Maximizing Value with Network Design and Transportation Optimization

Logix® Supply Chain Optimization
and Network Design Software

Logistix Solutions
On-Demand Solutions for Logistics Professionals

On-Demand Supply Chain Solutions for Logistics Professionals

> ## On-Demand … You only pay for what you use.

Logistics professionals from Fortune 500 to fast-growing enterprises use Logix for immediate and significant return on investment.

- Realize savings from day one. No up-front fees or implementation costs.
- Download and use cutting edge logistics software tools on your computer anytime, anywhere.
- Your data is secure and password protected on your computer.
- Risks are eliminated and start-up requirements are minimal.
- Logistix Solutions' award-winning Supply Chain applications can be instantly downloaded from www.logistixsolutions.com.

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On-Demand Solutions for Logistics Professionals

On-Demand Supply Chain Solutions for Logistics Professionals

❖ Distribution Network Design

❖ Transportation Optimization

❖ Truckload Scheduling

❖ Dynamic Route Planning

❖ Transport Manager - TMS

"Logix was designed to handle complex supply chain and distribution problems that used to require ERP-class distribution network modeling tools and time-consuming set-up and customization. "

Food Logistics, Intelligence for Food Warehousing, Transportation, and Information Technology Executives

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On-Demand Solutions for Logistics Professionals

Logistix Solutions covers a broad range of strategic, tactical and operational applications with its Logix Supply Chain Optimization software

Distribution Network Design and Supply Chain Optimization

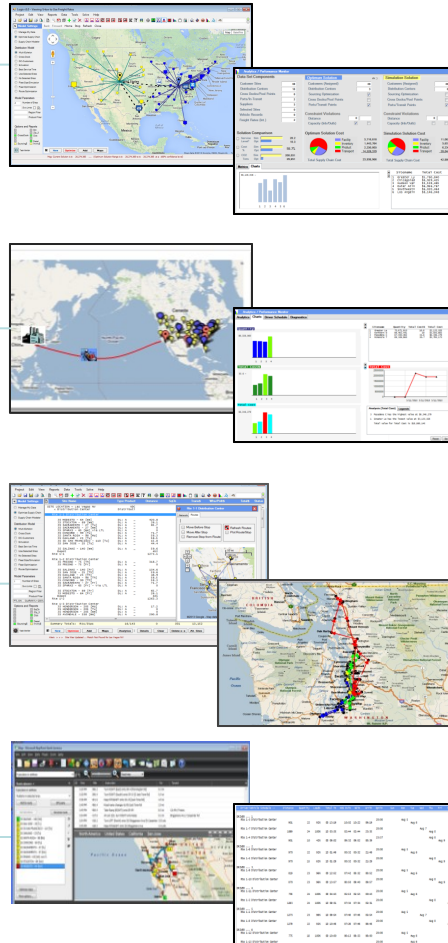Service Level and Delivery/ Lead Time Optimization

Product Flow, Inventory and Capacity Optimization

Strategic Sourcing and Procurement Optimization

Transportation Optimization and Truckload Scheduling

Dynamic Route Planning and Routing and Scheduling

Transportation Management, Visibility and Execution

Strategic

15-35%

Tactical

8-15%

Operational

15-20%

Typical savings

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Logix leverages the strengths of multiple modeling techniques to reduce total transportation, warehousing and inventory costs and improve customer service.

Distribution Network Design and Supply Chain Optimization	❖ Optimum number and location of distribution facilities, cross docking, product pooling/mixing and consolidation center location.
Service Level and Delivery/ Lead Time Optimization	❖ Optimum distribution network to optimize service levels, ensure service level agreement and on-time delivery performance
Product Flow, Inventory and Capacity Optimization	❖ Optimum product flows, capacities and inventory levels throughout a multi-tiered network of suppliers, plants, ports and distribution facilities.
Strategic Sourcing and Procurement Optimization	❖ Optimum sourcing, total landed cost, lead time and risk mitigation, supplier selection, manufacturing and capacity planning.
Transportation Optimization and Truckload Scheduling	❖ Integrated fleet sizing, multi-stop routing & truckload scheduling, and driver/vehicle utilization optimization.
Dynamic Route Planning and Routing and Scheduling	❖ Continuous, always-on route planning and scheduling for optimum delivery/pickup scheduling and most profitable/best service.
Transportation Management, Visibility and Execution	❖ Global rate management, carrier optimization, load tendering and acceptance, route optimization, visibility, vehicle monitoring, track and trace and settlement.

Logistix Solutions®
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Solutions Include:

- ❖ **Distribution Network Design**
  - ✓ Supply Chain Network Strategy
  - ✓ Product Flow, Inventory and Capacity Optimization
  - ✓ Service Level and Delivery/Lead Time Optimization
  - ✓ Strategic Sourcing and Procurement Optimization
- ❖ Transportation Optimization
- ❖ Truckload Scheduling
- ❖ Dynamic Route Planning
- ❖ Transport Manager - TMS

Logistics **solutions** across a range of **industries**

Optimize your supply chain with personalized solutions that deliver supply chain optimization, transportation planning & execution, inventory planning & management and Lead Logistics Provider services.

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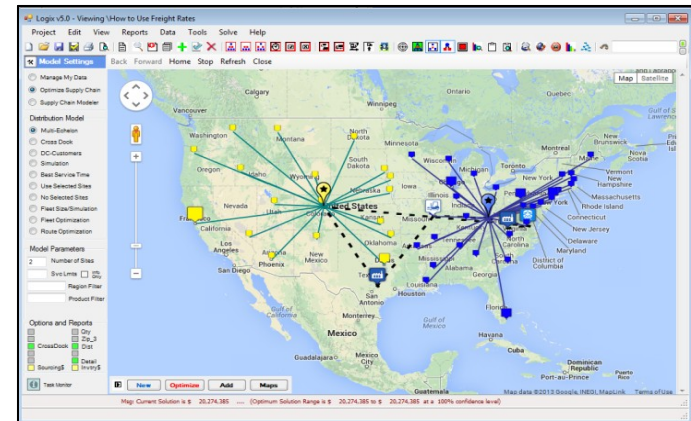
Supply Chain Network Strategy

A company's supply chain can mean the difference between a costly, overloaded distribution network barely able to keep up with customers' demands or a smooth running operation at the lowest overall cost and at the highest level of service.

