



Warehouse Transformation with SAP WMS: Enhancing Operational Efficiency in the Automotive Sector

Industry Overview: Modernizing Supply Chain Operations in the Automotive Sector

The automotive manufacturing industry is experiencing a fast transition to digitalization and data-driven operations. With increasing production volumes, global supply chains, and complex component assemblies, manufacturers are prioritizing warehouse modernization to improve operational visibility and reduce manual dependencies.

Effective inventory management and seamless coordination across warehouse functions have become essential to maintaining efficiency, controlling costs, and ensuring timely deliveries. The growing need for agility and real-time decision-making is pushing manufacturers to adopt advanced technology platforms that can unify processes across production, logistics, and distribution.

Protiviti's Role in Facilitating Warehouse Transformation

With deep industry experience and a human-centric approach to technology, Protiviti has been assisting manufacturers in modernizing their operations through SAP-led transformations.



Protiviti assisted in making the transition to SAP WMS smooth, effectively combining business understanding with technology execution to deliver measurable operational efficiency improvement.



Provided real-time visibility of material movements and inventory, resulting in faster and more accurate decision-making.



Operational workflows were redesigned to reduce complexity, enhance traceability, and improve performance across all aspects of warehouse management.



Using our process expertise combined with SAP capability, Protiviti assisted the client in transitioning from disconnected operations to a single warehouse management platform.

Protiviti assisted in making the transition to SAP WMS smooth, effectively combining business understanding with technology execution to deliver measurable improvements in operational efficiency.

Addressing Warehouse Fragmentation in a High-Volume Automotive Environment

The customer, a leading auto component manufacturer, operates various large plants that involve considerable material handling and component assembly. Warehouse execution was important to sustaining factory flow and meeting delivery

commitments, but the absence of the company's integrated digital foundation resulted in visibility gaps and manual dependencies, which slowed operations and affected precision.

Key Challenges

The customer had two distinct systems handling its warehousing operations: SAP ECC, for enterprise-level transaction processing, and another third-party, barcode-based system for tracking in a piece-wise manner. The absence of real-time synchronization between these systems caused the following issues:



Month-end closure processes were often delayed and extended beyond target timelines.



Manual reconciliations were inefficient and time-consuming.



There were **routine inventory mismatches** between systems, which affected accuracy and the validity of data displayed.



Visibility into warehouse and kitting processes was disjointed, impacting control and reporting.

In addition, the **kitting plant** faced complexity in managing **multi-level component kits**, where parts had to be packed and tracked in hierarchical structures. Handling this manually and outside SAP increased the risk of errors, inefficiencies, and data inconsistencies.

Core Technical and Operational Gaps



System integration

Lack of real-time connection between SAP ECC and barcode-driven tracking.



Data integrity

Inconsistent and unsynchronised records across multiple systems.



Scalability

High transaction volumes required a stable, performance-optimized solution.



Traceability

Limited visibility into nested kits and component-level details.



Designing an Integrated and Scalable Digital Warehouse Framework

To address system fragmentation and manual processes, Protiviti worked with the client to architect and deploy a unified warehouse management solution using **SAP Warehouse Management (WMS)**. The

objective was to develop a **single common, real-time platform** for all kitting and warehouse operations—offering improved visibility, traceability, and accuracy for all processes.

Solution Overview

The modernized warehouse solution was built to streamline operations, automate data capture, and ensure end-to-end integration with enterprise systems.

Key solution elements included:



SAP WMS is the central system of record, replacing third-party applications and eliminating data silos



Advanced scanning technology integrated with SAP for real-time material movement tracking.



UID-based piece-wise tracking to ensure complete visibility of inventory across all warehouses.



SAP Nested Handling Unit (HU) functionality for managing multi-level kits with precision and control.








Automated workflows for inbound, outbound, and kitting operations to reduce manual interventions.

This total product solution gave the customer a digital foundation to solve short-term warehouse inefficiencies and set up the client for future growth and automation.

Implementation Strategy

Protiviti implemented an approach that was structured and designed to provide a smooth transition:

				
Technology Enablement	Gap Analysis & Assessment	Alignment & Process Design	Data Migration & Validation	User Training & Change Management
Engineered hand-held scanning units with SAP to assist in gathering data in real-time.	Evaluated current warehouse and kitting operations to establish requirements and integration into current systems.	Defined SAP WMS workflow mapping, enabling Nested HU structures for multi-level kits.	Migrated transactional and master data, which ensured data integrity and consistency across the systems.	Conducted targeted training sessions focused on implementation states to support operational awareness and deployment ease.

