

## Case Study: Nationwide Distribution Optimization- Simulation Model

### Innovative Healthcare Products, Services & Educational Programs (IHP)

- Decrease Distribution Costs, Increase Profits

#### The Challenges

IHP, a leading supplier of healthcare products, maintained a policy of on-demand order fulfillment requiring the Company to search for an item in one of its sixteen Nationwide Warehouse Distribution Centers. Ninety-three percent of deliveries were processed by six main warehouses and more than 20% of customers placed orders more than once a day. As a result of increased fuel charges, policy revisions were needed to trim costs and increase profitability. Efficiency Engineers were hired to provide expert data advice and evaluation to reduce distribution centers used and overall delivery frequency, while keeping customer service and overall net profit a top priority.

#### Efficiency Engineers Solutions

To devise the most effective and efficient policy for IHP, Efficiency Engineers created a simulation model using actual data of customer ordering patterns over 18 months. Simulation models are best used to animate, analyze, evaluate, and improve any process by utilizing actual data in an environment that mirrors reality.

- Efficiency Engineers applied different combinations of delivery patterns to the model determining when the optimum combination was reached.
- Results generated showed that the majority of customers needed only weekly delivery while the larger facilities needed two visits per week.
- Distribution center workload and schedules were also analyzed.



All results and trends were supplied to IHP in an easy to understand format enabling make quick and profitable decision making.

#### Results

Efficiency Engineers' extensive data-driven simulation model provided IHP with information necessary to make massive changes impacting its nationwide operations. As a result of the data, IHP was able to

- Reduce 50% of its Nationwide Distribution Centers utilized
- Reduce delivery cycles by up to 300%.
- Decrease overall costs up to \$4 million per month in delivery, storage and handling fees.

Efficiency Engineers' simulation model and evaluation allowed IHP to improve a nationwide policy while substantially increasing net profit.