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EDI Software Viewpoint:

A Software Market in Transition

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January 2005

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INTRODUCTION

Hosted Services Emerge as an Alternative to Traditional

To say that the Internet has changed everything is both a cliché and a foregone conclusion at this point. However, its impact cannot be denied, especially when it comes to the economics and delivery of software.

Using a service model, and typically the delivery vehicle of a secure Internet connection, companies can now outsource the installation, delivery, and maintenance of their mission-critical software to service providers that specialize in specific application areas.

Companies like Salesforce.com, NetSuite, SPS Commerce and others are experiencing success both in terms of rapid growth and customer satisfaction by taking mature business applications that traditionally were only available by purchasing do-it-yourself, packaged software companies. By successfully changing the delivery and economic model of these applications, Software-as-a-Service companies are creating a seismic shift in the software industry.

It is now a mainstream and accepted idea that sophisticated, high-end enterprise applications like customer relationship management (CRM), accounting, and intercompany data exchange can be delivered successfully by a service provider. Because service providers are experts in their particular software category, handle the messy business of software maintenance and integration, and maintain secure, reliable data centers for the delivery, the hosted model is very attractive for companies that want to concentrate on improving their core business rather than software upgrade skills.

EDI: HOSTED OR IN-HOUSE?

One of the first applications to emerge with a software-as-a-service model is Electronic Data Interchange (EDI). Given the nature of EDI applications - which for most organizations is a non-core, but essential business function – it shouldn't be surprising that it made a good candidate to be outsourced if a service provider could effectively deliver it to customers and still satisfy the application's demanding operational requirements.

Early on, the hosted EDI service model gained traction by attracting small businesses with annual revenues of less than $20 million. These organizations were most often in

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search of an EDI application as it had become requirement of doing business with a key customer. These small businesses couldn't afford the upfront expense, ongoing costs of building up internal technical infrastructure and hiring or training staff required to implement a packaged EDI software application. Instead they turned to service providers that provided them a more attractive means to quickly get up and running with an economically attractive solution that satisfied the needs of their customers.

Later on, the hosted EDI service model gained traction with mid-sized business with revenue of less than $100 million. These organization had already made an investment in a packaged EDI software application but were struggling with keeping it working well. It was challenging to continually support the ongoing maintenance work required to deal with changing customer requirements, keep the system running on a 24/7 and protect the EDI system from security challenges associated with an application that is in constant interaction with systems outside the corporate firewall.

Most recently, the hosted EDI service model has caught the attention of larger business with revenues between $100 million and $1 billion. While they already have implemented and operate a mature, stable and successful in-house EDI application using packaged software, they couldn't ignore the benefits of outsourcing this non-core business process and recognize the long term cost of ownership advantages of a hosted EDI service.

QUESTION #1:
Is maintaining an internal EDI application and operation core to my business?

In each case, companies have two options. They can either subscribe to a hosted EDI service or maintain an in-house EDI system using packaged software. The trick is that each company must determine which path is best for them. That question can be answered by asking ***three critical questions***.

The first has to do with core competency. In other words, is maintaining an internal EDI application and operation critical to your company's growth and health? Is it something that could be left to an expert service provider, thereby freeing up internal resources while delivering an equal or superior result?

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QUESTION #2:
Is your existing EDI implementation reliable enough for 24/7 commerce?

Secondly, companies have to ask themselves if their existing EDI implementations are reliable enough. By its very nature, EDI is a 24/7 application. Often, trading partners send in batch orders at odd hours of the day and night. The EDI system needs to be able to exchange documents, also known as sending an electronic acknowledgment, with trading partners at all times. If the acknowledgment isn't sent within a certain period of time, the company risks losing the order. That means if the system breaks down, it must be fixed right away. This isn't always feasible for in-house EDI systems. However, an EDI service provider can offer both the infrastructure and reliable technology to ensure the outage will be identified and corrected in near real-time.

QUESTION #3:
Is it more economical to have an in-house EDI application or hosted service?

The third question has to do with the age-old issue of cost of ownership. In short, will it cost less money to go with a hosted option? It is at least worth investigating whether an EDI service would be more economical than maintaining an internal EDI system with the associated infrastructure, communications, and staff overhead.

