

Andea GUIDE: **MANAGING LOGISTICS PROCESSES IN MES**

Loading...



Your warehouse is a hub of activity. It's a place where raw parts and materials are stored, and where finished products await shipment. So, it's no surprise that maintaining stock levels in a world of unpredictable market demand poses a significant challenge for manufacturers globally - and that's where MES/WMS solutions can help.

Efficient warehouse management will help your organization achieve two crucial business goals: **cost reduction and improved customer service**. However, there are four objectives that need to be met in order to achieve those goals:

- **Maintaining accurate and sufficient inventory level**
- **Easy retrieval and storage of stock**
- **Shorter delivery time**
- **Automating warehouse activities to reduce physical labor**

What you need to meet these objectives is a proper design and management of your warehouse's physical layout and space, followed by efficient implementation and management of business processes connected to the warehouse. **And above all, you need a team of experienced and skillful resources to carry out these processes efficiently.**

During Andea **Meet-the-ExpertS** webinar on Managing Logistics Processes in MES, our experts broke down a set of logistic processes offered by the MES system and answered the most pressing questions from our audience regarding the solution and its implementation and management process compiled in this guide.



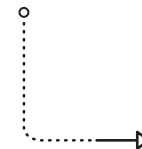
WHAT

LEVEL OF CUSTOMIZATION IS APPLIED IN MES/WMS SOLUTIONS TO HAVE A PROPER LOGISTIC PROCESS RUNNING?

Unfortunately, there is no single best answer to this question. Quantifying or even qualifying the level of customization without knowing the details about your solution requirements or current manufacturing processes is challenging and often impossible without gaining a deeper understanding beforehand. Even some ballpark figures often prove unrealistic. However, based on our experience, we've identified four categories of customization offered by MES/WMS:

- **Data Model** - we don't want to say 0% because nothing is impossible, but the need for customization, in this case, is scarce. Even 1 to 2% is a high figure that sometimes results from a low requirement specification or design.
- **Interface** - although the interface customization is largely influenced by any external systems (i.e. their working patterns or expectations), the level of customization can range from 0 to 100%. Our MES consultants have experienced both extremities.

- **Business Processes** - we call these kinds of APIs business components. Finding a suitable API for your specific business flows is pretty straightforward - some are readily available, some require minor code adjustments, and others need to be built from scratch. Yet even then, the implementation is pretty easy and quick in our experience. For that reason, we sometimes refer to them as business flow configuration rather than customization.
- **User Interface(UI)** - this is an area with the highest level of customization, with levels varying even up to 100%. Of course, it also largely depends on the end-user expectations, their previous experience with similar applications and their adaptability.

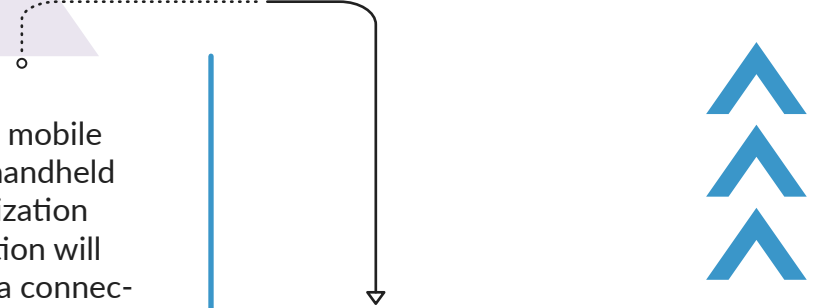


HOW

TO HANDLE RECEIVING GOODS OUTSIDE THE BUILDING WITHOUT WIFI COVERAGE?

To start with, we would recommend using mobile devices such as smartphones, tablets, or handheld scanners - essentially, nothing your organization isn't already using. Additionally, your solution will require minor modifications to ensure data connectivity without WiFi access.

Right now, most modern MES & WMS solutions support "offline" modes. It allows you to implement the solution and work without access to the network or directly connecting to the central server. In order for receiving to take place, you'll need to download all the necessary data on a mobile device. Then, you can use the same transaction for the regular receiving and validate the received inventory against previously downloaded data. The warehouse operator should then return to the WiFi coverage area and synchronize or upload received data with the central system.



As you can see, the process of "offline" receiving looks similar to the regular one from the operator's perspective. The only difference is that they now have to click a button twice: once to download necessary data to a mobile device and then again to synchronize the data.

If you face similar issues with WiFi in other parts of your facility, you can always use the same concept for some other transactions.

WHAT IS AN OPTIMAL WAY TO SUPPORT LOGISTIC PROCESSES IN DIFFERENT WAREHOUSES TO STILL KEEP THE STANDARD?

