

ERP / EDI INTEGRATION METHODOLOGIES
In-House versus Hosted

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ERP / EDI INTEGRATION METHODOLOGIES - In-House versus Hosted

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ERP / EDI INTEGRATION METHODOLOGIES

- In-House versus Hosted

PREFACE

You're the CIO of a growing company. Required internal business applications are growing rapidly and you also have to maintain external EDI compliance to keep the revenue flowing. You know it's time to move to an ERP but do you keep your EDI program localized or move to the outsourced model? The right decisions in implementing your EDI solution will yield cost-efficiencies and greater functionality and can help pay for the upgrade to the ERP solution.

OVERVIEW

Designing or re-engineering ERP solutions to incorporate EDI-based Supply Chain Management is never a simple task. At the outset, investigation of EDI integration strategies will reveal two basic approaches, each being vociferously advocated by those representing a methodology while simultaneously depreciating the value of the other approach. The rub is that they cannot all be right or all be wrong.

So what is the “best” solution? Is it possible that a best solution even exists? How can you determine what is best for your enterprise?

Selecting the “best” strategy for your enterprise need not be a daunting task. Challenges will vary among companies but there are some basic, common factors that can be applied to aid in choosing an approach.

It is important to remember why your company adopted EDI for B2B commerce in the first place. It was primarily to reduce costs. Certainly there are many other benefits that appropriately could be listed along with trading partner requirements. The bottom line remains cost reduction or, inversely, margin increase.

Accordingly, any competent new or re-engineered solution must first be held accountable to the simple test of its effect in terms of acquisition and operation costs. An expanded view is that any new EDI strategy must reduce costs while simultaneously adding capabilities, increasing accuracy, reducing charge backs, expanding the trading community and decreasing the time required to add/revise documents or add new trading partners.

Generally, a company has two strategic implementation options:

- Establish and maintain an in-house EDI solution
- Engage a hosted EDI service provider

The shift from proprietary EDI solutions to Internet-based or even Web-based infrastructures is inevitable.

*-Dr. Jacques Hale
“From EDI to Web Services – the Evolution of E-Commerce”*

SELECTING A MODEL

In considering implementation of an in-house or hosted EDI solution businesses must evaluate the alternatives and their associated implications in order to intelligently choose the method that most appropriately aligns with their unique needs.

A good starting place is to consider some basic factors that likely represent the key indicators to what path is most closely aligned with your ERP and IT operations.

Perhaps the most fundamental of the following questions relate to your core competencies and where you want to invest resources.

- Does it make sense for you to invest capital in the required hardware, software, staffing, and management of an IT “service” that is not a critical part of your core business mission?
- Does it make sense to outsource this “service” to an expert organization whose core business is providing the EDI “service”?
- Would outsourcing allow you to redeploy resources that had been directed to the in-house EDI operation while simultaneously enabling you to meet or improve the efficiency and accuracy of your EDI transaction processing -- and at a cost savings?
- Does it make sense to simplify the interconnection with your trading partners to make it easy for them to do business with you?

If it is too hard to integrate with trading partners, a business may lose customers or be forced to abandon suppliers

- Which method offers the lower total cost of ownership (TCO)?

A due diligence approach suggests that one would at least explore a TCO comparison between the in-house and outsource models. Often TCO is not fully understood and according to reports from numerous EDI service providers regarding real-world analyses it is not infrequent for the in-house solution TCO to actually be more than twice that of a hosted alternative.

The benefits of EDI are clearly tied to levels of EDI integration, even for small and medium-sized manufacturers. While many companies have some form of integration, those existing levels are minimal. Therefore, solutions are needed to help move companies from states of lesser to greater integration.

*- Industrial Technology Institute
Center for Electronic Commerce*

Many businesses consider only the cost of acquiring/licensing an EDI software application and fail to calculate the costs associated with implementing and maintaining that application.

- EDI Center for Training

- Do you want to provide and support a 24x7 EDI service operation?

Since trading partners often cross time zones, have varying business practices, and don't always observe the same holidays it is essential that the EDI services be on-line and available at all times. The key point being that it is common practice that transaction acknowledgements must be sent within time limits in accordance with the trading partner agreement in order to avoid charge backs or, worse yet, cancellation of an order. This demands that the service be monitored on a 24x7 basis and that problems be identified and resolved in real-time. Providing these capabilities for in-house systems may be challenging while hosted EDI service providers offer it as part of their core capabilities.

