

The **Craft** Approach to Supplier Data

A Dynamic Solution for a Changing World

A Reinvented Supply Chain

Post-pandemic Supply Chain	3
Consumer Changes and Rising Costs	4
Labor Issues	5
Geopolitical Uncertainty	6
Natural Disasters and Ecological Concerns	7

What This Means for Supply Chains

Leaning into a Digital Approach	8
---------------------------------	---

Data Challenges When Assuming a Digital First Approach

Data Fragmentation	11
Lack of Visibility Into Different Data Sources	11
Lack of Visibility Beyond Tier 2	11
Stale or Poor Quality Data	11
Data Fatigue and Paralysis	12

How to Manage These Data Challenges

Rely Less on Supplier Surveys	14
Use a Combination of Reliable Data Sources	15
Leverage Both Manual Review and ML Technology	16

Level Up Your Data Game with Craft

Monitor Risks all in One Place	17
Streamline Workflows and Data Integration	17
Surface Actionable Insights in Real-time	17
Always Work with Fresh Data	18

Risk Hub | The Craft Approach to Data

Thresholds	20
Industry Benchmarks	20
Insights	21
Machine Learning and AI	21

The Value of a Resilient Supply Chain

22

Post-pandemic Supply Chain Pressures

Over the past two years, the world has confronted a host of different challenges, including rising geopolitical tensions, ecological uncertainties, and a global pandemic. Businesses have felt these challenges acutely, specifically within their supply chains.

In fact, 62% of organizations reported supply chain concerns in the past year.¹

While disruption within supply chains is not new, increased globalization makes the effects of these disruptions deeper and more challenging to mitigate. This has led to unprecedented levels of disruption and volatility that businesses are still struggling to manage today.

According to the Global Supply Chain Pressure Index (GSCPI), which measures supply chain conditions over time, there was little variation in pressures over the past twenty years, resulting in relative stability in traditional supply chain management and forecasting strategies—until 2020. Since the pandemic, the index has been highly volatile. As economies shut down temporarily to “flatten the curve” of the virus in early 2020, the repercussions reverberated across global supply chains.

Consumer habits changed abruptly, leading to dramatic shifts in market demands; many offices went remote, driving digital transformation throughout multiple industries and introducing new questions of cybersecurity; and labor markets were thrown into chaos as millions of people dropped out of the workforce leading to ongoing labor shortages and rising costs of doing business. All of these shifts continue to impact supply chains even three years later, resulting in inflation, supply shortages, and shipping delays, among other challenges.

Only in recent months has the index started trending downward, indicating supply chain pressures are easing, but they are still significantly higher than historical norms. Moving forward, businesses will need to understand these intersecting pressures and adopt new strategies to meet the challenges of an evolving supply chain landscape.

Consumer Changes and Rising Costs

Everyone remembers the Great Toilet Paper Shortage of 2020. Buying habits changed quickly and dramatically during the pandemic, leading to ripple effects within organizations and their supply chains. Businesses weren't prepared for certain items to spike in sales (e.g., toilet paper and hand sanitizer), resulting in both shortages and overstock, as well as delayed manufacturing and delivery times.

48% of consumers say **their shopping habits have been permanently changed** by the pandemic.²

Most retailers followed a “just-in-time” delivery strategy with little to no slack in the supply chain. This meant when those supply chains were disrupted, most businesses didn't have backup inventory or suppliers to fill the gap. This led many businesses to over-correct. In the wake of 2020, many retailers shifted to a “just-in-case” stocking approach, purchasing extra inventory in advance to avoid being caught short again. But with demand constantly shifting over the past three years, some retailers are now struggling with the opposite problem: too much inventory taking up valuable shelf space, necessitating price slashing to move product.

These challenges have been exacerbated by a looming recession and skyrocketing inflation that has hit consumers hard—particularly in rising food costs. Economists predict most consumers will severely cut down their expenditures, causing increased uncertainty around demand for goods and services. This makes it even harder for supply chain managers to accurately estimate order quantities—a recipe for over- or understocked supplies.

Labor Issues

The last few years have also seen an increase in labor market challenges. The U.S. currently has over 10 million job openings but only around six million unemployed workers³. Even if every unemployed person went back to work, that still leaves a significant gap of four million open jobs with no people to fill them. While many of these challenges existed prior to 2020, the pandemic exacerbated many of the issues.

