EXTOL®

Modernizing EDI

Drivers, Options, and Success Factors

An EXTOL International White Paper

Modern technical innovations are affecting transaction protocols, document types, communication methods, security, and the "interfaces" available for integration. With such dramatic changes, many businesses are discovering that their current EDI solutions are simply not keeping up.

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Introduction

Once a business reaches a certain size, the interchange and processing of its business documents must be automated. Automation reduces the incremental cost of the growing number of transactions. It also cuts processing time, errors, and turn-around. And, it provides management with a way of tracking and measuring service levels to customers and suppliers.

As the foundational model for electronic business interactions, Electronic Data Interchange (EDI) remains the backbone of business-to-business (B2B) integration. The adoption of EDI standards – primarily X12 and EDIFACT – has made it easier for trading partners to agree on common document formats and protocols. As a result, there is widespread adoption of EDI among medium and large enterprises.

But a growing percentage of electronic data interchange doesn't conform to EDI standards. Business innovation continues to drive changes in B2B transaction protocols, document types, communication methods, security protocols, and other facets of EDI. And changing interfaces exposed by business processes, computing platforms, and applications are testing the limits of aging EDI middleware and tools. As a result, many businesses are discovering that their incumbent EDI solutions no longer meet their needs.

EDI Modernization Drivers

There are two kinds of drivers for EDI modernization – cumulative and disruptive.

Cumulative drivers are patterns of recurring activities that, over time, pose significant problems or risks to a business. Examples include late or incorrect product shipments, invoicing errors, and slow response to customer change requests. Symptoms vary by industry, but may include customer chargebacks, high product return rates, and mediocre vendor scorecard ratings. Chronic problems in IT or operational processes, such as slow partner onboarding or rekeying partner data from one format to another, also belong in this category.

Because their effects are felt over months or years of business activity, cumulative drivers rarely propel change on their own. But when a business finally recognizes the need for change, the opportunity to address cumulative factors is often the most important benefit of taking action.

The second kind of EDI modernization driver is disruptive change. Typically brought on by mergers, acquisitions, large account sales, platform or application replacements, disruptive change affects a large part of an organization, if not the entire organization. Oftentimes, changes like these require IT departments to figure out how to support new standards or interfaces, integrate new middleware capabilities, re-implement application interfaces, or even consolidate or replace entire EDI systems.

> *Disruptive changes are **HARD TO IGNORE**, because they impose **BUSINESS-CRITICAL REQUIREMENTS**, usually under a deadline. As a result, they are common **TRIGGERS FOR EDI MODERNIZATION**.*

Modern EDI versus Classic EDI

Today's EDI is very different from what it was 10 or 15 years ago. When many companies made their last EDI technology investments, they were not facing the challenges they face today as they fill a supplier or intermediary role in the B2B value chain. They must support new shared processes, transactions, document types, and communication methods, all while meeting more stringent service levels.

Partner-driven and IT-driven integration changes are also propelling a wave of modernization. "Classic EDI" translators are being replaced by "Modern EDI" integration solutions, due to radical changes in internal business processes, on-premise and cloud (Saas) applications, and new platforms.

Classic EDI refers to the exchange of standard electronic document types, with syntax and semantics defined by standards organizations, principally X12 and EDIFACT. Like Classic EDI, Modern EDI also embraces standard EDI document interchanges, but in addition, supports the interchange of non-standard, proprietary documents, mostly based on flat file, XML, and spreadsheet syntaxes.

But the differences between Classic and Modern EDI go beyond support for new document types:

	Classic EDI	*Modern EDI*
Document types	Standard EDI document syntax and semantics	Standard EDI plus XML, spreadsheet, and flat file documents
Endpoint connections	Limited to connections between external partners and internal resources	"Any-to-any" integration between partners, applications, data, and cloud services
Process flexibility	Simple inbound and outbound processes	End-to-end combinations of partner-facing and internal business processes
Resource integration	Coded integration with applications and data	Rapid integration with internal and external endpoints, without coding
Visibility	IT-dependent, "forensic" management and reporting	Management by exception via alerts, dashboards, and self-serve reporting

Modern EDI reflects the increased diversity of partner, application, and service interfaces present in business environments today. That diversity imposes new requirements on EDI systems, including support for connections that combine applications, services, and data resources in powerful end-to-end business processes.

