A Tale of 3 Supply Chains

elementum



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Executive Summary

In a world where speed is everything, supply chains of even the biggest organizations suffer from slow reaction time and disjointed resolution of the endless issues that arise across their global operations. This is due to structural siloes that separate enterprises, functions, and systems up- and downstream of the chain. When relying on spreadsheets, phone calls, and teams of analysts to connect the dots, the only thing companies can count on in times of misalignment is tribal knowledge (and a bit of fortune telling).

Given this landscape, operational efficiency remains out of reach—even though today's "I want it now" economy makes it an existential necessity.

Elementum's Orchestration Platform™ connects across supply chain partners to fundamentally change the way information flows and the way global ecosystems can collaborate.

The Orchestration Platform:

- *Unifies* data for ecosystem visibility and increased data quality
- *Predicts* problems or opportunities proactively
- *Drives* multi-enterprise resolution of these problems or opportunities

While companies today focus on cost as their main metric for benchmarking operational success, it is revenue and cash that impact strategic growth. Elementum's solution spans systems, teams, and ecosystem partners to help companies move with unprecedented speed towards action and resolution. This new level of connectivity helps companies drive revenue through product availability and customer satisfaction, with wide-ranging impact on cash and cost.

This paper examines three supply chain use cases to illustrate and quantify the benefit of running on Elementum across revenue, cost, and cash metrics.



Case for Preserved Revenue

$20B+ Food & Beverage giant prevented major stockouts and preserved annual revenue of **$79M**



Case for Freed Cash

$20B+ Healthcare company reduced end-to-end lead time, freeing up **$83M** cash



Case for Saved Cost

$10B+ Advanced Materials giant proactively managed an external disaster, saving **$8.1M** in costs

By connecting global ecosystems to drive revenue, operations are no longer a back-room cost and cash drain, but a key strategic driver of business—the new differentiator in tomorrow's autonomous supply chain.

Deriving Multi-Dimensional ROI

When deciding between getting the right product to the right place, at the right time versus balancing costs, supply chain executives will opt for high product availability every time, even though their bonus may be riding on cutting costs. Because product availability is the one thing that drives a company's reputation for meeting customer commitments. And because most organizations don't have a good way of matching forecasted plan to real-time demand, executives end up spending a fortune on inventory buffers, last minute expedites, or unplanned supplier changes. In other words, in attempts to drive *revenue*, companies sink billions in *cost* and *cash*.

So why aren't companies focusing on the right metric? Because supply chain professionals' hands are tied by a fundamental disconnect across their operation and simply don't have the capabilities needed to influence revenue in a healthy way.

Today, most companies don't own or control about 80% of their operations, having outsourced materials, manufacturing, and logistics to external partner networks. In a constant game of conflicting priorities, unforeseen events, and shifting market demands across an ecosystem of hundreds of separate entities, organizations have no ability to know what is happening in their supply chains, let alone fix problems.

In desperate firefighting attempts to get products to customers, the only lever companies feel they can control is crunching costs and margins across their partner ecosystem.

In order to minimize orders at risk (and increase customer satisfaction), companies need transparency across the entire supply chain —inside and outside their four walls. This means monitoring manufacturing and material availability in relation to how these entities impact finished goods across global shipments and real-time demand. This level of operational orchestration requires turning the chain into a network, breaking down siloes, and enabling partners to surface issues, collaborate, and resolve issues before they impact customers.

The connected supply chain will transform the way businesses run. No longer a cost center, supply chain operations becomes the most strategic driver of business. By optimizing for product availability, companies can drive revenue, while materially impacting cash and cost through increased operational efficiency.

Companies that approach operational ROI in this multi-dimensional way will be those that rise to the top in the next decade.

A Transformed Supply Chain Requires a Fresh Look at Value

Today's supply chain operations have been built upon a set of outdated assumptions that rely on spreadsheets and email as communication tools; a status quo that exacerbates the latency and misalignment of parties along the value chain. This blind trust in inherited processes has embedded sluggish responsiveness into supply chains that are built on siloed transactional systems. The result is decisions that are optimized "locally" without a global context, potentially creating further problems upstream and downstream across the supply chain.