3.3M fewer Americans are working today compared to 2020.

There are several reasons for the ongoing shortage:

- Workers are cautious to return to the office amid an ongoing pandemic
- Caregivers have dropped out of the workforce to care for children and family
- Death, illness, and disability caused by Covid mean many are too unwell to work
- Wage stagnation and low pay have pushed many to find higher-paying jobs
- Older generations filling many of these now-vacant jobs are retiring

Public health concerns over Covid-19 mean many people are reluctant to return to in-person work, which has led to shifts in job markets and prompted many organizations to rethink their remote work policies. Additionally, those who do contract COVID must quarantine for at least a week, leading to labor gaps, disruption, and delays.

The manufacturing industry, which had a skilled labor shortage even before the pandemic, has been hit particularly hard. After losing approximately 1.4 million jobs in 2020⁴, the industry has struggled to fully recover. This is not only a short-term problem but also poses long-term industry challenges. A study by Deloitte and The Manufacturing Institute found that the manufacturing skills gap in the U.S. could result in 2.1 million unfilled jobs by 2030—costing the industry as much as \$1 trillion in 2030 alone⁵.

2.1M unfilled jobs is projected by the manufacturing industry by 2030.

³US Chamber of Commerce, "Understanding America's Labor Shortage"

⁴National Association of Manufacturers, "2.1 Million Manufacturing Jobs Could Go Unfilled by 2030" May 2021

⁵Deloitte Insights, "Creating pathways for tomorrow's workforce today" May 2021"

Geopolitical Uncertainty

Geopolitical tensions and uncertainty have had a significant impact on businesses and supply chains. Rising tensions between China and the U.S., as well as the escalating conflict in the Russia-Ukraine war, have led to increased sanctions, inflation, cybersecurity threats, and shortages.

Approximately 374,000 businesses worldwide rely on Russian suppliers, and another 241,000 businesses rely on Ukrainian suppliers.⁶

This is particularly concerning as several key commodities are linked to the region, including wheat, coal, and petroleum gas. For example, Russia is the third largest producer of oil globally and also holds 40% of the world's supply of palladium (which is used to produce catalytic converters for the car industry).

Additionally, rising tensions between China and U.S. have further complicated trade relationships and supply networks. Increased export controls on Chinese semiconductor manufacturing, as well as forced labor laws limiting Chinese imports from the Xinjiang region, have already led to delays in shipments and disruption as businesses scramble to comply.

As a result, many organizations have started to divest from the Ukraine and Xinjiang regions and seek out alternative suppliers.

Natural Disasters and Ecological Concerns

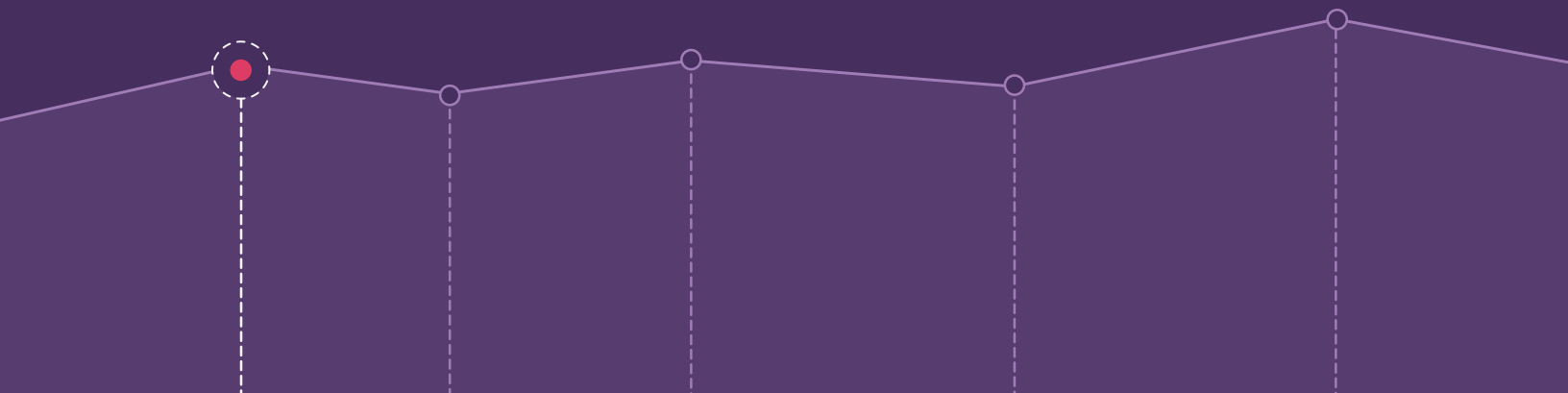
The rise in severe weather events and climate-related disasters has put increased pressure on supply chains in recent years. When droughts, floods, wildfires, or tsunamis hit, they disrupt business operations and damage infrastructure, causing both short-term and potentially long-term repercussions in supply chains.

