Solution Brief

Observability is the Critical Link in Next-Generation Supply Chains

The Global Industrial Supply Chain is Broken

Economic security is increasingly imperiled by cyber adversaries creating and exploiting vulnerabilities in the global industrial supply chain. They exploit gaps in outdated systems, services, and infrastructure used to insecurely store and communicate endless amounts of data to facilitate the myriad of necessary commercial data transfers. These threats exist at every link in the global industrial supply chain and pose devastating consequences to economic security if left unaddressed.

Securing the industrial supply chain while maintaining an open global investment climate is imperative for collective growth and prosperity. Although a complex task, that does not mean it has to be difficult. To help deal with these challenges, Accedian and New Context have partnered to push security to the edge. More specifically, to provide observability for the gaps in the global supply chain.

Governments, Industry, and Energy Sectors, Among Many Others, Need Observability

Hyper connectivity is coming. Fast.

Everyday, market edge forces usher in new 5G infrastructure, giving life to IoT, C-V2X, computer vision, AI, robotics, edge devices, and countless other advancing technologies. Together, they are creating an entirely new industrial global supply chain that is vastly different than anything that has existed before.

Multinational C-suite leaders must now deal with the accelerating dynamic of staying on top of global supply data across all of the countless interconnected, yet disparate networks, in real-time, in order to accurately project and meet forecasted consumer demands. Tools such as AI, Big Data analytics, RPA, and blockchain must be adapted and deployed, along with cloud-based applications, to fulfill the sprawling hyperconnectivity of next-generation global supply chain technologies.

This is a tall order, and even the 2019 United States Presidential Executive Order, "Securing the Information and Communications Technology and Services Supply Chain," recognizes these many challenges, asserting that all organizations must lean forward together to secure outdated industrial supply chains if they are to ensure future economic and domestic prosperity.

However, in order for modern day businesses to manage risks and compliance, optimize assets and liabilities, drive cash flow, guide investments, and capitalize on the digitization of global supply chains to get their products and services to consumers, they must first rethink the entire way they go about securing their own links in the global industrial supply chain. All of the systems, services, and infrastructures they utilize must be strengthened to become more efficient, transparent, and immutable for the petabytes of digital data that is generated if they are to both deter adversary exploitation and assure their economic prosperity. This is where observability comes in.

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Figure 1: Data transparency from Accedian combined with immutability from New Context provides complete observability for global supply chains

Observability pushes transparency and immutability to the edge to empower the next generation of applications, sensors, relays, and transmitters that serve as the backbone for the global industrial supply chain. This includes shipping ports, air cargo hubs, warehouses, fleet operations yards, maintenance and repair facilities, rail yards, and a whole host of supply chain infrastructure that runs from point of origin, through transit, processing, warehousing, and distribution, and finally to the end consumer.

Continuous observability strengthens the integrity of the global industrial supply chain where it is weakest, at the seams that exist between data collection and transfer. The following are examples of these seams.

Intermodal Cargo Handoffs

This is one of the specific supply chain areas that can be strengthened with observability. The gaps in observability manifest at transfer points between any two elements of transportation exchanging cargo. When a ship arrives at a terminal to transfer cargo containers onto a railhead, semitruck, or smaller shipping vessel, each one of the potential platforms generates, stores, and transmits vital data that needs to be made more transparent and immutable for ensuring greater security, and for ensuring that the handoff doesn't break links in the supply chain. IoT sensors should also be employed to generate and then send geolocation-based data for the products that are needed for logistics applications that leverage AI for real time, higher integrity, supply chain distribution. Data should be free to hit any network and transit any national border or jurisdiction, if observability exists from end to end. Maintaining data transparency and immutability throughout all of the vulnerable handoffs requires new technology and new know-how. Together, Accedian and New Context provide this capability.



