

# Stock 4.0: **Intelligent optimisation for stock management in SMEs**



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## 1. Introduction

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In an increasingly connected and technologically advanced world, **stock management** has become a **crucial factor for the success and efficiency of any company**. Maintaining accurate and timely inventory control is essential to ensure product availability and minimize operating costs.

Stock management is a **fundamental process** for any company that handles physical products, whether they are manufacturers, distributors or retailers. Simplifying it, it could be said that it consists of monitoring and **controlling the available inventory**, ensuring adequate supply to meet market demand and, at the same time, reducing the costs of the SME.

There are different types of stocks that we could classify as follows: [REF-01]

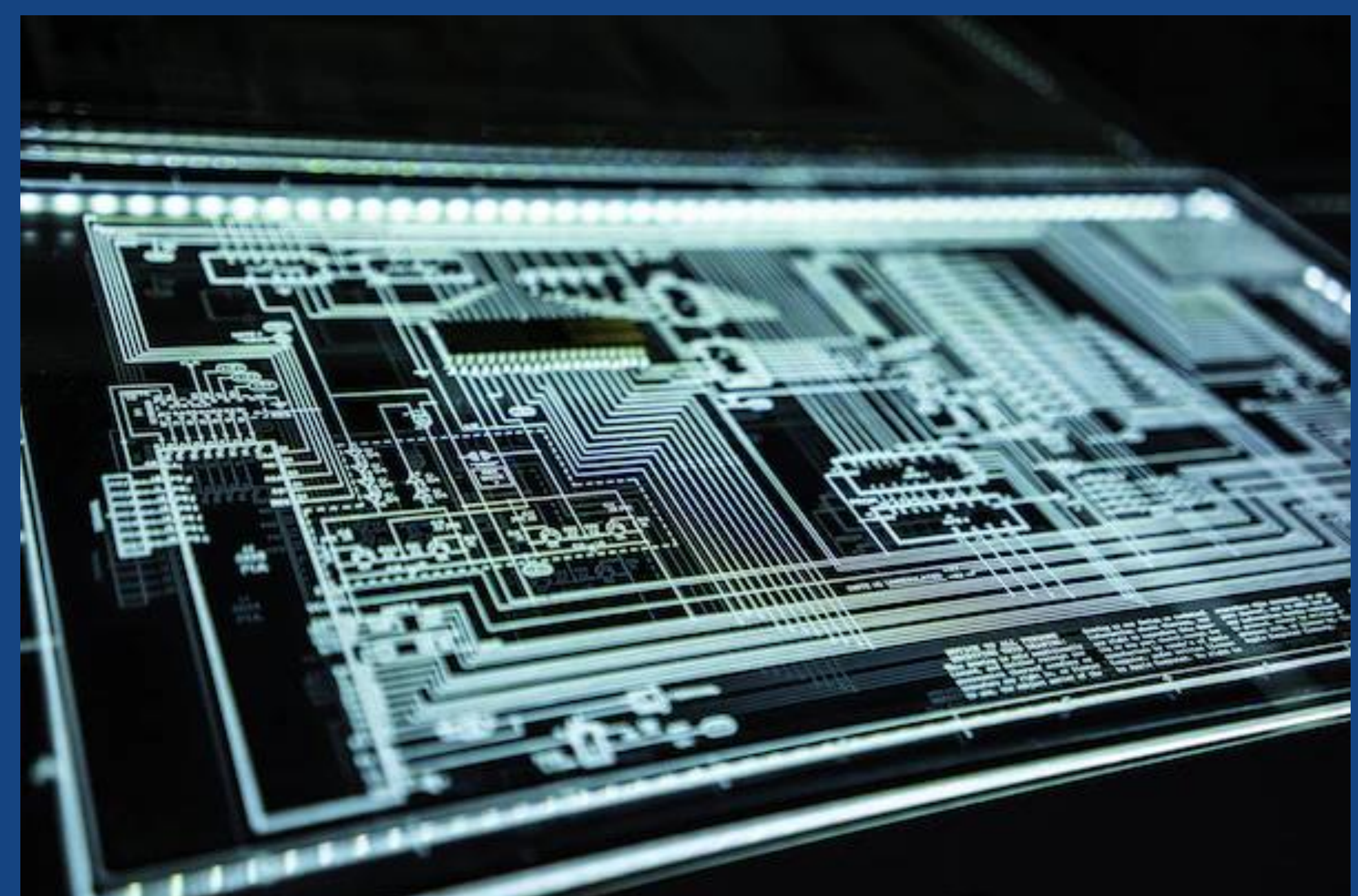
- The **stock of raw material** is composed of the materials necessary for the production of goods or services of the company.
- **In-process stock** refers to products that are in various stages of production, from inception to completion.
- The **stock of finished products** includes goods that are ready for sale or distribution.