Logix is a full-featured supply chain optimization and distribution network design software application that helps you quickly solve even your most complex supply chain problems.

Savings of 15% to 35% with improved customer service and lower carbon emissions often result from rigorous analysis and distribution optimization using Logix®.

Features

❖ Fast and Easy to Use

❖ Comprehensive Solutions

❖ Dashboard Metrics, Analytics and Reports

❖ Fully Integrated Google Maps and Solutions

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On-Demand Solutions for Logistics Professionals

Achieve *clarity* from chaos

❖ Complex logistics problems require optimization technology to evaluate the astronomical number of alternatives for an optimum solution.

❖ Logix ensures all product flows, transportation, warehousing and inventory costs and service implications are accurately represented in the optimum solution.

❖ Typical savings using Logix Distribution Network Optimization software range from 15-35%.
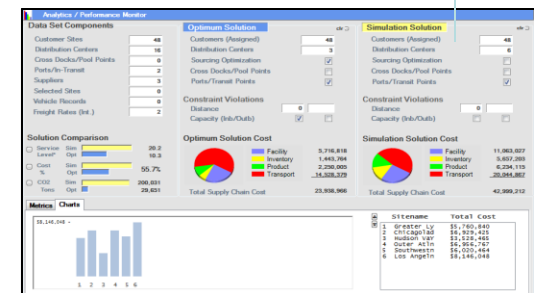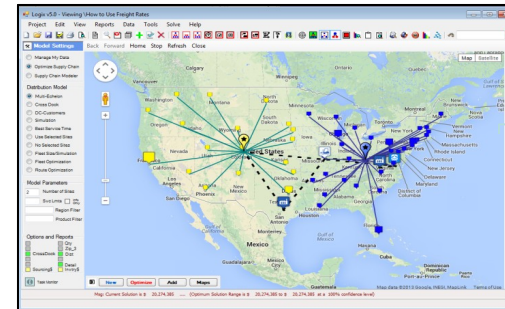

Supply Chain Network Strategy

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Continuously *improve* or fall behind

- ❖ Build simulation models to try different scenarios and approaches

- ❖ Model future scenarios including new suppliers, product lines and customers.

- ❖ Replace off-lease facilities with more strategically located DCs.

- ❖ Optimize networks and DCs that have reached or exceeded capacities.

- ❖ Model the effect of future growth or different product mixes including e-commerce.

- ❖ Routinely optimize logistics operations to keep up with changing demand, new products, acquisitions and supply chain disruptions.

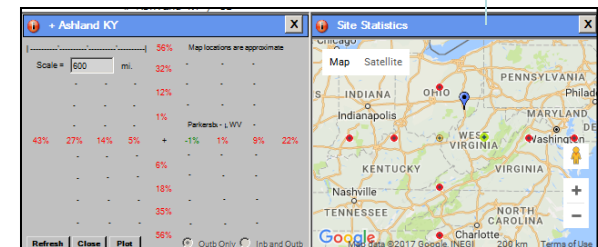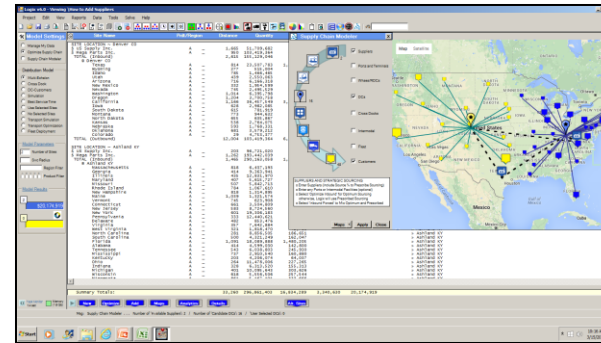Update and reoptimize distribution networks to model future growth scenarios

Logistix Solutions ®
On-Demand Solutions for Logistics Professionals

Answers to *complex problems*

❖ Data includes demand, labor and facility costs, transportation rates, existing or candidate distribution facilities, sources of supply, capacities and other network restrictions.

❖ Within seconds, Logix' powerful algorithms calculate all your costs and determine the optimum number and location of distribution centers, warehouses, pooling centers and satellite fulfillment centers.

❖ Unique "Radar View" shows how much you would be losing not to locate distribution facilities optimally.

Powerful Optimization Algorithms and Unique "Radar View" Shows Alternative Results

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Solutions Include:

❖ **Distribution Network Design**
  - ✓ Supply Chain Network Strategy
  - ✓ Product Flow, Inventory and Capacity Optimization
  - ✓ Service Level and Delivery/Lead Time Optimization
  - ✓ Strategic Sourcing and Procurement Optimization

❖ Transportation Optimization

❖ Truckload Scheduling

❖ Dynamic Route Planning

❖ Transport Manager - TMS

> "Logix allowed us to quickly download inbound and outbound shipment transaction details from the client's ERP system and pinpoint customer density and consolidation opportunities for LTL and truckload planning", commented Tom McKenna, President of Navesink Logistics.
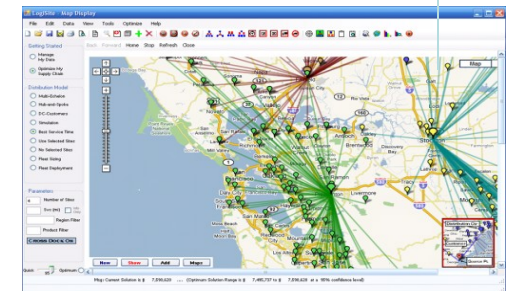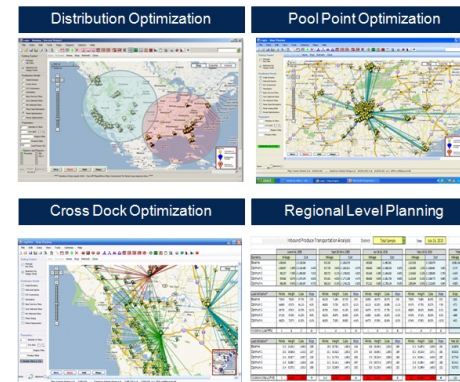
Navesink® Logistics, Inc.