For example, when a record-setting drought hit southwestern China in August 2022, their hydroelectric dams dried up, and rolling blackouts left people and businesses without power. Rivers were so low that ships couldn't carry supplies for weeks. Factory shutdowns and logistical delays kept supply chains for car parts, electronics, and other goods in limbo.

This exacerbated many of the issues supply chains have been dealing with throughout the pandemic, including inflated prices, delayed shipments, and bottlenecks. As the effects of climate change increase in number and severity in the coming years, businesses will need to include these risks in their calculations to build resiliency.

What This Means For Supply Chains

Companies have responded to the turbulence of the last few years with plans to build greater resiliency into their supply chains. Conventional approaches to improve resiliency rely on expanding and diversifying supplier networks and increasing inventory and capacity.



80% of companies surveyed **increased their inventories** during 2021.⁷

These “physical” approaches to resilience are important to be sure. However, they tend to be short-term solutions that come with a high overhead cost to maintain. Plus, they don’t enable the visibility or agility leaders need to make more proactive and strategic decisions in a quickly changing global landscape.

Companies that implemented digital dashboards for end-to-end visibility were 2x more likely to avoid supply chain problems caused by disruptions in 2022.⁸

Moving forward, businesses that want to remain competitive and efficient long-term without breaking the bank need to adopt a digital-first approach to supply chain management.

Leaning into a Digital Approach

A digital-first mindset focuses on data and technology to unlock the visibility and agility businesses need in today’s global supply chains. This includes leveraging innovative tools like artificial intelligence, machine learning (AI/ML), and automation.

Digital-first strategies enable businesses to harness the data they’re already generating to capture real-time insights, take action sooner, and even identify threats and opportunities before competitors. AI and ML are key to building this digital foundation.

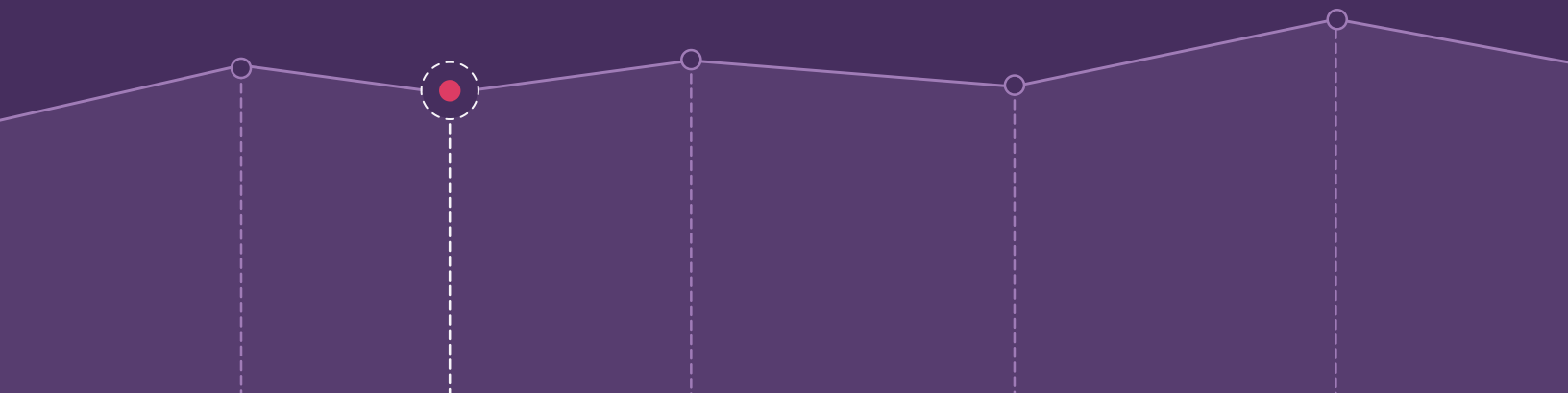
These technologies can integrate people, processes, and systems at every level of business. For supply chain management, this means automating and enhancing operations like planning, demand management, and even supplier discovery and sourcing. Machine learning builds agility into the system by ensuring continual improvement as machines learn. This results in not only better automation but better predictive models, more accurate insights, and smarter decision-making.

