

DIGITAL TWIN

SECURE YOUR LOGISTICS PROJECTS



In development since the 2000s and initially used in the automobile and aeronautics sectors, the digital twin has now been extended to various different sectors, including the supply chain. MarketsandMarkets forecasts annual growth in the global market of 58% with the budget allocated to this sector increasing from \$3.1m in 2020 to \$48.2m in 2026. Both appreciated by suppliers, who use it to guarantee the reliability of their products and strengthen their users' trust, and by users themselves who can reduce maintenance costs by anticipating future defects, the digital twin is a real industrial revolution that has everything in its power to win people over.

DEFINITION

The digital twin is a virtual representation of a process, product or service for any installation that exists in the world of industry. It makes it possible to carry out tests on the "clone" application, to measure their impact and to make an informed decision before integrating these changes into the real-life model. In order to provide relevant information, the digital twin must be up-to-date and evolve at the same time as its model.

DIGITAL TWIN

OPTIMIZING INTRA-LOGISTICS USING THE DIGITAL TWIN



An essential component in supply chain development, digitization has proved its efficiency by enabling companies to be even more responsive. The digital twin has therefore become a natural part of the world of logistics to digitize intra-logistics processes from end to end. As a decision making tool, it contributes to the overall performance of the distribution center, by modeling static, automated and robotic equipment, from acceptance of the goods until they are shipped.

THE DIGITAL TWIN SAVOYE

At SAVOYE, the digital twin is an application that makes it possible to represent, in 2D or 3D, the equipment in a logistics warehouse. Why is this useful? This digitization of the physical warehouse makes it possible to validate several features of the WCS (Warehouse Control System) management software, before it is rolled out on site. This twin is the exact representation of the customer's warehouse. Directly connected to the WCS, it makes it possible to carry out end-to-end tests, which check that the application is working as intended under normal operating conditions, but it can also simulate a large range of events that may occur during use (breakdowns, input errors, etc.) and therefore make the solution more resilient.

This makes it possible to monitor the progress of a package within the logistics platform: from the moment the message is received from the WMS until it can be seen passing through the picking stations, inspection stations and packaging and shipping zones. The digital twin also makes it possible to simulate a large number of events more quickly, thereby making it possible to analyze the behavior of applications over several days of intense use in a timeframe that is reduced to a few hours.

THE 3 ADVANTAGES OF THE DIGITAL TWIN

1: AN OPERATIONAL SYSTEM AS QUICK AS POSSIBLE



Our WCS teams work directly from a defined layout plan. This enables them to integrate and test all management features even before going on site. This step makes it possible to significantly reduce on-site testing time, to guarantee operational safety while reducing developments and costs. In order to increase the efficiency and validate the interactions between all the systems present in the warehouse before start-up, we integrate all present automated and robotic technology into the digital twin, whether proprietary or from a third party.

2: INVOLVE YOUR CUSTOMERS EARLIER IN THE PROJECT

Collaboration is possible via a “Factory Acceptance Test”, which enables all WCS functionalities to be validated in the digital twin, before the start-up on site. Involved as early as possible in the review of functional tests, our customers can be sure that the software is functionally compliant with expected behavior.