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Complete solutions *across the supply chain*

❖ Optimize the number <u>and</u> the location of distribution centers.

❖ Use existing facilities? Your own candidate facilities? A "Greenfield" solution? A mix?

❖ Optimize consolidation centers and pooling facilities.

❖ Evaluate direct shipments from suppliers, cross docking.

❖ Model Hub and Spoke warehouse and satellite networks.

❖ Model inventory costs as well as transportation, facility, storage and labor costs.

Complete Network, Pooling and Direct Ship Optimization for Maximum Savings

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❖ Transportation Optimization

❖ Truckload Scheduling

❖ Dynamic Route Planning

❖ Transport Manager - TMS

"Utilizing Logix' simulation capabilities let us look at some "What-if" scenarios and produce reports and maps that supported our recommendations to the client that cut transportation costs by 12%-15%."

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Service Level and Delivery/Lead Time Optimization

Strategic solutions to *improve service*

❖ Optimize Distribution Centers to prioritize better delivery/lead times.

❖ Model different transport modes and service level commitments.

❖ Model warehouse/satellite distribution networks to improve fulfillment times.

❖ Model LTL, Truckload and Package delivery options and lead times.

❖ Score alternative distribution designs based on Service Level Lead Time.

Service Level Optimization and Metrics
Compare Solutions for Service Performance
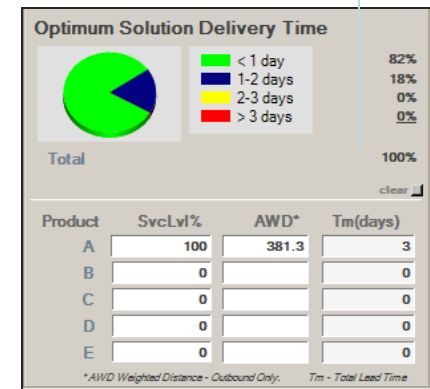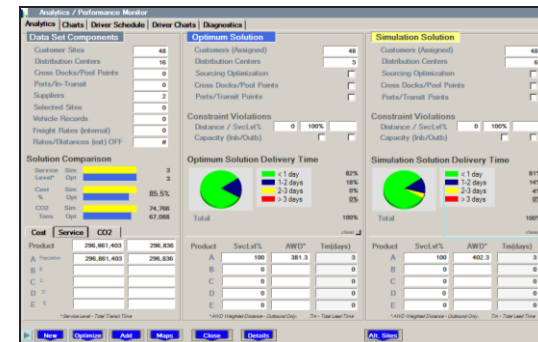
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Solutions Include:

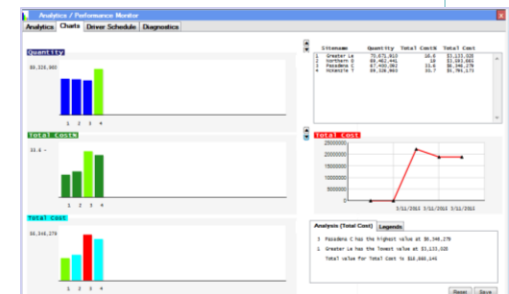❖ **Distribution Network Design**
- ✓ Supply Chain Network Strategy
- ✓ Product Flow, Inventory and Capacity Optimization
- ✓ Service Level and Delivery/Lead Time Optimization
- ✓ Strategic Sourcing and Procurement Optimization

❖ Transportation Optimization

❖ Truckload Scheduling

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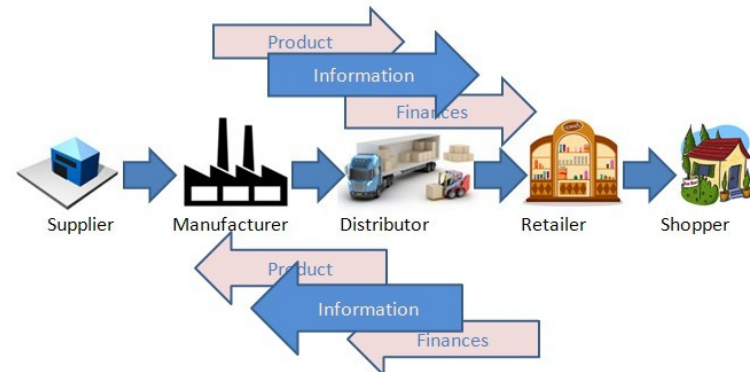
Sourcing solutions to *reduce risk*

- ❖ Optimize suppliers, manufacturing, product quantities and supplier costs.

- ❖ Fix suppliers, quantities, and optimize outbound or optimize inbound as well?

- ❖ Simulate demand growth over a multi-year horizon and model future supplier and manufacturing requirements.

- ❖ Estimate lead time and inventory effects based on different supplier networks.

- ❖ Optimize supplier networks in order to mitigate risks and ensure continuous product access.

Performance metrics, tracking and sensitivity analysis capabilities

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Solutions Include:

- ❖ Distribution Network Design
- ❖ **Transportation Optimization**
- ❖ Truckload Scheduling
- ❖ Dynamic Route Planning
- ❖ Transport Manager - TMS

Logix uniquely incorporates robust routing and scheduling technology and algorithms as part of its strategic planning capabilities for transportation planning and distribution network optimization.

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Logix Transportation Optimization

Logix Transportation Optimization optimizes routes and schedules for fleet applications typically reducing costs by as much as 15% or more.