⁷McKinsey, “Supply chain disruption and resilience” August 2022.

⁸McKinsey, “Supply chain disruption and resilience” August 2022.

Data Challenges When Assuming a Digital First Approach

Digital capabilities are essential to scaling resilience across supply chain operations. But adopting a digital-first strategy for supply chain management isn't without its challenges. Despite the potential of AI/ML and other innovative digital technologies, many companies are hampered by organizational siloes, the scope of the risk landscape, limitations in supplier data and visibility, and the sheer volume of data to work with.



Data Fragmentation

Organizational siloes can lead to data siloes. When each office or department generates its own data, the data becomes harder to consolidate, compare, and analyze. In other words, data fragmentation results in disparate batches of data that aren't created with outside uses in mind.

This problem is further exacerbated by the fact that most organizations don't have a common data language. Lacking that common language, even when teams share their data, means it isn't always clear how to use the data effectively.

Lack of Visibility into Different Data Sources

Chief Procurement Officers (CPOs) consistently rate risk management as a priority. Yet, despite its importance, many organizations and their leaders don't have access or visibility into different data sources to inform their risk analyses. And some aren't even aware of the gap. Without end-to-end visibility of supply chain risks, many leaders are missing the full context of their risk landscape.

Lack of Visibility Beyond Tier 2

Today's supply chains are complex. It's no longer enough to focus on just your direct suppliers. Disruption and other risks often start further down your supply network with n-tier suppliers. That's why procurement leaders need visibility into Tier 2 suppliers and beyond. But many organizations' data capabilities fall short of this goal.

In fact, according to a study by Deloitte, only 26% of CPOs were able to confidently predict risk within their supply bases.

15% had **visibility into Tier 2 or beyond**⁹.

Without this visibility, it is difficult for leaders and data analysts to accurately identify risks or opportunities.

Stale or Poor Quality Data

Data can hold a goldmine of insights. But only if the data itself is relevant, fresh, and high-quality. Too often, companies work with data that is outdated or simply low quality. This can include inaccurate data, missing data, or even inconsistent formatting, making it difficult, if not impossible, to analyze effectively. As more companies leverage external data to augment their internal insights, this becomes an even bigger challenge.

⁹Deloitte, "Agility: The antidote to complexity"

Data Fatigue and Paralysis

Data is everywhere now. A staggering 2.5 quintillion bytes of data are created every day¹⁰. While this opens up incredible opportunities, the sheer volume of available data today can be intimidating. Procurement professionals can quickly become overwhelmed with the amount of data they have to work with all while juggling shifting priorities within an organization. This can lead to data fatigue as teams struggle to make sense of their data and use it in a meaningful way.

On average, less than half of an organization's structured data is actively used in making decisions—and less than 1% of its unstructured data is analyzed or used at all.¹¹

