

The Evolution of B2B Integration in Supply-Chain: Inside the EDI-API Partnership that Drives Enterprise Connectivity with Increasing AI Adoption



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In every global enterprise, there's an invisible infrastructure that keeps commerce alive. It's the machinery that connects suppliers to manufacturers, retailers to distributors, and logistics partners to customers - moving orders, invoices, and shipments across the world. On paper, the workflow seems linear. In reality, it's anything but.

Hundreds of formats, systems, and channels must align around a single business intent, and each brings its own variations and complexities. Integration teams now juggle multi-template structured, semi-structured, and unstructured inputs - EDI, XLS, TXT, JSON, XML, Parquet, ORC, ZIP files, DOCX documents, PDFs, images - sometimes multiple in the same workflow.

Today, a single Purchase Order (PO) can arrive in almost any form: a classic EDI message from a major partner, an Excel sheet from a smaller distributor, a JSON request from a marketplace, a PDF attachment from a regional supplier, or even a screenshot from a portal.

All of it must be interpreted and normalized before the PO can enter an ERP, warehouse management system, transport platform, billing engine, or analytics pipeline. In addition, all of this comes with overheads of maintenance, managing multiple configurations, issue resolutions etc.

In light of these changes, enterprise leaders are questioning the viability of Electronic Data Interchange (EDI), that has been the trusted backbone of enterprise communication for decades.

"Isn't it outdated?" "Shouldn't APIs and event-driven systems have replaced it by now?"

But despite the doubts, EDI has never been more reliable or more misunderstood in the enterprise context.



The Integration Paradox & The Continued Relevance Of EDI

While it's tempting to think of EDI as lumbering, legacy technology that's moving toward obsolescence, the reality tells a different story. Not every exchange in the enterprise ecosystem demands the same kind of speed or interaction. EDI isn't so much vanishing as it is evolving.

In fact, it continues to manage some of the most critical, legally binding transactions between enterprises today, with a level of stability and standardization that makes it indispensable to global supply chains.



A large chunk of well-established business documents - such as Purchase Order, Shipment Notification, and Compliance Documents - that must move securely and predictably across enterprises when specific events occur, still depend on EDI. They may not require the synchronous, request-and-response model that APIs are designed for (unless there are specific contractual SLA commitments requiring stricter time-bound responses).

However, the business environment around EDI has changed dramatically. Enterprises now operate in ecosystems that demand real-time responsiveness via APIs and event-driven architectures with instantaneous data exchange, especially in the context of:



Stringent time-bound fulfilment
(such as lightning deals)



Inventory tracking



Customer experience
(such as customized status updates)



Data aggregation
(such as interfaces with industry leading 3rd party event trackers e.g. MarineTraffic / FourKites, Infor Nexus etc.)

In such scenarios, today's customers expect instant updates, retailers rely on live inventory views and logistics teams need real-time shipment visibility.

To summarize, for a logistics company that processes thousands of shipments every day, EDI systems are what keep all their transactions compliant and traceable. But its customers now also expect to transact, such as tracking their shipments, in real-time. That's where APIs go to work. They augment the primarily batch-mode EDI system, adding a layer of real-time responsiveness and visibility.

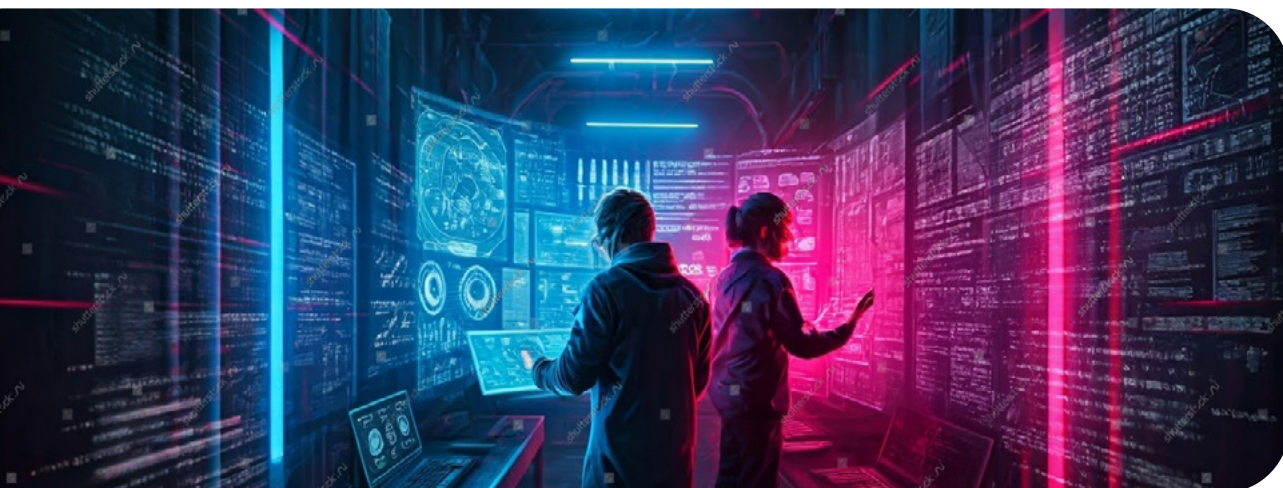
This has created what we call the integration paradox. Enterprises now find themselves having to reconcile the stability of EDI and the speed of dynamic, event-driven APIs. In such hybrid systems, AI further accelerates automation by streamlining mapping, validation, and onboarding without breaking business continuity.

