

NTT DATA

EXTENDED WAREHOUSE MANAGEMENT

**MORE AGILE SUPPLY CHAINS
FASTER, SAFER HANDLING**



WHAT IS IT?

A multi-dimensional concept:

- Handles physical storage of components, by OEMs, component suppliers or specialist logistics partners.
- Efficiently manages inventory in warehouse and support goods movement processes.
- Links to automated systems for placing and picking components, both into storage and out again for onward shipping.
- Includes real-time analytics and operational intelligence, with automation and device Integration.

S/4HANA is enabler of the information flow, making it possible to build customised, efficient solutions which include high levels of standardisation and interoperability.



THE BUSINESS CASE

The Automotive sector is facing a **whole series of new challenges**, as the industry moves:

- From conventional power to electric vehicles.
- From a focus on the purely physical to the virtual (redefinition of the car as an internet-enabled, connected environment on wheels).
- To strengthen its focus on sustainability and hyper-customisation.

This **state of rapid change** affects supply chains, procurement, production asset management, and all aspects of analytics and decision-making. Industry leaders are rethinking supply chains to deliver faster response times, with higher levels of automation and lower carbon emissions.

- Extended supply chains have serious environmental impact.
- Threats of disruption, not only due to Covid but to political and economic factors.
- Need for greater agility, cost efficiency and responsiveness to safeguard profits.

EWM brings greater resilience to the supply chain, providing a buffer against disruption, reducing human touch points, reducing the risk of errors, improves safety levels and ensures full transparency end to end.

The Warehouse Management solution from NTT DATA is built on SAP S/4HANA embedded EWM, guaranteeing a single version of the truth, a full audit trail and rapid intervention at any point. With a proven EWM solution in place, OEMs can store larger numbers of components close to their assembly plants without raising costs in proportion. EWM helps to control costs, ensure on-time fulfilment, and deliver competitive advantage at a time of unpredictable change.

NTT DATA has a focus on co-innovation together with SAP, customers and other Group Business Units.



ADDRESSING THE CHALLENGE

At the heart of every supply chain is the warehouse, itself, which will normally use handling solutions based on automated systems.

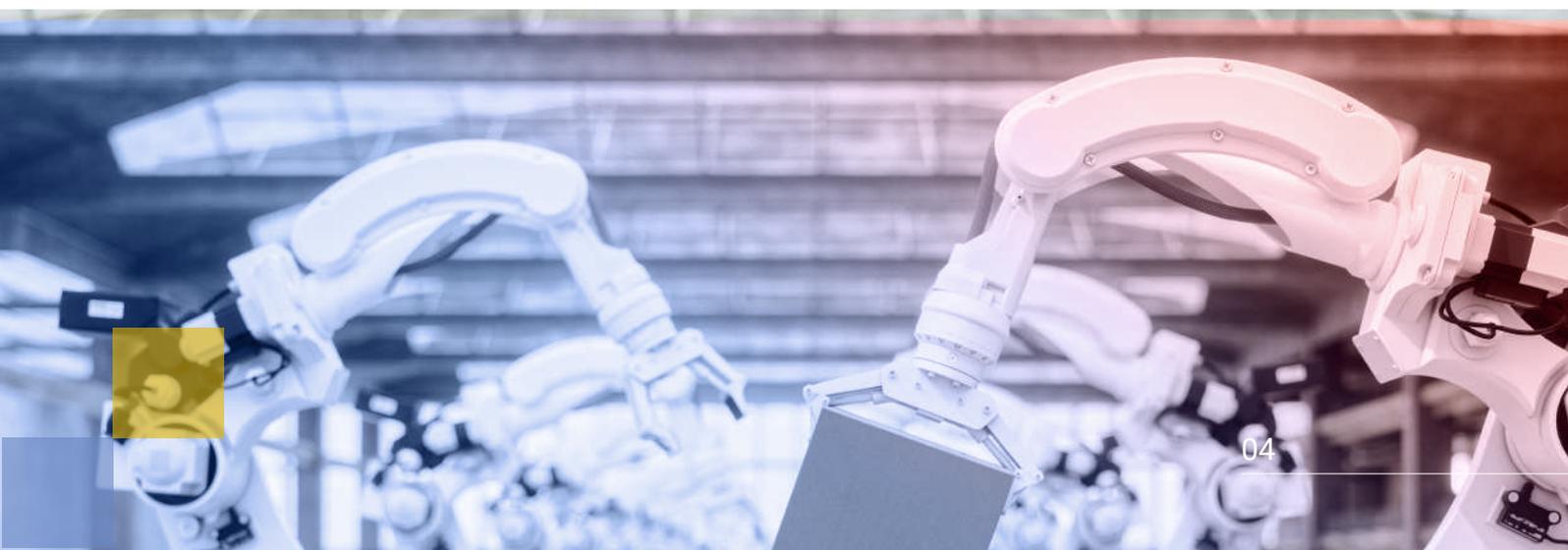
Machines, such as **vacuum grippers** are used to offload incoming items and place them in their designated storage bays in the warehouse. The same handling systems are used to pick items as and when required by the manufacturer and place them onto the outgoing trucks directly, or into pallets for materials handling systems to manage. Human intervention is minimised as we move to more automated solutions.

