

SIMULATED PACKAGING FOR SUSTAINABLE E-COMMERCE

CASE STUDY

About the Customer

Our customer is an e-commerce industry leader and household name that continuously seeks innovative ways to improve their warehouse technology and distribution processes for more efficient and sustainable outcomes. At a pilot site in North America, our team of Digital Twin experts helped the customer implement new packaging technology that transformed their operations and delivered major cost savings.

Project Summary

The customer wanted to eliminate as much plastic and unnecessary material as possible from their packaging process. Having already chosen AnyLogic Simulation Software as the best technology to enable this achievement, the e-commerce leader sought a strategic services partner to customize and implement the solution without disrupting their complex operations. Engineering Industries eXcellence was chosen to create a Digital Twin of their pilot warehouse and model the best ways to execute their packaging transformation plan in a risk-free virtual environment.

Project Activities

- Conducted comprehensive site visits to gather simulation model requirements.
- Utilized packaging system and AGV data to improve model reliability.
- Designed a Digital Twin that accurately reflects facility operations.
- Modeled production lines that manage grouping, boxing and labeling.
- Determined ideal implementation scenarios for sustainable packaging solutions.
- Created scalable simulation model for future enterprise-wide transformation.

Business Drivers

- Implement new packaging and labeling technology for greater efficiency.
- Eliminate unnecessary materials from packaging process for cost savings.
- Transition packaging processes and equipment without disruption.
- Enhance sustainability across packaging and distribution processes.
- Deploy scalable solution across customer's packaging sites worldwide.

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More About The Project

Our Digital Twin team first conducted comprehensive site visits, analyzed requirements and began designing a Manufacturing Simulation model that accurately reflected the behavior of the customer's facility. We modeled the site's production lines which manage grouping, boxing and labeling. Leveraging data collected from these packaging systems and the automated guided vehicles (AGVs) that move products within warehouses and packaging facilities, our Digital Twin created scenarios for ideal implementation according to the customer's requirements. Their ideal solution would find a balance between a fast-tracked installation and minimal impact on order delays. The simulation model we designed could also be scaled to cover more sites and means of production, creating opportunities for better decision-making across the enterprise. While this project may only cover one of the customer's thousands of facilities, it is the beginning of a new initiative that can have a positive impact on consumers and the environment.

Engineering's Advantage

As a strategic partner for The AnyLogic Company, Engineering Industries eXcellence was one of a few names recommended to the e-commerce leader for their packaging optimization initiative. We were chosen because our Digital Twin team made significant efforts to understand their production model and its challenges, then meticulously designed an initial simulation to showcase how their new solutions could be implemented. Beyond the technology, we bring valuable development services and a forward-thinking perspective on digital capabilities. Our worldwide team of simulation experts is uniquely positioned to help businesses across industrial sectors optimize their production, and we will be there to support this industry leader as they implement their sustainable packaging technologies on a global scale.



Engineering Industries eXcellence

Engineering Industries eXcellence is the global division of the Engineering Group specialized in the development, integration and implementation of holistic digital transformation solutions covering the end-to-end lifecycle and supply chain of all industrial products and processes. A leader in digital transformation, the Engineering Group is a global software maker, a system integrator and a leading provider of technology solutions and services. With an annual revenue of over $1.7 billion and around 15,000 professionals across 70 office locations worldwide, the Engineering Group manages projects in over 50 countries by designing, developing and implementing innovative solutions for the business areas in which digitalization is having the biggest impact today.

- Delivering the Digital Thread for Industry X.0
- Global System Integrator for All Industrial Sectors
- End-to-End Technology Solution & Service Capabilities

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