EDI: THE BASICS

Before going any farther down the path of whether a hosted or packaged EDI offering is best, it's important to understand the critical elements of the application in question. An EDI application has four primary components, each of which has both an upfront and ongoing cost. These are the same components whether it is being hosted or packaged as software. What differs is how expenses are accurately calculated with each model so a fair cost of ownership comparison can be conducted.

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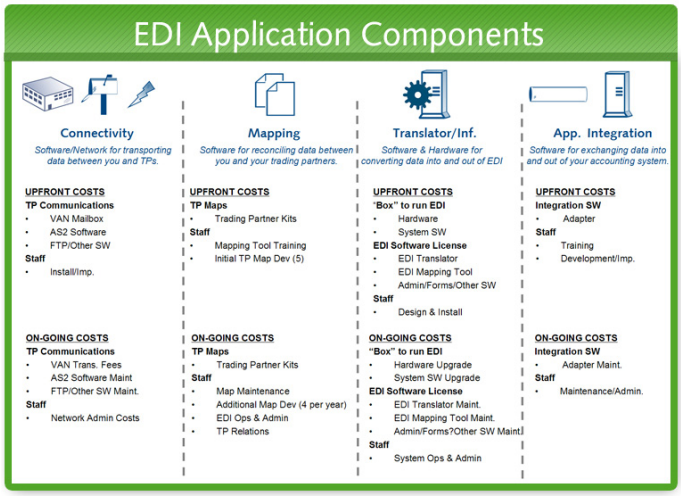
EDI Software Viewpoint:
A Software Market in Transition

Any EDI application – whether hosted or implemented via a packaged application – involves four main components including:



1. **EDI and Infrastructure Layer**: software and Hardware for converting data into and out of EDI
2. **Mapping Layer**: software for reconciling data between you and your trading partners
3. **Connectivity Layer**: software and network technology for transporting data between you and your trading partner
4. **Application Integration Layer**: software for exchanging data into and out of your accounting system.

EDI COMPONENT#1:

Like any other software application, the EDI software needs hardware to run on.

The first piece of the EDI puzzle is the EDI software layer itself – the EDI translator itself. Like any other software application, the EDI software needs hardware to run on.

These systems will need sophisticated antivirus, firewall, and possibly intrusion detection software. By definition, EDI is a system that communicates with companies on the other side of the firewall, which leaves it immensely vulnerable to attack. EDI is also an application that must operate on a 24/7 basis since orders are often sent by customers during off-peak hours. Thus, system monitoring software is required to ensure that the servers are performing optimally and send alerts the moment anything goes wrong.

Ongoing costs include maintenance and upgrades to application, networking and system hardware, annual maintenance fees for each software license and the staffing costs to do the work. Also, ongoing staffing costs must be factored into the overall expense structure. Someone must be assigned to make sure the application is running smoothly, diagnose and fix problems when they occur.

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EDI COMPONENT #2:

The mapping layer is essentially the implementation component of any EDI application.

The second critical EDI building block is the mapping layer, which is essentially the implementation component of any EDI application. The mapping layer is where the electronic trading parameters are set up for every EDI relationship that is implemented.

These maps, which sit on top of the translation layer, are slightly different for each trading partner due to particular supply chain or business process requirements of the relationship. Also, since a map is needed for each transaction with every unique trading partner, the number of maps can add up quickly.

For example, if Company A has 10 trading partners that it conducts business with using EDI, and each trading partner requires Company A to conduct three transactions, 30 maps are needed. As companies add partners over time, those numbers keep going up, as do the requirements for keeping the maps and the data they're transmitting synchronized.

The upfront costs associated with the mapping layer have mostly to do with determining how the maps should be structured for each trading partner. Then, there are the associated training and development costs for those individuals charged with building the maps. As for ongoing costs, they fall into the usual categories. They include maintaining the maps, fixing them when they break, creating additional maps as more trading partners come on board and maintaining good relationships with those partners so problems can be easily addressed and fixed. Some maps can be developed in as little as 8-12 hours, while more sophisticated maps such as Advanced Ship Notices (ASNs) may take as long as 20–30 hours to implement.

EDI COMPONENT #3:

The third is all about transporting that data between company A and its trading partners.

