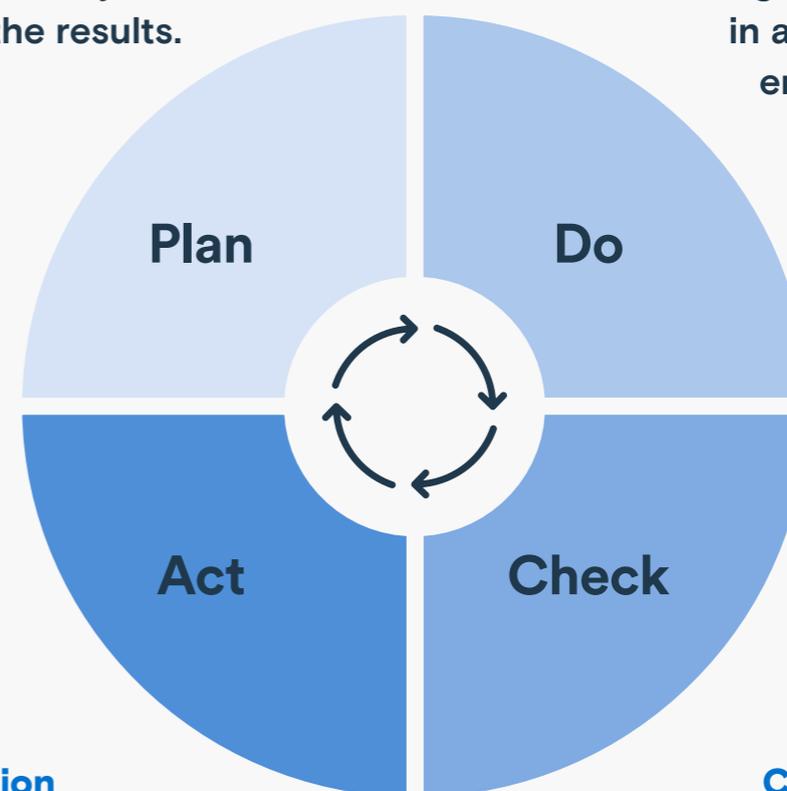
Besides offering training, it's important to involve employees in implementing change, including when selecting systems and introducing new procedures. Leaders should clearly communicate the benefits of change and seek feedback from employees.

Start with pilot projects

Optimizing inventory management can be complex, so it's often a good idea to do pilot projects before rolling changes out to the whole company. Pilots allow you to test new methods and systems on a small scale to evaluate performance, iron out bugs and accumulate knowledge with lower risk. A good way to manage your pilot projects is through the plan, do, check, act method.

Plan ahead of the change and try to predict the results.

Execute the plan, taking small steps in a controlled environment.



Take action to standardize or improve the process.

Collect data, comparing to expected results.

Conclusion

Cost-savings and productivity gains

Inventory is a critical assets in a business. Yet, it's often poorly managed with damaging consequences for cash flow, productivity, customer satisfaction and sales. Optimizing your inventory management may not be glamorous, but it can lead to remarkable gains for your company.

It starts with taking a close look at how you are doing things now and measuring your results. Once you've identified where there are gaps between what you are doing and best practices, you can get ready to make improvements. Choose KPIs, set targets, make an action plan and create a dashboard to monitor your progress. Then, you can get going on improvements by reviewing your processes, introducing inventory management systems, training your people and using a dashboard to track your progress. The main objective is to find the right inventory level for the service required for your organization.

When your teams see things getting better, they will be inspired to take it further. You will be able to set more aggressive targets and achieve them. It's a virtuous cycle of continuous improvement and it works, but you have to take that first step.





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