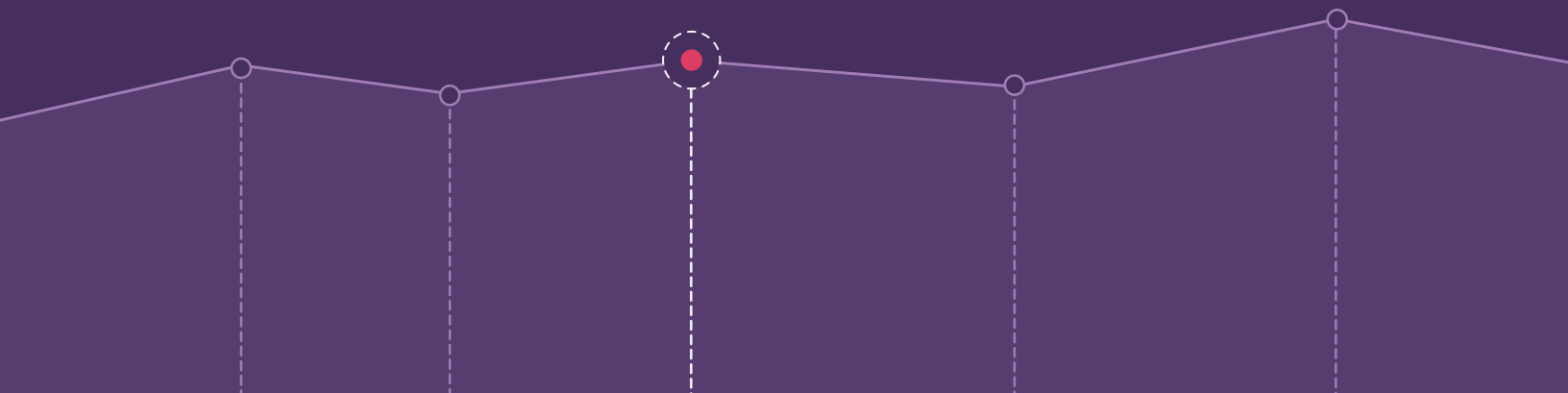
Without support, data becomes a burden rather than an advantage.

¹⁰Forbes.com "How Much Data Do We Create Every Day?"

¹¹Harvard Business Review, "What's Your Data Strategy?" May/June 2017.

How to Manage These **Data Challenges**

Good data hygiene and management practices are critical for scaling agility. Supply chains are increasingly complex, which makes it difficult to overcome many of these data challenges. But with the right support, tools, and strategy, you can build an intelligent, platform with the right insights from first and third party sources.



Rely Less On Supplier Surveys

Supplier surveys are the most common method for enterprises to gather supplier data and measure their risk. However, while they provide important context, they also have significant limitations that can put your company at risk, including:

- Subjectivity and supplier bias
- Manual response and analysis
- Stale data
- Limited scope

Surveys are inherently subjective and biased toward the supplier responding. This means you may be missing key insights into the supplier's operations and risk management processes.

Survey data also has a short shelf life. Almost as soon as it's completed and the data analyzed, then it's out of date. As such, surveys can only provide a point-in-time snapshot of the supplier's risk—limiting visibility into emerging risks and making it difficult to predict problems.

Additionally, analyzing surveys is a highly manual—and, therefore, time-consuming—process. And because the responses are typically qualitative, it can be difficult for teams to assess and collate the data into actionable insights. And even when survey data is effectively managed, you'll still have blindspots. Supplier surveys simply can't cover all possible risk domains.

Companies adopting a digital-first approach will need to expand their data-sourcing methods beyond supplier surveys to ensure a more holistic and accurate view of their supplier landscape.

Use a Combination of Reliable Data Sources

Though surveys have their limits, they are not useless. Companies should instead take a “Yes, And” approach to data collection that includes a combination of reliable data sources from a variety of risk domains, such as:

- Revenue
- Profit margins
- Credit ratings
- Funding rounds
- Solvency ratios
- Cybersecurity measures
- Hiring trends
- Employee headcounts
- Leadership turnover

Together, these internal and external data can better contextualize your risk and enable stronger mitigation, forecasting, and compliance.

Monitoring a broad range of data is particularly important because risk is often interconnected, and traditional metrics may lag behind other risk indicators. For instance, at the start of the Russia-Ukraine war, clinical trials for pharmaceuticals stopped abruptly, disrupting drug manufacturing and their supply chains. However, labor data could have raised alarm bells sooner. As trials were delayed or canceled, recruitment for those studies also froze. If companies were monitoring hiring trends, along with other indicators like falling share prices, they could have taken action earlier on to mitigate the risk.

