

TAMING YOUR SUPPLY CHAIN ISN'T A DATA PROBLEM

IT'S A CLARITY
PROBLEM



The right BI can help you see the one crucial thing you're missing. We explore examples from real businesses we've helped and share 3 principles of best BI practice.

One of the more challenging aspects of supply chain management is that – compared to even a few years ago – we live in a world of considerable logistical uncertainty. The Swiss clock reliability of on-time delivery has given way to volatility. Shipping rates are rising. The days of running a simple, linear supply chain and a traditional shipping playbook have passed. And yet, opportunities are everywhere to do things better – from the game-changing impact of automation and AI to the practical grind of building stronger financial models and smarter tracking tools.

For better or worse, we're doing business in interesting logistical times. Writing for HBR, a CEO voted as one of the top leaders of small and medium companies in 2021 had this to say about managing a company through uncertainty: "One of the most important business lessons is also the simplest: success is often the result of making more good decisions than bad ones over time. The question is how to do that."

The question is, indeed, how to do that... And here, of course, the freight train of successful intention hits the cement mixer of an uncertain and unpredictable future.

In this white paper, using real examples, we look at supply chain decision-making clarity: What it is, where it comes from, and how business intelligence forms a vital bridge between data and smart decision-making. But let's start with a simpler question of why, and the horns of a decision-making dilemma.

The clarity dilemma and the tyranny of time

So why is it so hard to make clear, objective decisions? Even if you have spreadsheets. Even if you read all the things you should read and talk to all the people you should consult. Of course, most people running a supply chain understand that information and data deliver clarity. We comprehend implicitly that quantifiable, objective analysis begins with numbers. So why not just use spreadsheets to make every important business decision? Especially when it comes to something so metric-driven as a supply chain?

The problem is that finding clarity with data takes time. Real time. And time is a luxury you don't necessarily have.



In a recent [survey conducted by BI-survey.com](#), almost 60% of participating managers estimated that over half their business decisions were not based on objective data. While there are a few causes, the most cited reason is depressingly simple: a lack of time.

So we find shortcuts and fallbacks:

- **Gut instinct:** In the pursuit of clarity, a lot of decision-makers lean on gut instinct for quick-fire supply chain decision-making. One significant problem with gut instinct is that this approach is blind to what's coming next. It brings to mind the story of [the inductivist turkey](#), the tale of an ill-fated (yet delicious) bird who used a gut instinct analysis to gauge his prospects of survival. He concluded that the farmer's ax was used exclusively for chopping down trees – a theory that proved extremely accurate right up until Thanksgiving morning.
- **Memory:** Here it's a simple matter of our human biology often failing us. Our recollection of events is inherently unreliable. According to the American Psychological Association, our decisions are often compromised by "[flashbulb memory](#)" – a phenomenon where emotionally significant events are easier to remember than expected outcomes. Of course, we're stuck with the vagrancies of our dodgy recall on a day-to-day basis. Nevertheless, memory alone is an incredibly unreliable decision-making tool for business.

Data (and the clarity dilemma)