Logix uniquely incorporates robust routing and scheduling technology as part of its strategic planning capabilities for transportation planning and distribution network optimization.

Implementation time is minimal allowing you to focus on strategic changes to your fleet and transport management including mixed pickups and deliveries, backhauls, continuous moves and optimum depot assignment to maximize savings.

Features

❖ Private fleet and multi-stop freight optimization

❖ Driver and Vehicle scheduling.

❖ Automated Route Schedule and Manifest

❖ DOT Hours of Service Compliance.

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Logix Transportation Optimization
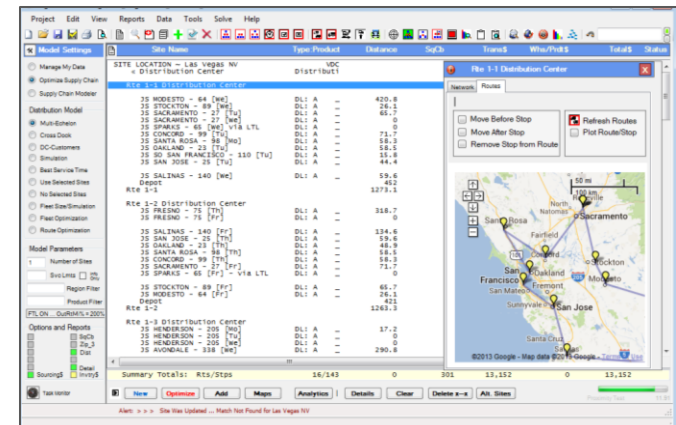
Provide superior *customer service*

❖ Optimize and dispatch loads for pickup and/or delivery.

❖ Minimize vehicle requirements and optimize driver schedules across a weekly or fixed planning horizon.

❖ Schedule routes according to customer time windows and DOT regulations.

❖ Model vehicle capacities, optimize fleet size, consolidate products/loads and automate route scheduling.

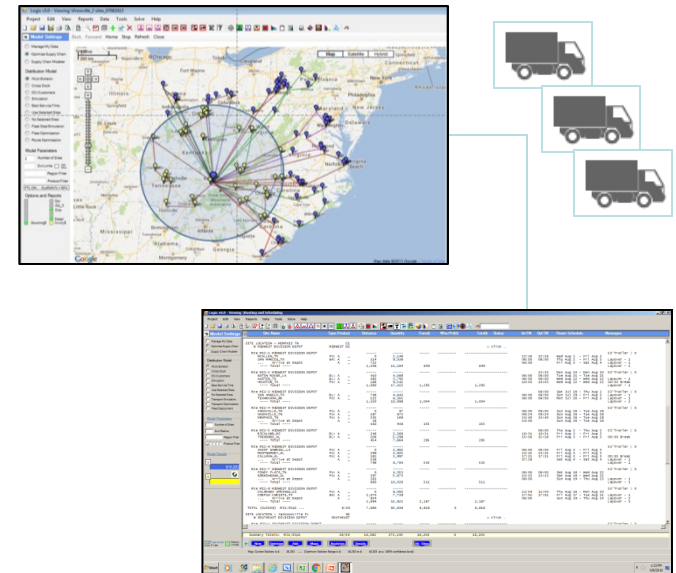❖ Incorporate accurate route costs in distribution network decisions.

Integrated Transportation Optimization and Distribution Network Design

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On-Demand Solutions for Logistics Professionals
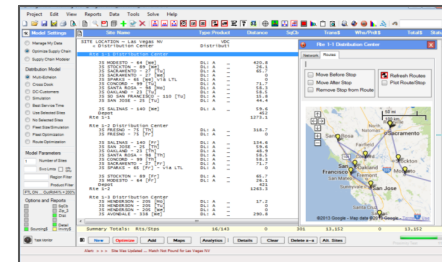
Provide superior *customer service* at a lower cost

❖ Data includes customer orders, stop locations, transportation rates, vehicle types and operational metrics (average speed, driver wages, operating times, capacities, DOT regulations), time windows and product type restrictions.

❖ Logix quickly calculates optimum route schedules, required fleet size, driver schedules, and potential backhaul or continuous moves for maximum savings.

❖ Unique Distribution Network and Transportation Optimization integration provides even greater savings by optimizing customer/depot assignment and cross dock or load transfer opportunities.

Generate Routes and Vehicle Schedules to Reduce Delivery Costs

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On-Demand Solutions for Logistics Professionals

Solutions Include:

- ❖ Distribution Network Design
- ❖ Transportation Optimization
- ❖ **Truckload Scheduling**
- ❖ Dynamic Route Planning
- ❖ Transport Manager - TMS

"Optimum routing, fleet configurations and driver schedules help submit winning bids at the best mix of service and cost."   Director of Dedicated Engineering and Pricing

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On-Demand Solutions for Logistics Professionals

Logix Truckload Scheduling

Companies that tender loads for product pickup and delivery to distributors, individual stores, markets and customers (i.e., beverage, food and grocery distributors, propane and bottled gas delivery) use Logix Transportation Optimization to:

❖ **Increase asset utilization**
 Reduce the number of routes, vehicles, resources and total transportation costs

❖ **Increase on-time delivery**
 Better scheduling based on customer requirements
 Reduce penalties and late charges

❖ **Produce a Rapid Return on Investment**
 Operating costs reduced by 5% to 35%

❖ **Improve Planning**
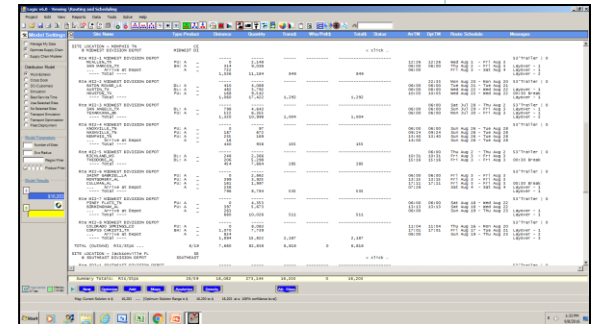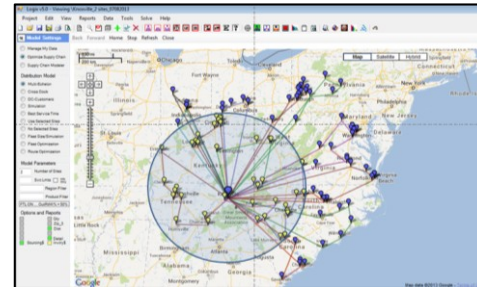 Respond more quickly to bid proposals
 Quick and accurate