Modern EDI also simplifies EDI configuration and operation for IT and business users. IT personnel can onboard new partners and introduce changes to existing partner integrations using visual modeling, template-driven specification, and object reuse, instead of coding. And business professionals gain direct access to EDI activity data and results, through secure dashboards and email notifications.

Overall, modern EDI gives a business the ability to automate more kinds of partner interactions, and improves quality, accuracy, turnaround, and cost per transaction. It provides increased flexibility to connect with partners on their own terms, and makes it possible to respond faster to partner-driven changes. And it provides improved visibility and control over partner-facing connections and processes, allowing businesses to respond to exceptions before they become problems.

Modern EDI Options

The right modernization approach for your business depends on multiple factors, including classic and modern EDI requirements, the number of trading partners and partner "churn" rate, available EDI skills, and sourcing preferences. Here are the four main modernization options to consider:

1. **Do nothing and handle exceptions manually:** If the consequences of inaction are minor, such as having to manually process a few transactions per day, doing nothing can make good business sense. But except as an occasional stopgap, manual processing can quickly become an expensive trap. As transaction volume increases, manual processing steps add errors and delays that inflate processing costs and can jeopardize customer satisfaction and future business.

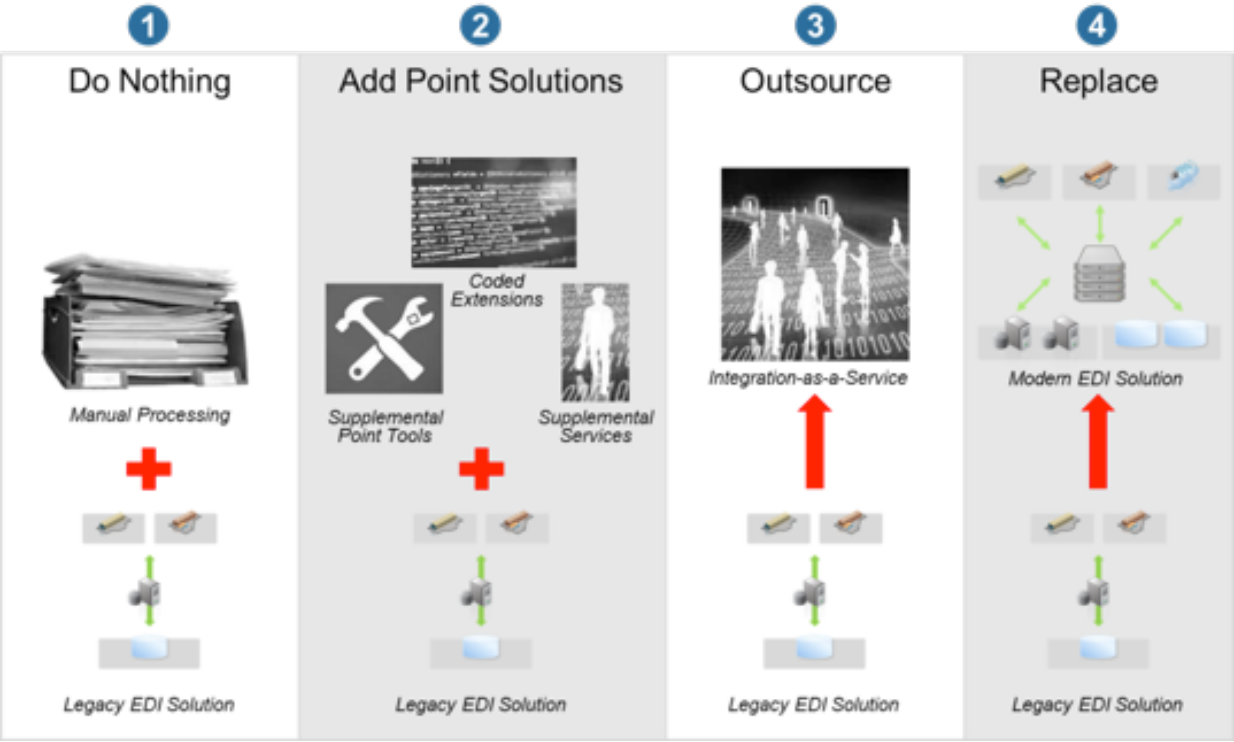
2. **Add point tools, coded extensions, or services:** In some circumstances, leaving your legacy EDI system in place and adding features can be an effective way to provide modern EDI capabilities. If needed capabilities are available from your existing EDI solution provider as additional integrated features, then licensing those features is an attractive option.