- Do you want to bear the cost of acquiring and maintaining the hardware and software to support the EDI application service?

Items such as networking equipment, servers, operating systems, licenses, maintenance contracts and the staffing costs of personnel to maintain them are part of the hosted EDI service model.

A STUDY OF MODEL ADVANTAGES AND COST COMPARISONS

Traditionally companies have elected to implement mission-critical applications like EDI utilizing in-house resources. Typically, the approach is to license a core do-it-yourself solution and to invest additional resources into customizing and integrating that solution into a new or existing licensed ERP environment.

The in-house approach may create a sense of control over the EDI operations. For certain it creates an expense that includes licensed software maintenance and upgrade fees, networking and server hardware costs, staffing costs for development and maintenance, and ongoing monitoring resources to detect and resolve real-time problems.

Add to that the cost of staff development and dealing with employee turnover in skilled positions that are not consistent with your core business applications. The net is often a difficult and expensive solution that provides a "service" outside of your core business mission.

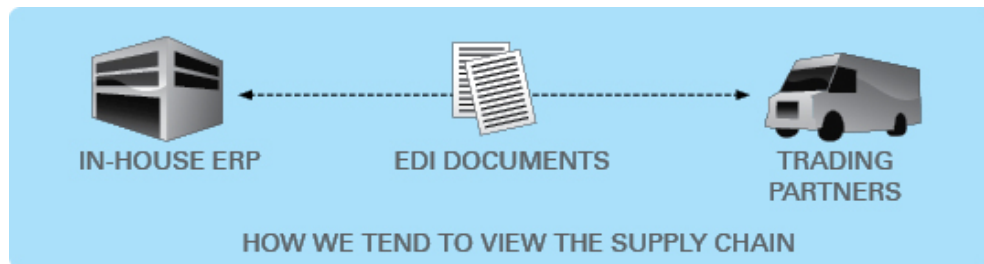
Hosted EDI services have emerged as a mainstream solution and joined hosted CRM and accounting applications that have been enthusiastically and successfully accepted by large enterprises. This acceptance is, in part, based upon recognition that EDI service providers are application experts and provide highly skilled resources along with security, backup, support and monitoring services that exceed those that can be economically implemented in-house. Hosted solutions frequently

The decision to outsource is often made in the interest of reducing costs, redirecting or conserving energy directed at the competencies of a particular business, or to make more efficient use of labor, capital, technology and resources.

provide more functionality and benefits than licensed EDI software and with significantly less expenses.

Hosted solutions allow a company to integrate the EDI process into their internal Accounting or ERP systems and have the hosting provider operate and manage the EDI process. Hosted EDI allows for an integrated EDI environment without the upfront expense of EDI software, development, training and support.

THE FUNDAMENTALS OF IN-HOUSE SOLUTIONS



On the surface, it may seem a simple matter to purchase/license an “EDI solution” to integrate with your ERP solution. A larger view reveals that, at minimum, a number of products and capabilities are required to get an in-house EDI system configured and implemented.

An in-house EDI implementation includes several integral parts.

In-House Solution Key Components

1. **Communication/Connectivity Services:** the transport media that enable you to connect with your trading partners.

Typically included are VANs, Internet for AS1/2, and ftp. Each unique connection method requires investment involving both upfront and recurring charges along with staff to implement and maintain these networked services.

2. **EDI Translator:** the software needed to convert electronic documents to and from an EDI Standards format.

Requirements include server hardware and software, EDI translator software, licensing and maintenance fees as well as staffing resources for implementation, customization, and maintenance.

3. **Mapping:** the software needed to reconcile EDI document layouts with your trading partners. Even though EDI is a standards-based solution it is almost certain that documents will be slightly different for each trading partner since processes vary among businesses. Accordingly, partners will require mapping of their data into your

Problems can be classified by size according to the time it takes to fully understand how to solve them— the more complex the larger the size. The difficulty to actually solve them is a function of the problem size.