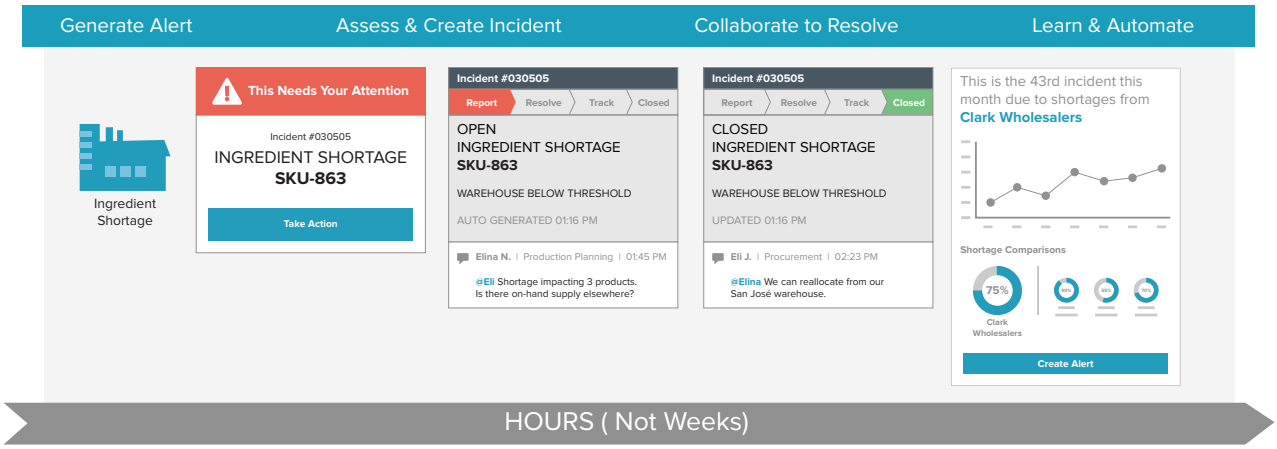
Traditional supply chains suffer across the board from:



- *Slow pace of communication,* or more likely, a failure to communicate
- *Intense manual effort* to understand issues, typically taking days, weeks, or even months of data gathering
- *Excess resource buffer across the board* due to poor flow of information and the constant battle against stockouts

Connectivity Unlocks Speed of Discovery and Resolution

The financial benefits accrued through Elementum derive from a foundational improvement in how supply chains are connected and orchestrated. This level of connectivity generates a paradigmatic shift from the unknown to the fully aware: a smart, connected supply chain that sends proactive alerts and drives collaborative action across multi-enterprise partners.



The connected *speed* of the orchestrated supply chain drives the core financial benefits of Elementum. In general, these benefits come from the ability to:

Make Decisions Earlier:

Proactive alerts to members across the value chain accelerate the discovery of potential problem by days, weeks, and months, before they result in crisis. Avoiding late decisions means saving on costly last-minute actions, or worse, brand-damaging stockouts.

Execute on Options Faster:

When teams can conduct local incident management responses with choices viewable in the system, decisions get made faster. And with cross-organization collaboration, they are also executed more effectively

Create Agile Operations:

With access to a historical log of material flows and incident resolution drivers, organizations can actually incorporate lessons from past experience back into everyday operations in order to become more agile and responsive.

The business examples that follow help illustrate the financial impact of the type of supply chain that is common to Elementum deployments—one that is connected, predictive, and optimized for speed.

A Tale of 3 Supply Chains

1. Major Food & Beverage Company Preserves Revenue

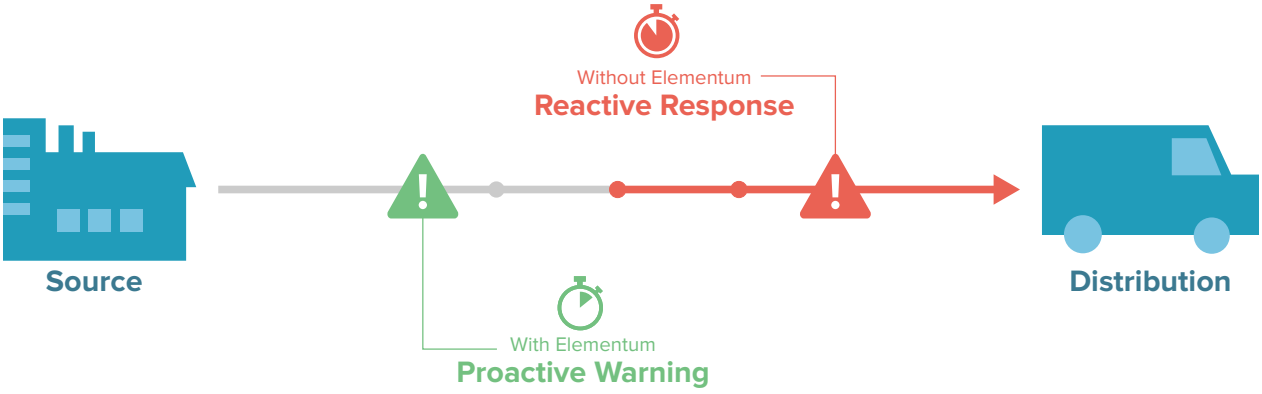
Just in Time Adjustments Keep Shelves Stocked and Revenue Preserved