The third EDI layer is connectivity. While the first two components have to do with data processing, the third is all about transporting that data between Company A and its trading partners. The upfront costs here have to do with providing the numerous communications methods that trading partners might require. These include a VAN mailbox, which provides access to a specialized proprietary network, often called a value-added network; AS2 software support, which is a secure Internet protocol that large trading partners such as Wal-Mart often use; and even secure FTP sites available via the Internet. Many companies today have to support all three to satisfy their

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EDI COMPONENT #4:
Application integration allows companies to move data between their own accounting systems and the EDI translator

full trading partner community. The initial costs here are related to setting up these connectivity options and writing small communications scripts. The "gotcha" for this area has to do with the transaction fees for using a VAN, software maintenance fees for FTP and AS2 software, and staffing associated with upkeep.

The last of the EDI pieces is application integration. In short, application integration allows companies to move data between their own accounting systems and the EDI translator to eliminate manual keying of data – an extremely valuable feature. Here, the big outlay is the upfront costs associated with the time to do the software development and implementation. In some cases, prebuilt software modules, called adapters, can be used to reduce development time for certain accounting systems. Once implemented, the integration layer has to be maintained to keep it current with accounting system version upgrades and changes to trading partner EDI specifications.

THE TOUGH QUESTIONS:

Clearly, implementing and maintaining an EDI application is a bit more involved than buying a packaged EDI application and paying VAN fees to move data to your trading partners. That's why considering a hosted EDI service as an alternative makes sense for many companies. When it comes to figuring out whether it's an option your company should explore, there are a few questions that need to be asked.

TOUGH QUESTION #1:
Is EDI a core competency of your organization?

First of all, companies have to decide if running an EDI application is something they deem a core competency. The best way to determine this is to apply the same logic used when figuring out whether to outsource payroll processing to an organization like ADP or to keep it in-house. In other words, is this a set of tasks that simply needs to get done versus tasks that are strategic for the business? For most companies, running an EDI application is something that needs to get done and work well, but it is not a market differentiator.

TOUGH QUESTION #2:
Can you ensure the EDI system is always on and always available?

Second is the issue of reliability. EDI applications require operational excellence. After all, this is the vehicle for taking and fulfilling orders for key customers. Without it the business can be hurt. EDI systems must be always on and available. Orders can come in at any time of the day

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or night, and responding to these orders must always be handled in a timely fashion. This is all complicated by the fact that EDI applications require vigilant maintenance and monitoring. As mentioned previously, because they communicate with computers outside the firewall, EDI systems are especially vulnerable to hackers and viruses, not to mention that maps must be constantly maintained and added as your customer's business changes.

Problem resolution is another often overlooked by-product of conducting electronic transactions with trading partners. Every transaction is sent from one company and received by another and, as with all two-way communications, things can go wrong. To prevent problems, technical staff need to frequently call and talk to their trading partners via phone in order to make a sound diagnosis. This is a delicate undertaking that requires staff members with both technical and people skills – a rare skill to find anywhere, let alone to fill within an EDI team. By outsourcing EDI, this troublesome element is outsourced as well, a welcome occurrence for those in your company charged with addressing trading partner issues.

TOUGH QUESTION #3:

What are the ongoing costs?

The third question a company has to ask is what the cost of ownership will be for a hosted service versus an internal software implementation. Though the upfront costs often vary, a consistent trend surfaces when ongoing costs are compared – a hosted EDI service is lower. The key lies in taking into account the "hidden" staffing costs associated with development, implementation, support and maintenance of an EDI application.

SHOW ME THE MONEY:

Now that the expense components of EDI systems have been identified and defined, it's time to discuss how to compare EDI software versus a hosted EDI service. The goal, of course, is to determine which option will result in the lowest cost of ownership for the company while delivering the highest quality of service to its trading partners.

Even though the two options tend to be priced and implemented very differently, there are enough comparison points between the two so that costs can be lined up and a fair analysis conducted. The first step is to break the costs into two categories: upfront and ongoing. Naturally, upfront costs are those associated with getting the application up and running so that trading partners can begin

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APPENDIX A
UPFRONT COST CALCULATOR:

Use this table to accurately calculate the upfront cost of implementing an EDI application with a packaged software application vs. using a hosted EDI

using it. Ongoing costs are those tied to the day-to-day operations needed to manage and support an EDI application once implemented. Ongoing costs can be normalized by cost per month as well as cost per transaction.

Included in Appendix A is a worksheet that is an effective tool for calculating and comparing both sets of costs.

The first worksheet details upfront costs. There are five columns listed for determining these costs.