Traditionally, this management **involved manual procedures** and spreadsheets, which entailed **risks of errors** and difficulties in decision-making [REF-02]. However, currently, stock management is experiencing a significant evolution thanks to the use of advanced technologies that have transformed this process [REF-03].



This shift towards digitalization is essential to stay competitive today. The director of the Business Applications business unit of Microsoft Spain said that companies that have managed to digitize their management chain have managed to increase revenue performance by 54%, cut by 44% the time needed to put new products on the market and increase customer satisfaction by 62% [REF-04].

In this document we will talk about stock management: what it is, how to digitise it, the benefits it entails and some case studies of SMEs that have successfully managed to digitise their stock management. In addition, different tools will be proposed that can be of great help to SMEs.



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## 2. What is digitisation in stock management?

Digitalization in stock management involves the **use of information and communication technologies (ICT)** to automate, integrate and optimize all phases of the inventory cycle. Stock management involves receiving products, storing, tracking and delivering them to the customer. The **implementation of digital systems and solutions** has proven to have a **significant impact on efficiency and strategic decision-making**. [REF-05]

One of the fundamental pillars of digitalization in stock management is the **use of inventory management software integrated into ERP** (Enterprise Resource Planning) systems. These ERP solutions offer a unified platform that covers all areas of a company, including stock management, facilitating a complete view of the operation.

The use of ERP technologies in stock management allows for more efficient coordination between different departments, such as purchasing, sales, logistics and finance. **ERP systems** provide real-time data, enabling **informed and strategic decisions to optimize inventory level and avoid both excess and shortages of products**. According to the SME 2022 report, 53.1% of Spanish companies already use this technology. [REF-06]

The integration of technologies such as the **Internet of Things (IoT) and Artificial Intelligence (AI)** has also revolutionized stock management. Thanks to sensors and connected devices, companies can monitor their inventories in real time and adjust stock to real needs, avoiding stock-outs or surplus stock.