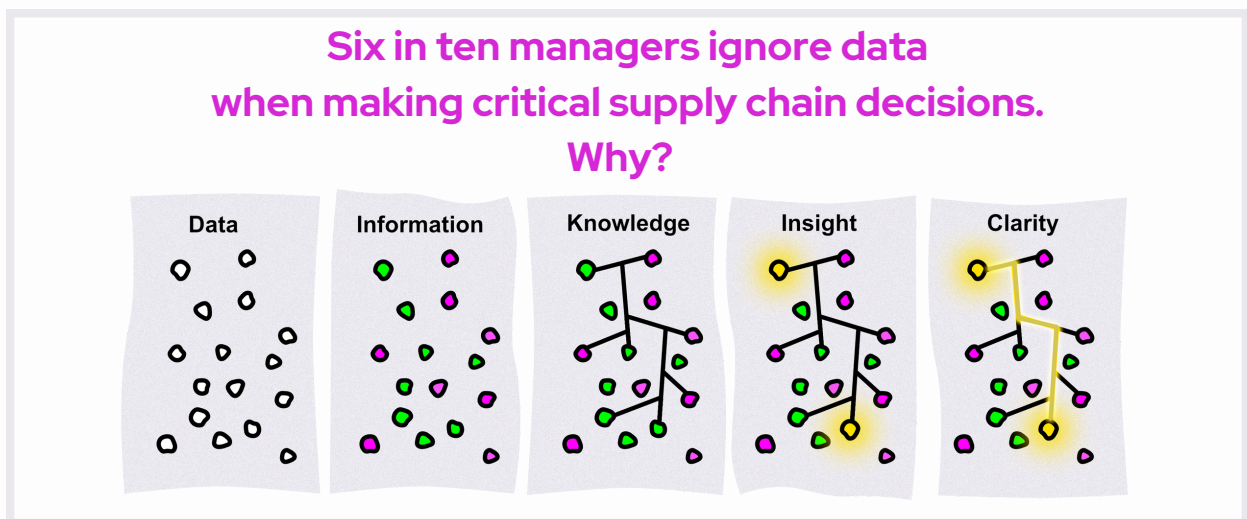
So here's the clarity dilemma – and it's an existentially urgent problem. Data offers the clearest pathway to smart-decision making. It is the crucial ingredient that gives us access to a broader frame, an informed perspective, and an objective measure of our success or failure. Data is key to chartering fresh fields of opportunity and to avoiding the farmer's ax.

- But data takes time to extrapolate.
- It takes more time to verify.
- And it takes yet more time to interpret and analyze.

Somewhere in the spreadsheets and graphs and matrices lies a hidden point of data that can transform your supply chain uncertainty into an efficient freight operation – even a profit center. But most decision-makers simply don't have the time or resources to find it. Enter the logistics BI dashboard.

How business intelligence gives you clarity

A BI dashboard resolves the too much data, too little time dilemma by simplifying data right down to actionable insight – something you can act on now. At IL2000, when we develop a dashboard for a client, our goal is that every data point we collect supports clarity and guides effective decision-making. Let's look at a few practical examples of how IL2000 has used BI to help companies make bold, smart, and profitable supply chain decisions.



1. Recognizing linear and cyclical trends

Limited truckload (LTL) shipping typically employs a pricing model known as a weight break, where the shipping cost per pound of freight (or unit cost) will decrease once the overall weight of the shipment increases past a certain threshold. It's usually in a shipper's best interest to consolidate multiple small shipments into fewer large shipments because this reduces the shipment's unit cost. And this means the shipper will be spending less on freight overall.

Over time, it's easy for a company's average shipment weight to drift downward. A host of factors come into play here. A sudden surge in customer orders, heightened volatility across shipping lanes, even staffing restructures or market turbulence caused by other companies can place gradual pressure on a company to ship in smaller batches.

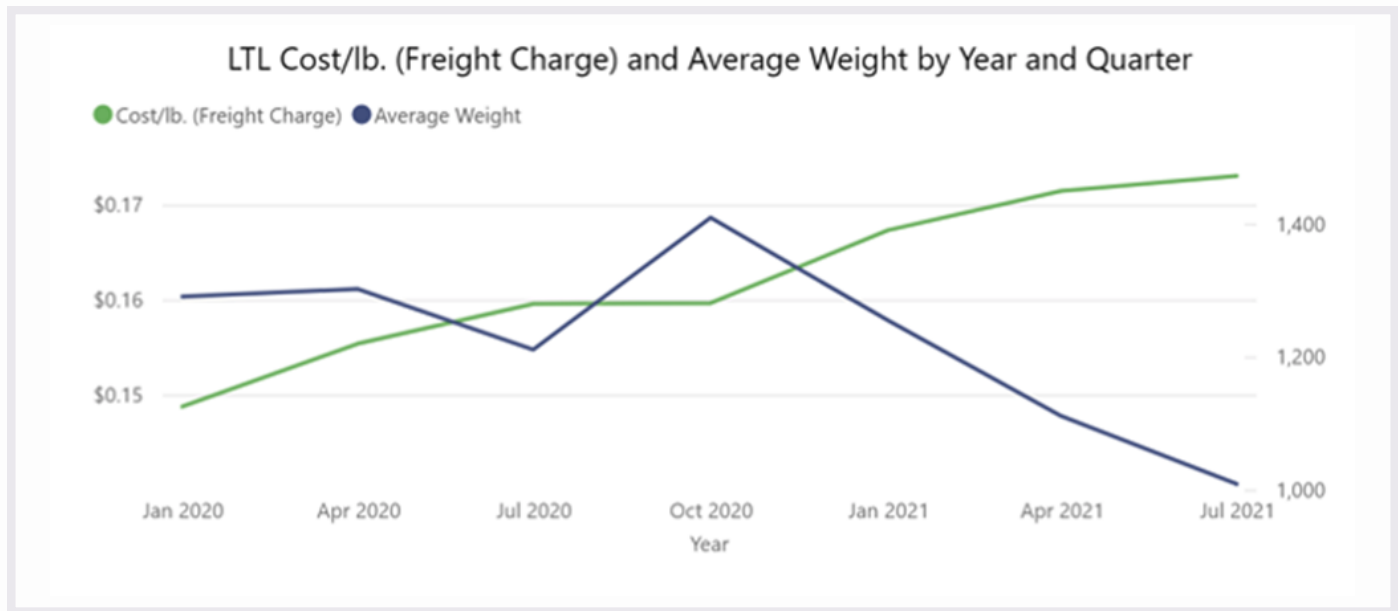
Moreover, it's easy to miss this kind of trend.

