Logistix Solutions

Logistix Solutions' Logix® Software Comparison to "MIT/Coupa Case Studies, and Best Supply Chain Practices in 2022"

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In this edition …

- Next Generation Supply Chain Solutions – How ProLogix performs against MIT's Best Supply Chain Practices in 2022.

- How the data and tools organizations use differ according to their level of decision-making maturity.

- Descriptions and criteria for developing more sophisticated and planning tools and supply chain models.

<u>Next Generation Supply Chain Solutions – How ProLogix Supply Chain Optimization Software performs against MIT's "Best Supply Chain Practices in 2002".</u>

Massachusetts Institute of Technology teamed with Coupa to author a look at next generation supply chain software tools and their criteria enabling these tools to solve the supply chain challenges of the future. The article describes how today's software solutions must be adapted to solve increasingly complex issues such as supply chain resiliency, carbon emissions and massive data while offering better solutions, keener insights, and overall more sophisticated performance.

This whitepaper compares each of the criteria described in the article to the more sophisticated AI enabled ProLogix Supply Chain modeling and optimization software from Logistix Solutions. The table below contains excerpts from the article listing each of the criteria and how ProLogix functions and features address these criteria.

ProLogix was introduced by Logistix Solutions in 2018 as an AI Enabled / Machine Learning software extension of its widely used Logix Distribution Network Modeling and Transportation Optimization software tool. Intended for a more sophisticated supply chain practitioner audience, ProLogix is increasingly used by supply chain professionals in consultancy, third-party logistics and solution providers and in-house supply chain organizations to highlight key areas of potential improvement in supply chain performance on a continual basis.

Logix solves the typical supply chain optimization problems such as how many distribution facilities do we need and where should they be located, how do we improve service and product distribution through our existing network of by adding strategically located facilities and how do we optimize the performance of our delivery fleet.

ProLogix greatly expands this ability with features like AI/Machine Learning Predictive Analytics, highlighting exactly where supply chain bottlenecks hinder performance, which customers experience declining service or higher costs, and how the supply chain of the future is impacted by rising fuel costs, shifting demand, new products and expanded customer bases, and supply chain crises due to supplier shortages, global disruptions, and uncertainty, using sophisticated "What-if" capabilities, probability-based modeling techniques, and graphic or map-based tools to easily visualize and report on the results.

Greater sophistication often comes at a price, resulting in higher priced, more difficult to use software. Logistix Solutions strives to provide its On-Demand software at accessible subscription pricing models that have received numerous awards for the solutions provided that have saved companies worldwide millions of dollars in costs while greatly improving service or offering new, more rapid-delivery solutions that meet today's more challenging customer-driven standards.

As the most widely used on-demand software tool on the market, Logistix Solutions provides a demo as well as convenient short-term licenses of its software tools by [following this link](#). The format of this white paper is intended to allow you to quickly view each criteria, its description directly from the article, and the related functionality from Logix or ProLogix that supports this criteria, free of hype or jargon. Supporting case studies and whitepapers on each topic [found here on our website](#).

[A link to this article is provided here](#). Feel free to view the article and explore each metric of supply chain excellence.