The Core Case for Modernization and Consolidation

For many organizations, integration has become patchwork. Legacy EDI platforms coexist with custom scripts, API middleware, and manually configured partner workflows. Data moves at a managed pace navigating multiple hops and traffic constraints, partner onboarding takes months, and teams spend more time maintaining connections than building innovation. And now, as AI begins to reshape how decisions are made, enterprises are realizing their integration core isn't ready for the speed of intelligence.

Modern integration demands both real-time context-rich data and batch-based integrations to seamlessly co-exist. Meanwhile, the sprawl of disparate tools, many born out of a need to solve a niche purpose in the labyrinth of data traffic variances, makes it nearly impossible to bring this to reality leading to multiple specialized systems and duplication of effort across systems.

This results in delayed new partner onboarding, latency in handling change requests, high-complexity code depth and skilled resource dependencies and in many cases loss of business to competition.



That's why modernization has shifted from an IT project to a business necessity. Enterprises are consolidating their integration landscape and unifying EDI, non-EDI, and API flows into single, intelligent, multi-featured platforms.

Design Innovation to Eliminate Point-to-Point Integrations using Canonical Model

Integration landscape is complex. Imagine on the left-hand-side there are multiple source systems from which data needs to be ingested. It comes in all shapes and forms i.e. formats, structure, context, etc. all varies. On the right-hand-side there are enterprise applications (one or many).

Traditionally, point-to-point integrations lead to hairball configurations over-time resulting in significant work to accommodate a small change request. Such systems also lead to configuration re-work that integration teams have to do if organization decides to change a downstream application.

To mitigate this risk and reduce duplicate efforts, a new-age integration platform must support canonical based design to abstract the complexity and isolate the mapping problem from the data transformation/manipulation problem.



A canonical model gives the enterprise a standardized way to represent its core business objects - purchase orders, shipments, invoices, ASNs - irrespective of how they arrive from the outside world.

When the business object is unified, it no longer matters whether the transaction enters through an event-driven EDI flow or a synchronous API. Both feed into the same canonical representation, which means changes introduced by partners or channels stay contained at the edges instead of rippling across the enterprise.

That shared structure becomes the common denominator to integrate with ERPs, TMSs, WMSs, and other backend systems, ensuring internal consistency while supporting external flexibility. This not only eliminates point-to-point integration but also enables an enterprise to expose the canonical as an API endpoint for modern partner integrations, enabling a hybrid EDI and API Integration approach to work seamlessly.

3 Key Promises of a Modern Integration Platform



01

Cost-neutral Migration: In the current volatile market landscape, many enterprises are faced with margin and cost pressures.

To enable modernization agenda, a modern platform must have the key capabilities to drive migration at zero additional cost to the customer and facilitate IT teams to build a business case for modernization agenda.

02

Simplification and Consolidation of Disparate Tools: Managing B2B and EAI integrations seamlessly on a single platform not only eliminates technical complexity and overheads but also reduces duplication of efforts.

One-stop solution to integrate internal and external data enables significant business and operations analytics opportunities.



03



AI-First Approach: Finally, the ability to support AI, GenAI and Agentic AI use-cases leveraging the data that is flowing through the platform. The modern platform delivers on the promise of keeping AI at the center of the platform design strategy.

For example, Co-pilot for personas across build, test, deploy, manage and operate, Agentic business solutions such as agentic order exception handling, Automated RFI for missing mandatory information, an AI buddy for production support and more.

While a few players in the market today offer the modular, extensible architecture required to achieve this, the ideal approach consists of a natively integrated, low-code/no-code, and AI-model-agnostic platform that enables enterprises to develop, monitor, and scale such solutions with ease. Built-in observability and proactive KPI and exception management capabilities in such a platform ensures actionable visibility across data flows no matter where they run, whether on-premises, on cloud, or across hyperscalers

What Impact Does Modern Integration Deliver at Scale?

Recently, a global logistics major replaced its legacy integration stack with a unified hybrid platform. The result? Their order update speed improved by 90%, they experienced zero downtime during migration and were able to more effectively create real-time coordination across multiple partners.

Similarly, a leading consumer goods retailer managed a 66% reduction in technical onboarding time, while reducing their integration costs by 50%. How? Simply by consolidating its EDI gateways, API middleware, and custom connectors into one platform.

In both cases, modernization didn't disrupt business continuity but rather worked as a rapid efficiency and innovation enabler. And by allowing EDI and API systems to coexist on a common foundation, these enterprises turned integration from a back-office burden into a front-line differentiator that delivers a clear competitive advantage.



The Leadership Agenda for Integration in 2026

Since its elevation from basement function to boardroom imperative, integration now sits at the intersection of strategy, technology, and transformation. And for leaders looking ahead, three imperatives stand out.

First, prioritize hybrid systems. With a hybrid-first approach, the enterprise focus stays firmly on designing systems where the best of traditional dependable EDI, latest real-time penetrative API, and comprehensive end-to-end integration capabilities can co-exist with increasingly greater adoption of AI to fast-track on-boarding and support.

Secondly, consolidate for visibility and feature-rich offerings. Push past the era of fragmented tools and sprawling solutions toward unified platforms that offer up a single view and one-stop action center of any-to-any capable partner and data connections.

Finally, design for intelligence. Architect integrations that are future-proofed with in-built AI enablers, making it easier to leverage predictive insights and automated workflows. The intelligence and comprehensiveness of tomorrow's connected systems need not be limited by the way their data moves. The stronger, more agile and robust the integration core, the faster and deeper each system can think, process, and drive results.

About the Authors



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Sudipto is a Client Delivery Partner with 23+ years of experience leading large-scale AD, ASM, and modernization programs in Logistics. He specializes in EDI/B2B service excellence, solution architecture, framework migration, driving streamlined partner onboarding, optimized data flows, and efficient enterprise landscapes across diverse logistics segments.



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