



The Multimodal Balancing Act

It's not about choosing one priority over another — it's about balancing them all to create greater value across the network

Multimodal logistics teams are juggling increasing complexity: unpredictable demand, tighter delivery windows, regulatory bottlenecks, and growing pressure to reduce emissions. Containers move across networks that include road, rail, barge, air, terminals, and inland depots but the planning behind those movements is often fragmented. Supporting activities like customs, cleaning, and safety checks add another layer of complexity, yet they're rarely integrated into the core plan.



Behind every container is a web of decisions. And each one affects costs, timing and flow and none can be made in isolation:

- **Where to store a container?**
- **How to route a shipment?**
- **When to reposition assets?**
- **Prioritize delivery speed or network efficiency?**

This is the multimodal balancing act. When the impact of those decisions isn't visible, the consequences ripple across the network.

Complexity is intensifying the ripple effect

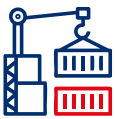
Multimodal logistics isn't just about moving assets, it's about orchestrating movements across systems that were never designed to talk to each other. As expectations around cost, service reliability and sustainability continue to rise, the impact of each decision becomes more significant.

At the same time, supply chains are becoming more interconnected, volatile, and harder to manage. Small changes in one part of the network can quickly lead to unexpected consequences elsewhere. A single delay, missed activity, or suboptimal routing choice can ripple across not just one shipment, but multiple legs, services, and schedules.

This is where planning becomes more challenging but also more valuable.



Everyday constraints like health and safety zones, temperature requirements, driver qualifications, and strict SLAs are part of normal operations. When these constraints aren't considered early, the result is often rework, risk or delay.



Asset positioning is another ongoing balancing act. It's not about having enough containers; it's about having them in the right place at the right time. Keeping containers nearby can help you stay responsive but may create unnecessary congestion or cost. Moving them inland can free up space but it comes with the risk of future delays if demand shifts. The key is being able to make these decisions with a clear view of what's coming next.



Supporting activities like customs clearance, inspections, and cleaning tasks are operational necessities that affect flow and resource use. When these steps are built into the flow from the start, they stop being sources of delay and become part of a well-functioning system.



Disruptions are no longer the exception, they're part of daily life. Barge delays, labor shortages, port congestion... these things happen. The difference is how you prepare for them. Simulation allows you to test scenarios and explore alternatives before you commit so you can take control, even when the unexpected happens.



Making the right decisions across cost, service, or emissions doesn't mean prioritizing one over the others. When you can see the impact of a decision, you're not choosing between competing goals, you're balancing them in a way that works for your operation.

Planning in isolation is no longer enough. But it's not about trade-offs, it's about making informed decisions that balance what matters most: **performance, cost, and resilience.**



Five planning pillars and the decisions they support

To move from reactive firefighting to proactive planning, you need to think holistically across five interconnected pillar, each one offering opportunities to improve visibility, efficiency and value:

Decision: When and where should I plan for cleaning, customs, and safety checks?