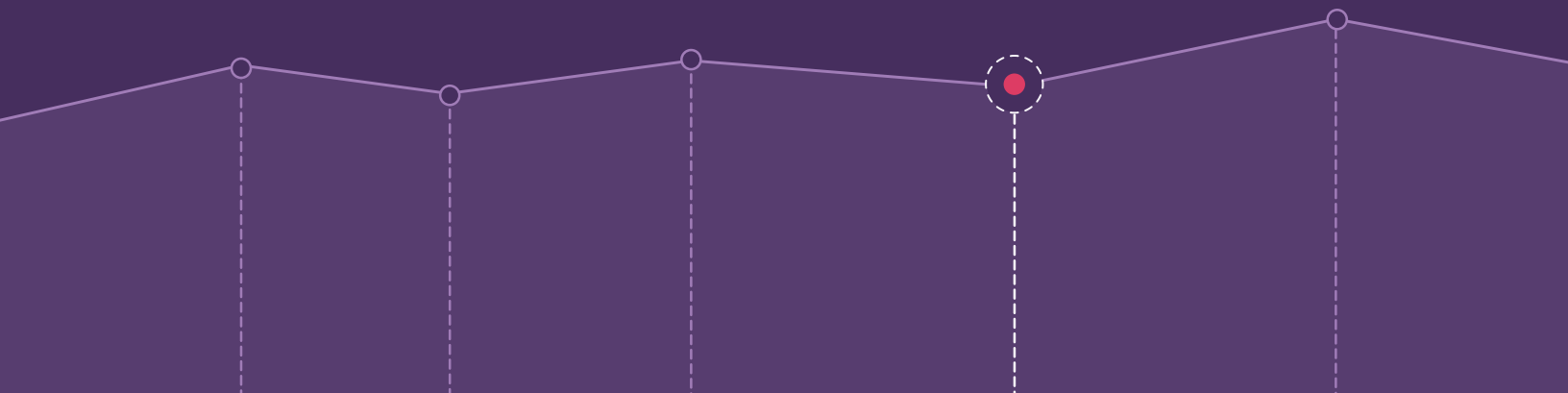
Leverage Both Manual Review and ML Technology

Data is only useful if it is both accurate and contextualized. Otherwise, you’re just working with disjointed information that is largely meaningless.

To achieve this, enterprises should use a platform that leverages a combination of manual human review and ML technology. Machine learning enhances and accelerates data analysis, enabling teams to focus on other high-value tasks. At the same time, supplier intelligence platforms should also enable manual input and review. This is especially important for pulling together data from internal sources and supplier surveys, which can augment the external data you’re working with. Enabling both capabilities ensures that aggregated data is tailored to your company’s needs.

Level Up Your Data Game

Craft's leading supplier intelligence platform helps enterprises implement a digital-first posture with ease. Through advanced technology and exceptional customer service, Craft's one-stop supplier intelligence solution helps build resilience at every link in your supply chain.



Monitor risks all in one place

Risk in the twenty-first century is multi-dimensional and must be assessed across domains. With Craft, users can monitor risk on all fronts from a single platform. No more blind spots. No more disparate datasets. And no more toggling between different tabs or systems, which opens organizations up to needless errors. Get 360-degree visibility into your risk landscape, 24/7.

Craft **aggregates and analyzes data** for you **across every critical risk category** including: operational, legal and regulatory, ESG, financial, strategic, brand, macro level, and cybersecurity.

"[We don't] just focus on financials or operating metrics, but a broad set of data that has been invaluable for us in minimizing and mitigating risk much earlier in the process." -Ingmar Mester, Supplier Manager

Streamline Workflows and Data Integration

The platform's easy-to-use GraphQL API integrates into your existing workflows for centralized end-to-end procurement functions.

Craft reduces the manual burden of data sourcing and monitoring so you can focus on taking action. Upload first-party data directly into Craft to visualize and assess both first- and third-party data within a single view. Users can also download the data necessary from Craft in a PDF or CSV form, allowing you to assess and work with the data in a way that is most efficient for you.

Surface Actionable Insights in Real-time

Data alone isn't enough. Craft goes beyond raw data to cut through the noise and provide actionable supplier intelligence. Through Craft's Risk Hub, users can assess the overall health of their suppliers, determine where the highest risk exists in their network, and prioritize intervention and risk mitigation.

Always Work with Fresh Data

Stale or poor-quality data diminishes your ability to assess and act on risk. Craft addresses this challenge through ML, automation, and customer service support to ensure you're always working with the most up-to-date and accurate information.

- **Human-in-the-loop Machine Learning:**

Human-in-the-loop validation ensures the accuracy and reliability of different data streams.