Optimize Multi-stop Truckload Dispatch and Driver Weekly/Monthly Schedules

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On-Demand Solutions for Logistics Professionals
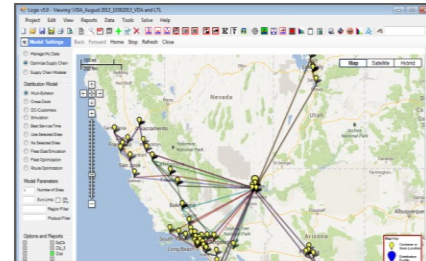
Optimize both carrier and fleet management

- ❖ Tender loads to carriers for truckload or multi-stop delivery/pickup?

- ❖ Schedule and route stops to minimize distance and/or cost or allow the carrier to make appointments.

- ❖ Develop weekly schedules to minimize total fleet and driver requirements.

- ❖ Run both a dedicated fleet and ship LTL and truckload?

- ❖ Generate truck manifests and assign carriers, consolidate products/loads to maximize utilization.

- ❖ Incorporate accurate route costs in distribution network decisions.

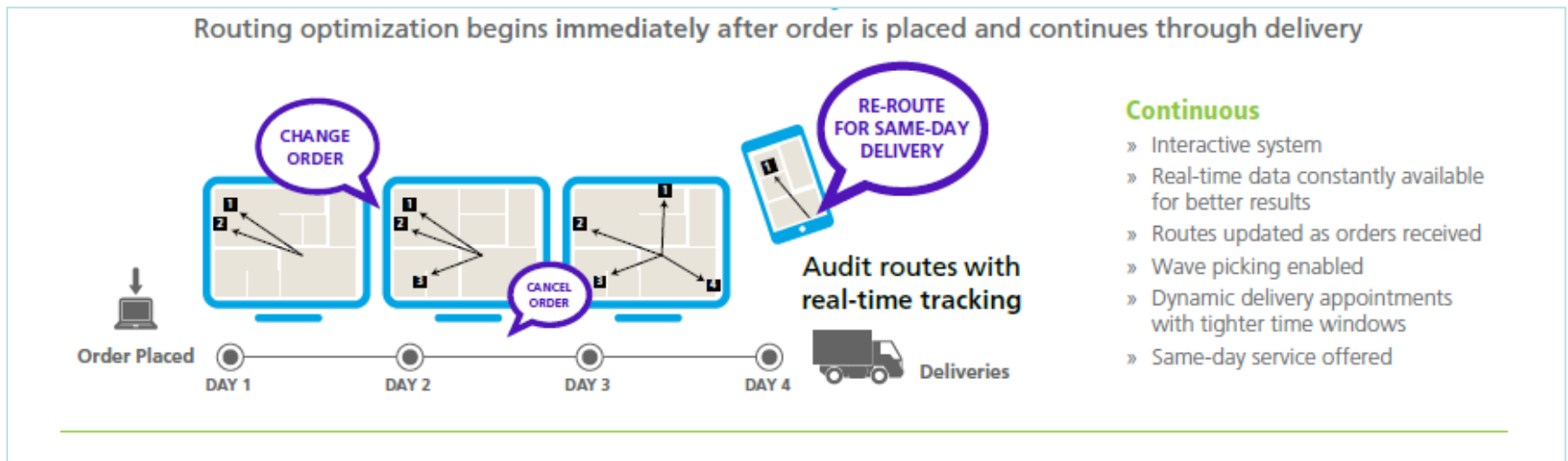Generate Carrier Manifests and Vehicle Schedules to Improve On-time Delivery

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Solutions Include:

- ❖ Distribution Network Design
- ❖ Transportation Optimization
- ❖ Truckload Scheduling
- ❖ **Dynamic Route Planning**
- ❖ Transport Manager - TMS

Routing optimization begins immediately after order is placed and continues through delivery

CHANGE ORDER

RE-ROUTE FOR SAME-DAY DELIVERY

CANCEL ORDER

Audit routes with real-time tracking

Order Placed — DAY 1 — DAY 2 — DAY 3 — DAY 4 — Deliveries

Continuous
- » Interactive system
- » Real-time data constantly available for better results
- » Routes updated as orders received
- » Wave picking enabled
- » Dynamic delivery appointments with tighter time windows
- » Same-day service offered

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On-Demand Solutions for Logistics Professionals

Dynamic Route Planning

Effectively managing <u>daily delivery routes</u> involves two distinct phases.

❖ First, a constantly evolving dynamic route plan must be built to efficiently deploy vehicles while satisfying changing customer demands and new orders in real time.

❖ Then, vehicles and drivers are monitored and dispatchers and customers are alerted to reflect real-world changes.

Benefits

❖ Coordinates users in a web-based, centrally maintained server.

❖ Easily integrates with existing order management or transportation planning systems.

❖ Decreases expediting costs and overtime charges

❖ Enhances fleet capacity utilization

❖ Minimizes route distances, average miles between stops, stop duration, and fuel usage

❖ Reduces fleet size necessary to service orders and dispatcher to driver ratios.

Features

❖ <u>Adaptive planning</u> re-optimizes plans as customer requirements, routes, and orders change.

❖ <u>Fleet-wide visibility</u> dynamically links map and schedule text views for all dispatched vehicles.

❖ <u>Geographic intelligence</u>: Employs extensive digital road network to support street-level optimization.