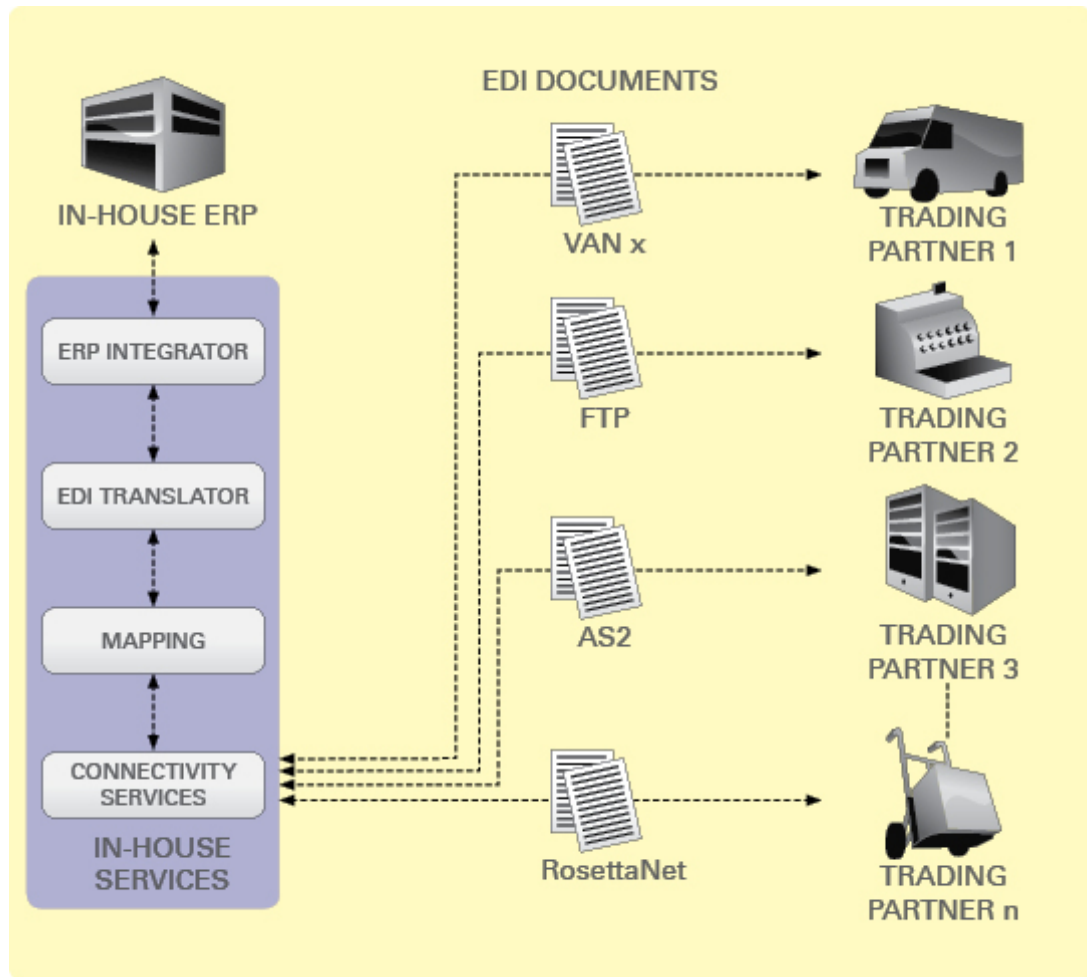
format for each document type exchanged in the trading relationship. The required number of maps can be extensive and the maintenance development required to accommodate changes or to add a new document type can be quite daunting and expensive. And remember that 3PLs, freight carriers/consolidators, warehouse/DCs and other members of your supply chain are part of your EDI trading community and their EDI documents must be supported.

Requirements include server hardware and software, Mapping tool software, licensing and maintenance fees as well as staffing resources for implementation, customization, and maintenance.

4. **EDI Integration Software:** the middleware to connect your ERP or accounting solution with the EDI and to move data between them. There are software development kits and adapters that may reduce the development time but they all require customization and on-going maintenance for each unique business environment.

