

A transformative approach to supply chain resilience and veracity

Recent experience has put supply chain resilience right back at the top of the global agenda for businesses and governments alike. The impact of black swan events, from the pandemic to conflicts and extreme weather, means that “*just in case*” is as important as “*just in time*”.

Globalised supply chains have generated unprecedented improvements in efficiency but are proportionately vulnerable to multiple points of failure. What you can't trust becomes a risk, whether because the supply chain is geographically distant or because it depends on partners who, however reliable in the past, may fail to deliver. We have seen that in extreme conditions - medicines, PPE, integrated circuits, basic foods, baseline energy demand and trustworthy data networks cannot be taken for granted, as we once believed. Success or failure may depend on a hurricane, a blocked canal, a regional conflict, a bank failure, or an unexpected government decision to impose sanctions.

We now know that the unthinkable is – in fact, always was – perfectly possible. Once we've recognised that simple fact, it becomes clear that without appropriate risk mitigation, global supply chains can jeopardise security of supply and progressively reduce the capacity and capability that are essential for resilience. Unless we take action, *it's a short step from efficiency to disaster.*

The world has gained too much from global trade for it to be rational to throw out the baby with the bathwater. Instead, we need to make the problem controllable by focusing on the two practical elements of successful supply chain resilience and security:

- **Data** - Business and regulators need access to a holistic package of information provided by and accessible to all parties in the trade relationship. The data must cover provenance and all related transactions, be based on parameters agreed by all relevant parties, and be authenticatable and auditable in real time.
- **Connectivity** - Business and regulators need computationally secure connections between all the elements *tangible (physical goods)* and *intangible (logical data)* that are essential for friction-free international trade.

Post-Brexit, the UK and EU authorities need to find new ways to ensure trust in the data they must exchange to keep trade flowing. Business must be a key partner in the new processes and has the opportunity to offer up its own data-driven solutions that can be shared with and trusted by governments and regulators.

The baseline is trust, which can only be driven by real-time authentication and auditability. The more trust, the more efficient, faster and cheaper trade becomes.

Digital Cognate's **Global Trade Cognate solution is data-driven** and allows the integration of all designated data using APIs connected to cloud systems used by traders. Trustworthy data with trustworthy connectivity allows independent authorities to work in concert to:

- **Confirm the veracity of any cross-border transaction** within agreed trade parameters based upon credible and mutually respected trade data.
- **Deny the veracity of any transaction** within agreed trade parameters and prevent the shipment from receiving export or import approval.
- **Allow arbitrary inspection** of shipments for enforcement.

These operations fall within the Single Window and Trusted Trader services. Approved Economic Operators in the UK must demonstrate compliance with the established regime and will be incentivised to ensure compliance.

Digital Cognate establishes **Certainty of Value** as a prerequisite for **Finality of Settlement**. Value is determined by the provenance and accessibility of data, identity of traders, patterns of trade, ability to demonstrate compliance and to satisfy the terms and conditions of their trade partners.

Our Global Trade Cognate achieves *certainty of value* for both government agencies and individual traders using *four discrete processes*:

- **Connectivity:** Connecting any Physical Asset in the supply chain with its cognate (i.e. twin) Logical Asset containing the consensus-based trade data through an Intelligent Gateway with cryptographically secure connectivity.
- **Immutability:** Capturing these linked assets in an immutable cloud archive as a Digital Cognate that can be audited in real time with hashing.
- **Contractual:** Confirming the legal standing of the transaction and the end-to-end requirements of the supply chain, using natural language contracts which are immutably linked to a machine-readable contract.
- **Nonrepudiation:** Confirming the finality of every transaction using approved electronic identities.

Our Global Trade Cognate services are the key to *resilience, security and performance*.

Global Trade Cognate can be easily integrate with existing logistics, warehouse, tracking, fleet management, packaging, telemetry, and *government provided risk, security and trade management systems* using APIs. All data is incorporated into a designated Global Trade Cognate.

Digital Cognate would be pleased to explain the scalability, security, transparency and speed of our Global Trade Cognate data platform and demonstrate its utility using our AWS demo.

Digital Cognate Team
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