   But when classic and modern EDI capabilities must be used together – such as invoking a web service as part of validating an EDI document – combining legacy EDI with newer point solutions may be difficult or impossible. Visibility and control also suffer, by complicating monitoring and management of integration activities across different solutions. Overall, using and managing multiple integration solutions limits flexibility and can substantially increase staffing, training, and maintenance costs.

3. **Outsource to an Integration-as-a-Service provider:** Engaging a third party service to replace your existing EDI solution is another possible path to EDI modernization. Integration-as-a-Service can be a particularly appropriate option when internal IT resources or integration skills are scarce, or when unexpected organization or personnel changes make self-management impractical. The main advantage of service-based solutions is that they free internal resources for other work. They can also shorten time-to-production, by reducing delays and errors due to learning curves.

But the convenience of integration-as-a-service may come at the cost of flexibility and control. If your service provider is not familiar with your current EDI environment, the time and cost of migrating to the new service can be substantial. Service providers may also be slow to respond to change requests. And with some solutions, "last mile" integration with on-premise applications and data – a commonly overlooked requirement – can markedly increase implementation time and cost.

4. **Replace your legacy EDI software with a "Modern EDI" software solution:** As explained earlier, modern EDI software satisfies classic EDI requirements as part of a broader framework that supports additional connections, document types, and processing options. Because of this, migrating to a modern EDI software solution is the only way to address both classic and modern EDI requirements without sacrificing flexibility, visibility, and control. By providing all EDI-related services and operations in one place, modern EDI software offers a consistent approach to addressing multiple B2B integration requirements. The result is faster results, improved EDI visibility and manageability, and reduced lifecycle costs.



Four EDI modernization options

Planning Your EDI Modernization Project

Gaining modern EDI capabilities requires engaging new software or services, in some form. Over time, adding new capabilities to a legacy EDI solution increases complexity and costs when compared to migrating to a new software or an Integration-as-a-Service solution. Migrating existing EDI assets to a new software or Integration-as-a-Service solution is the only way to gain modern EDI capabilities and realize the benefits of centralized provisioning, monitoring, and management.

Whether you choose to outsource or to migrate to a modern EDI software solution, the first step in migration is to inventory your existing EDI assets. At a high level, EDI systems comprise three kinds of assets: the capabilities provided by the core solution, the configured integration assets that define the behavior of your EDI system, and the tools and best practices you employ to implement, monitor, and manage EDI processes. Understanding what your classic EDI system offers in each of these areas establishes a baseline for evaluation of modern EDI solution alternatives and for planning your migration.

Integration Capabilities: Classic EDI, which constitutes the largest portion of B2B integration in most industries and businesses, imposes specific functional requirements on EDI systems. The ability to validate, envelope, and de-envelope EDI documents, analyze and route documents based on envelope attributes, and generate and reconcile acknowledgements. Your business also might depend on secondary capabilities such as control number generation, exit processing and error notifications. It's important to analyze the EDI infrastructure features you're currently using. If the modern EDI solution you choose doesn't offer equivalent capabilities, you'll need to build them yourself, pay for additional services, or adapt your EDI operations to do without them.

Integration Assets: Integration assets are objects created by your business (usually by IT) that collectively define the business-specific behavior of EDI processes used in your business. These assets include EDI standards and document definitions, trading partner profiles, data transformation maps, application and data interfaces, communication interfaces, scripts, schedules, and other objects. Before you modernize, it's important to understand the similarities and differences between the objects in your current EDI system and the ones you'll be replacing in the modern EDI solution. This establishes a basis for replicating current system behaviors by migrating or recreating equivalent objects in the target environment.

Tools and Best Practices: The third asset area to examine is the set of tools and practices you currently employ to implement, monitor, and manage EDI. These assets are important because they determine how quickly and easily you can produce the results you need from your EDI system. Start with an analysis of design-time activities (trading partner definition, mapping, interface specification, etc.), focusing on where IT staff spends the most time and where you need improved tool support. For example, if partner onboarding takes longer than it should, find out where your staff hits roadblocks or spends excessive time, and look for improvements there. Then repeat this analysis for your runtime processes and tools, focusing especially on those that support detection, diagnosis, and resolution of processing exceptions.

