



LogChain



WHITE PAPER

Why Supply Chain Transparency is Important

AND WHAT YOU NEED TO KNOW ABOUT IT



Today's business environment is getting increasingly intertwined and complicated. Customer requirements and expectations are evolving, and firms must be valued, efficient, adaptable, safe, and cost-efficient in order to satisfy these demands. At the same time, business models are evolving toward collaboration and platform-based enterprises. This necessitates firms to actively engage with various third-party organizations. Furthermore, complexity is increasing due to outsourcing, geographically scattered partners, and ongoing push on cost efficiency. Such factors result in interconnected and diversified supply chains that can be challenging to manage and are vulnerable to risks.

According to the Supply Chain Worldwide Survey, 70% of the organizations questioned consider their supply chain 'very' or 'extremely' complicated (GEODIS, 2017). Non-transparent supply chains and upstream activities can blindside firms, resulting in more uncertainty, increased risk exposure, and supply chain instabilities (KPMG, 2020). Furthermore, firms are under the inspection of their supply chain from governments, customers, NGOs, shareholders, and other stakeholders, aided by the upsurge and usage of technology and social media.

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It is particularly important for chemical supply chains due to the increased risk involved in sourcing and delivering hazardous substances. Storing and shipping chemicals is a dangerous and complicated procedure. Complicated because the industry is strictly regulated, and there are several raw materials and processed products that must be handled in specialized and distinct ways. Products pose a high risk since they can be caustic, volatile, dangerous, and costly to store and transport (Serdarasan, 2013). The ability to comply with various business practices, environmental standards, and track-and-trace legislation has become critical.

"We are still working like the 1970's" (Andrew MCKeown)2020)) with dependency upon paper, fax machines, EDI's, etc. and this results not just inefficiencies but real-world disasters. We have seen a number of high-profile incidents in recent years that have had far reaching implications. Courts are now finding fault with manufacturers and 3PL's in what are new precedents in the industry. The MSC Flaminia fire in 2012 was caused due to improper handling and stowage of dangerous goods. The manufacturer (Deltech) and 3PL (Stolt) were found wholly responsible for the fatal incident causing over US\$150m in damages. The court ruled that the shipping line (MSC) was not liable for the loss on the grounds that:



"although MSC also possessed substantial information regarding the heat sensitive nature of DVB before the MSC Flaminia voyage, it lacked sufficient information that the tanks not only contained a heat sensitive product, but –very importantly– had already been exposed to conditions that transformed them into ticking time bombs.."

Presiding judge Katherine B. Forrest (2018)



What is supply chain transparency?

Transparency is defined as the degree to which information is easily available to the participants in an exchange and also to the other key stakeholders (Awaysheh & Klassen, 2010). In a supply chain context, it refers to information accessible to the organizations engaged in a supply network (Francisco & Swanson, 2018).

Supply chain transparency is the process of gathering and exchanging information along the supply chain and conveying it to related internal and external stakeholders in order to increase visibility, traceability, and transparency. It enables stakeholders to obtain insights, learn from, and act on supply chain information in order to make better decisions.

The need for supply chain transparency comes from a variety of stakeholders who are attempting to achieve various goals. For example, corporate executives managing huge and complicated enterprises, partner organizations collaborating to decrease waste and costs, regulators tracking adherence to regulatory policies, consumer groups influencing preferences, and so on.

How is supply chain transparency different from visibility and traceability?

Supply chain transparency is interchangeably used with the term's visibility and traceability. However, supply chain transparency is fundamentally different from visibility and traceability. Visibility and traceability provide foundations to build transparency across the supply chain. Where transparency is more about a firm's initiative to let its stakeholders know about the information regarding its supply chain processes and strategies, visibility refers to the firm's own ability to see what is happening across its supply chain network (Caridi et al., 2014).



Visibility emerges when information is shared across supply chain partners, such as the status of in-transit inventory and sources of goods and materials. This information can be both operational and strategic in nature. Consequently, having higher visibility across the supply chain enables managers to make informed decisions. For instance, managers who know the status of in-transit inventory can make better decisions about the manufacturing schedules and plan the shipment of finished products to customers accordingly. Furthermore, embracing sustainability as a vital pillar in the supply chain is gaining traction in recent years.