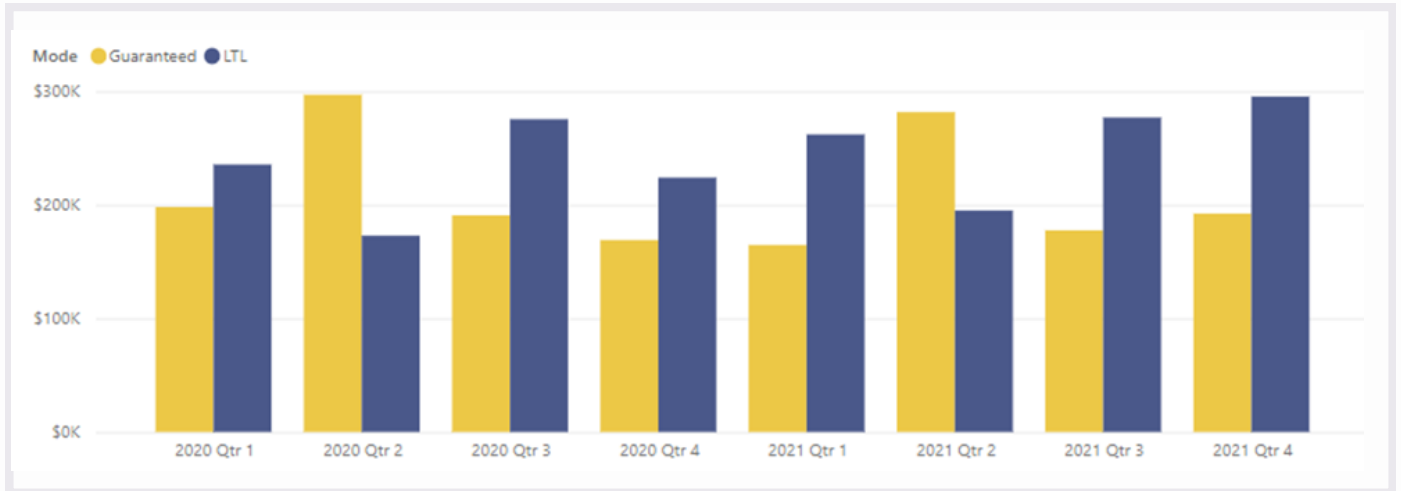
- The snapshot memory effect (described above) will invariably skew a freight team's recollection to smaller over larger shipments. Why? Because small, ad hoc shipments are usually reactive – a response to the unknown. Our monkey memories glom to the novel and gloss over the routine. Over time, smaller shipments begin to feel like the norm.

- Gut instinct, meanwhile, tends to encourage freight handlers, being human, to make expedient decisions based on what makes life easier here and now.
- But even large quantities of data here can fail to bring clarity. Lots of information isn't the same as the right information. Data alone can actually obfuscate clarity, if for no other reason than that it's notoriously difficult to identify a trend over time by appraising a myriad of individual points of data.