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Dynamic Route Planning

Optimize   *Dynamic Dispatch*

- ❖ Route Planner is geared towards organizations that are looking for a routing solution that is tightly integrated into enterprise processes and that have customers and orders that change right up to and beyond the time of dispatch.
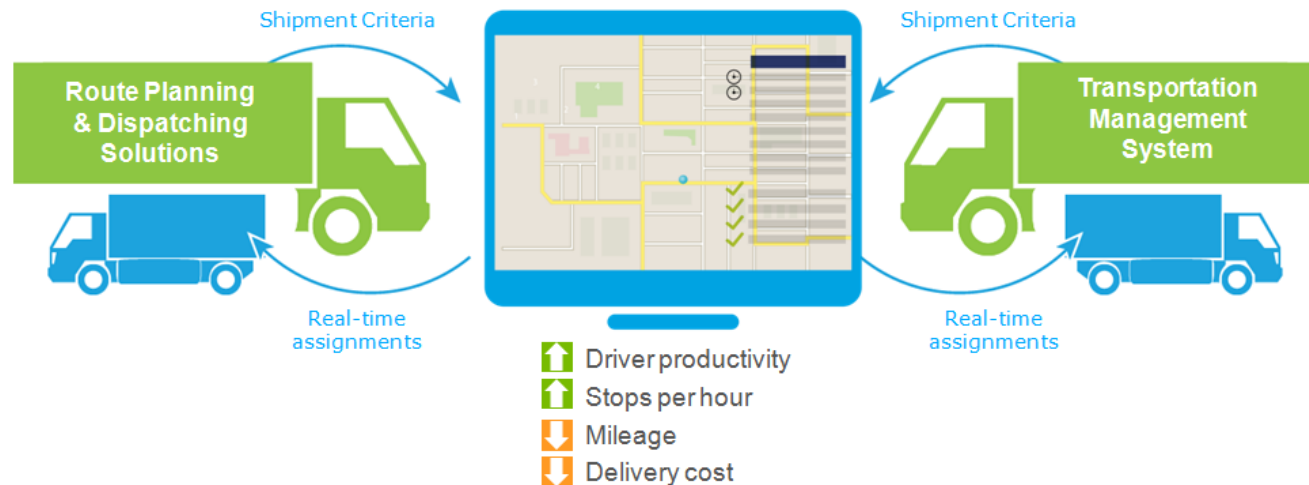
- ❖ With the right tool, planning for such a fluid environment becomes a powerful way to serve customers and keep a sharp eye on the bottom line.

- ❖ Route Planner is provided through Logistix Solutions' partnership with software provider Descartes Systems Group.

Continuous - Always On Model
Routing optimization begins immediately after order is placed and continues through delivery

CHANGE ORDER
RE-ROUTE FOR SAME-DAY DELIVERY
CANCEL ORDER
Audit routes with real-time tracking
Order Placed   DAY 1   DAY 2   DAY 3   DAY 4   Deliveries

Continuous
» Interactive system
» Real-time data constantly available for better results
» Routes updated as orders received
» Wave picking enabled
» Dynamic delivery appointments with tighter time windows
» Same-day service offered

Always On Model – A Profitable Choice

Increased Sales
» Enhanced omni-channel sales & fulfillment
» More transactions closed
» Better customer experience with more choice for delivery options

Reduced Expenses
» Fewer vehicles
» Better/right sizing driver pool
» Lower cost per mile
» Reduced replenishment costs

Logistix Solutions ®
On-Demand Solutions for Logistics Professionals

Solutions Include:

- Distribution Network Design
- Transportation Optimization
- Truckload Scheduling
- Dynamic Route Planning
- **Transport Manager - TMS**

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On-Demand Solutions for Logistics Professionals

Transportation Management System

Built to accommodate the end-to-end transportation management business process, Transportation Manager supports order management through consolidation, financial settlement and auditing.

Transportation Manager enables logistics managers, shippers and third parties to simultaneously evaluate and select the most efficient shipping method.

Benefits
- ❖ Provides ability to centrally control transportation spending and data
- ❖ Alleviates headaches associated with managing trading partner data quality and inconsistency
- ❖ Curtails "maverick" transportation spending
- ❖ Delivers quick time-to-value for customers
- ❖ Facilitates compliance with regulatory environments by sharing information in the correct format.
- ❖ Reduces drain on internal IT resources because of web-based architecture and upgrades
- ❖ Supports enterprise, private/public exchange, and 3PL transport models
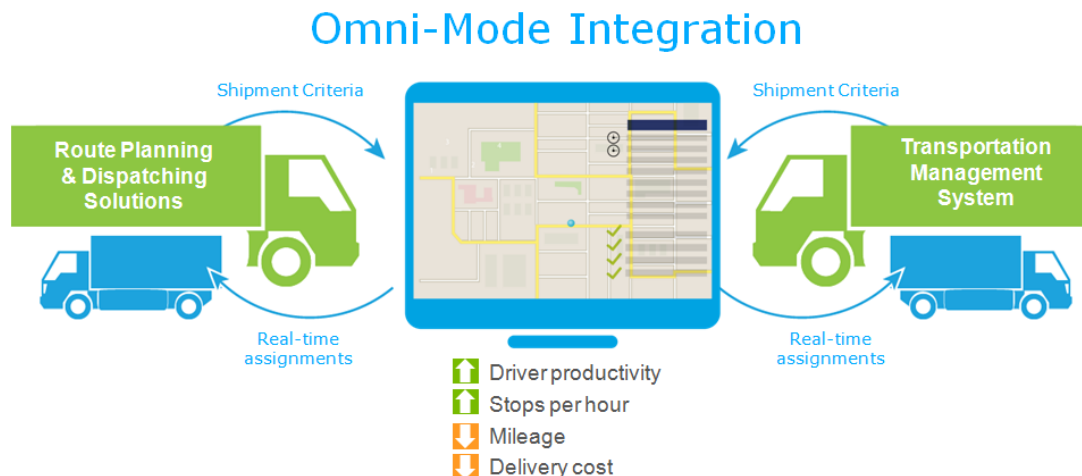
Features
Automated carrier selection: Tendering, notification, acceptance, re-tendering, alerts

Business process functionality: Supports and optimizes the entire business process of purchasing transportation, including automated carrier selection; management of freight rates and carrier contracts; shipment document generation; electronic communication of transportation needs to carriers; and real-time, exception-based visibility of shipment status to partners and customers.

