



THE THREE DIMENSIONAL FACTORY

KEWESTA simulates "Power & Free" with VISUAL COMPONENTS

With around 50 employees and an annual turnover of 10 million euros, KEWESTA is one of the leading suppliers of conveyor, drive, and chain technology for niche applications. The company's success is due to their flexible, adaptable and modular systems. For detailed factory and layout planning of overhead (Power & Free) conveyor systems, Kewesta are using Visual Components. This solution enables the simulation of complex material flows made up from processes with numerous decision points and processing branches.

KEWESTA: highly competent and innovative conveyor technology

KEWESTA has been planning, manufacturing, and assembling high-quality components and conveyor systems for material handling applications since 1971. The application of KEWESTA "Power & Free" transport systems ranges from light-weight individually packaged goods to items weighing several tons, and applies to most types of industry around the world. Whether as components or a ready-made system solution – KEWESTA always offers its customers tangible advantages, as only an owner-managed business can provide – right through from design and commissioning to the end-user maintenance contract.

A major strength of KEWESTA is the enormous depth of production, e.g., from sheet metal coil to perfectly stamped chain link. Modern equipment and machinery ensures a high degree of flexibility and offers maximum responsiveness for customer requirements.

The challenge: thorough system design to avoid plant shut-downs

"The manufacturing and logistic conditions in the industry are becoming more complex and demanding. The pace is set with high production rates, short delivery times and expectations for high quality. In most industries now, efficient planning of material flow can only be achieved with simulation", explains Martin Köster, KEWESTA's sales manager. "Overhead conveyor systems, often used in assembly lines and large

paint shops, have to be reliable and thoroughly planned from the beginning. The system's operation needs to be understood and calculated for different product mixes during regular production and for non-shift periods particularly when time consuming setups and continuous processes such as ovens are involved", Köster continues.



Large factories need to be constantly adapted to changing market conditions during a typical twenty-year life-span. During the factory's lifetime it is critical to plan ahead and avoid extended shut-down periods for future modifications. Building in future-proof features to keep the facility operational, as much as possible, is a special challenge for system designers. Factories like these require a supportive solution to achieve high productivity and predictability, which is where the 3D simulation platform by Visual Components comes into play.

The solution: modular based 3D simulation

KEWESTA has been working with DUALIS GmbH IT Solution to develop a customized simulation solution based on the Visual Components modular platform. DUALIS is the largest distributor of Visual Components software in the German speaking business world and over the last ten years, have built a library of modules that fulfils KEWESTA's simulation requirements.



In the "Power & Free" area, the simulation is used for decision making. Based on new inputs or requirements for production, a company can first simulate, visualize and test a new system configuration before applying any changes to the actual line. 3D simulation is used very early on in the design and planning phase to provide working proposals that then support the sales process. Custom three-dimensional layouts are generated based on the given design parameters using drag-and-drop functions. The resulting layouts visualize the production process and provide realistic performance metrics for clients to evaluate and approve.

"The simulation depends on both the simulation engineer and the production engineer working together to validate the correct behaviour of the work stations. When this is correctly implemented, the results from the simulated layout will be very accurate," explains Martin Köster.

Using the simulation as a tool for collaboration between different departments helps select and introduce the right equipment and methods for factory modifications. By completing a simulation of their factory beforehand, KEWESTA's customers are optimally prepared, in advance, for future operations. In addition, understanding production operations through the simulation allows employees to react faster to unexpected production issues.

Future outlook:

Industry 4.0 in three dimensions

In the future, the simulation software will develop new functionality to meet KEWESTA's evolving business requirements. Current Industry 4.0 initiatives are contributing to these requirements as evidenced by the use of VR glasses, links to an optimizer, and applications in virtual commissioning, and several more functions already in the planning phase.