Context: About the Company's Operations

A $20 billion company in the traditional beverage business faced pressure from fresh food competitors expanding into their core market. With additional pressure from Wall Street and their Board of Directors, the company quickly assembled third-party food and kitchen providers across the globe to serve fresh food to their thousands of retail stores. These perishable products required a much faster supply chain.

The Problem: Last to Know

Prior to Elementum, the company would catch wind of problems only upon receiving customer complaints, or more critically, in highly-publicized social media flame wars. Why didn't they know earlier? As it turns out, a supply chain built on email and spreadsheets prevented them from being able to quickly resolve issues. Fractured communications resulted in a giant game of phone tag, with the company's planners and buyers receiving only bits and pieces of information, or none at all.



Elementum: Forward Prediction & Just In Time Adjustment

Elementum is now deployed across the company's supply and logistic networks, through to its end stores. Suppliers and kitchens now exchange live information with the company's planners, distribution managers, logistics managers, and store managers. Any alert in the supply network, production status, and logistics flow gets acted on within minutes, instead of days, through a coordinated incident management system.

Replicable Example: Preserving Revenue

One day, a planner for the salad products received an Elementum alert that the supplier of a particular salad dressing had failed to ship to one of the contracted kitchens. In the past, she wouldn't have learned about this until 72 hours later when the salads failed to show up at the stores. But with the Elementum app on her phone, she opened an incident and simply switched to a slightly different salad which did not rely on that particular dressing. This small early act, now repeated across the company's fresh food business on a regular basis, keeps shelves stocked and revenue flowing.

Preserving Revenue

Salad retail price	$7.95
Average # of salads sold per store	12
Stockout revenue at risk across all stores	$2.55M
45% consumers not choosing substitution	-$1.15M
10% stockouts that prevented substitution	-$369K
1 day revenue lost per event	-$1.52M
Revenue Preserved Annually (average 1 similar event/week)	$78.8M

Additional Financial Benefits

While this company uses revenue protection as its primary ROI driver with Elementum, they profit from a number of additional benefits:



Increased Customer Satisfaction & Retention:

Stockouts drive a percentage of consumers to switch to alternative brands. This results in long-term lost revenue and acquisition costs to win them back. With the ability to proactively reallocate inventory in times of demand spikes, this customer was able to protect revenue and brand loyalty.



Decreased Excess and Obsolete Expenses

Each disruption in the value chain represents a misalignment of planned inventory and actual sales. Given the perishability factor in the food business, this mismatch results in a portion of inventory that expires and has to be destroyed. Such misalignment can be avoided with the ability to rightsize inventory and reduce lead times, lowering waste.



Decreased Expedited Orders

A certain percent of disruptive events require expediting materials to make up for stock shortfalls. This leads to increased logistics costs. Having a better pulse on demand and a faster production cycle time helps to optimize the supply chain and take these costs out.



Smooth Product Launches and Promotions

In new product launches or promotions, minor disruptions can be exacerbated when new teams try to interact before having time to establish the network through which traditional supply chains operate, causing unsuccessful or flat launches.

2. Diversified Healthcare Company Returns Free Cash

Reducing Logistics Lead Times and Adding Accountable Inventory Buffers

Context: About the Company Operations

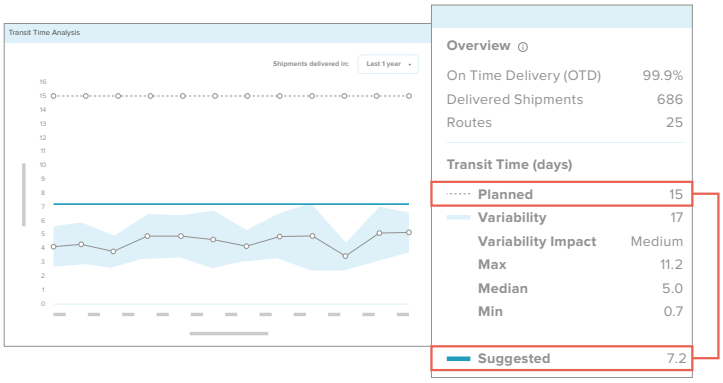
A diversified Fortune 100 healthcare company with products from pharmaceuticals to consumer healthcare, to orthopedic implants, faced gradually increasing inventory levels in their effort to ensure product availability for patients and customers. With several drugs coming off patent, Wall Street analysts were placing intense pressure to increase R&D funding to maintain a pipeline of new high-value drugs. The company launched an initiative to increase free cash flow for research investments by lowering inventory.