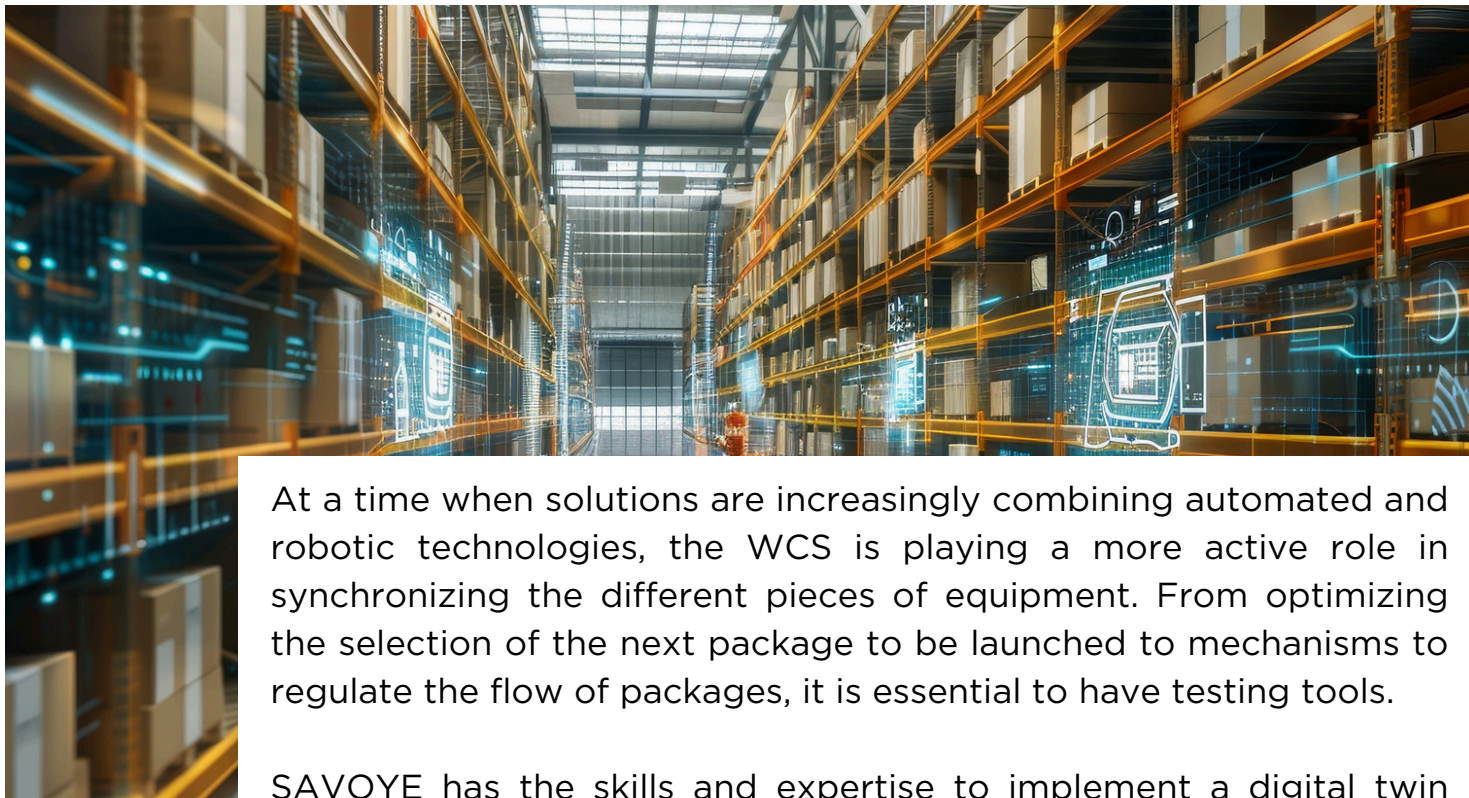
3: SECURING FUTURE DEVELOPMENTS OF THE SYSTEM



The digital partner is not only advantageous in the pre-project stage - the model is alive and not frozen in time. It lives alongside and evolves at the same time as the system. As it can be updated regularly, it can be used to test and validate system development requests before their production is launched. As the WCS and the digital twin use a common warehouse model, they can evolve at the same time without generating additional costs.

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TECHNOLOGY THAT CAN BENEFIT ALL EQUIPMENT



At a time when solutions are increasingly combining automated and robotic technologies, the WCS is playing a more active role in synchronizing the different pieces of equipment. From optimizing the selection of the next package to be launched to mechanisms to regulate the flow of packages, it is essential to have testing tools.

SAVOYE has the skills and expertise to implement a digital twin either in 2D, making it possible to visualize logistics processes, or in 3D offering reliable visibility of the movements of equipment and packages, etc.

The digital twin is now part of the standard practices in our business, and can even be provided on the customer site.

CONCLUSION

At a time when the major supply chain players are having to adapt more quickly and reduce their costs while demonstrating great flexibility, they need to be provided with new, more efficient tools with an ultimate goal: fulfilling the customer promise.

Ranked among the ten major strategic technological trends by Gartner, the digital twin now plays a decisive role in intra-logistics.

Taking it on board means greater efficiency and reliability!