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Criteria	Description	Features, Functions and Case Studies
Continuous Review and Redesign	It is necessary to move from an event-based (or crisis-driven) approach, where supply chain design is performed as a one-off study, toward a continuous review and redesign process, allowing organizations to quickly adapt to changes in the business environment and develop feedback loops that enable timely course adjustments.	Logix is available "On-Demand" and any model you build is yours to use as often as you'd like to instantly ask "What-if" questions about your supply chain and to model any supply chain issue or future-based scenario today.
Choosing the Right Level of Customization & Complexity	Given the key role that supply chain design plays in corporate strategy, a more customized approach to supply chain design is needed. While targeted solutions increase the relevance of tools and models used to support decision-making in supply chain design, they also require the maintenance of custom-developed code. Therefore, while reframing the decision-making problem, it is necessary to adopt a more customized approach only in those areas that act as key levers of performance.	Logix is constantly updated with new, custom developments based on user requirements approximately every two weeks. The "On-Demand" delivery model allows the entire community of Logix users to immediately take advantage of these "customizations".
Reframing the Design Problem	Key value-generation levers must be translated into design decisions (changing product mix or employing a crowdsourced delivery model in retail, for example), while realistically capturing critical industry and organization specific constraints (regulatory constraints limiting the structure of physical flows in the pharmaceutical sector, for example). Finally, primary sources of uncertainty should shape the implicit stochastic modeling and/or the scenario-building process.	ProLogix AI/Machine Learning Optimization helps users adapt their data and design parameters to create realistic computer models of their supply chain environment to drive insightful solutions buried in mountains of data, in a matter of seconds.
AI and Machine Learning to Facilitate Scenario Building, Enhance Input Data, and Reduce Model Complexity	Data science can be used to reduce the complexity of the model by performing aggregation, such as the use of clustering rules, or by replacing certain parts of the model—for example, by approximating certain tactical or operational decisions sufficiently well rather than explicitly modeling them.	Using innovative visualization techniques that display entire supply chains and product flows along with data aggregation techniques Logix simplifies even complex supply chain scenarios.
Tapping into the Full Power of Analytics	The complexity of models used to support supply chain design should account for trade-offs between the need to collect and maintain data, the computational time required, and the ability of those models to generate relevant insights.	ProLogix AI comes with built in stochastic 'what if assessment', highlighting major pain points in a network

Adapting to Local Specificities in Supply Chain Design	Modeling scenario of a large and highly fragmented customer base requesting small but frequent deliveries while remaining computationally tractable. This requires different approaches to capturing customer availability, predicting delivery success, and estimating travel times, as well as to cost-to-serve and route productivities. Further, local security constraints and a cash-based economy give rise to a number of additional sources of risk and uncertainty that require modeling.	Logix supports both Supply Chain Network Design at a more macro level as well as Transport Optimization at the street level, with route level input such as customer time windows, vehicle capacities and commodity restrictions, as well as accurate point-to-point driving directions and distances. Logix is currently in use in Eastern Africa in this exact scenario.
Replenishment and Inventory Decisions	Particularly relevant for global, multi-tier supply chains, and industries characterized by a high value of inventory, where decisions about cycle and safety-stock deployment can have substantial financial impacts. Extending the current supply chain design models to incorporate inventory and replenishment aspects is crucial to capture trade-offs between facility, transportation, and inventory capital costs.	ProLogix AI/Machine Learning functionality goes beyond modeling inventory safety stock requirements and costs to solve product replenishment and economic order quantity problems.
Design for Global and Diverse Markets	Objectives tend to vary, and there is frequent lack of alignment in areas such as offshoring, onshoring, postponement, stocking, and last-mile delivery. To overcome such inconsistencies, supply chain design must holistically integrate decisions from sourcing to go-to-market channels across multiple countries and geographies.	Logix incorporates maps, geocoding data, and even economic/logistics models from around the world allowing users to adapt readily available Logix models to their own needs.
Design for Value Creation/ Value-Based Supply Chain Design	Supply chain design models should incorporate a larger set of financial objectives, such as capital expenditure, working capital, market share, price, growth, and an extended set of decisions (e.g., product assortment, product launch).	Logix supports cost optimization, best service optimization, and mixed criteria to balance transportation costs, warehouse costs and inventory, all while presenting results for service level, cost reduction and asset deployment.
Production Planning	Important to represent is the profit-optimal trade-off, between the expected additional logistics costs and the resulting growth in market share and revenue captured. Strategic production planning decisions, including facility location and machine capacity, are directly interrelated with tactical decisions on the utilization of those assets— i.e., choice of facility and production line	

Design for Sustainability

While it is common for industries to compute the CO2 emissions for various transportation modes, these assessments need to be expanded and refined to include the social and environmental impact of end-to-end supply chains, incorporating all production and warehousing facilities as well as the upstream energy sources, to achieve the "triple bottom line" of sustainability": economic prosperity, environmental quality, and social justice—or, more simply, people, planet, and profits.

Every Logix model instantly provides measures of CO2 and Greenhouse Gas Emissions for all modes of transport as well as for many warehouse and industrial facilities. Users can also input CO2 estimates for suppliers and other sources of pollutants.