With these very human limitations in mind, consider this below presentation of LTL unit cost per pound against average weight by year and quarter. [Graph: LTL Cost/lb. (Freight Charge) and Average Weight by Year and Quarter]

Here you can clearly identify a gradual upward trend in freight charge, with an inversely correlated decrease in average shipment weight. This data sends a clear message that a shipper should take a closer look at its business rules for freight – unraveling the causes of the gradual drift while identifying opportunities for greater shipment consolidation.





Good business intelligence can also give you clarity about **cyclical trends**. For example, this graph above shows a company how their spending across two modes of transportation has shifted over time.

A spike in a guaranteed mode of shipping correlated with a decrease in LTL spending reveals a significant pattern. A cycle of rush orders, perhaps? Armed with that insight, a company might decide to dig deeper, filtering further by inbound and outbound freight. If the spike came from inbound freight, understanding this cycle might help the company better plan its materials on hand. If the increase arose from outbound freight, the company may consider adjusting its markups to maintain margins.

The right logistics BI helps you swiftly gain clarity about how your company's supply chain moves over time, both linearly and cyclically. Building that insight fuels better supply chain decision-making.

2. Discerning meaningful patterns

Sometimes the value of business intelligence lies in helping a decision-maker dismiss false patterns from consideration. The human brain is evolved to recognize patterns. The psychological phenomenon of pareidolia refers to our tendency to find patterns where there are none. While pareidolia often manifests in the ridiculous, unchecked its impacts can have far-reaching consequences.

In business, decision-makers can all too easily "jump at shadows," making big and reactive choices when it'd be smarter to wait and see. And worse, recognizing our pattern-finding tendency, it's often equally easy for strategists to become gun-shy, opting to do nothing when a real risk presents itself and a change of course might be warranted.

Business intelligence leaps to our aid by helping us discern specious patterns from meaningful ones. In this matrix, you can see delivery reliability data presented across multiple shipping lanes.

Shipper Region	Canada	Mid-Atlantic	Midwest Lower	Midwest Upper	Mountain	New England	Northeast	Pacific Northwest	Plains	South	Southeast	Southwest	West	Total
Mid-Atlantic		98.4%	97.9%	97.5%	100.0%	100.0%	97.1%	100.0%	100.0%	98.2%	96.7%	98.4%	100.0%	98.0%
Midwest Lower		87.5%		50.0%			100.0%			92.9%				89.7%
Midwest Upper	100.0%	66.7%	100.0%	91.7%			100.0%		85.7%	97.7%	100.0%	100.0%	90.5%	94.7%
New England				100.0%										100.0%
Northeast		100.0%		100.0%										100.0%
Plains				100.0%										100.0%
South		100.0%		100.0%										100.0%
Southeast		100.0%												100.0%
Southwest												100.0%		100.0%
West				100.0%										100.0%
Total	100.0%	97.9%	98.1%	95.1%	100.0%	100.0%	98.3%	100.0%	94.7%	97.4%	96.9%	98.5%	94.9%	97.3%

The matrix demonstrates that, overall, 97.3% of this company's shipments were delivered on time. But it also affords a critical bird's eye perspective of their supply chain. We see a pattern: Mid-Atlantic delivery performance was hampered by two notably low results. But we also see a deeper and more meaningful pattern: Mid-Atlantic delivery performance was impacted by Midwest Lower and Upper, two regions experiencing multiple performance issues across a total of five areas.

How might this company's logistics team respond to this pattern once they've recognized it?

By separating a superficial pattern from an underlying one, a supply chain analyst can, in effect, narrow their search pattern. In all probability, this

issue is quite localized; it may even originate from a single terminal within the carrier network. Equipped with that insight, the analyst can quickly drill down to the lane level to troubleshoot.

With this view below, the analyst is reviewing performance in relation to one client over time. They can observe a tailing off of performance over the last four weeks. A logistics team or 3PL could swiftly step in to create an action plan for the carrier to improve, or they may decide it's prudent to remove the carrier from that lane. Early insight, swift response, efficient outcome.

BI equips you to discern meaningful patterns from those that can be ignored. Gaining that clarity means you can formulate targeted plans in less time and with fewer resources.