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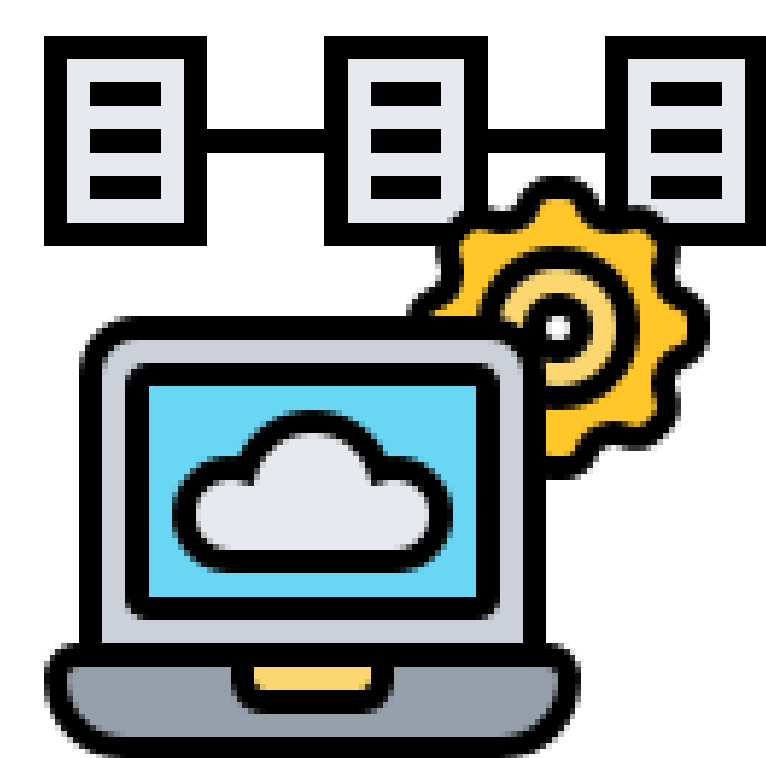
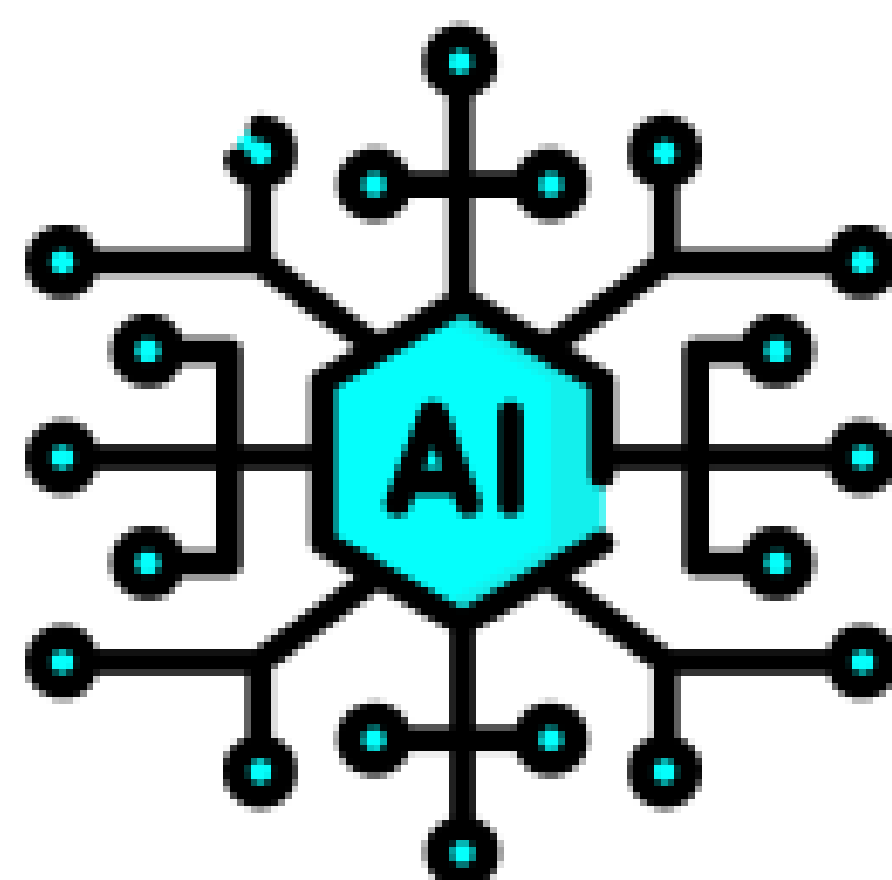


**AI** has also enabled the development of predictive algorithms that analyze historical data and demand patterns to make accurate forecasts, facilitating **better planning and better decision-making**. [REF-07]

Another relevant aspect is the implementation of cloud-based inventory management systems. These online solutions offer real-time visibility into inventory and are accessible from any device with an internet connection. This allows companies to monitor their stock levels continuously, receive automatic updates and optimize their operations proactively. [REF-08]

Stock management in the digital age represents a significant transformation for companies looking to improve their efficiency and competitiveness. Digitalization has brought several benefits:

- **Process automation:** Thanks to digitalization, manual inventory recording processes have been replaced by automated systems that automatically update stock levels.
- **Optimization of operations:** The use of track and trace technologies (RFID) in the transport of products has allowed efficient resources, reducing shipping costs and shortening delivery times.
- **Decision making based on real-time data:** By tracking real-time sales and inventory levels, companies can make agile decisions to promote products with excess stock or replenish those that are out of stock.



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## 3. Advantages of digitisation in stock management

Digitalization in stock management offers a wide range of advantages that allow SMEs to improve their efficiency by increasing their competitiveness in today's market. By adopting these technologies, companies can experience major changes in the way they manage their inventories. Next, we will highlight the most outstanding benefits of digitalization in stock management: [REF-09]

- 1. Increased accuracy and visibility:** Digitized stock management systems provide around-the-clock control of inventory, allowing businesses to have accurate visibility into stock. This helps reduce errors, minimize losses and improve informed decision making.
- 2. Inventory optimization:** Digitization allows for in-depth data analysis, making it easier to identify demand patterns and market trends. With this information, companies can adjust their inventory levels more precisely, avoiding surpluses or stock-outs and reducing associated costs.
- 3. Agility in decision making:** An adequate monitoring and analysis of inventory data provides valuable information for strategic decision making (dashboards). Monitoring demand trends, identifying underperforming products and evaluating suppliers are some examples of how inventory management can support decision making.