Using Scenarios to Account for High-Impact Risk

Low-probability, high-impact risks (fire, hurricane, flooding, pandemic) require more complex decision-making support. Lack of historical data makes it extremely difficult to associate probabilities with this risk type, and, given their extremely low likelihood, the potentially catastrophic impact of such events will likely not be captured by traditional methods, and therefore, will likely not affect the design choices. To incorporate these types of risks in supply chain design, a scenario planning approach can be useful. Scenario planning allows users to understand potential outcomes and steer decision-making away from reaction and toward proactive preparedness.

ProLogix AI/Machine Learning capabilities allow data driven what-if analysis of any scenario, incorporating both deterministic demand growth or decline as well as stochastic / probabilistic changes in demand or fuel prices and other parameters in changing or highly volatile economic environments.

Incorporating Risk Mitigation and Resilience

Disruption, uncertainty, and risk have all increased in recent years. Product demand, costs, freight transportation rates, lead times, exchange rates, and capacity requirements are naturally exposed to various sources of uncertainty. Demand and capacity are also subject to risk from natural disasters and accidents, but also to supplier failures, strikes, and, of course, epidemics and pandemics. In light of the increased pace of change on the demand and supply sides and the growing relevance of major disruptive events, it is imperative that companies mitigate risk to achieve optimal performance in challenging environments. Accordingly, supply chain decision-makers are seeking methods for integrating risk and resilience into their supply chain designs.

Simply input the level of confidence in certain parameters and Logix provides alternative solutions allowing for risk, uncertainty and endless possibilities.

Sourcing Optimization

Sourcing optimization has become extremely important, owing to the adoption of multi-sourcing practices as well as rising concern over supplier risk, the sustainability of sourcing practices, and the impact of sourcing on corporate responsibility. Most recently, disruptions during the Covid-19 pandemic have shed light on sourcing as a major point of failure and have confirmed the need to look at this issue in finer detail.

Logix not only optimizes outbound delivery networks and inbound sourcing but has the unique capability to do so simultaneously, for the ultimate end-to-end supply chain optimized solution.

Transportation Planning, and Sustainable Last-Mile Distribution Network Design with Digitally Enabled, On-Demand Fulfillment

An up-to-date software technology can make recommendations on which future vehicle technology (including drones, electric cargo bicycles, and electric delivery vans) the carrier should deploy, in which service areas they would be most beneficial, and which customers and parcel volumes would be best suited for service by these new delivery solutions.

In parcel delivery and retail industries, transportation planning has a strong influence on strategic planning. This applies especially in inbound transportation and last-mile distribution, where decisions about the allocation of transportation resources and carrier or mode selection need to be aligned with the design of the network. Design of distribution networks should incorporate a more granular estimation of the transportation and routing costs, accounting for elements such as customer density, logistics infrastructure, and the expected service level.

Logix Transport Optimization provides solutions for last mile delivery by walkers, bicycles, e-vans and delivery trucks. Optimum solutions provide numbers of each delivery type, delivery coverage and timings.

<u>LOGISTIX SOLUTIONS – On-Demand Technology for Logistics Professionals</u>

Logistix Solutions is a software and consulting company with premier technology solutions and in-depth industry knowledge for logistics professionals. We offer award-winning, on-demand Supply Chain Planning and Execution (SCP&E) applications for retailers, manufacturers, third party logistics providers, consultants, food and beverage and other distributors. We support strategic planning and logistics execution requirements at an affordable value for rapid ROI and benefit realization.

Based on extensive development working with Fortune 1000 companies, Logistix Solutions provides full-featured, on-demand supply chain solutions and consulting services for retailers, manufacturers, third party logistics providers, consultants, food and beverage and other distributors to support strategic planning and logistics execution requirements.

Supply Chain Planning and Execution software solutions offered:

- o   Distribution Network Design and Supply Chain Optimization
- o   Sourcing and Procurement Optimization
- o   Driver and Vehicle Scheduling
- o   Routing and Scheduling Fleet Optimization

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

For more information on the Logistix Solutions suite of products, visit our website at
www.LogistixSolutions.com

or

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