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On-Demand Solutions for Logistics Professionals

Real time *visibility and collaboration*

- ❖ How can I effectively use all of my carrier contracts?
- ❖ Who is the most suitable carrier in this mode to handle my shipment?
- ❖ How do I communicate shipment information to my carriers and trading partners?
- ❖ How do I manage my shipment information through delivery and payment?
- ❖ What shipments can I combine to lower my costs?
- ❖ What combination methods should I use – aggregation, multi-stop routes, or pooling?
- ❖ Which shipment should go on my fleet instead of "for-hire" carriers?

Omni-Mode Integration

Logistix Solutions ®
On-Demand Solutions for Logistics Professionals

On-Demand Solutions for Logistics Professionals

Full-Featured, On-Demand Solutions
 Logistix Solutions integrates network, routing and transportation optimization solutions for accurate and complete results.

Solutions to Complex Distribution Problems
 Multi-tier, cross dock, intermodal and pool point distribution, global supply chain, supplier selection and private fleet and LTL/TL transport solutions.

Beyond Modeling – New Insights
 Powerful optimization algorithms provide unique solutions beyond simple user-provided scenarios to ensure all options are considered.

Real World Considerations
 DOT and driver requirements, facility, labor, inventory and transportation costs as well as capacity and service constraints are built into each solution.

Maps, Reports and Analytics
 Detailed reports, maps, charts and analytics to support your results and presentations.
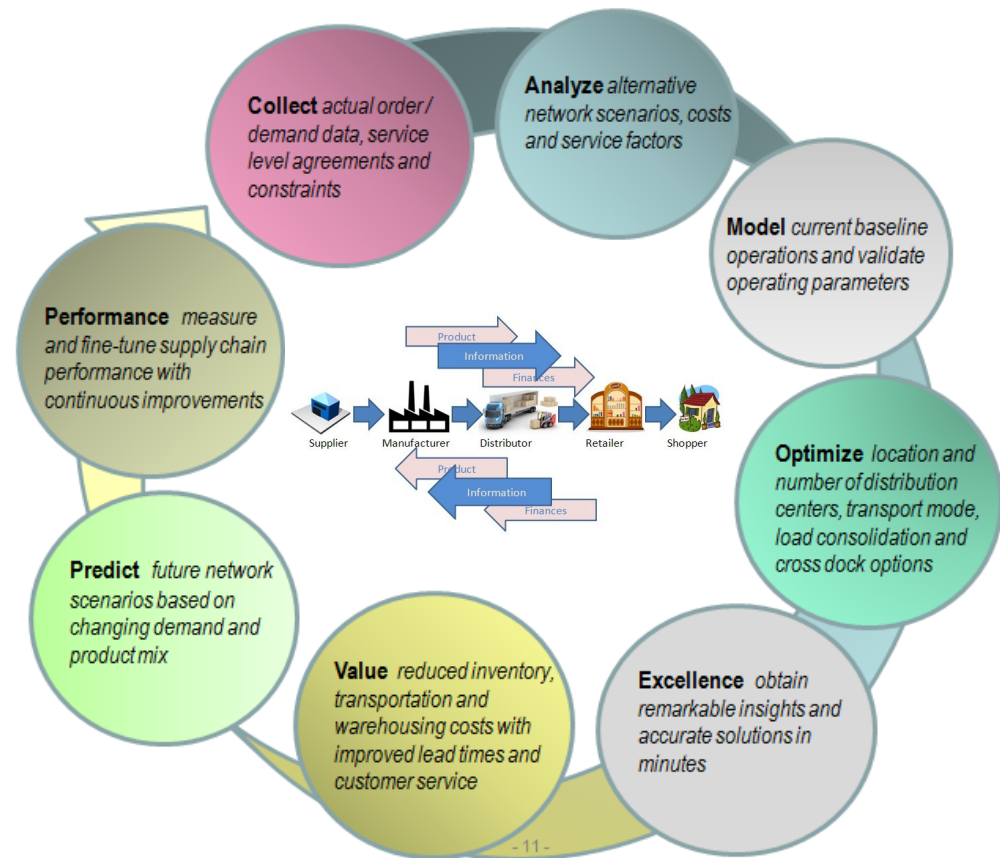
Technology
 Proven ILP / NLP optimization algorithms, MicroSoft .NET and SQL data base architectures updated continuously to meet our customers' latest requirements.

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Strategic Planning `blueprint for success`

❖ Use Logix to build your own distribution network model and quickly optimize logistics operations using your data, your priorities, and your evaluation criteria.

❖ Let us help you set up your distribution model with help from our web-site tutorials and on-line support.

❖ Work with our logistics experts and consultants to help you manage a complete network design project.