Delivering Real-Time Control and Operational Accuracy through SAP WMS

The warehouse modernization initiative delivered measurable technical and business improvements across the client's operations. By consolidating all warehouse and kitting activities within SAP WMS, the organization achieved real-time visibility, faster process execution, and greater reliability in decision-making.

Operational Outcomes

		
Timely Month-End Closures	Real-Time Inventory Accuracy	Consolidated Source of Data
Reconciliation operations automated, ensuring smooth financial closure cycles without any delays	UID-based tracking removed inaccuracies and provided near-perfect visibility of stock in all facilities.	One warehouse and kitting system of record enhanced visibility and reporting.
		
Enhanced Kitting Efficiency	Increased Productivity	Improved Decision-Making
Nested Handling Unit functionality allowed precise control of multi-level kits, reducing manual errors.	Automation of inbound, outbound, and kitting processes optimized workforce utilization and reduced turnaround time.	Real-time dashboards and accurate data empowered leadership with actionable insights



Technical Lessons Learned and Best Practices

The implementation introduced valuable lessons that defined the project methodology and solution. The project employed a modular integration approach, which provides a certain degree of comfort. The flexibility will enable future enhancements and updates without disconnecting live operations. The modular structure used ensures flexibility and future optimization.

Real-time validation was applied at every transaction level, ensuring that data moving between systems remained accurate and complete. Intelligent caching supported faster processing and kept system performance stable, even during peak

Future Roadmap

Following this transformation, the client plans to extend digital capabilities across its wider supply-chain network. Predictive analytics will be introduced to improve forecasting accuracy and optimize stock levels. IoT-enabled sensors will provide live visibility into storage conditions and goods movement, enhancing control and compliance.

warehouse activity.

Asynchronous communication was used for non-critical updates, allowing continuous operations while larger data jobs ran in the background. SAP WMS performance was continuously monitored and optimized for uniformity across all the facilities. Complete documentation of the design, configurations, and testing was created to ensure traceability for future reference and knowledge transfer.

These practices helped deliver a stable, responsive, and easily scalable SAP WMS environment that continues to support the client's high-volume operations efficiently.

The next phase also includes robotic process automation in picking and dispatch to increase speed and consistency. Additional analytics dashboards will help leadership track performance trends and respond quickly to demand shifts.

These initiatives aim to move the client towards an advanced warehouse ecosystem — one that operates with higher precision, faster decision-making, and measurable gains in efficiency.

Driving Continuous Operational Excellence

The client's experience with Protiviti using SAP Warehouse Management (WMS) and accompanying comprehensive supply chain integration facilitated the client's changeover from manual and isolated processes to a streamlined and smart warehouse system. The result of the transformation contributed to enhanced operational efficacy at the personal processing level and provided avenues for future sustained operational expansion.

The solution was designed to be scalable and flexible at its planning stage. With the help of robust integration architecture, process enhancement, and official change management, Protiviti enabled warehouse and kitting operations to function as one integrated data-driven environment.

Through this process, the client has created a platform for the future that can handle evolving technology, increase automation, and constant process enhancement — a major step ahead in continuing to cement its position as a digital leader in automotive manufacturing.

Contact:

Himanshu Sachdeva

Director

Phone: +91 9503106263/ +91 124 66186606

Email: Himanshu.s@protivitiglobal.in

This publication has been carefully prepared, but should be seen as general guidance only. You should not act or refrain from acting, based upon the information contained in this publication, without obtaining specific professional advice. Please contact the person listed in the publication to discuss these matters in the context of your particular circumstances. Neither Protiviti India Member Private Limited nor the shareholders, partners, directors, managers, employees or agents of any of them make any representation or warranty, expressed or implied, as to the accuracy, reasonableness or completeness of the information contained in the publication. All such parties and entities expressly disclaim any and all liability for or based on or relating to any information contained herein, or error, or omissions from this publication or any loss incurred as a result of acting on information in this presentation, or for any decision based on it.