There is no optimal way as supporting logistic processes depends on several factors:

- **Handling units - operations supporting multi-level packaging structures have high complexity;**
- **Type of warehouse - the procedures in the components warehouse differ from those in production buffers or finished goods storage;**
- **Physical constraints - high-bay storage, block storage with limited access, multi-floor repositories;**
- **Specific manufacturing functions - conditioning, kitting, cross-docking;**
- **Level of automation - AGVs, transportation belts, fully automated warehouses.**

Each of these factors adds complexity to the entire process in its own unique way. However, we can confidently say that an MES/WMS system like DELMIA Apriso is an excellent platform for standardizing your logistic processes and providing alternatives for different scenarios.

DELMIA Apriso allows you to create a framework with a core superset of functions supporting the logistic processes and deploy them across all of your warehouses. Once the core framework is in place, you have the ability to use only those features and functionalities each warehouse requires.

In the ideal world, manufacturers identify the full scope of features and functionalities right at the beginning of the MES/WMS planning & implementation process. However, that's hardly ever the case in reality. More often than not, our clients start to build a solution looking at an individual warehouse with an expectation that it will address all warehouses' needs within their company.

So it's worth mentioning that during solution blue-printing, the active involvement of business people who have a thorough knowledge of all operations found in different warehouses in your organization will play a crucial role in the solution's success.

WHAT

IS THE FUTURE OF THE WMS?

Our extensive MES experience empowered us to identify the three following trends:

- **The first trend is actually visible across the entire software market, and that's cloud solutions.** By migrating or installing your system into the cloud, you can reduce the system's deployment time and complexity. Another benefit of cloud solutions is that you won't need to invest in a new physical server or to create a dedicated environment with the necessary IT infrastructure. Instead, you can now buy it as a service and reduce the time and costs of future rollouts.
- **The second trend is warehouse automation.** We've noticed that more and more companies invest in solutions like AGVs (Automated Guided Vehicles), automated storage and retrieval systems, carousels/sorters, or forklift tracking and navigation systems. In most cases, this equipment has its own subsystem that executes a piece of the logic, while the WMS is responsible for frictionless communication and coordination within the whole warehouse ecosystem.



- **The third trend revolves around analytics.** WMS as we know it is changing - from being a software used to manage, receive, put away, locate, pick, and ship products to a far more sophisticated system that closely integrates with the rest of the supply chain software platforms, like automation software. This transformation will allow WMS to better coordinate movements (help choose a better path or assign movement tasks correctly) and storage locations within the warehouse to efficiently leverage its space and layout.

WHY IS IT BETTER TO HAVE MES AND WMS ON THE SAME SOFTWARE PLATFORM? IS IT BETTER TO HAVE MES AND WMS ON THE SAME SOFTWARE PLATFORM?

When you consider the business processes covered by the WMS, you'll notice that the MES system is right in the centre of all warehouse management activities. For that reason, it's crucial for both systems to work together seamlessly and simultaneously.

The correlation starts with the replenishment process, delivery of the new materials to the line, and managing the materials' returns to the warehouse. The two systems also interact during the process of putting away or moving finished goods to the warehouse, and WMS sometimes even helps in the rework processes or in-warehouse packaging.

To efficiently support all these processes, WMS requires access to data provided by the MES system. MES tracks the line's speed, the orders' schedule, and the Bill of Materials to accurately and optimally handle replenishment orders and return them based on this information.

MES can also estimate when the current order will be complete and request materials to be delivered earlier to avoid production stops.

Of course, keeping your WMS and MES as separate platforms and simply integrating their operations is possible. However, we have found that using this method makes warehouse management unnecessarily complicated - you have to build interfaces in both systems, exchange rich volumes of data and add another layer of communication.

On a final note, make sure both systems are regularly maintained in the future. Should any delay occur in either of them, you'll notice a negative domino effect on the warehouse operations, production line's business processes, or both.

FINAL THOUGHTS

The market for manufacturing software is changing. Digital transformation has reached the industry, urging organizations to deploy more efficient and agile solutions that will empower them to better serve their customers and stay ahead of the competition. With our MES/WMS solution, it's finally possible.

We hope this guide gives you a better understanding of how to achieve a more dynamic warehouse environment using the MES/WMS DELMIA Apriso solution. Should you have any further questions or would like to discuss the subject further, please do not hesitate to contact us via a contact form on our website or email us directly at info@andea.com

ABOUT ANDEA

Andea specializes in delivering MES services and solutions, from conducting technical assessments and implementing strategic manufacturing systems to managing global MES rollouts. Our employees are process experts in production and logistics, quality management, and production data analysis. We have successfully delivered hundreds of global manufacturing system implementations in various industries, including Automotive, Aerospace & Defense, Packaging, Medical Devices, FMCG, and Industrial Machinery & Equipment.

In 2020 Andea decided to expand its portfolio with APS (Advanced Planning and Scheduling) solutions by signing a partnership agreement with Dassault Systèmes as the only authorized DELMIA Ortens vendor in the Polish market. Since then, Andea has been distributing the product on their home market and providing implementation services worldwide. With this expanded product portfolio, Andea provides its customers with solutions that support a more comprehensive range of manufacturing processes.



Andea

GUIDE

www.andea.com