Required are the ERP integration development tool kits or adapters

5. **IT Technical Staff:** at least one EDI-literate programmer analyst is required to install, configure, implement and maintain the integrated EDI solution. In addition to the required IT skills, they must understand your business/industry, EDI standards, and be able to communicate with your partners regarding the technical aspects of their EDI solutions and practices.
6. **EDI Coordinator:** at least one person to monitor the on-going EDI operations, to resolve problems and to provide operational liaison with your trading partners. Since trading can occur 24x7, operational support and troubleshooting must likewise be available 24x7.



The startup costs range from a few to hundreds of thousands of dollars depending on the complexity of your ERP environment, the number of trading partners, and the required transport media services.

It is clear there will be some significant upfront investments in hardware and software along with ongoing investments in staff and operations to maintain an in-house EDI system. Add the requirement to have professional staff fully engaged in development, maintenance and support activities that are entirely independent of your core business activities and you may elect to consider a hosted / out-sourced solution.

THE FUNDAMENTALS OF HOSTED SOLUTIONS

Leverage is the factor by which a lever multiplies the applied force - it is therefore referred to as an advantage.

Early adopters of hosted offerings often held the view that they could live with off-the-shelf implementations that required no customization, according to the EDI Center for Training. The idea being hosted applications needed to serve a large customer community without custom adaptations and that businesses should adapt their operations to embrace the hosted application's capabilities and business procedures. Nothing could be further from the truth in the current hosting model.

Leading providers of hosted EDI services offer extensive capabilities to customize their services to each unique trading partner's requirements. These capabilities virtually eliminate the need for on-site technical resources to accomplish custom programming. Additionally, automated tools are presented to EDI coordination personnel to allow some level of customization without the need for a skilled programmer.

In contrast with the in-house implementation, the hosted solution requires only the implementation of EDI integration software: the middleware to connect your ERP or accounting solution with the EDI and to move data between them.

The hosted model simplifies efficient delivery of changes and upgrades to all partners in the trading community. Once applied at the hosting center all changes are immediately effected to the various partners.

According to Sourcingmag.com, one company's change from an in-house to a hosted EDI model enabled them to redeploy resources toward improving and optimizing its internal core business applications, keep the headcount down in the EDI department and still maintain the system integrity to support their business, and meet their trading partner's requirements.

The hosting service provider supplies all the connectivity to your trading partners, data transformation, data translation and document mapping

A Virtual Team is a group of individuals who work across time, space, and organizational boundaries with links strengthened by webs of communication technology. They have complementary skills and are committed to a common purpose, have inter-dependent performance goals, and share an approach to work for which they hold themselves mutually accountable.

Hosted Solution Key Components

1. Communication/Connectivity Services:

Provided by the Hosting Service except for the single connection to your ERP environment.

2. EDI Translator:

Provided by the Hosting Service.

3. Mapping:

Developed and maintained by the Hosting Service.