Specifications are set by OEMs, based on orders received. Each order automatically generates its Bill of Materials (BOM), which defines requirements for specific components. The supply chain/procurement system will designate those within the BOM that are required for direct delivery to the assembly unit and those sent for storage in the associated warehouse(s).

SAP S/4HANA EWM solutions are evolving fast, with additional functions added at regular intervals, including:

- **Fully Cloud enabled**, enabling us to automate more and more of the actions required to receive, check, store, pick, handle and deliver each component. NTT DATA's EWM solutions interface with intelligent Edge devices to automate verification, validation, and acceptance of components.
- **Enhanced operational efficiency**, drawdown from stock takes place at the optimum moment for efficiency in manufacturing, use of resources and smooth running of the logistics network. The entire end to end process will take place virtually within the integrated supply, procure, planning solution built on S/4HANA.

The solution is an integral part of the overall S/4HANA based supply chain, procurement, ERP system, with connections to MES solutions. As these systems evolve, we will automate more process stages, so a single Bill of Materials drives everything from component procurement to transportation, storage, delivery for assembly and final production.

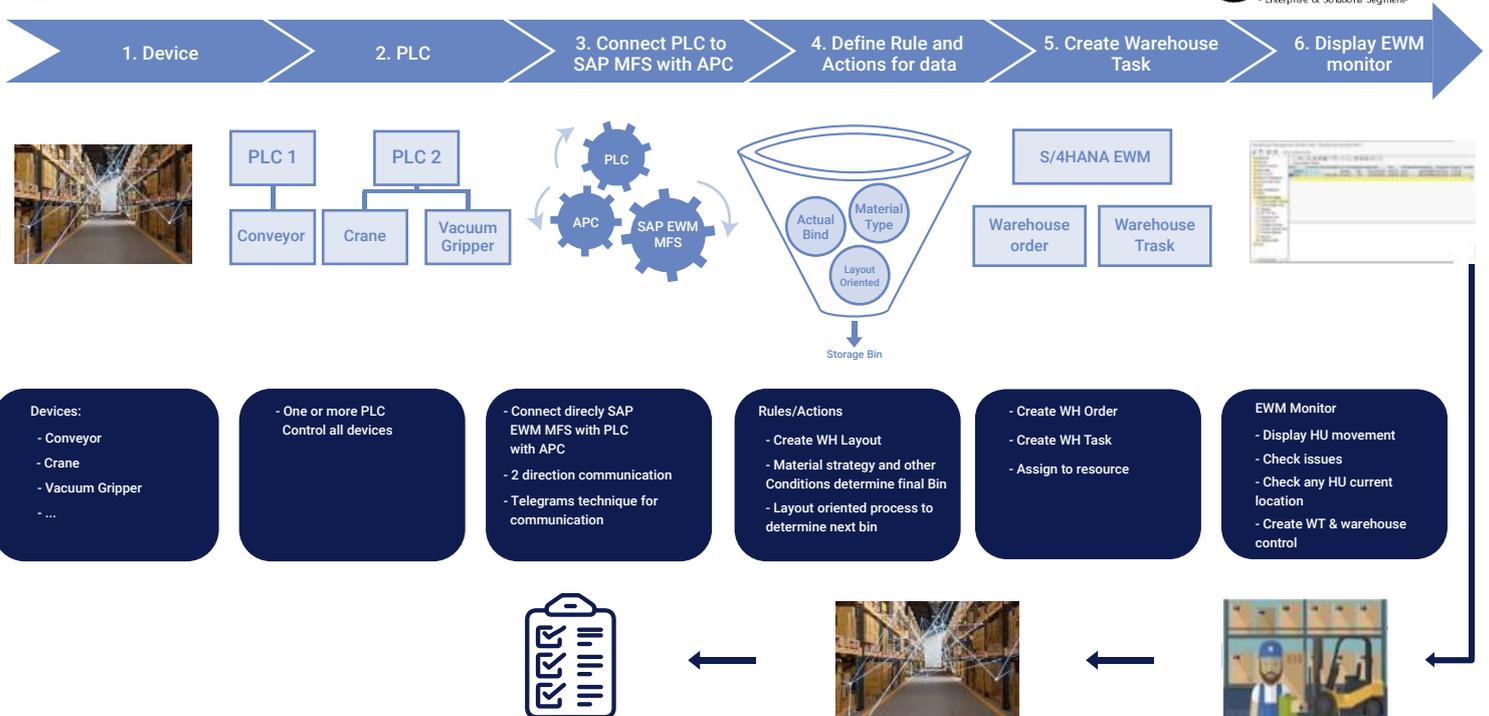


SMARTER WAREHOUSING

Main Features

- Smart high bay for best space utilization in the warehouse, as there is no need to consider whether or not human operatives can access these locations.
- Warehouse space is optimized automatically through analysis of sensor data, leading to more efficient rotation of items through the available space.
- Goods received and despatched are managed by the same system, based on a straight-through, goods-to-person approach.
- Items entering the warehouse are automatically stored in the most logical space for their final destination.
- The solution can be used equally well when hazardous materials and goods are included, as there is no human intervention at these key points.

Figure 1 below shows how the materials flow works.



HOW IT WORKS

- **Arrival.** Components and assemblies arrive at the warehouse and are transferred by conveyor for picking up and transfer to storage by vacuum grippers, capable of reaching to the furthest part of the high bay storage units.
- **PLC management.** Programmable Logic Controllers automatically select the optimal location for component storage.
- **PLC-SAP connection.** The NTT DATA EWM solution establishes an automatic connection between the PLC controllers, using “telegram” for communication between systems.
- **Rules and data.** Business rules are set in advance to ensure that individual items are stored in the most logical place, ensuring rapid fulfilment of individual BOMs.
