



## Sustainability

The game changer of your  
Supply Chain



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# INTRODUCTION

In a world where the influence of human activities on the environment is becoming more apparent, it becomes imperative to reconsider our way of consuming and producing. Awareness about climate change, CO2 emissions, resource scarcity and industrial waste has been raised in various industry fields, warehousing being one of them.

Sustainability is about improving processes to reduce the environmental impact, enhance social responsibility, and ensure economic resilience. By designing processes to spare resources or reduce the effort associated with them, companies can find solutions to optimize not only their environmental impact, but also to make their processes more efficient from a social or economic perspective, thereby leading to optimized processes that fosters better economical results. Moreover, by considering the footprint of companies activities and integrating environmental and social considerations into future strategies, sustainability is playing a key role of differentiation in helping companies to position themselves on the market.



Nowadays, sustainability is a term that is being increasingly used by companies and the main essence of what sustainable means might be distorted. Therefore, before digging into the development of a sustainable strategy, it is first essential to understand the meaning of sustainability and identify the starting point before trying to implement it in its strategy.



# CONTENT

## a) Sustainability

Sustainability consists of 3 dimensions: economical, ecological and social. This means that to adopt a sustainable strategy, processes should be designed in a way to not compromise future generations from meeting their own needs, while also being socially responsible and ensuring the long term survival of the company.

## b) Sustainability in Warehousing

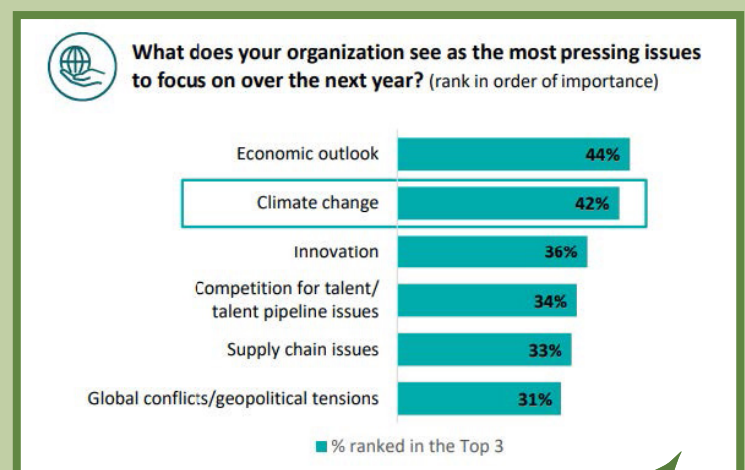
As human impact on the environment becomes more and more obvious, people, companies and organisations have put the focus on reducing their footprint. All of this can be challenging when we do not know where to start, what to do and when. This is where becoming a sustainable organisation starts.

Let's try to make this idea a bit more clear.

In order to have a glimpse on how sustainability is perceived on the market, Deloitte has conducted a survey that can be found in the [Deloitte Sustainability Report \(2023\)](#). This report contributes valuable insights into the global sustainability landscape, offering perspectives on how organizations are navigating sustainability challenges and opportunities. Deloitte's research provides a strategic view of the current state of sustainability and can serve as a valuable resource for understanding trends and best practices in specific areas such as the warehousing world.

### » What does the market think about sustainability?

Deloitte has asked 2.016 c-level executives about the most pressing issues they should focus on in the coming year. By being ranked second, "climate change" emphasizes the focus put by organizations for including sustainable choices in their coming strategies. In that perspective, resource scarcity, resource waste and carbon emissions are amongst the major sustainability struggles faced by Supply Chain actors.





Supply chain processes play a major role in achieving these objectives, as major impact can be achieved by optimizing the transportation process, using eco-friendly materials and production method, reducing packaging effort in the different steps of the process and optimizing warehousing processes. **By being the connection points within the Supply Chain, warehouses are playing a central role and can be a good starting point for further analysis<sup>1</sup>.**



## So what are the key topics with regards to sustainability in the warehouse?

The principal challenges include:

- Waste in packaging/handling material
- Product waste (i.e. FMCG)
- Paper waste
- Inefficient space utilization
- Transportation cost and CO2 emissions
- Workload not well balanced for operators
- Greenhouse gas emissions because of IT systems, equipment and infrastructure requiring a lot of energy

This above list is not comprehensive, this could be enhanced with myriads of other topics if we look at it from an end-to-end perspective. For instance, looking at it from a procurement perspective, the waste in packaging/handling material can be reduced. Indeed, by integrating with suppliers, the amount of additional repacking activities and the associated waste could be minimized.