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- 4.** **Improved operational efficiency:** Efficient stock management contributes to optimizing operational processes in the company. It enables more accurate production planning and scheduling, facilitates supply chain management, and improves the ability to respond quickly to changes in demand.
  - 5.** **Reduction of costs and waste:** Efficient stock management minimizes the costs associated with inventory. Avoiding overstocks helps reduce storage and spoilage costs. On the other hand, having enough stock on hand avoids additional costs related to production delays or lost sales due to lack of products.
  - 6.** **Increased customer satisfaction:** By having accurate and up-to-date inventory information, companies can meet deadlines and meet customer expectations, thereby improving the customer experience and fostering loyalty.
  - 7.** **Balanced cash flow:** Maintaining a proper balance between capital invested in inventory and the ability to generate income is essential to maintaining a healthy cash flow. Optimal stock management helps minimize the need for external financing and allows financial resources to be used more efficiently.

In conclusion, digitalization in stock management provides numerous benefits that transform the way companies manage their inventories. From greater accuracy and visibility to agile and optimized decision making.



## 4. How to digitise stock and improve stock management in an SME?

The digitalization of stock management is an essential strategy to improve the efficiency and competitiveness of an SME. In this context, several methods stand out for their efficiency in the control and optimization of resources. Below are distinct but complementary approaches that contribute to effective inventory management.

- **Just-in-Time (JIT) method:** The JIT method is based on receiving and producing products just in time, avoiding the storage of large inventories. It focuses on the precise synchronization of production and delivery processes.
- **Reorder Point Method (ROP):** The ROP method is based on setting a minimum inventory level at which an order must be placed to replenish it. When inventory reaches this point, a purchase order is issued.
- **Economic Order Quantity Method (EOQ):** The EOQ method is based on calculating the optimal purchase lot size that minimizes total inventory costs, considering inventory maintenance costs and ordering costs.



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In this sense, the adoption of advanced technologies allows **optimizing inventory control, minimizing costs and reducing errors**. Below, we present a guide for an SME to digitize its stock management and significantly improve its operation: **[REF-10]**

- 1. Assessment of needs and objectives:** It is essential that the SME carries out a detailed assessment of its needs and objectives. Identifying the areas of stock management that require improvement, knowing the turnover rate of each of your products or knowing those that are the best sellers is essential to select the right technologies and ensure a successful implementation.
- 2. Research of inventory management solutions:** Once the needs and objectives have been defined, it is necessary to search and compare the different solutions available in the market. There are different ERP systems and stock management software that adapt to the different needs of SMEs. Parameters such as scalability, ease of use, and cost of each option should be considered.
- 3. Selection and implementation of the appropriate solution:** After evaluating the available options, the solution that best fits the characteristics of each SME should be selected. It is important that the employees who will work with this system are involved when selecting the tool. Implementation should be gradual to ensure a smooth transition.