The Problem: The Inventory Impact of Guessing

With over 100 different instances of their ERP systems, multiple regional TMS systems, various local WMS systems, and hundreds of logistics carriers, there was no clear view of the problem. Despite major investments in some of the best BI analytics and central data lakes, information to decision makers was still days, if not weeks, old. Worse, this data was only available to the analytics groups, and not the supply chain operations teams who make hundreds of critical decisions on an hourly basis. Every day, groups down the value chain would be surprised by missing goods, even when upstream entities knew about problems. Last-minute scrambling around manual adjustments and expedites became a frequent occurrence. Over time, planners within the system had begun adding buffer time into logistics lanes in order to smooth out shortage spikes, and to avoid finger-pointing when problems materialized.

Elementum: Logistics Lead Time Reduction & Incident Alerting

Elementum was already being used by the company's procurement Center of Excellence for supplier monitoring and incident response. As a logical next step, the company began integrating logistics nodes into Elementum by adding carriers, lanes, and inventory locations. With their first unified view of real-time shipment and historical lane performance across the more than 10,000 lanes, the team identified opportunities for reducing lead times and the amount of product sitting idle. Equally as important, all members of the value chain were alerted early on when problems arose, and coordinated through an integrated incident management system to resolve problems before they became a crisis.



Elementum Lead Time view reveals savings areas for achieving the targeted SLA level.

Replicable Example: Shave Off Uncertainty-Driven Lead Time Buffers

The very first lane analyzed became an exemplary model across all of their lanes. An international lane connecting an internal distribution center (DC) to an external DC carried surgical orthopedic finished goods to the North American market. Even as an air route, the ERP system was set up with a 15-day lead time. Local teams indicated that neither pick and pack nor other activities on either end were the cause of the lengthy lead time. With Elementum, real performance data showed an average lead time of 4.7 days, with 7.2 days recommended to preserve the 95% OTD target. After further investigation, they discovered that the initial 15-day lead time had resulted from a planner entering a large buffer in response to a single Belgian labor strike two years prior. In his experience, parties were quick to point fingers when shipments were even slightly late, while no one complained if goods arrived several days early. The company was able to replicate the results of this case across all of their lanes. After analyzing their first 60 lanes in just one year, $100M previously tied up in inventory in transit has been returned to the business as free cash to reinvest.

Free Cash Flow Return

Annual Goods on Lane	$70,000,000
Average Flow per Day	$191,781
Initial Planned Lead Time for 95% SLA	15 Days
Initial Average Inventory In-Transit	$2,876,712
New Planned Lead Time for 95% SLA (Average LT + 2 x Standard Deviation)	7.2 Days
New Average Inventory In-Transit	$1,495,890
Lead Time Reduction (in days)	7.8 Days
Reduced Inventory In-Transit for 1 Lane:	$1,380,822
Lanes Re-Adjusted Per year	60 (out of 10,000+ lanes)
Global Inventory In-Transit for 1 Year:	$82,849,315

Additional Financial Benefits

This company had a primary goal of freeing up cash flow and used it as the main ROI for the project. However, several other benefits resulted:



Reduced Warehousing & Carrying Costs:

The company no longer had to rent excess warehouse space and was able to reduce the overall amount of goods sitting idle. Using a standard carrying cost estimate of 10%, that represents $138,082 in savings on the example lane above.



Reduced Excess & Obsolete:

While the example above involved non-sensitive orthopedic products, other lanes carried more sensitive drugs and ingredients. A tighter control on inventory, coupled with the incident alerting, translated into lower E&O costs.

3. Advanced Industrial Materials Company Reduces Costs

Collision Avoidance

Context: About the Company Operations

A 200-year-old Fortune 500 company making advanced materials for life sciences, consumer products, and telecommunications was facing increased investor pressure to reverse shrinking margins. This presented no small task in a highly-specialized supply chain that sourced raw materials from around the globe, manufactured in highly advanced proprietary factories, and purchased in multi-million dollar contracts. However, their status as a leader in the material science space meant that seeing the big picture was built into their DNA; in other words, they wanted to reduce costs in a way that didn't harm the quality of their business. To accomplish this, a visionary supply chain executive began an initiative to focus on organizational behavior, result-oriented measurements, and ways to improve supply chain maturity along with the cost-cutting program.

