



Understanding complex systems with computer simulation.

IET helped its client increase packaging capacity 14% with no additional equipment by using simulation tools to understand complex interactions between production resources.

The Customer

An international manufacturer of pet food and pet care products.

The Challenge

The customer's highly automated processing and packaging operations were going to be stretched by increasing production volumes. In addition, packaging volumes would experience even more growth due to a mandate for shorter pallet heights. If the customers' production resources could not handle the growth, they needed to know what changes to make. Since all products were transported by a common conveyor, it was difficult to predict what effect the transport resources would have on the processing resources. They needed to know which resources would be bottlenecks and how much production they could achieve with the current processing equipment.

The Solutions

IET's engineers reviewed all relevant aspects of the manufacturing process: product mix, production rates, conveyor layout, timing control logic, palletizer rates, conveyor speeds, wrapper rates. Using computer simulation technology, IET developed models of the current production system and a redesigned production system. Animated computer graphics allowed the customer to "see" how the simulation worked and confirm its validity. After validating the baseline model with data from current operations, IET evaluated the effect of increased production volumes on the current and proposed conveyor layouts.

IET's analysis proved that the customer's current production system would not support the increased volumes at peak operating conditions. Palletizer and wrapper equipment became blocked due to the conveyor layout.

Utilizing the same processing equipment, IET redesigned the conveyor layout with parallel lines and a shared, overflow wrapper. This design supported the planned volume increases even under peak loading conditions. As a result, the customer committed itself to the production increases and avoided capital expenditures for new wrappers.

iet

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How can IET help you?

Any way you need us to.

Productivity

Current production standards

Current production performance

Detailed reasons for variances

Detailed plan for improvement

Goal-setting, accountability

Capacity planning

Key capital resources

Direct and indirect labor

Salaried personnel

Facilities

New manufacturing

Detailed process map

Layout

Facilities

Labor

Support

Indirect labor design

Standards

Material handling

Supervision

Maintenance

Plan for improvement

Total value analysis

Make vs. buy

Site selection

Consolidation

Vertical integration

Horizontal integration