- **Column 1** details all the setup and expense components of an EDI application.
- **Column 2 and 3** are for calculating the upfront costs associated with a packaged EDI software.
    - **Column 2** lists common examples of specific solutions referenced to help align the expenses per solution that are likely to be chosen
    - **Column 3** is used for placing the actual upfront dollar amount for each component. For example, is the hardware an NT or Unix server and what is its upfront expense? Does any firewall, security or backup and recovery systems software need to be purchased? What packaged EDI software is being considered, Sterling Commerce's GenTran, TIE Commerce's eVision, or something else? Common VAN choices include GXS, Sterling and Easylink. As for AS2 solutions, these are available from Cleo, Cyclone Commerce or IPNet. There is also an entry that can be used to detail the staff resources expenses. In other words, those individuals who will be designing and implementing the EDI application technology, training a staff person to build the maps, and the staff resources needed to test the maps with each trading partner.
    - **Lastly, Column 3** allows organizations to account for the expense of integrating the EDI application with its accounting system.

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- **Column 4 and 5** are for calculating the upfront costs associated with a hosted EDI service. Given the differences in the business model, the pricing of a hosted EDI service is different. In most cases, the base infrastructure is included as the cost of an account setup fee. Implementation costs are split between trading partner implementation – usually a fixed fee for setting up a new trading partner and their associated maps – and the costs of the adapter used to integrate the EDI service with an accounting system. The primary difference is that since a hosted EDI service manages everything on your behalf, all staffing expenses around setup and implementation of the application are covered by the setup fees, like any outsourcing service.

APPENDIX B
ONGOING COST CALCULATOR:

Use this table to accurately calculate the ongoing cost of supporting and managing an EDI application with a packaged software application vs. using a hosted EDI service. Be careful not to underestimate the staffing and maintenance costs required to keep an in-house EDI application

The second worksheet focuses on ongoing costs.

- **Column 1** again lists the components necessary to operate and support an EDI application.

- **Columns 2 and 3** aid in calculating the ongoing, cost of ownership to operate and support an EDI application after the initial implementation. The first few entries are for the ongoing expenses associated with the base systems and application infrastructure including hardware upgrades, systems software maintenance, and the labor expense for performing the upgrades and management.

  The next entries are for detailing those costs associated with the EDI software itself, such as maintenance fees for the translator license. Also listed are the labor costs for an EDI expert who can monitor the data flow between the company and its trading partners to ensure orders are not getting lost in transit and that errors are not being made as orders are sent into your application. This expert is also the person who would find and fix problems, as well as communicate with the EDI departments of trading partners, especially when the problem appears to be on their end.

  Next are the ongoing communication costs. Per transaction VAN fees and maintenance fees for AS2 or other Internet security software and associated staffing are entered here.

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The final entries target the ongoing costs of trading partner mapping and application integration. Existing maps need to be modified on occasion to accommodate changes in a partner's supply chain processes, and new maps must be developed when new partners are added to the network. For the most part, this is an exercise in computing labor costs associated with these activities. As for application integration, the costs there have to do with maintaining the adapters between the EDI translator software and your accounting application.

- **Columns 4 and 5** provide a means to calculate the ongoing costs associated with a hosted EDI service. Again, the different model results in different types of expenses. With a hosted model, the ongoing costs associated with the entire infrastructure and EDI application software are covered by a fixed base monthly service fee.

  Next, the ongoing expenses associated with keeping trading partner implementations and mapping are covered by the monthly trading partner maintenance fees.

  The expenses associated with transmitting information with trading partners, as well as the job of monitoring data flow, finding, diagnosing and fixing problems is accounted for in the variable usage-based transaction fees.

  Finally, the remaining entry is for the costs of maintaining the integration adapter between the service provider and the accounting system.

REAL WORLD NUMBERS:

The best way to understand the difference between the two options is to examine a real-world example. Consider a company that has the following characteristics:

- No existing EDI system
- Windows NT server environment
- 5 trading partners
- 300 orders per month that result in 900 transactions per month
- 1 trading partner that requires AS2
- Staff resource for application integration with its internal accounting systems
- Contractor needed for setting up and developing the application integration code and ongoing resources related to mapping and staff
- 1/3 of a full-time employee (FTE) dedicated to maintaining the EDI application