The Problem: Every Incident is a Crisis

Over the years, individual business units and factories were operating in a highly decentralized model, functioning through semi-autonomous ERP, TMS, and MES solutions. People, spreadsheets, and emails connected material flows throughout the system. As a result, a minor 'hiccup' early on wasn't identified until further down the value chain, when it had escalated into a full blown crisis with few available options, every one of them expensive. If they could incorporate early warnings to manage these daily hiccups, they knew they could operate much more efficiently.

Elementum: Earlier Adjustments Make Huge Differences

In the summer of 2017, a material planner received an Elementum alert of major flooding in eastern China. The alert included supplier, material, and finished good impact. One of the impacted parties was a critical supplier, so she quickly messaged the factory to discuss the issue. Although the supplier downplayed the impact, the material planner trusted the info in Elementum and saw a major production line had been badly damaged. She was immediately able to create a contingency plan to source the materials from another supplier. Had this played out like her previous experiences, the material planner would have taken the supplier's word and would eventually have to stop production once they ran out of materials. While these types of events occur on a regular basis across the supply chain, Elementum now allows decision makers to spot and steer around problems, whether it be a supplier with component issues or a regional carrier going out of business.

Cost Avoidance

Material at Risk for $3M in Product Revenue (6 month)	$1,050,000
Spot Purchase Premium (10%)	-$105,000
Projected Premium Shipping	-$20,000
Projected Overtime Costs	-$10,000
Per Event Cost Avoidance	$135,000
Average # of crisis events with premium spending	60
Global Cost Savings	$8,100,000

Additional Financial Benefits

While this example illustrates cost savings, the company also realized savings in several other key areas:



Protected Revenue:

By avoiding production downtime, the customer was able to keep product moving and protect $26.2M in revenue their first year



Lower Inventory & Buffers:

Tighter supplier and logistics monitoring allowed the company to save $4.8M in under one year.



Increased Supplier Cooperation:

The company has transitioned into a more cooperative model with its suppliers that involves incorporating a shared risk and reward model. This provides financial rewards for sharing information and participating in problem resolution.



Smoother New Product Introductions

Tighter communication among the players in the value chain has allowed the company to spot small problems earlier and smooth out what normally could have caused delays in new product introductions, from supplier ramp-up problems to logistics miscommunications.

Future Outlook: The Autonomous Supply Chain

The value delivered by the Elementum platform as highlighted by three different supply chain examples is just the beginning of the journey towards a new operational model. It is a journey that will profoundly influence how people in supply chain operate and the models and incentives that they operate under. When examining this progression, one can map three rough inflection points.

The Directed Supply Chain: This is a new operating model enabled through a digitized supply chain running on the Elementum platform. Business goals are defined across the supply chain (dates, targets, etc.). A system aware of the flow of goods oversees the operation and alerts people to problems. They then operate on the exceptions rather than micro-monitoring the system daily. This is the model of the Elementum customer.

The Intelligent Supply Chain: To drive intelligence across the supply chain is not just a pure data consideration. It must incorporate the lessons of how people have executed actions towards exceptions and have a feedback model to measure their success. This information currently sits in emails or in people's collective wisdom. An intelligent supply chain accounts for successful actions and uses it to suggest additional actions. This is where Elementum leverages Machine Learning against data and prior collaboration to dynamically suggest actions to users.

The Autonomous Supply Chain: A hot topic within supply chain and the last transformational stage. Once this stage is reached, the platform has learned what the flow of goods towards sets of business goals will look like, and codified the collective supply chain wisdom into adaptive, automated actions. Configurable rules automate alerts and workflow to eliminate friction caused by manual intervention today. The number of steps, touchpoints and human interaction needed are drastically reduced, shrinking the process of supply chain management to perfection. Imagine how the world will look when the autonomous supply chain stage is reached. Now think of the financial benefits when operations can not just adapt quickly to avoid colliding with problems, but predict problems before they even happen and when parties along the value chain have more rapid, interactive relationships. This is true supply chain transformation and your future state with the Elementum Orchestration Platform.

About Elementum:

Elementum is the SCM company behind the world's supply chain orchestration platform. In today's world, instant gratification trumps brand loyalty. To survive, brands must connect across their extended ecosystem so they can operate in real-time and deliver at the speed of customer demand. By digitally mapping the $25T product economy, Elementum's platform sheds light on the flow of goods around the world, and facilitates cross-ecosystem execution to ensure that products are available at the right time, place, quantity, and cost.