Supply chain visibility becomes a key aspect in the effective implementation of strategic sustainability efforts as firms adopt sustainability activities and strive to control risk. Firms can use their visibility to check what their suppliers are practicing in terms of sourcing, compliance to standards of conduct, work conditions, and so on, in addition to just monitoring how inventory is moving along the value chain. Supply chain visibility is all about knowing what's happening across the supply chain and using that knowledge to improve performance-related outcomes.

Traceability is another term that is used interchangeably with supply chain transparency. Traceability refers to the ability to monitor a product's origin or source, keeping track of activities related to a product and its materials as they move through the supply chain to consumers. Transparency emphasizes on monitoring the entire supply chain, while traceability examines specific sets of products as they flow along the supply chain. Traceability can enable more targeted recalls as the data utilized in traceability is more detailed, which lowers its scope and cost. The chemical products are subject to stringent regulations. These regulations often call for product recalls and audits. Firms in a chemical supply chain require traceability in their supply chain to keep ahead of such difficulties. Obtaining traceability can aid in the prevention of recalls and prepares the supply chain for audit.

Traceability has been found to be a difficult endeavor for most businesses, with a 2014 research indicating that more than 90% of the 1,200 firms reported to the SEC were failing to properly track the origin of components/materials used in their products (Back, 2017). However, various methods are now available to ensure that commodities can be tracked and traced as they progress across the supply chain, such as Blockchain, IoT, and 3PL. While traceability is more limited in its nature, it is a prerequisite for transparency.

Having higher visibility across the supply chain enables managers to make informed decisions



The interrelation of supply chain transparency, visibility, and traceability

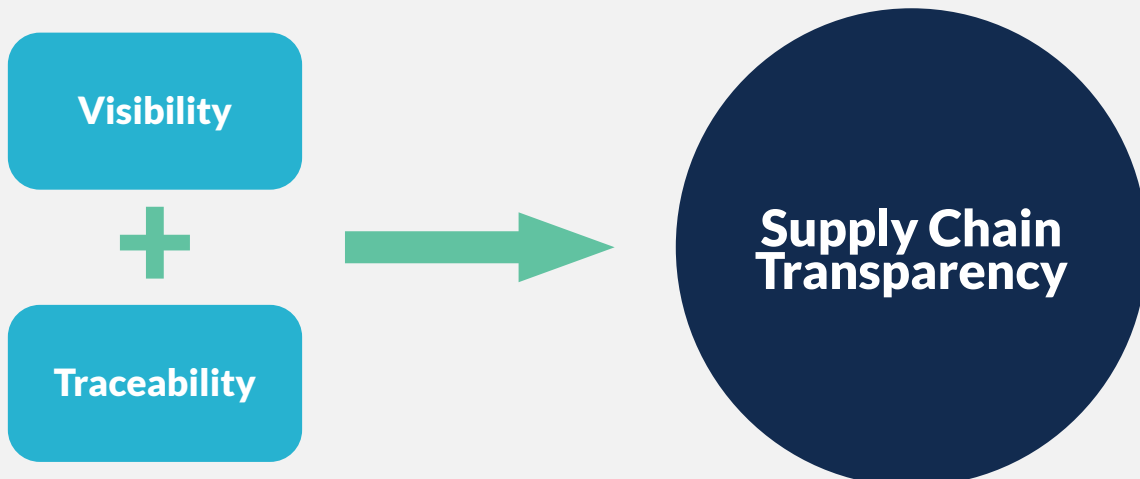
While visibility is the firm's ability to see what is happening across the supply chain and traceability relates to the firm's ability to track and trace the origin of products through the supply chain, transparency extends a manager's attention to external stakeholders of a supply chain network. It entails that how transparent a firm is about its products and operations. Thus, it entails a firm's proactive involvement and openness in communicating about its operations with external stakeholders such as consumers, civic groups, and governments. This type of interaction is intended to share the firm's practices with members of society who are interested in the firm's operations and citizenship behavior, such as the sustainability performance of the firm's goods and operations.

Firms that are transparent disclose a wide range of information about their operations and decisions. Materials used in goods, production, and sourcing procedures that may have environmental or social ramifications, labor relations, community engagement, and other factors may be included. As firms fulfill stakeholder requirements for increased supply chain transparency, the relevance of supply chain visibility and traceability becomes evident.

These are the fundamental competencies for the development of supply chain transparency.

For instance, GB Prior-Inform Consent (PIC) regulation requires chemical firms to disclose all the necessary information about the quantities of chemicals that are planned to be imported or exported, including the vulnerability disclosures. To furnish such information in order to adhere to regulations, a manager needs visibility across its supply chain. To create supply chain transparency, supply chain managers require visibility and traceability across their supply chain, so they communicate the information with external stakeholders.