4. EDI Integration Software:

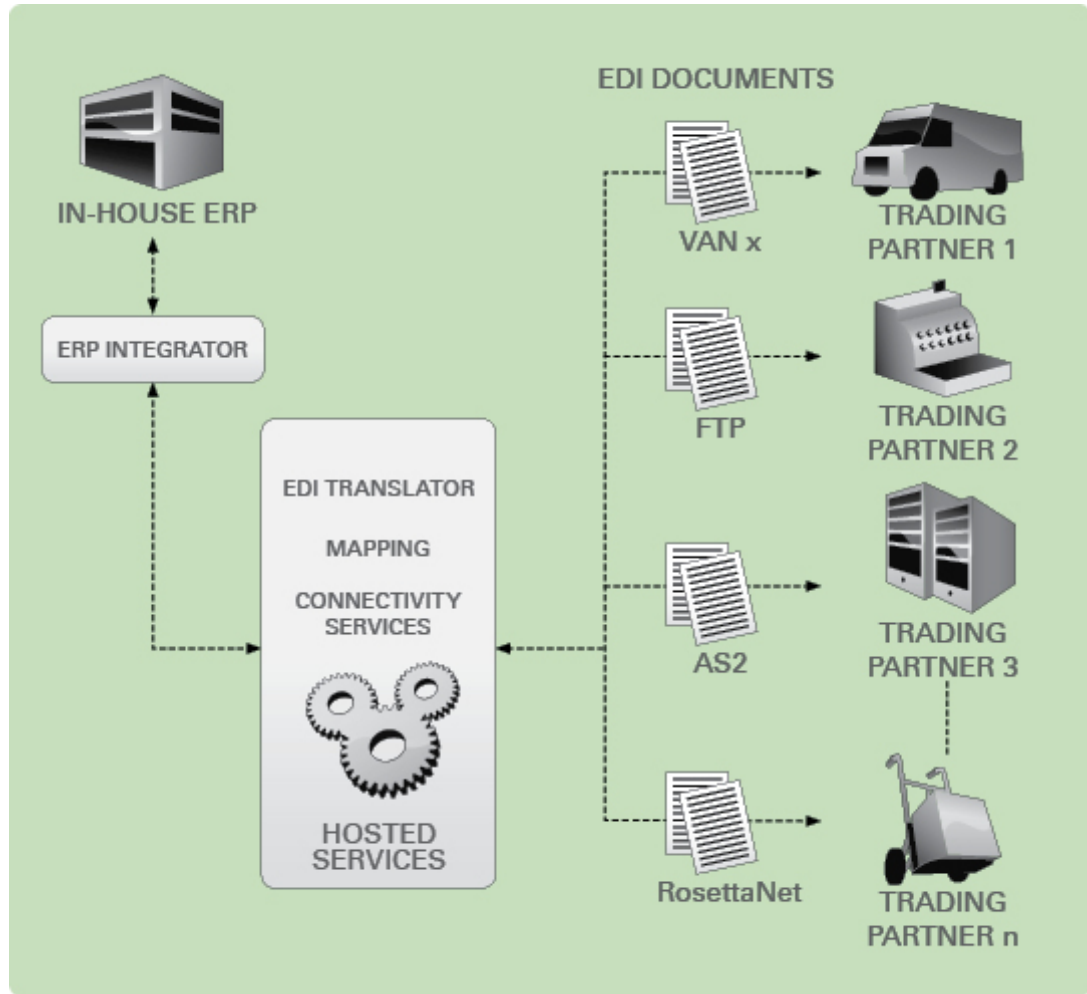
A single standard document interface is required on-site to integrate transactions with your ERP system in a native format. Typically provided and integrated by a consultant specializing in your specific ERP platform.

5. IT Technical Staff:

EDI technical services provided by the Hosting Service include development, testing, maintenance and support.

6. EDI Coordinator:

The one resource required on-site providing operational liaison with your trading partners and in-house supply chain stakeholders.



SELECTING A HOSTED SERVICES PROVIDER

Selecting a hosted EDI services provider is a strategic decision that demands that a company investigate not only the providers' technology but also the processes and the people.

Key Selection Criteria

- **Decision Support**
Knowledgeable service providers offer professional services which aid in understanding business issues and help in making the right choices for implementation.
- **Connectivity and Translation Standards**
Enables rapid connection to new partners without transport media or document format limitations.
- **A Global Infrastructure**
The world is flat: rarely does a company only trade with partners in their own country. A "globally enabled" service provider will enable quick and efficient communications with partners in other geographies.
- **Extensive Integration Tools and Methods**
Trading partners come in all sizes and with different levels of sophistication with EDI processing needs ranging from direct EDI-to-ERP integration to simple Web portals for small partners. Hosted services providers must embrace the spectrum of partners and provide effective, high-value solutions for each class of partner. More advanced services include Vendor Managed Inventory, Scan Based Trading, and Logistics management capabilities.
- **Change Management Tools and Processes**
Few EDI trading environments are static. Standards change, trading partners are added and deleted, documents are added or changed, and on. It is essential that the Hosted services provider offer well-defined, proven methods for adding new partners, conducting testing of new or changed solutions, providing operational services to rollout new programs, and providing overall program management for your initiatives.
- **Live Operational Management Services**
The Hosted services provider must offer 24x7 monitoring and support services, be continually available to alert you to issues, and be available to respond to your problem reports. A capability is required for collection and analysis of your transaction information to support metrics regarding partner performance.

Qualified service providers offer professional services that will aid you in understanding your business issues and help you make the right choices to implement the required services in the most efficient fashion.