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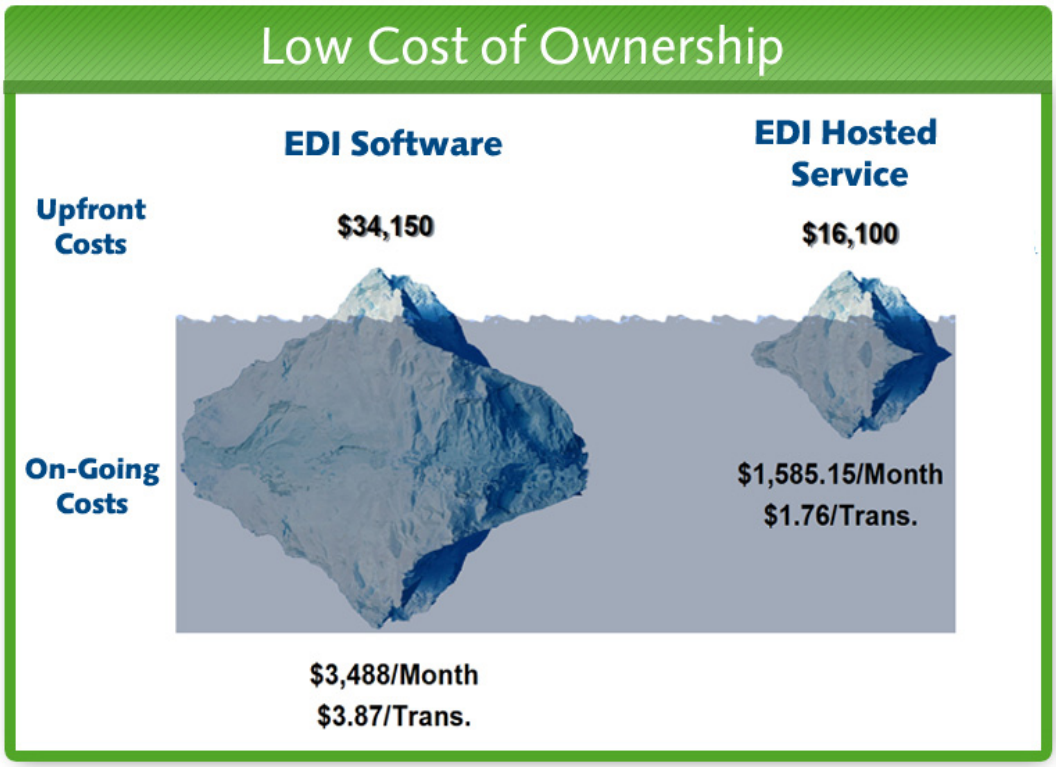

ACTUAL COMPARISON:

The true cost of software is not always obvious. Like an iceberg, you need to look below the surface .

After working out the numbers and ensuring that all of the so-called hidden costs were factored into the equation, the following results were modeled:

The hosted EDI service model turned out to be substantially lower in terms of both the upfront outlay of cash as well as the ongoing cost of ownership. The upfront savings came primarily from the fact that there was no need to invest in any additional labor or infrastructure, such as hardware, application software, and networking and communications components. **To be specific, the upfront costs for this company were estimated to be $34,150 for an in-house EDI system versus $16,100 for a hosted EDI service.**

The savings in terms of ongoing costs were equally dramatic. For an **in-house EDI system**, monthly costs were estimated to be $3,488, or put another way, **the average cost of a transaction was $3.87**. The **monthly hosted service fees** were approximately $1,585, and transactions were **a mere $1.76 each**. The added benefit is that the costs for the hosted EDI service were fixed, predictable, and known. Given all that, this company would get

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double for its money by choosing a hosted offering. In addition, this company received the benefits of remaining focused on their core business and having their application housed and managed in a world class data facility operated by a staff of experienced EDI professionals.

THE SPS COMMERCE SERVICE:

Once a company has made a choice to select a hosted EDI service over implementing their own EDI application, the next task is finding a top-flight provider. The leading service is SPS Commerce. SPS Commerce has offered a hosted EDI service since 1997, and is approximately three times larger than its next competitor. Due to this, it has a significant bank of experience on which to draw, having served 22,000 different companies with its hosted service, approximately 10,000 on EDI. In addition, the company is sound financially. It has grown more than 200 percent in the past three years and has posted strong earnings.

SPS Commerce currently offers two hosted EDI service options. The first is a browser-based Web forms service, and the second is an integrated EDI offering. Both benefit from SPS Commerce's excellent operational support and its leadership in pioneering the hosted model. Both of these services, along with SPS' UPC catalog and online ordering services for smaller customers, are built on top of the company's two industry-leading data centers. These sites provide superior reliability, security and performance. In fact, SPS has the highest availability level in the industry with 99.993 percent system uptime.