While the concept of transparency may seem simple, putting it into practice can quite challenging. It requires a hefty investment in technological infrastructure and related human resources. Independent technology platforms, such as LogChain, free the firms from such hassle by providing real-time visibility and transparency across their supply chain.





Risks of lack of supply chain transparency

According to a recent Harvard Business Review Analytics survey, 60 percent of firm executives who participated in the study believe a lack of transparency within their functional units and their suppliers poses a risk to their business. Another 26% believe that increased transparency in their supply chain would result in cost efficiency (HBR, 2020).

Transparency in supply chains extends beyond informing consumers that the firm knows from where its products and materials are sourced. It is also critical to ensure that business operations are efficient and cost-effective. If a firm is unable to trace the flow of goods across the supply chain, it will be hard to determine which suppliers offer the delivery in the most efficient and effective manner. Or whether there is an issue in any node of its supply chain network that is causing the discontinuities. A few of the business risks and problems that result due to the lack of transparency in a supply chain are discussed below. It will help in highlighting its significance.



Lack of quality control

The chemical sector is a stringently governed sector, with governments and regulatory authorities imposing strict regulatory standards such as the Globally Harmonized System of Classification and Labeling of Chemicals (GHS), which helps to mitigate and control the environmental and health hazards during chemical processing, usage, and transportation. Chemical firms are required to adhere to these standards at each stage of their supply chains due to the sensitive nature of their products.

Moreover, the implications of violating quality standards and product recalls have never been this high before, thanks to the widespread availability of social media and strict consumer protection measures. Lack of transparency across the supply chain can make room for poor quality products or illegally sourced materials which can dramatically damage brand image, resulting in a loss of credibility and adverse consequences. Chemical firms need visibility across their whole manufacturing processes in order to swiftly detect batches of poor quality and track problems back to their source.





Limited view of supply chain and shipments

There are several red lines that must be cleared when firms import/export materials involved in chemical manufacturing from companies around the world. There is also documentation and regulations to comply with before firms collect their shipments. Without adequate transparency, it is hard to determine when or why shipments are stuck. The company's critical supplies might be held in a port someplace. Because of the lack of transparency, the manager may not learn about the problem until days later.

Improving transparency in supply networks will enable supply chain managers to determine where these potential difficulties may exist ahead of time. Transparency across the supply chain allows managers to know the routes that shipment will take and the related regulations of each port. Managers may then prepare the necessary paperwork, payments, and other critical information. Firms can even bypass specific ports if they slow down supplies by shifting to new suppliers near to the firm's home country.

Lack of transparency also leads firms to rely on suppliers and other businesses to remain informed about the activities across the supply chain. Many suppliers do a fantastic job of keeping their consumers informed. However, all it takes is one vulnerable link in the supply chain to put the entire business to a standstill. LogChain, with its minimum integration requirement, takes each firm in your supply chain on board so managers can know each link in their supply chain and how the materials are progressing across it.

Potential damage to reputation and goodwill

As the world is growing more conscious about the environmental and social footprint of their consumption behaviors, incorporating sustainability across the supply chain is imperative. For instance, lack of transparency into a firm's procurement processes may leave an impact on customers and community groups that firm is involved in unethical sourcing of materials. It may also lead to sanctions from regulatory bodies if proper disclosures are not made about the sourcing and disposing of hazardous chemicals. SAP's Kraus quoted in a survey conducted by Deloitte that:

“Usually, reputation risks result from other risks. For example, noncompliance with applicable laws and regulations, misconduct of senior management, failure to adequately meet our customer's expectations and contractual requirements. All of these could lead to civil liabilities and fines, as well as loss of customers and damage to the reputation and brand value of SAP, to just mention a few.”

(Deloitte, 2012, p.7)





Lack of supply chain intelligence

Evaluating the complete supply chain is an excellent method to uncover any bottlenecks that are holding down business processes. However, if a company lacks transparency across its functional units and supply chain, it will be more exposed to the supply chain risks, particularly in terms of customer demand and inventory turnover.