Whether your modernization strategy is to replace your legacy system with modern EDI software or to move to an Integration-as-a-Service solution, conducting an inventory of assets and unmet needs is essential. It greatly reduces the chance of selecting a software or service solution that can't meet your requirements for operational continuity and enhanced EDI capabilities.

EDI Modernization Success Factors

The right EDI modernization strategy for any company depends on many factors that are business-specific, but also some that are universal. To maximize the likelihood of a successful outcome, start by incorporating the following points in your modernization plan:

Keep track of cumulative EDI issues: In many businesses, no single EDI project is sufficient to justify EDI modernization. So it's important to document – and where possible, measure – the impacts of manual data rekeying, undetected processing errors, resolving customer complaints and inquiries, researching cryptic system outputs, slow response to change requests, and other chronic problems that can be attributed to EDI system limitations.

Use disruptive events to impel action: Exploit mergers, acquisitions, large customer acquisitions, platform changes, major application upgrades, and other business-critical events to make long-needed improvements to EDI systems. Use cumulative issues to justify taking action.

Conduct a thorough inventory of EDI assets and capability gaps: Allocate ample time for a thorough inventory of your current EDI assets and unmet needs. Even if you're facing a tight modernization deadline, this analysis can return multiples of the time you invest by preventing missteps and wasted effort, later on.

Think strategically about your future needs: Be sure to consider potential future needs in addition to the unmet needs you recognize currently. Looking beyond current needs is insurance against dead-end solution choices, whether you decide to self-implement or outsource EDI.

Consider solution flexibility when evaluating modern EDI options: When evaluating EDI solution options, look for the ability to change capabilities, licensing, deployment, and service choices, downstream. Make sure your solution provider offers sufficient flexibility to accommodate unanticipated changes in your business and IT environments.

Include migration criteria in your evaluation of modern EDI tools: As part of your evaluation of new EDI tools, examine their ability to shorten and simplify the migration of current integration assets to the target solution. Some modern tools offer powerful object generation capabilities that can drastically reduce migration effort. This area is worth examining even if you outsource migration to a service provider, because the right tools can substantially reduce time and cost.

Finally, even if you plan to self-implement, consider engaging your solution provider in your implementation project, especially in the planning and early implementation stages. Doing so can shorten learning curves, avoid design dead-ends, and result in more robust and extensible results.

**Look for part two of this 2-part white paper series for details on how to plan and manage your EDI modernization project.*

About the Author

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Jim has over 20 years of senior and executive management experience with software companies, and holds a deep understanding of current technological drivers across multiple industries.

Mr. O'Leary earned a B.S. from the University of Kansas in 1975.

About EXTOL International

EXTOL International has been a provider of EDI integration software and managed service solutions for more than 20 years. The foundation of EXTOL's modern EDI offerings is EXTOL Business Integrator (EBI), a unified middleware platform and toolset for integrating trading partners, on-premise applications, cloud services, and enterprise data, in any combination. EBI is available as a software solution for self-managed EDI, and as an Integration-as-a-Service offering for companies that prefer to outsource EDI.

EBI automates customer and supplier interactions for manufacturing, retail, transportation, logistics, insurance, and many other industries. It comes complete with all of the capabilities you need for business-to-business (B2B) integration, including powerful process automation and data transformation; adapters for integrating partners, applications, and data resources; and a comprehensive, web-based dashboard for monitoring and analyzing integration activities.

EBI supports both classic and modern EDI requirements, including traditional batch and non-traditional real-time interactions. It includes X12 and EDIFACT EDI document standards, and supports integration of XML, flat file, and spreadsheet documents. The integrations you create with EBI are portable across IBM i, Windows, and Linux environments, as is the EBI product itself.

EBI integrates flexibly with business applications and data. It offers pre-built adapters for enterprise software products from Oracle, SAP, TMW Systems, and others, and supports both SOAP and REST services for integration with SaaS and other service-oriented applications. EBI can also integrate with internally-developed applications, using file system, database, web service, and other open interfaces.

EBI includes the EXTOL Integration Studio (EIS) design-time tool environment for creating and maintaining custom integrations that run on EBI. EIS includes advanced metadata-driven modeling and object generation tools that cut the time needed to create integrations and replace legacy integration assets. EIS also supports a very high level of object reuse, so you can bring new trading partners onboard faster, and with fewer errors.