## IN SHORT

We can clearly see that more and more organisations are emphasizing the importance of acting diligently with the environment and supply chain processes play a major role in achieving these objectives. In order to reach the goal of reducing their carbon footprint, organisations need to be supported by experts that will accompany them towards the move of becoming a more sustainable company.

This is where the Deloitte SAP EWM Centre of Excellence can come into play by leveraging internal tools designed for warehouse management solutions like, for instance, SAP EWM.

<sup>1</sup> Rusu, Stefan, "Reshaping Warehousing with Purpose: Navigating ESG Transformation for Sustainable Success", September 18, 2023, <https://www2.deloitte.com/be/reshaping-warehousing-with-purpose> (consulted 20.09.2023).

## c) How can Deloitte help you?

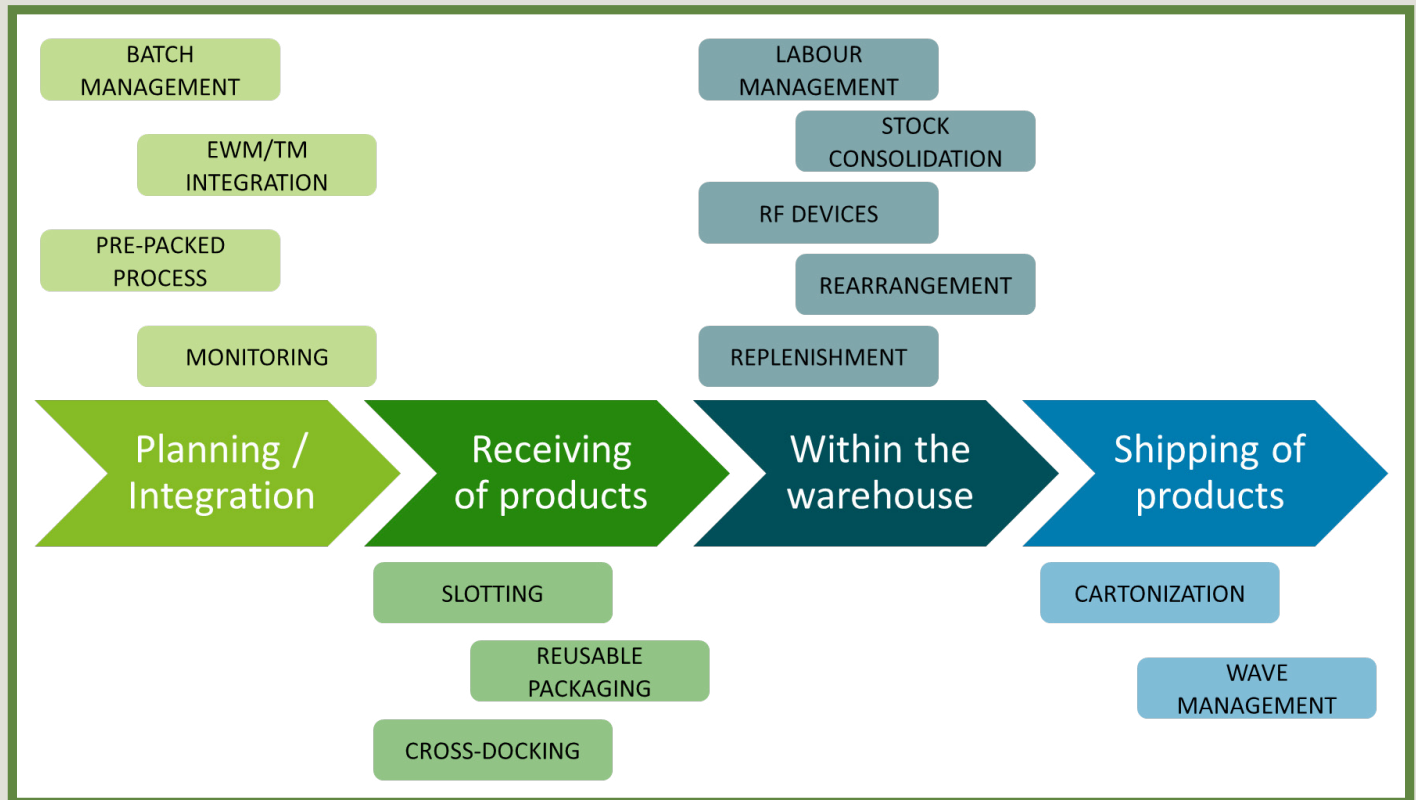
In order to have an impact that matters, sustainability needs to be one of the core objectives when designing E2E supply chain processes. While some tools can be implemented in order to make improvements in specific area, the biggest impact is obtained by considering sustainability across the whole process. For instance, consider a company trying to reduce its environmental impact across its delivery chain. If this company solely focuses on decreasing its number of storage facilities by reducing the stock available at some locations and adopting a JIT approach, this might result in an increased need for transportation. Therefore, it is important to always consider the bigger picture and the impact of a decision for the whole logistics network.