- **Automatic Updates:**

Risk Hub is constantly updating based on the refresh rates of different data partners.

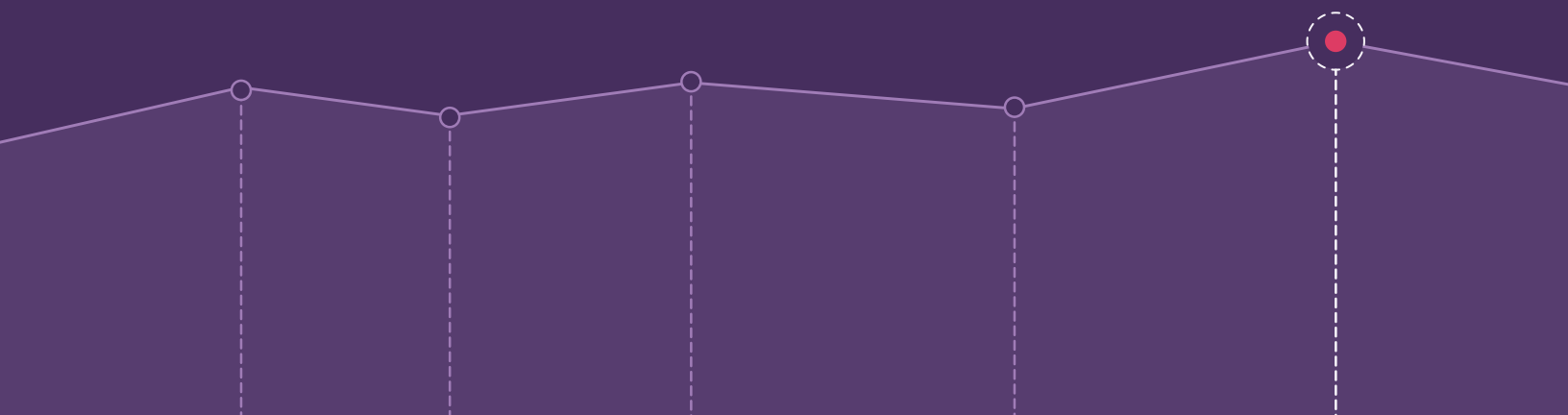
- **Customer Support:**

All customers get a dedicated Customer Success partner to ensure they have the tools, resources, and support to harness the power of their data.

Risk Hub

The Craft Approach to Data Science

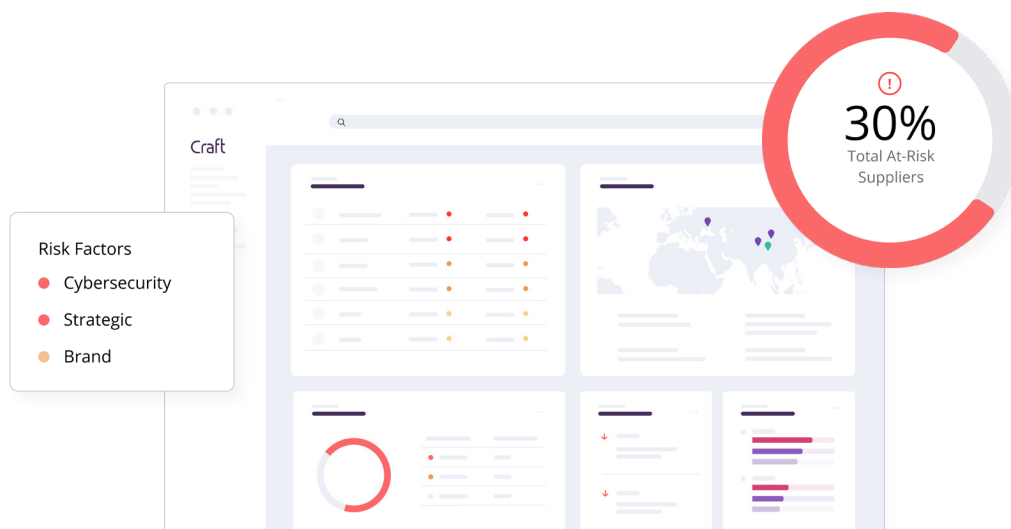
Risk Hub is central to any conversation about Craft's data science capabilities. Craft's Risk Hub and Insights provide users with actionable data that can be leveraged to prioritize intervention and mitigate supplier risk.