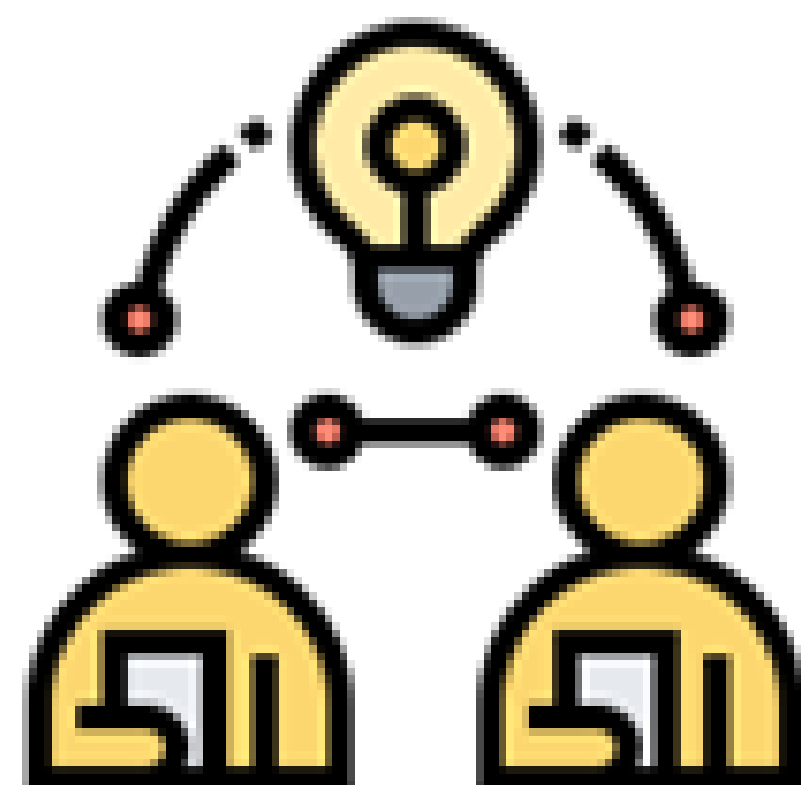


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- 4. Integration with other business systems:** For efficient stock management, it is important that the inventory management system integrates the other areas of the SME such as sales, purchasing and logistics. Synchronizing data between these systems facilitates coordination across departments and reduces duplication of effort.
- 5. Staff training:** Once the inventory management system is implemented, it is of utmost importance to train workers so that they can take full advantage of the functions of the selected tool.
- 6. Monitoring and continuous improvement:** It is important to establish controls and constantly monitor system performance by making adjustments if necessary.



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## 5. Performance indicators for stock management

The use of KPIs (Key Performance Indicators) in inventory management is fundamental due to their ability to provide an objective and accurate evaluation of a company's performance. By providing concrete and measurable data, they **enable managers to make informed and strategic decisions** to optimize efficiency, reduce costs and improve customer satisfaction. In addition, KPIs encourage **continuous monitoring and constant improvement** by setting clear and comparable objectives, which in turn contributes to a more agile and adaptive inventory management. Below are some of the most important indicators in this area:

**Inventory Turnover Level:** Shows the rate at which products are sold and replenished in inventory.

- **Inventory coverage:** Calculates the period of time that current inventory can meet demand without replenishment.
- **Inventory Accuracy Rate:** Evaluates the accuracy of inventory records compared to physical inventory.

**Total, of units in stock:** Shows the current quantity of products in inventory.

- **Inventory Value:** Calculates the total monetary value of the products in the inventory.



**Inventory breakdown:** Product categories: Shows the distribution of inventory according to different product categories.

- Units by SKU (Stock Keeping Unit): Provides a detailed breakdown of available units by SKU.
- Inventory alerts.

**Minimum stock reached:** Indicates products that have reached their reorder point or are below a critical level.

- Surplus stock: Identifies products with excess inventory, which can lead to unnecessary costs.
- Orders and receptions.

**Pending orders:** Shows orders placed to suppliers that have not yet been delivered.

- Recent Receipts: Records product receipts and corresponding dates.
- History of inventory movements.

**Daily or weekly sales:** Shows sales made during a specific period.

- Inventory inputs and outputs: Records product movements, such as purchases, returns, or inventory adjustments.
- Trends and forecasts.

**Demand analysis:** Provides information on historical trends in product demand.

- Demand forecasts: Provides future estimates of demand based on analysis and statistical models.



## 6. Use cases for SMEs and freelancers

Below are three use cases applicable to SMEs and freelancers who have successfully digitized their stock management:

### COMPANY NAME



### SECTOR TO WHICH IT BELONGS

Agricultural production



Source: Atlantic Blue

### USE CASE DESCRIPTION

Atlantic Blue is an SME dedicated to agricultural production that has managed to expand its business thanks to the digitization of its stock management **through the implementation of an ERP system**. With the new solution, the company achieved greater visibility and control over their inventory, allowing them to optimize their stock levels and improve decision-making.

In addition, automating manual tasks **significantly reduced the time spent on inventory management**, freeing up resources for other strategic areas of the business. With this ERP they managed to interconnect all his departments. Enrique Ruiz, the IT Manager of Atlantic Blue said that "they have gone from having a multisystem scenario to having one in which this ERP is the backbone of all departments"

This has resulted in **improved financial statements** and purchase orders and therefore has meant **better business decisions**. [REF-11].

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## COMPANY NAME

# VÄCKA

## SECTOR TO WHICH IT BELONGS

Food production



Source: Väcka

## USE CASE DESCRIPTION

Väcka is an SME that emerged in Barcelona in 2015 dedicated to the production of vegan cheeses. To improve their stock management, they implemented a **cloud-based inventory management system**. The solution included stock management software that allowed real-time control of stock, automating inventory updates every time a sale or receipt of products was made.

Thanks to this they obtained great benefits. By having real-time information on inventory, the company was able to **optimize production times and ensure a more constant flow of products in line with the demand**.