SPS Commerce has also made significant investments in its customer support infrastructure. It currently has a world-class call center that its customers and their trading partners can access to speak with live support representatives. 80 percent of all support calls are answered within 20 seconds, an impressive metric for any industry. Also, online support is available any time through interactive chat and an online knowledge base. In a further commitment to customer service, SPS Commerce assigns each of its clients an account manager. That manager is tasked with guiding clients to the solution that best fits their needs and also serves as a dedicated resource for project management responsibilities during the implementation phase.

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CONCLUSION:

Whether your company is looking at EDI for the first time, interesting in moving to an integrated environment, or wanting to outsource an in-house, do-it-yourself EDI system, hosted EDI makes sense.

Because EDI is SPS Commerce's business focus, it clearly has a vested interest in making sure that EDI is unquestionably its core competency. A quality service provider, like SPS Commerce, can offer excellence in reliability, security, and performance for a much lower total cost of ownership.

If your company is in the market for this kind of solution, SPS Commerce ought to be on your list. It is the largest provider in terms of size and market share, and has been the undisputed thought leader in the area of hosted EDI since 1997. SPS Commerce has the products, operations, and service leadership to demonstrate its leadership and capabilities.

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APPENDIX A
UPFRONT COST CALCULATOR:

	Upfront Costs	
	EDI Software	**Hosted EDI Service**
Infrastructure to Run EDI		
Hardware	Server (Unix, NT, etc)	Data Center
System Software	OS, Security, Backup	Data Center
EDI Software License		
EDI Translator	Translator (GenTran, Trusted Link)	Data Center
EDI Mapping Tool	GenTran Mapper	Data Center
Admin/Forms/Other Software	GenTran Admin	Data Center
Installation Staff	Resource @ __ Hours	Data Center
Trading Partner Communications		
VAN Mailbox	Sterling, GXS, Innovis, etc.	Data Center
AS2	Cleo, Cyclone, IPnet	Data Center
FTP	Microsoft, Other	Data Center
Installation Staff	Resource @ __ Hours	Data Center
Initial Development of Maps for Trading Partner(s)		
1-5 Trading Partners (~15 Maps)	Resource @ __ Hours	Connections & Map Setups
EDI Setup Subtotal	***$?***	***SPS Account Setup Fee***
Application Integration		
Adapter	Resource @ __ Hours	Resource @ __ Hours
Integration Subtotal	***$__***	***$__***
SETUP TOTAL	**$?**	**$?**

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APPENDIX B
ONGOING COST CALCULATOR:

		Ongoing Costs	
		EDI Software	**Hosted EDI Service**
Infrastructure to Run EDI			
Hardware Upgrades		Server (Unix, NT, etc)	Data Center
System Software Maintenance		Operating System, Security, Backup	Data Center
Systems Operations & Administrative Staff		Resource @ __ Hours/Month	Data Center
EDI SW License			
EDI Translator Software		Translator (GenTran, Trusted Link)	Data Center
EDI Mapping Tool Software Maintenance		GenTran Mapper	Data Center
Admin/Forms/Other Software Maintenance		GenTran Admin	Data Center
EDI Operations & Administrative Staff		Resource @ __Hours/Month	Data Center
Trading Partner Communications			
VAN Transaction Fees actions per month @ .10 each)	(__ trans-	Sterling, GXS, Innovis, etc.	Data Center
AS2 Software Maintenance		Cleo, Cyclone, IPnet	Data Center
FTP Software Maintenance		Microsoft, Other	Data Center
Trading Partner Relationship Staff		Resource @ __ Hours/Month	Data Center
Trading Partner Maps Maintenance			
Customer 1-5 Maps (15 Maps)		Resource @ __ Hours/Month	Monthly Trading Partner Fees
Subtotal of Monthly Costs for EDI		***$__/Month***	***Monthly Service Fee***
Application Integration			
Development Staff		Resource @ __ Hours	Resource @ __ Hours
Integration Monthly Subtotal		***$__/Month***	***$__/Month***
Operating Totals Per Month		**$__/Month**	**$__/Month**
Operating Totals Per Transaction		**$__/Transaction**	**$__/Transaction**

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