Intelligent supply chain technologies give immediate insight into key aspects of the business. For example, visibility across sales data will enable the manager to track high-demand products. It will also enable managers to identify demand peaks and falls. As a result, transparency among a firm's functional divisions will enable managers to order supplies and schedule manufacturing in accordance with demand forecasts. However, the challenge most of the small businesses face is that their supply chain data exist in siloes across the supply chain links with little to no consolidation and integration, which results in a lack of transparency. Guillaume Rauels, a professor of Technology and Innovation at INSEAD, quoted in an interview:



“We have to move beyond the mentality of siloes. Many organizations try to optimize just for their business, but they don’t see the whole value chain. Businesses really compete at the supply chain level. You need to find ways to capture the savings and to share the benefits with your supply chain partners. But transparency doesn’t come for free; you have to work hard to get it.”

(Baseware, 2020)

Having a clear picture of the supply chain allows businesses to make informed decisions. For example, the more a supplier has visibility into the sales data of its customer firm, the more prepared it will be for rising demand and higher shipments. On the contrary, a lack of transparency across the supply chain and inside the firm may result in bad decisions and consequently cause supply chain disruptions.



Supply chain blind spots

Historically, the structure of a company's supply chain has been largely driven by the imperative to reduce labor costs and improve efficiency. But in prioritizing cost and efficiency, companies have allowed weaknesses and vulnerabilities to emerge in times of unexpected events. The 2011 earthquake, tsunami, and subsequent nuclear disaster in Fukushima, Japan is an example: When disaster struck, most multinational companies had little visibility into the origin of the parts and materials that their tier-one suppliers depended on. Many of the tier-one suppliers had suppliers located in Fukushima, leaving companies scrambling. Flooding in Thailand later that year created the same disruption: Second and third-tier suppliers—unknown to manufacturers—were unable to deliver necessary materials.

Subsequently, disruption in the availability of inexpensive parts ended up causing billions of dollars in lost revenue. Still, only a minority of companies used Fukushima and the Thailand floods as a wake-up call to gain visibility into their supply chain; a critical mistake when COVID struck.

Those that set up comprehensive, multi-tier supplier mapping programs came into 2020 more prepared:

By having visibility into their supplier networks, companies such as GM, Cisco, IBM, and Amgen were able to quickly ascertain what parts and materials originated in Wuhan and Hubei and fast-track their responses.

Those that didn't had to act based on what an August 2020 report McKinsey Global Institute (MGI) report described as "only a murky view beyond their tier-one and perhaps some large tier-two suppliers." (Resilinc, 2020, p.28)

Benefits of supply chain transparency

Supply chain transparency has several advantages. One of the most compelling advantages is the ability to empower firms in a supply chain with the assurance that all partner firms comply with the government and industry standards and all the products and materials are genuine. Transparency also indicates that these suppliers follow a moral and ethical code of conduct and that all materials can be tracked throughout the procurement and production processes. Moreover, community groups and NGOs are concerned about firms' operations and want to know about their environmental and social impact. These external stakeholders take firms' claims diligently and voice their dissatisfaction on electronic and social media when firms fail to perform as promised.

A supply chain that is driven by real-time data enhances supply chain operations while reducing discontinuities and quality concerns. Supply chain transparency creates trust in the product and the firm, and it strengthens customer loyalty. Firms are implementing supply chain transparency policies to reap a slew of benefits.





Reduced risk

Visibility into the supply chain enables businesses to discover problems and hazards early on, allowing them to solve them before they escalate into a significant and costly crisis. Having explicit standards and transparency helps to guarantee that someone is accountable for monitoring and enforcing such standards. Weather, labour conflicts, hazardous products, and counterfeits are all examples of threats that can result in lost sales, damaged reputation, and sanctions. It is particularly important in chemical supply chains where rules and regulation regarding the handling and storing of chemicals is highly strict. Increased visibility and examination of the supply chain mitigates these risks and makes problem-solving more manageable.

