

VinLogic® Supply-Chain Simulation Tool

Total Visibility.

Total Collaboration.

Total Solution.

VinLogic simulation technology enables INL logistics managers to provide in-depth support for finished-vehicle supply-chain planning and decision making. Using VinLogic network modeling, managers can forecast resource requirements more accurately, test design options without risk or capital investment, and anticipate bottlenecks in order to develop contingency plans.

VinLogic can be initialized with live inventory data from VinVision®, INL's finished-vehicle supply-chain management system. This allows integration of the most current network operating and performance characteristics within various VinLogic modeling scenarios.

Supply-Chain Planning

Tactical Forecasting VinLogic enables INL to provide short-range (6-8 weeks) volume outlooks for service providers and terminals within the vehicle-distribution network. By having visibility into the future, tactical decisions can be made to avoid network delays or bottlenecks.

Strategic Forecasting Looking even farther in the future, VinLogic's ability to forecast one to several years out allows logistics engineers to study how changes in volume, vehicle design or mix, network design, resource availability and destination mix affect the dynamics and behavior of the delivery network.

Network Bottleneck Analysis Synthesized results from strategic and tactical planning forecasts allow INL to determine where and when network constraints will occur, which enables more effective contingency planning.

Resource Allocation and Planning VinLogic modeling enables detailed analysis of railcar, haulaway truck equipment, manpower, and facility requirements. Information may include a gap analysis depicting where resource adjustments are necessary to satisfy volume surges, vehicle or network design changes, and long-term equipment planning (fleet sizing).

Crisis and Contingency Planning VinLogic offers emergency simulation analysis of various extraordinary network events that are forecast on the horizon, or where effects are yet unknown. Some of these events include forces of nature (hurricanes, floods, snow storms, etc.), service breakdowns, labor disruptions, or quality-containment actions. VinLogic not only estimates the impact of these events, it supports analysis of contingencies and predicts when the network will normalize.

Additional VinLogic Functionality

Facility Rationalization VinLogic provides detailed facility rationalization, without having to make commitments or invest capital. Simulation modeling allows users to clearly evaluate the effects of adding or removing distribution locations. Based on proposed carrier resources, volumes and facility operating characteristics, VinLogic users will test feasibility and provide decision-support evidence.

Network Design Testing VinLogic has the flexibility to adjust and test various network design scenarios, provided by an optimization-modeling tool. Design alterations may include routing changes, modal shifts, new facilities, or a combination of the three. VinLogic allows users to provide concise information pertaining to these changes and their potential impact on the vehicle-distribution network.

Accurate Supply-Chain Budgeting Users can employ INL's supply-chain simulation model to provide precise and detailed budgets that reflect current and anticipated operating conditions and network performance. This allows operational managers to make smarter tactical and strategic spending decisions, support more effective cost budgeting for new-product launches or other business priorities, and help align and adjust operations to offset cost fluctuations resulting from unexpected occurrences. Budgeting using VinLogic allows for risk-free network design testing and cost-impact analysis before designs are implemented.

VinLogic Simulation can help VinVision users effectively resolve short- and long-term performance, cost and operational issues, as well as optimize overall network design.

VinLogic: part of INL's Total Visibility, Total Collaboration, Total Solution approach to finished-vehicle supply-chain management.