Nevertheless, by focusing on localized specific key areas of improvement, companies can still implement strategies to consistently improve their efficiency and reduce their environmental impact overall; as long as the decision makers are mindful on the global impact it has across their logistics process.

**SAP Extended Warehouse Management (EWM)** is a software solution enabling users to efficiently manage the incoming and outgoing flow of goods inside a warehouse such as complex putaway and picking processes. Moreover, additional functionalities can be used to manage stock levels as well as day-to-day workload.

Warehouse management is only a subset of the supply chain, nevertheless, many SAP EWM solutions can be considered to reduce the environmental impact of warehousing activities. In this section, we intend to list down some of the solutions to the concerns that we identified. While implementing SAP EWM, Deloitte can help you identify how to best use these tools to design sustainable and efficient warehouse processes and integrate them in the Supply Chain landscape of your company.





On the above timeline, we represent the key topics which came up when discussing supply chain related sustainability topic.

We illustrate below how some of the major topics mentioned hereabove can be implemented:

### Pre-packed process

With a pre-packed process, the intend is to minimize repacking in each facility through the whole supply chain; e.g. avoid deconsolidating and unpacking the materials sent from the supplier and repacking them when shipping them to the customers. While integrating with SAP S/4 HANA, it is possible to use the same handling units through the entire supply chain.

Concretely, the suppliers ship products in packaging materials that the warehouse is immediately able to store as such (without the need to deconsolidate). EWM supports creating the handling units to be received in the system upfront to gain time during the actual receiving of the goods, or creating them on the spot by scanning the supplier's label. When these products have to be shipped out of the warehouse, the warehouse can in turn ship them with the same packaging materials. This saves efforts in deconsolidating and repacking the products, making the process more efficient and more sustainable.

### Reusable Packaging

SAP EWM can support using the same labelled packaging materials for different processes, so that empty pallets / boxes are reused rather than using one-time packaging materials.

With this scenario, the warehouse can reuse its packaging materials (e.g. reuse the same set of pallets, reuse boxes, ...) across its processes. This saves effort in managing stock of these and in printing of new labels, hence avoiding paper waste.



## Stock Consolidation

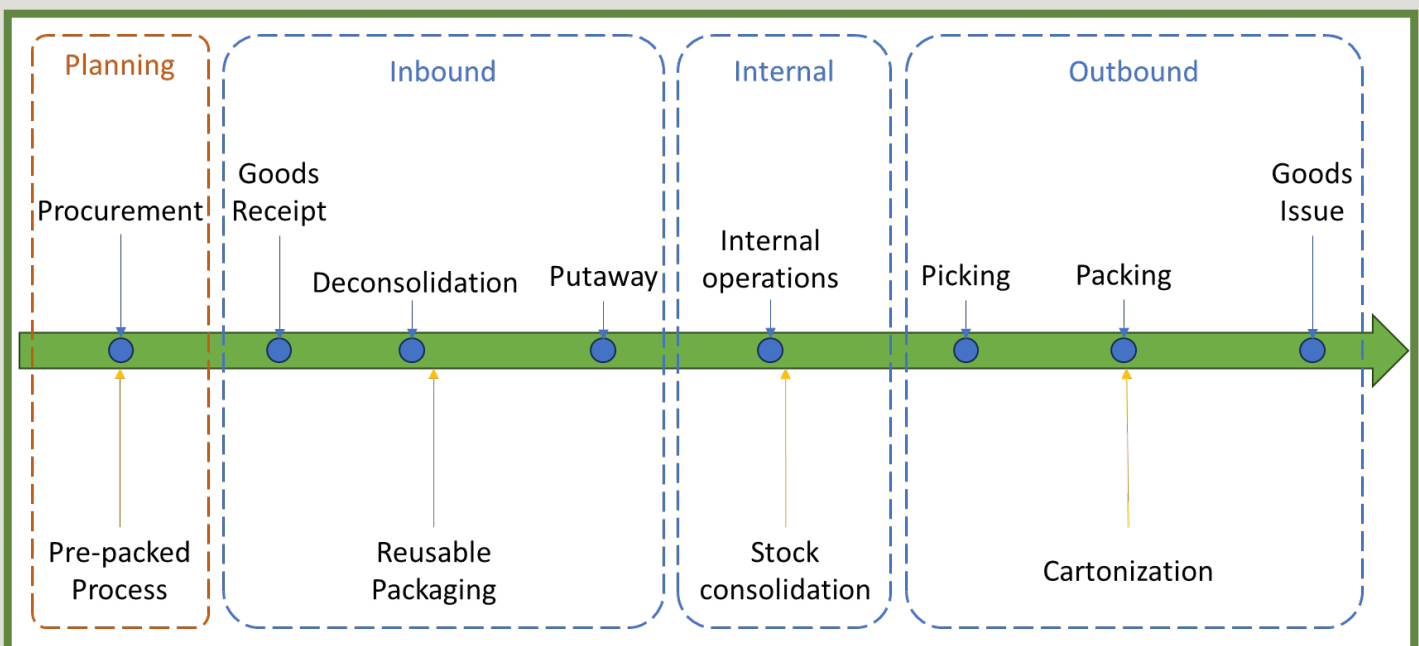
Stock consolidation can be used to optimize the space within the warehouse by consolidating partial quantities of products scattered over different storage bins into full pallets, thereby reducing the space needed for it.