- **Tasks and orders.** Based on the business rules and informed by automated collection of sensor data and analysis, individual warehouse tasks are established, which define each movement of every part, from arrival to despatch.
- **EWM monitor.** Creates a real time view of all activities, providing complete insight and transparency over warehouse functions and movement of all items.

To maximize warehouse capacity, high bays are used, which are hard to access by human operatives. The automated handling, picking, placing and retrieval capabilities of NTT DATA’s EWM solution takes human labor out of the equation almost completely. It is possible to manage the entire warehouse with just one skilled person, reducing accident levels and consequent stoppages effectively to zero.

NTT DATA has developed regionally world-class expertise in technologies and industries.



DELIVERING BUSINESS BENEFITS

- More efficient workload management because automation improves utilization, increasing warehouse capacity without physical extension. Dynamic warehousing, controlled automatically by EWM speeds throughput and improves operational efficiency.
- Simpler resource management, as one qualified person can manage a vast range of actions. Human errors can be almost eliminated, training requirements are reduced, and staff related turnover or absences do not cause disruption.
- Transformed productivity due to transparent, always current data, which allows clear KPIs to be set and managed, with higher targets being reached. New functions and workloads can be taken on as the warehouse moves to 24/7 automated working, while issues are rapidly identified for fast intervention.
- Improved maintenance as EWM simplifies the entire system. Middleware can be removed, while sensor data is used to monitor component performance, leading to predictive maintenance, avoiding unplanned downtime and extending asset life.

NTT DATA EWM adds value in **Safety**, by removing the need for humans to interface with handling systems except through PLCs. It improves **Sustainability**, using machine intelligence to identify opportunities for optimisation, reducing movements, cutting transport costs and scheduling actions in the most logical and efficient order.



WHY CHOOSE NTT DATA FOR YOUR SAP AUTOMOTIVE PROJECT?

We Are Experts in Automotive

NTT DATA has worked with the automotive industry for more than 40 years. We have 10,000 professionals worldwide serving 85 clients across the automotive value chain, including major OEMs.

To accompany automotive companies on their SAP S/4HANA journey, NTT DATA has a team dedicated to S/4HANA transformation and an S/4HANA Center of Excellence that establishes the most appropriate evolution strategy for companies that want to evolve to S/4HANA and other SAP solutions, platforms and technologies.