Full Customer	Total Bookings	Raw On Time	Delivery Performance %
2053246722 - Rozar's Auto Paint Supply, Inc - Birmingham, AL	234	89.3%	91.9%
1117981189 - CTI Industrial Supply - Las Vegas, NV	163	73.6%	78.8%
5551000100 - Capital Paint - Complex Dr - Baton Rouge - Baton Rouge, LA	161	87.6%	92.5%
5036252321 - Z Best Distributing - Sherwood, OR	158	88.6%	93.0%
8592557717 - Kentucky Auto Body Supplies - Main Billing - Lexington, KY	145	88.3%	91.7%
0035301666 - TCP Global Corporation - South Carolina - Duncan, SC	136	97.8%	99.3%
3335739500 - Capital Paint - San Antonio - San Antonio, TX	134	91.8%	94.8%
0424437777 - Dulacotta Paint	131	92.4%	94.7%

Last 4 Weeks

Total Bookings	Weekly Frequency	Total On Time Deliveries	Raw On Time	Uncontrollable Delivery Exceptions	Shipper/Consignee Delivery Exceptions	Carrier Failure Deliveries	Delivery Performance %
6	2	5	83.3%			1	100.0%

Last 8 Weeks

Total Bookings	Weekly Frequency	Total On Time Deliveries	Raw On Time	Uncontrollable Delivery Exceptions	Shipper/Consignee Delivery Exceptions	Carrier Failure Deliveries	Delivery Performance %
16	2	15	93.8%			1	100.0%

Last 12 Weeks

Total Bookings	Weekly Frequency	Total On Time Deliveries	Raw On Time	Uncontrollable Delivery Exceptions	Shipper/Consignee Delivery Exceptions	Carrier Failure Deliveries	Delivery Performance %
26	2	24	92.3%			1	96.2%

3. Separating fear from uncertainty

Let's return to the quote we offered at the beginning of this paper about managing uncertainty: "One of the most important business lessons is also the simplest: success is often the result of making more good decisions than bad ones over time. The question is how to do that."

Thus far, we've talked about the clarity problem from a strictly objective standpoint. Making good decisions is about having access to better information. But if the COVID-19 pandemic has taught us anything, it's that information doesn't automatically make people smart, or particularly good at measuring and responding to risk.

Fear plays an often unwelcome role in decision-making, priming humans to react with:

- **Negativity bias:** A stronger reaction to unpleasant than pleasant stimuli.
- **Loss aversion:** A greater importance weighting placed on losing an asset than on gaining an asset of identical value.
- **The endowment effect:** The human tendency to overvalue things we own and overestimate their contribution to our lasting security.

A supply chain is a human process filled with the potential for these elements to come into play. Owing to fear, a supply chain manager is more likely to remember a carrier failure than all the times everything proceeded to plan. They're more apt to react emphatically to losing an opportunity than gaining one. And they're likely to incorrectly equate assets with security.

One powerful value-add of business intelligence is that it allows a company to more accurately quantify what it doesn't know about the future. In the example above where we talked about recognizing a gradual shift in shipment weight, a valuable next step in analyzing that problem could be to place a dollar figure on exactly how much would be gained by addressing that gradual trend and how much would be lost by ignoring it.

Accurate and timely supply chain BI allows you to separate fear from the uncertainty that caused it. And in today's volatile shipping environment,

bolstering a company against fear-driven decision-making is as important as knowing when to exercise reasonable caution. Quantifying the unknown is important intellectual capital.

Business intelligence and good decision-making

Business intelligence isn't about reams of new data pouring into your board room or warehouse floor. It isn't about graphs and dashboards for their own sake. Nor is business intelligence necessarily about finding a more elaborate pathway to success. Ultimately, business intelligence is doing its job when it equips your company with **clarity**.

Clarity is a crucially important asset. The vast global supply chain we all rely on is more uncertain and tenuous than it has been in decades. It's too easy for gut instinct, the vagaries of memory, and even unnecessarily complicated datasets to lead your decision-making astray. In this white paper, we've talked about how a good business intelligence approach can:

- Help you recognize linear and cyclical trends.
- Discern meaningful patterns within complex variables.
- Quantify uncertainty, limiting the impact of fear on company decision-making.

If your company needs more clarity, talk to IL2000 about [our business intelligence solutions](#). We'll prove that you don't need a crystal ball for a crystal-clear supply chain strategy.

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