VISUAL COMPONENTS

The result: process optimization at all levels

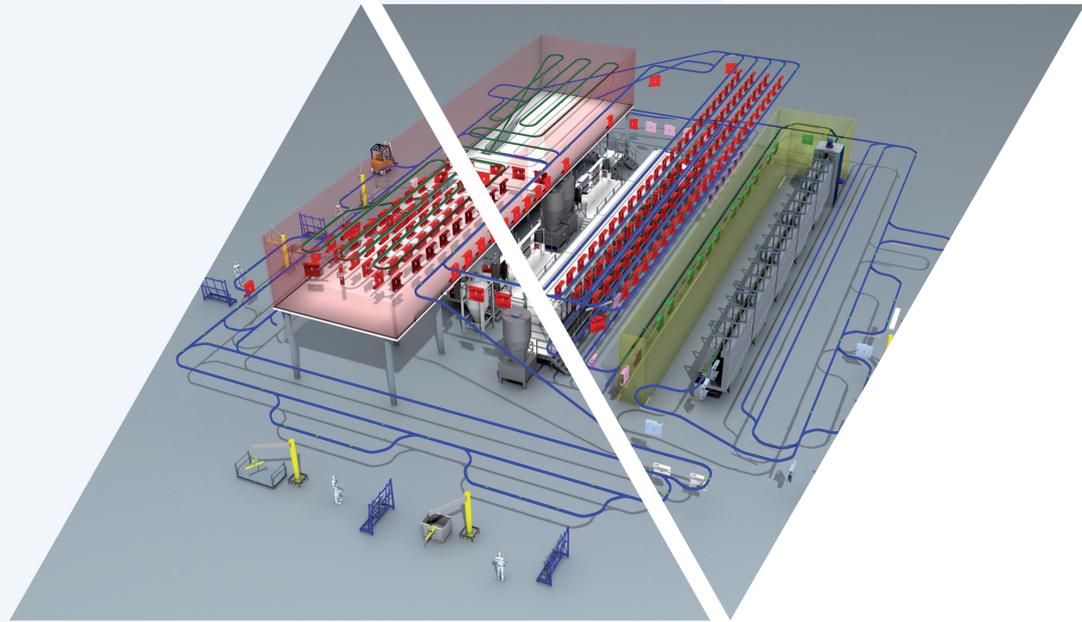
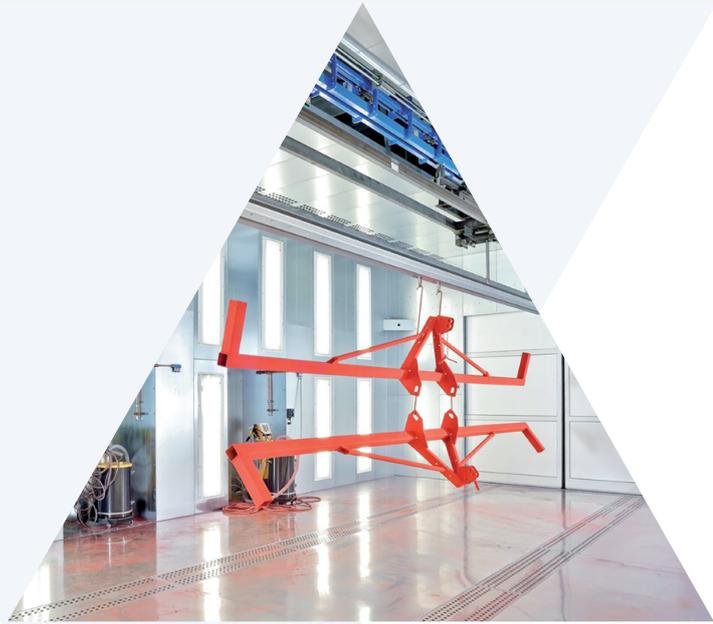
The use of Visual Components results in added value for factory planning and sales. Systems can be planned much more precisely and verified in advance with the customer. "In most cases we see savings of at least 10,000 euros for projects by simply reducing buffer requirements and track-lengths. In one case we saved over 120,000 euros for a project by optimizing the layout", explains Martin Köster.

The employees of KEWESTA also benefit from the simulation during their daily work. While simulating and testing a new layout under laboratory conditions, they gain valuable insight to the system behaviour while avoiding any real world safety issues.



Facts and figures

- € Cost savings per project
in the range of 10,000 – 120,000 euros
- 🕒 Reduced project completion times
(depending on size): from 3 days to 5 weeks
- 👤 Significant increase in employee satisfaction
through better preparation and understanding
- 📅 Increased on-time deliveries:
up to 70%
- ⚠️ Risk reduction:
up to 80%



„Before Visual Components was introduced, we resorted to quite creative means: we simulated the overhead conveyor using paper clips. Now, the simulation solution is much more vivid - and we save on paper clips.“

Martin Köster, Sales Manager at KEWESTA



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