Distribution Centers

These are another vulnerable point where increased observability can strengthen supply chain integrity. From warehouse rafters to consumer tables, pushing observability to the edge of distribution centers will enhance and improve inventory data acquisition with real-time visibility of the goods and services they house. Easily repositioning inventory to accommodate fluctuating changes in consumer demand, seasonal variance or emergency conditions is the ultimate goal, and improved observability helps link warehouse data acquisition to vehicle transportation. It allows organizations to easily pre-position inventory and goods onto trucks as needed. Vehicle telemetry sensors will route goods and products to be loaded, transferred, and delivered to the right locations, at the right time, and to the stores that need them most. Data acquisition centers inside every store can then track and monitor consumer mobile and vehicle application geolocation devices to more accurately predict anticipated demand, relaying this information throughout the supply chain network accordingly and in real-time. Continuous observability is achieved throughout the distribution center process.



Observability Through Transparency from Accedian and New Context's Immutability

Observability provides an economically and operationally viable way to generate granular transparency of network and application transaction data for multi-operator, heterogeneous edge, and multi and hybrid cloud environments.

An indispensable element of observability is transparency, or complete user and data visibility. Transparency ensures the accurate monitoring of data storage, visualization, KPIs for analysis, and correlation of all performance data in comprehensive dashboards. It means aggregating real-time analytics that offer metric baselining, normalization, calculation of custom metrics, threshold cross alerting, anomaly detection leveraging statistical and machine learning methods, and enrichment and correlation via third party network data. Finally, transparency enables enhanced security for next-generation, behavior-based intrusion detection devices that provide the critical insight needed to detect advanced, targeted, cyber-breaches, and other invasive attacks. These types of attacks are typically able to evade next-gen firewalls, security gateways, and antivirus solutions.

Accedian provides ubiquitous observability of distributed infrastructure, application delivery performance, network quality, and security threat detection, both between and within all distributed IT assets. Accedian ensures transparency of the data that is generated within throughout the entire supply chain and offers complete and total visibility of all the data generated, assuring that it was delivered by the right application, to the right place, for the right reason, and at the right time. Or perhaps, providing the visibility that it wasn't.

Observability also means complete immutability. Immutability offers a completely auditable chain of events for the custody of data regardless of how, when, and where it was exchanged. Whether IoT, C-V2X, computer vision, AI, robotics, edge devices, or countless other emerging technologies, the transactional attestation of the data showing what or who connected and where it was stored or communicated, is indispensable for the integrity of the next-generation supply chain. Immutability assures liability and remediates transactional risk by providing forensic attestation for underwriting countless applications that link machines to machines and machines to humans.

New Context puts it all together in an immutable design. With its unique industrial knowledge and its secure compliant data platform reference architecture, New Context binds the data links in the seams of the global industrial supply chain. As a leading systems integration company of data experts and innovators, New Context excels in the security of data in highly regulated industries like energy, telecommunications, and finance. They help ensure adversaries cannot exploit gaps in outdated systems, services, and infrastructure by building it right the first time, strengthening global industrial supply chains where they are weakest—at the seams between data collection and transfer.

Increased Observability Means Stronger Supply Chain Integrity

Improving collective economic security means strengthening the integrity of the global industrial supply chain. Stronger integrity requires pushing security to the edge of all next-generation systems, services, and infrastructures that store and transmit endless amounts of data for countless commercial transfers. Every link in the ever-expanding global industrial supply chain needs increased observability if it is to ever achieve stronger integrity. Accedian's expertise at providing solutions to assure supply chain transparency, coupled with New Context's expertise in immutable design, make observability the critical link to strengthening not only the global industrial supply chain, but ultimately, the collective economic security and prosperity. The challenge is complex, but with the expertise from Accedian and New Context, the work in reaching this goal does not have to be difficult.

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About New Context

Founded in 2013, New Context is an innovator in the security of data for highly regulated industries including energy, telecommunications, finance and government. We help our customers around the globe prepare for security orchestration, building critical infrastructure that works with emerging tech. We're passionate about protecting the organizations, communities, and families living together in our connected world, and you'll see that commitment in everything we do.

newcontext.com

About Accedian

Accedian is the leader in performance analytics and end user experience solutions, dedicated to providing our customers with the ability to assure their digital infrastructure, while helping them to unlock the full productivity of their users.

Learn more at accedian.com

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