The warehouse supervisor can trigger this flow at the desired time. Different criteria can be used in order to optimally regroup the product on a single pallet, such as defining whether different batches can be consolidated together and according to which rules. This allows to group together products with similar properties to keep quality high while storing products efficiently.

## Cartonization

Cartonization allows to plan the picking and shipping HUs optimally so to reduce the amount of cartons used and increase picking and packing efficiency. The algorithm will select the appropriate packaging material quantity and size based on the products to be picked, considering their dimension, weight and whether they are stackable or not.

For example, if the warehouse ships many materials of different sizes in carton boxes, cartonization allows to determine which cartons should be used for the shipment to minimize the number of packaging material used and maximizing the filling of each cartons.





The following table shows the advantages and attention points of the abovementioned examples:

	Advantages	Attention Points
Pre-packed Process	<ul style="list-style-type: none"><li>• Cross integrated processes between suppliers and customers</li><li>• mproved inbound and outbound throughput</li><li>• Reduction of needed packaging materials</li></ul>	<ul style="list-style-type: none"><li>• If it is needed to keep an internal number range for labels, then printing of new labels will be required</li><li>• Need to be careful to receive different number ranges from the different suppliers</li><li>• Master Data (i.e. Units of Measure)</li></ul>
Reusable Packaging	<ul style="list-style-type: none"><li>• Reduced paper utilization (label printing)</li><li>• Reduced “single usage” packaging materials</li><li>• Positive financial impact of reusing packaging material</li></ul>	<ul style="list-style-type: none"><li>• Physical handling of pack mat (i.e. pallet, boxes, etc.) can be cumbersome (i.e. returning it to the previous pick station)</li><li>• Lifecycle and storage of physical packaging material</li></ul>
Stock Consolidation	<ul style="list-style-type: none"><li>• Reduced space usage</li><li>• Physical organisation and simplified tracking of inventory</li></ul>	<ul style="list-style-type: none"><li>• Additional handling for repacking execution (time)</li><li>• Recurring monitoring to keep stock consolidated (effort)</li></ul>
Cartonization	<ul style="list-style-type: none"><li>• Simplified outbound packing process (guided by the system)</li><li>• Reduced number of used packaging materials/less waste</li><li>• Reduced usage of auxiliary packaging materials (i.e. plastic bubbles)</li><li>• Tailored shipping materials for outgoing deliveries</li></ul>	<ul style="list-style-type: none"><li>• Specific master data needs → precise measurement of all packaging material types (i.e. pallets, cartons, etc.)</li><li>• Stackability of product to be considered</li><li>• Evaluation and fine-tuning of the solution (i.e. rules to define) is recommended</li></ul>





## CONCLUSION

Warehouse management is one of the key areas emerging from discussion on sustainability issues. But, in order to make warehouses true pillars of sustainability, a comprehensive E2E approach is vital. Tackling issues like waste reduction (i.e. cartonization), optimizing space utilization (i.e. stock consolidation) and the reducing of CO2 emissions requires concrete actions. Deloitte, driven by its commitment to sustainability, is ready to guide organizations through this transformative journey. By its expertise, advanced tools and strategic thinking, Deloitte is well-equipped to steer organizations toward sustainable warehousing practices, contributing to the creation of a more sustainable and resilient global supply chain.

**Stay green and stay tuned!**

**More sustainable warehouse insights coming your way soon.**





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- [Rise to the Sustainability Challenge | Deloitte Belgium](#)





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