Collect actual order / demand data, service level agreements and constraints

Analyze alternative network scenarios, costs and service factors

Model current baseline operations and validate operating parameters

Optimize location and number of distribution centers, transport mode, load consolidation and cross dock options

Excellence obtain remarkable insights and accurate solutions in minutes

Value reduced inventory, transportation and warehousing costs with improved lead times and customer service

Predict future network scenarios based on changing demand and product mix

Performance measure and fine-tune supply chain performance with continuous improvements

Product
Information
Finances

Supplier Manufacturer Distributor Retailer Shopper

Product
Information
Finances

- 11 -

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On-Demand *solutions and support*

- ❖ On-Demand subscription licenses for one month, 3-months or longer
- ❖ Term licenses available
- ❖ Consulting Support and Training
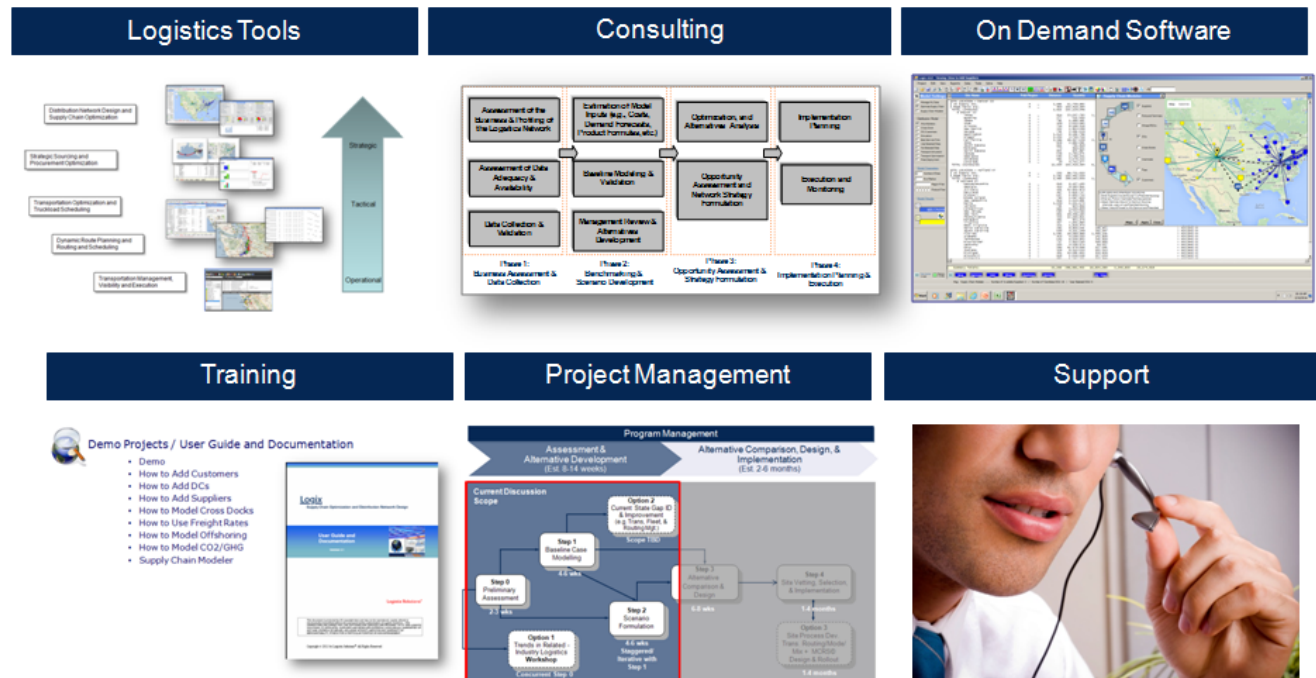
About Logistix Solutions

❖ Established in 2006 as a software and consulting company to provide technology solutions and in-depth industry knowledge for logistics professionals.

❖ Supply Chain Planning and Execution (SCPE) state-of-the-art software applications are designed for ease of use, speed and rapid implementation.

❖ Customers include Fortune 500 and mid-tier 3PLs, carriers, shippers, manufacturers, retailers, grocery, food, beverage and consumer goods companies.

❖ On-Demand solutions are licensed on a subscription basis with no upfront license fees, annual maintenance or implementation costs.

❖ Support, training and consulting services provided by experienced supply chain practitioners and logistics software experts.

"Each year, the editors of Food Logistics recognize 100 technology and solution providers that help grocery and foodservice distributors and manufacturers to better manage their supply chains and reach their business goals. This year, Logistix Solutions was recognized as a recipient of the Top 100 Software and Services Providers "

Food Logistics Top 100
Software and services providers

About Logistix Solutions

Our *Partners and Technology Solutions*

DESCARTES™

United by Design. Uniting the People and Technology that Move the World

Navesink Logistics, Inc.

Executive Search and Consulting Services for the Logistics and Supply Chain Industry

BESTRANE

Asia Pacific. Logistics solutions to optimise your supply chain operations.

Microsoft

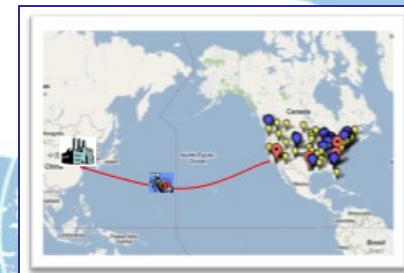.NET Framework and SQL DBMS

Google Maps

Mapping and Geocoding

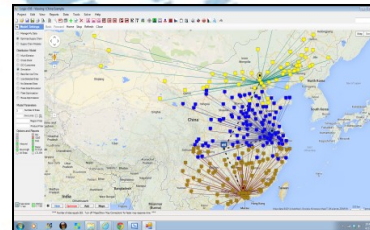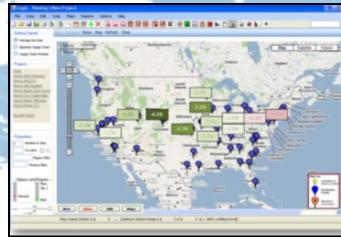**PC*MILER**

Mileage and Mapping Software

About Logistix Solutions

Logistics Professionals worldwide have made Logistix Solutions' range of Supply Chain Management applications some of the most widely used global solutions.

❖ Transport Optimization – Northwest Region USA
❖ Parcel Shipment Lead Time Optimization – USA
❖ Food Product Import Optimization – Europe
❖ Lubrication Products Sourcing Optimization – China
❖ Hospital Location Analysis - Australia
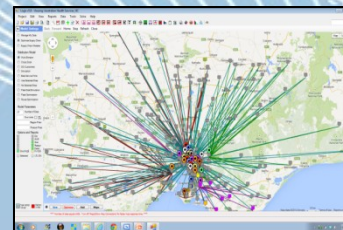
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