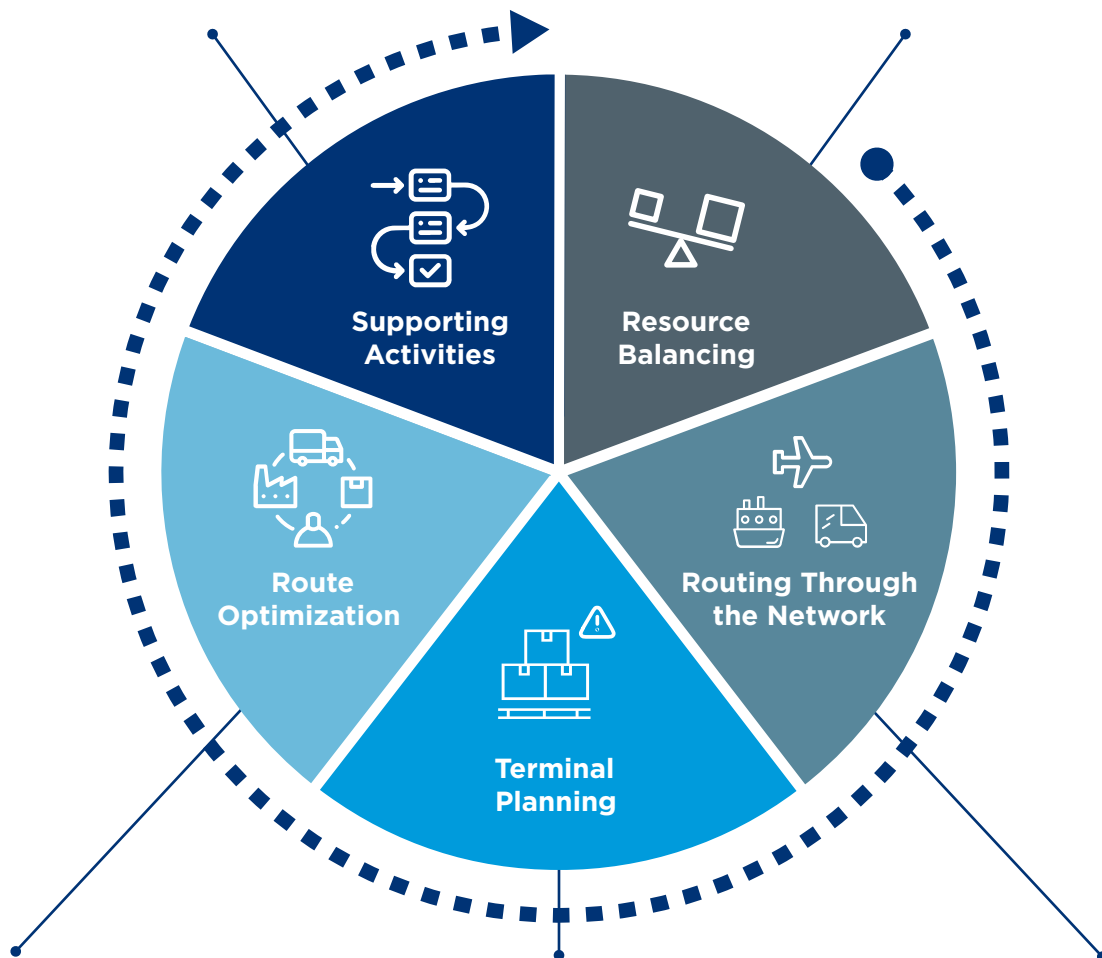
Planning these in too late can cause disruption. Planning too early may reduce flexibility.

Solution: Integrate supporting activities directly into your plans, with logic and timing embedded directly into the flow.

Decision: Where should I position assets now to meet future demand?

Keeping containers close supports responsiveness but can create excess capacity. Moving them inland reduces congestion, but risks availability later.

Solution: Use scenario planning to anticipate future demand shifts and pre-position containers where they'll create the most value across the network.



Decision: How do I build efficient, executable transport plans?

Bundling deliveries reduces miles and resource usage but may add complexity to scheduling and on-site constraints.

Solution: Combine routing with driver skills, site-specific constraints, and timing of supporting activities to create feasible, efficient routes.

Decision: Where and how should I store containers for optimal flow?

Inland storage may be more cost-effective but increases re-handling and dwell time. Keeping containers closer to the port may raise costs but speeds up response.

Solution: Align terminal choices with downstream movement needs and minimize re-stacking and dwell time.

Decision: What's the best routing and modality mix for this shipment or region?

Lower-emission options like rail or barge help meet sustainability goals while truck routes offer speed and flexibility.

Solution: Evaluate routing options in context (factoring in service levels, constraints, emissions and cost) to choose the best route, not just the fastest or cheapest.



From Juggling to Orchestrating

Everyone in the industry is juggling competing priorities. The question is whether you're doing it reactively or with a clear line of sight across the network. The real opportunity isn't about compromise, it's about understanding the impact of every decision and confidently balancing what matters most.

When planners stop fighting fires and start simulating scenarios, they stop reacting and start orchestrating. By connecting the five planning pillars and making smarter, more informed decisions, you unlock value and create opportunities to reduce unnecessary movements, lower emissions, and increase delivery performance - all at once.

Ready to stop juggling and start orchestrating?



Let's walk through your multimodal planning challenges together.
No demos. No pressure.

ABOUT THE LOGIC FACTORY

The Logic Factory (TLF) is an independent global supply chain planning and optimization consultancy focused on delivering lasting value and sustainable growth. We empower companies to improve performance by identifying what makes them unique and building tailored solutions for greater efficiency. From consulting and implementation to post-go-live support, we guide clients every step of the way to ensure business success. Trusted by single-site operations and global leaders alike, we build long-term partnerships grounded in collaboration and shared success—turning complexity into clarity and enabling smarter decisions for a better future.

Are you interested to know more? Get in touch.

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