In addition, the company managed to reduce the costs associated with warehousing and inventory management. The automation of manual tasks allowed a better utilization of resources and a significant reduction of errors. Thus, they were able to improve customer service. By having more precise control of stocks, the company was able to ensure constant product availability and fulfill orders more quickly and reliably. [REF-12].

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## COMPANY NAME

# ECOALF

## SECTOR TO WHICH IT BELONGS

Sustainable fashion retail



Source: Unsplash

## USE CASE DESCRIPTION

Ecoalf is a sustainable fashion company that has incorporated digitalization into its stock management to support its circular economy approach. The company implemented **radio frequency identification (RFID) technology** to track products from manufacture to final sale. This implementation brought them great benefits.

They have achieved an improvement in traceability, each garment was uniquely and accurately identified, which made it easier to track its location and status in real time. This reduced inventory errors and enabled better stock management. Automated identification and tracking of each item **streamlined the receipt, storage and dispatch of products, reducing the time spent on these tasks and improving overall supply chain efficiency.** [REF-13].

These examples show how different Spanish SMEs from different sectors have carried out digitalization in their stock management to **improve operational efficiency, reduce costs and improve customer satisfaction**. Digitalization offers significant opportunities to improve inventory management and optimize business processes across industries.

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## 7. Tools for digitising stock

There are currently different free or low-cost tools that could help an SME digitize stock management:



Holded [REF-14] is a cloud-based business management platform designed for SMEs and freelancers. It offers a variety of integrated tools for managing different business areas, including sales, purchasing, accounting, inventory, billing, human resources and more. Holded stands out for its **focus on simplicity and ease of use**.

In addition, it allows **detailed monitoring of stocks and control of available stock**. You can record product inputs and outputs, as well as inventory adjustments. Moreover, Holded integrates with other applications and platforms, making it easy to synchronize data and automate tasks.

Holded allows for a **14-day free trial** so users can explore and familiarize themselves with its features. Once the trial is over, there are different tariffs that users can choose from depending on their needs. The **cheapest rate** has a cost of approximately **29€ / month**.



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## Dolibarr ERP/CRM

Another very useful platform is Dolibarr [REF-15]. It offers a wide range of functionalities for business management. It is a modular and customizable solution that adapts to the needs of various industries and business sizes.

Dolibarr allows you to manage the stock of products, create warehouses and control product movements. Dolibarr allows a **free version** that includes **essential functionalities for business management**, such as billing, customer management, product management, basic accounting, among others.

In addition to the free version, Dolibarr also offers different paid versions that include **greater functionalities and additional features**. These paid versions have a cost of approximately 12€ / month, while the most complete and advanced versions can be somewhat more expensive, costing around 60€ / month.

## odoo

Odoo Inventory [REF-16] is another platform that focuses on offering **inventory management solutions** for companies of different sizes and sectors. Odoo Inventory allows **detailed tracking of stocks**, whether by batches, serial numbers or specific locations. It allows you to manage multiple warehouses and locations, making it easy to distribute and control inventory in different locations.

In addition, it includes functionalities to **automate the generation of purchase and sale orders**, based on predefined minimum and maximum stock levels. This helps avoid out-of-stock and excess inventory. With this platform you can also record and track all stock transactions, such as product receipt, internal transfers, inventory adjustments, and customer returns. This platform offers a **first free trial** and then has a monthly cost of approximately 12€ / month.



## 8. Conclusions

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In conclusion, digitalization in stock management has proven to be a **highly beneficial strategy for SMEs**. By automating, integrating and optimizing all phases of the inventory cycle, from the receipt of products to final delivery, a comprehensive improvement of the different operations and processes that a company that manages stock can have is achieved.

A fundamental aspect of this digitalization is the use of inventory management software integrated into ERP systems, providing a complete and unified view of the entire company. The integration of technologies such as the Internet of Things (IoT) and Artificial Intelligence (AI) has also been key.

Digitalization not only improves internal efficiency, but also **optimizes the customer experience**. In addition, digitalization in stock management has encouraged more sustainable and environmentally friendly practices. **Precise inventory control prevents waste and reduces overproduction**, contributing to resource conservation and carbon footprint reduction.

Therefore, digitalization in stock management offers a wide range of benefits that improve efficiency, optimize operations and increase competitiveness in today's market. From greater accuracy and visibility to agile decision making. The implementation of digital solutions in stock management has become a necessity to stay competitive in the globalized and constantly evolving market.



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