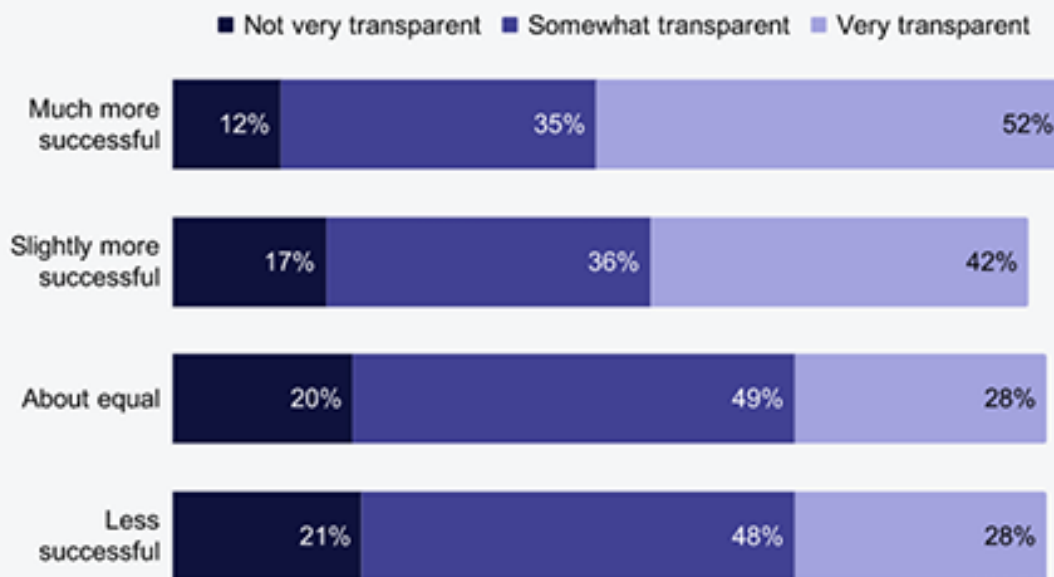


Enhanced efficiency

Availability of timely and accurate data ensures that all supply chain partners are informed of supply chain dynamics. It also enables all stakeholders to make choices based on real-time data and current situations, as well as to predict and act promptly to delays and disturbances. A survey conducted by Harvard business review revealed that implementation of transparency across all links of supply chain results in improved performance.

Success and transparency go hand in hand

Respondents rated the transparency of their processes against their level of success



Source: Basware, (2020)



Improved reputation

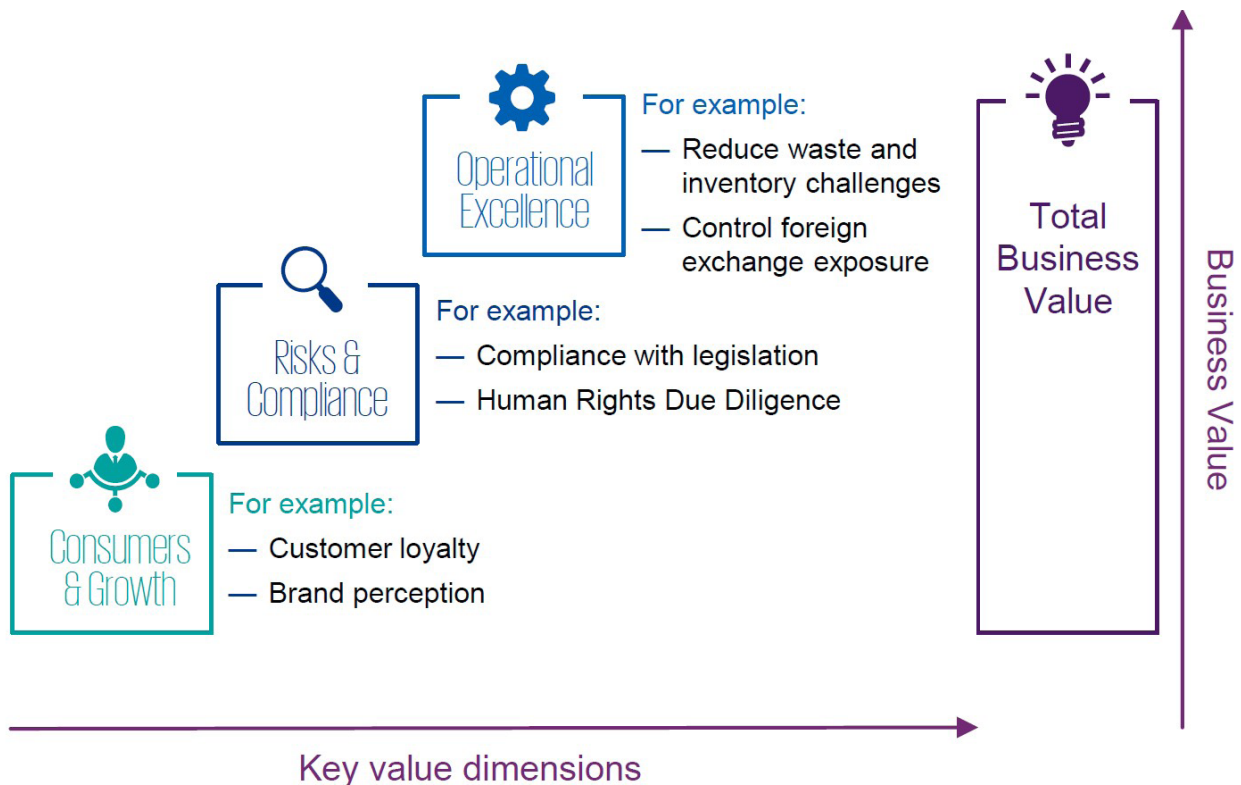
Reputation is an intangible asset that results in a higher market value of the firm and its products. When firms openly disclose and explain important materials, sources, and methods that go into manufacturing and distributing their products, data exchange, and standards about quality, safety, and ethical behavior, it is more likely to build a positive image and reputation across its external stakeholders including environmental & social groups, and end customers.