Thresholds

Risk Thresholds within Craft's Risk Hub indicate the relative level of risk for any given risk category. Craft's data partners provide specialized, global supplier data for some of the world's largest and most advanced companies. Craft uses these partner data and risk scoring methodologies to determine risk and then layers its own data analytics to provide necessary insights into your risk landscape.

Thresholds range from minimal to low, medium, or high. (Medium to high risk may require direct intervention). Users can quickly see at a glance which areas or companies are at the greatest risk and prioritize mitigation efforts accordingly.



Industry Benchmarks

Risk is difficult to assess in a silo. That's why Craft has found that one of the most important indicators of risk is how a company is performing in comparison to its peers in the market. These industry benchmarks enable users to contextualize risk thresholds and determine what action is needed.

For example, let's say a company has a high risk threshold. If the risk level is in line with most companies in its industry, that may be pointing to a broader external issue (e.g., tariffs, geopolitical tensions, weather events, etc.) impacting the entire industry. However, if a company is flagged as high risk, but none of its peers are, this could point towards something that is happening internally within the company and should be addressed by Craft users.

Insights

Insights are an essential component of Craft’s data analysis and intelligence. Craft Insights provide users with snapshots of a company’s performance within a specific risk category, saving users time from sifting through different data streams. The snapshots present two key insights:

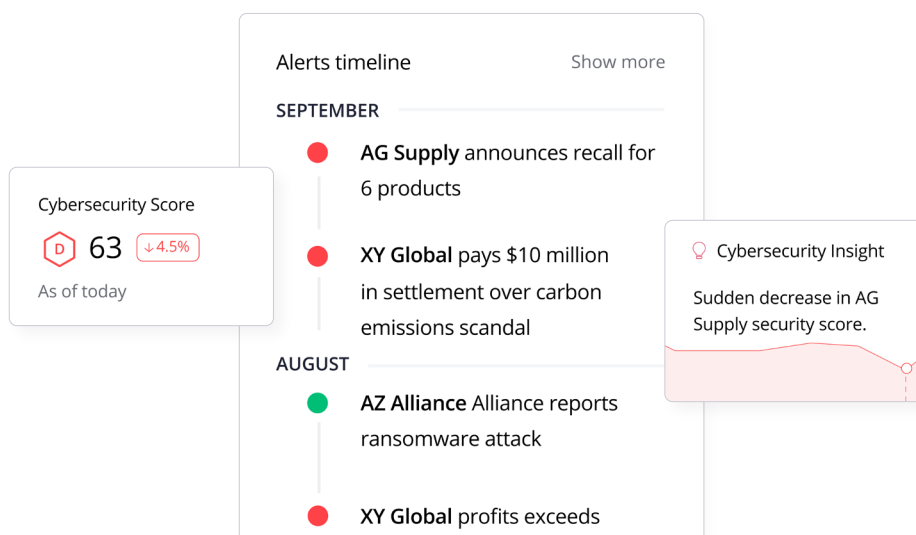
- Bottom 10% of Industry
- Risk dropped significantly over the past three months

Together, these indicators can help users quickly assess performance trends to enable better decision-making.

Machine Learning and AI

Underpinning Craft’s data capabilities are machine learning and artificial intelligence. Together, these technologies enable Craft to automatically gather and categorize data at scale, so you don’t have to.

Craft’s predictive model anticipates change events through behavioral observation across data categories. This allows Craft to alert users faster so they can more accurately forecast and mitigate risk across their supply chain. Unlike other financial distress models, Craft’s model uses disparate data signals to cover private companies where financial data is unavailable. As a result, Craft users get more comprehensive risk assessments with fewer blindspots for every supplier.



The value of a **resilient supply chain** is clear today, more than ever before.

As supply chains continue to grow in complexity and disruptions increase in frequency and severity, resiliency will play a critical role in preventing and mitigating risk going forward. But achieving this goal relies on strong data.

Take the guesswork out of your risk management processes with comprehensive supplier intelligence done for you. Craft provides your team with a unified view of your risk landscape and real-time, contextualized insights to mitigate risk and stay proactive in your approach to supplier management.

Try Craft today.