Cost Comparisons

(Even though the implementation methods are different there are enough similarities to make a general cost comparison. The following chart illustrates the pricing differences.)

	IN-HOUSE MODEL	HOSTED MODEL
Server Hardware & OS	\$10,000 and up	Host provides
Staffing Salaries	\$60k to \$120k per FTE (Salary.com)	Host provides support & other SME services on demand at a per hour rate
Translator Software	\$10k to over \$200k	Host provides
EDI Mapping Tool	\$5K to \$25k	Host provides
Install & Integrate	Varies – staff costs may be extensive	Host provides & 3rd party provides ERP integrator
Communications Services	AS2 at \$3k to \$5k license VAN Charges	Host Provides
Operation Monitoring	Staffing and alert tools	Host Provides
Support & Help Desk	Staffing and support tools	Host Provides
Transaction Data Backup	Hardware & software plus backup administration	Host Provides
Updates & Changes (Programs and EDI documents)	Development costs plus distribution to all trading partners and coordination of implementation at each partner location	Changes may be fee or free and are automatically made available to all partners through the central hosting service
Late Fees & Charge backs	Variable but common	Significantly reduced by increased accuracy and timely transaction processing

Pricing Examples

(For illustration purposes only. Each business implementation is unique and requires a custom quote.)

	IN-HOUSE MODEL	HOSTED MODEL
Small Business 15 Trading Partners 2 Supported Documents 20 Transactions Per Month	Hardware: \$10k Connectivity: VAN fee Translator: \$10k Mapping: \$3k Staffing: \$60k	Set-Up: \$3k Monthly Svc: \$75
Mid-Sized Business 75 Trading Partners 4 Supported Documents 200 Transactions Per Month	Hardware: \$25k Connectivity: VAN fee AS2 fee Mapping: \$6K Translator: \$50k Staffing: \$120k	Set-Up: \$20k Monthly Svc: \$2k
Enterprise 150 Trading Partners 6 Supported Documents 2000 Transactions Per Month	Hardware: \$50k Connectivity: VAN fee AS2 fee Mapping: \$30k Translator: \$200k Staffing: \$240k	Set-Up: \$50k Monthly Svc: \$6k

CONCLUSION

The decision to implement an in-house EDI solution or outsource to a Hosted Service provider is a key strategic decision. Either approach can be successful. Accordingly, a decision-maker must look closely at the alternatives to understand the costs and value-propositions of each.

Identifying the right strategy requires time and diligence with respect to clear goals and objectives. At the proverbial “end of the day,” the right decision will be one that lowers your capital expenses and operating costs while simultaneously increasing your service levels and partner satisfaction.

Important key objectives include:

- Focus on Core Business
- Simplify Operation
- Improve Service Level
- Mitigate Risks
- Reduce TCO (operations and capital)
- Migrate to new technology

A more traditional approach suggests that in-house solutions are always best since you have “control” over the operation. Further investigations

and development of an accurate Total Cost of Ownership will suggest that having a vertically focused hosting provider for your EDI services is less expensive, faster to implement and modify, more extensible and more easily managed.

As an inevitable evolutionary growth, hosted EDI services have emerged as a mainstream solution and have joined hosted CRM and accounting applications that have been enthusiastically and successfully accepted by large enterprises. Companies like Salesforce.com are application experts that provide highly skilled resources along with security, backup, support and monitoring services that exceed those that can be economically implemented in-house.

Hosted solutions allow a company to integrate the EDI process into their internal accounting or ERP systems and have the hosting provider operate and manage the EDI process. And, in doing so, help companies meet their objectives to maintain core business focus, reduce costs and risks, improve service and expand their EDI trading community without the corresponding growth pains.

ABOUT DICENTRAL

In July 2000, DiCentral Corporation introduced a technically innovative web-hosted EDI solution that enabled buyers and suppliers to collaborate and exchange critical enterprise data without costly investments in software or hardware. This innovation transformed the EDI world by providing easy and immediate EDI compliancy for small, medium, and large suppliers.