Supply chain collaboration

When supply chain disruptions arise, all partners (upstream suppliers and downstream customers) can respond more effectively and collaborate more successfully with real-time access to data, defined roles, and responsibilities. The risk of poor-quality materials and operations is significantly reduced, but if it does occur and a recall is required, supply chain partners can work together to promptly and efficiently detect and remove substandard materials and processes from the supply chain.

Increased value across all supply chain links

The push for supply chain transparency encompasses a variety of factors and necessitates the participation of several stakeholder groups. Even though this makes the implementation of transparency quite challenging, it is a highly useful and necessary endeavor. Value is realized across all divisions, business functions, and supply chain links when various groups effectively collaborate. For instance, a chemical firm shifted from country-based visibility and built European-level visibility across its supply chain logistics in order to improve efficiency. This resulted in 10-15% more cost-effectiveness in inventory management and transportation, as well as improved On-time delivery to customers (KPMG, 2020).







Source: KPMG (2020)



What can LogChain do to help you implement transparency across your supply chain?

The LogChain logistics platform instantly connects your company to every other company in your trade lane. Sharing data in real-time, in a controlled and risk-free way, enables businesses to slash their costs – and those of every other partner in the trade lane deliver a significant competitive advantage. LogChain delivers massive transparency about the operation of your supply chain operations and enables you to leverage that data to create significant efficiencies and optimizations through AI and digital transformation.

 <p>1 Ease Paperwork Processing</p>	<p>Global container shipping still involves a lot of paperwork – costing time and money. Also, paper-based freight documents like the bill of lading are prone to loss, tampering, and fraud.</p>
 <p>2 Identify Counterfeit Products</p>	<p>Counterfeit medicine is a growing problem for pharmacy supply chains. This especially pertains to expensive, innovative medicine like cancer drugs. Pharmacies have to make sure to sell “the right thing” to the consumers.</p>
 <p>3 Facilitate Origin Tracking</p>	<p>In the food supply chain, foodborne out-breaks are a challenge for retailers. They have to get a quick overview of where the food came from and which other products are also affected and have to be removed from the stores.</p>
 <p>4 Operate the Internet of Things</p>	<p>More and more logistics objects are equipped with sensors that generate data along the supply chain – e.g. about the status of a shipment. This data has to be stored in an immutable, accessible way.</p>

Source: Hamburg International Conference of Logistics (HICL) No. 23

LogChain executive summary

What is LogChain? LogChain is the distributed platform that is driving the transformation of global logistics supply chains fully into the digital realm, addressing long-standing industry pain-points around efficiency, compliance and safety.

How does LogChain work? Leveraging the power of Blockchain technology the secure LogChain network allows authorised parties to transparently exchange relevant documents and data front-to-back across the extended supply chain, ensuring that counterparties can efficiently trade with confidence, trust, and auditability.

Where is LogChain? LogChain lives in the Cloud and, as such, is securely accessible for approved users wherever they might be in the world, via internet connectivity.

What makes LogChain different? Whilst there are many parties, industry bodies, companies, consortia, working groups etc. who are attempting to remedy specific aspects of the logistics digitalization puzzle - LogChain is purely focused on providing the independent underlying platform to underpin the global movement of goods.

Who is LogChain for? LogChain provides robust and accessible solutions for a wide variety of stakeholders across the logistics ecosystem, including manufacturers, 3PL’s, freight forwarders, trade finance, and regulatory bodies.



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