

SIMULATION DELIVERS AT ENTERTAINMENT UK

Part of the Kingfisher Group, Entertainment UK (EUK), distributes Home Entertainment products. Launched in 1988, the company has an enviable history of growth. Sales turnover has jumped from £340 million in 1992, to more than £600 millions in 2000.



Now EUK has opened a new high-tech distribution centre in Greenford, Middlesex. The greenfield development has been designed to cope with a business targeted to grow to £6 billion over the next few years. The centre which went live in August 2000, is the lynch pin of a dynamic organisation which supplies all the UK's leading retailers with fast moving multi-media, home entertainment products, a market sector which includes CDs, videos, cassettes, playstations and books. Entertainment UK relies on the AutoMod simulation software from AutoLogic Systems Ltd, to model and test the centre's ability to perform to the very highest levels of speed and efficiency all day, every day. It will be tasked with the delivery of up to 160 million units each year on a daily basis. The company is a front-runner in every aspect of its business. This includes being trusted by their customers to analyse, forecast, monitor and deliver all stocks, in a relationship known as Vendor Managed Inventory. This is an example of the most advanced and trusting business relationship currently in use anywhere in the world.

With so much resting on its success, absolute accuracy and reliability were vital in predicting the performance standards of the materials handling equipment installed and business

processes implemented at the centre. “We would have liked to use simulation techniques to model the design of the whole development.” Joanne Willetts, EUK’s Operational Planning Manager explains, “But unfortunately, the functionality of the system to which we had access at that time was limited. We heard about AutoMod, from AutoLogic Systems and after evaluating it against our requirements and meeting the consultants, we had no hesitation in entrusting the important task of simulating our performance to them. Both the system and the people have more than met our expectation.”

The Greenford development, a £42 million project, covers 300,000 sq. ft. with a mezzanine floor, which provides a further 80,000 sq. ft. of storage space for the locations required to house an inventory in excess of 48,000 line items. The centre, which operates without the help of fork-lift trucks, utilises the very latest in warehouse equipment, a Beewan 4 shuttle mini-loader, the first ever to be installed in the UK or Europe. Despite the size of the business, just two hundred people are employed at the centre, to service the needs of 2,500 customers every day.

“Picking is done by, grouping stores together into batches, each of which will total a number of totes from different areas.” Joanne Willetts continues, “We have three separate picking areas which are used to handle products with different levels of demand. Naturally the top selling CDs are very fast moving, whilst other goods have far slower demand cycles. The top 250 products represent 70% of our business. The fastest moving items are picked by RDTs (*Radio Data Terminals*) from pallets, which are replenished by automatic cranes. The next section, which represents a further 28.5% of demand, utilises a Pick to Light system and the remaining 1.5% of items, the slow movers, are picked manually and transferred from the pickers’ trolleys onto conveyors to move to the mini-loader where they join the other goods to be sorted.”

In addition to the 4 shuttle crane system, the complex mechanics of which were central to the simulation model, there are 3 Beumer sorters, each fed by 8 conveyors. Between them the sorters each of which service 76 destinations, have a capacity totalling 20,000 units per hour. The model needed to analyse these, the conveyors’ movements into and out of the mini-load and each individual location in terms of being empty or full.

“AutoMod tests our ability to meet our normal high volume demand patterns, including promotional activity,” comments Joanne Willetts, “The three months prior to Christmas are very busy for us, demand increases significantly, but meeting delivery promises is even more vital at this time of year. Having a model which replicates the whole operation so accurately means we can test our capability to meet the Christmas rush and have complete confidence in the results.”

The model was comprised of several main elements; the Beumer Sorters, the conveyor system, the 4 shuttle crane system, the automated cranes of the Fast Picking Area, the Pick to light system and the manual picking area. Within these the model analysed the fill rates of the mini-load, monitored the crane cycle times and utilisation, examined and resolved bottlenecks and checked the ratios of the totes being pulled from the different storage areas. It also analysed picker utilisations and congestion on the sorters. Joanne Willetts and AutoLogic consultant Harvey Craig worked hard to ensure every possible function, combination and situation were included and appropriate actions built into the operating processes. "We had to work to a tight schedule" says Harvey *Craig*, "Since the opening day for the centre was a fixed point, no delays could be accepted. Some of the main elements of the model were therefore built in parallel to reduce the timescales for building such a large model"

Jo Willetts concludes "In a volatile market like entertainment demand for individual items can fluctuate wildly dependent much on the changing tastes of the nation's teenagers. We must be fast, flexible and reliable. The new centre had to perform from day one. AutoMod gave us all the evidence we needed to go live with the total confidence that the centre would work exactly as we planned. Now we are looking to utilise AutoMod to simulate our emerging e-commerce business, Entertainment UK Direct. The ability to deliver will be the factor that determines success or failure. This is the face of the future and in this as in our established business, EUK intends to be the leader. Being able to accurately model and test our distribution facilities with AutoMod will be a huge business benefit and allow us to face that future with complete confidence."