Today, DiCentral is the fastest growing company in its field, with a broad suite of products and solutions designed to meet the unique needs of any size business. Our solutions address many industry challenges, such as mandated compliance, global trade management, global data synchronization, transaction management, and more. DiCentral products are highly versatile, flexible and reliable, providing over 4,000 current businesses with a competitive advantage in the marketplace.

For buyers, DiCentral offers proven, highly reliable, and global platforms throughout their entire trading partner community. Additionally, our expert background in buyer business rules and processes ensures that all EDI transactions are met with confidence.

For suppliers, our award-winning support team is ready to answer questions or resolve issues when the client needs assistance. With support services worldwide, problems are solved quickly. DiCentral provides on-demand training and live support to assist customers with up-to-date information.

It's an exciting time in the EDI industry, and DiCentral is proud to be at the forefront of new technologies. Our industry leadership gives you

At the proverbial "end of the day," the right decision will be one that lowers your capital expenses and operating costs while simultaneously increasing your service levels and partner satisfaction.

assurance that we understand your EDI challenges; demonstrating our ability to help optimize the supply chain for both buyer and supplier.

Learn more about how DiCentral can help you gain a competitive advantage; call us now at 281-480-1121. We welcome the opportunity to be part of your EDI team!

<http://www.dicentral.com>

ABOUT THE AUTHOR

John Simmons is an independent consultant and freelance writer. John's technology background extends from the desktop through enterprise-level computing and supporting infrastructures. He has worked extensively with both supplier and buyer organizations to help them enable and manage their trading environments. His business management experience includes senior and general management roles. At Tandem Computers, Inc, John directed the worldwide product support and software sustaining development operations for fault-tolerant UNIX servers utilized in mission critical transaction processing applications including EDI document exchange. At Avnet, Inc., he was responsible for championing the company's enterprise-level solutions. He has worked extensively with businesses to select, fund, and apply technology toward improving the quality of their supply chain operations, migrating to new technologies and reducing IT costs. John may be reached at john.simmons@ggi.net.

ATTACHMENT 1: Startup and Non-Recurring Costs Calculator

Startup & Non-Recurring Costs		
	In-House Implementation	EDI Hosted Services
✓ Supporting Hardware Hardware Operating System Backup Solution	_____ _____ _____	Included in Hosting Service Fee
✓ Application Software EDI Translator EDI Mapping Tool Integration Adapter or Toolkit	_____ _____	Included in Hosting Service Fee
✓ Communication Services VAN AS2 FTP	_____ _____ _____	Included in Hosting Service Fee
✓ Installation & Integration Avg Hourly Rate Per Person Total Hours x Avg Rate	_____ _____	Included in Hosting Service Fee
✓ Acctg or ERP Integration Avg Hourly Rate Per Person Total Hours x Avg Rate	_____ _____	Quoted Service from Hosting Provider
✓ Map Development Avg Hourly Rate Per Person Total Hours x Avg Rate	_____ _____	Quoted Service from Hosting Provider
TOTAL		

ATTACHMENT 2: Recurring and Operations Costs Calculator

Recurring & Operations Costs		
	In-House Implementation	EDI Hosted Services
✓ Supporting Hardware Hardware Maintenance Operating System Maintenance Backup Administration	_____ _____ _____	Included in Hosting Service Fee
✓ Application Software EDI Translator License Fee EDI Mapping Tool License Fee Int Adapter or Toolkit Fee	_____ _____	Included in Hosting Service Fee
✓ Communication Services VAN Transaction Fee AS2 License/Maint Fee FTP License/Maint Fee	_____ _____ _____	Included in Hosting Service Fee
✓ Operations & Monitoring Staff Avg Hourly Rate Per Person Total Hours x Avg Rate	_____ _____	Included in Hosting Service Fee
✓ Trading Partner Relations Avg Hourly Rate Per Person Total Hours x Avg Rate	_____ _____	Not Applicable
✓ Acctg or ERP Integration Maint Avg Hourly Rate Per Person Total Hours x Avg Rate	_____ _____	Quoted Service from Hosting or 3 rd Party Provider
✓ Map Maintenance Avg Hourly Rate Per Person Total Hours x Avg Rate	_____ _____	Fees Paid By Trading Partners
✓ Hosting Service Fee	Not Applicable	Quoted Service from Hosting Provider
TOTAL		