How much stock is needed?

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A company needs stock on hand to produce goods and offer customers a reliable service. But the more stock it has, the more it has to pay.

Good inventory management should satisfy customer needs in terms of product availability and response time, while always focusing on minimizing costs. While this may sound easy, it's actually a very difficult challenge for many companies.

In the face of this challenge, IESE professors Alejandro Lago, Philip G. Moscoso and Marc Sachon offer recommendations for managers to find the best model for handling their company's inventory.

They also debunk some common myths about stock management.

The basics of stock management

To optimize inventory level, companies must ask themselves three basic questions.

1. *What is it good for?* Stock can be necessary for different reasons, including covering demand uncertainty with backup stocks, reducing transport costs by producing in lots, or addressing seasonal spikes in demand. For instance, in the toy or confectionary industry, companies produce all year round so as to concentrate their sales at Christmas time.

2. *To what extent is inventory necessary*? How much stock a company needs depends primarily on its competitive strategy. It must choose whether to adopt a made-to-order strategy (i.e., without stock) or to have stock on hand as a general rule.

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In the first case, production starts when a client has confirmed an order. Stock must be delivered, which can take time, but there is no need for backup stock.

Working the other way means having the product on hand for when the client wants it. As such, having an inventory of finished products is essential. But there is wiggle room for deciding between backup inventory and how much of a given product is purchased at any given time.

3. *Where does cost come in?* Having too much stock on hand can significantly hurt a company's bottom line. But having too little can lead to missed sales or lower efficiency as production costs escalate. Therefore, it makes sense to measure how much return a company gets from the way it handles its inventory.

A range of options

There is a wide range of models for managing inventory. As a general rule, the authors recommend making decisions and pursuing strategies that lend lasting stability to their stock policy.

They also highlight two fundamental issues that need addressing.

First, companies must find an appropriate balance in lot size: increasing it can yield production discounts and savings in transport, while reducing it allows for savings in financing and management.

Second, managers must decide what minimum level of stock to aim for so as to ensure that new orders are swiftly replenished. The greater the level of backup stock there is, the less risk the company faces. But the price it pays for this is rising costs.

An inventory management model should indicate for each stock reference the size of the lot, the level of backup stock and when an order should be placed. The way these three factors come together will determine a company's inventory policy.

If the product has a long life cycle, the review policy can be either continuous or periodical.

The former is recommended for high-value or high-volume products and requires continual monitoring of the status of each product.

A periodic review, meanwhile, is ideal for low-value or low-volume items, and involves automatically placing orders at regular intervals so as to ensure that levels of available

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backup stock are always sufficient at the outset of each cycle.

For products with a short life cycle and long resupply periods (e.g., clothes, magazines, etc.), companies tend to make an initial order for each item, as reordering is often not an option.

In such a model, a company must identify the total inventory at the beginning of each period — in other words, the size of the lot plus the available backup stock. The key is to avoid both a glut, which forces the company to underprice, and a shortage, which sends customers away empty-handed.

Key questions, useful tools

To measure their inventory management and its costs, managers should ask themselves: How much inventory do we have and why? Are the stock management criteria unified? What department manages it? What tools does the company use to achieve improvements in all these areas?

The authors also highlight a series of tools that can be used to improve stock management.

- *Lot Size.* To reduce its lot size, a company can adjust the costs and time frames for preparing a lot change. To do this, it must review the tasks and the tools used. Companies can also seek alternatives that take advantage of economies of scale in transport, such as cutting deals to consolidate shipments with other manufacturers.
- *Variability of Demand.* Addressing this factor allows companies to trim backup stocks. It is possible to ease uncertainty by working with customers and suppliers, centralizing stock and forecasts, and adjusting the number of references.
- *Delivery Times*. The longer the delivery time, the more backup stock is needed. In light of this, enhancing collaboration with suppliers and clients, and using faster means of transport when demand uncertainty is high, can significantly reduce costs.
- *Level of Service.* This can by exaggerated by overzealous sales or operations departments, but it must be adjusted to meet the real needs of the company.

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