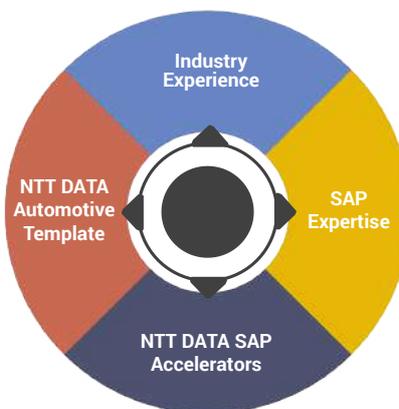
NTT DATA has developed an SAP Automotive template for S/4HANA and accelerators to help life sciences companies overcome specific challenges and reduce time to value.

- NTT DATA is a formidable force in SAP services with more than 20,000 SAP professionals, 2,700 SAP clients worldwide, 21 delivery centers and operations in 41 countries.
- NTT DATA has achieved the highest accolade from SAP, Global Strategic Services Partner, which recognizes its ability to offer a wide range of best-in-class business consulting and solution implementation services in support of SAP technology.
- NTT DATA is one of the Top Ten providers of SAP services worldwide according to Gartner.
- Our solutions leverage our business-specific expertise and skillsets in SAP technologies but also in other digital technologies, such as AI and IoT, for example.

Fully customized SAP S/4HANA system including all core-areas such as Finance, Sourcing & Procurement, Manufacturing, Asset Management, Sales, Supply Chain.
Includes 113 Best Practices.

NTT DATA has +10 SAP accelerators to reduce the time to market and costs.

- Supply Chain Control Tower
- Individualized Production
- Smart EWM High
- Bay Racks
- SAP JIT/JIS
- Others



- NTT DATA has been serving the automotive industry for more than 40 years.
- NTT DATA has more than 10,000 IT Consultants serving 85 clients in the automotive value chain including OEMs, suppliers and dealerships.

- 29-year partnership with SAP.
- Over 5,000 active SAP clients.
- Leading SAP partner with over 300 S/4HANA projects.
- Resource coverage in over 58 countries.

SAP global strategic service partner

NTT DATA is a formidable force in SAP services with more than 20,000 SAP professionals, 2,700 SAP clients worldwide, 21 delivery centers and operations in 41 countries. It is a truly global organization committed to seamlessly working together with its clients to deliver SAP-centric projects that can be delivered at scale and across multiple locations.

Our solutions leverage our business-specific expertise and skillsets in SAP technologies but also in other digital technologies, such as AI and IoT, for example. NTT DATA has achieved the highest accolade awarded by SAP, Global Strategic Partner, which recognizes its ability to offer a wide range of best-in-class business consulting and solution implementation services in support of SAP technology.

THE NTT DATA DIFFERENCE

NTT DATA SAP Automotive Template

- Fully customized SAP S/4HANA system including all core areas such as finance, procurement, sales, logistics and production.
- Includes new SAP modules such as EWM, IBP, TM, VMS, etc.
- SAP Business Technology Platform and Cloud Integration.

NTT DATA SAP Automotive Template

- **Smart EWM** combined with high bay racks streamlines component handling, enables more efficient management of the supply chain, ensures higher levels of speed and efficiency in product handling, and automates use of BOMs to ensure timely delivery of components to point of manufacture.
- **Supply Chain Control Tower** provides end to end visibility of the entire supply chain, identifying issues fast, to enable rapid intervention, and delivers timely business intelligence to operators and decision-makers on customised dashboards.
- **SAP JIT/JIS** unlocks the full potential of S/4HANA to deliver items to the production line not only Just in Time but also Just in Sequence, ensuring higher levels of efficiency in all aspects of manufacturing.
- **Individualized Production** simplifies the process of mass customization by making small production runs and batch sizes as cost efficient and fast to produce as traditional mass production. A single individualized bill of materials is used to build targeted products for individual customers with maximum efficiency.
- **Among others.**

ABOUT NTT DATA

NTT DATA – a part of NTT Group – is a trusted global innovator of IT and business services headquartered in Tokyo. We help clients transform through consulting, industry solutions, business process services, IT modernization and managed services.

NTT DATA enables clients, as well as society, to move confidently into the digital future. We are committed to our clients' long-term success and combine global reach with local client attention to serve them in over 50 countries. Visit us at [nttdata.com](https://www.nttdata.com).





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