

# A Valuable



## *Facilitating eBusiness in the Electrical Channel*

**Network Benefits** which expand exponentially with each new customer and each new eBusiness document used.

**Transaction Productivity** which is realized from efficient flow of electronic orders, invoices and SPA claims for both manufacturers and distributors. The combined effects of using EDI and correct, synchronized product data drive productivity gains.

**Distributor Gross Margin Enhancement** from using synchronized product and pricing data.

**Low cost, highly reliable business communications service** for transacting eBusiness documents between distributor and manufacturer trading partners.

May 10, 2005

**Table of Contents**

<b>1</b>	<b>Executive Summary.....</b>	<b>3</b>
<b>2</b>	<b>The Case for One Industry Product Database.....</b>	<b>6</b>
<b>3</b>	<b>Benefits of Synchronized Data, Perils of Unsynchronized Data .....</b>	<b>7</b>
<b>4</b>	<b>Case Methodology and Results .....</b>	<b>9</b>
<b>5</b>	<b>Cases .....</b>	<b>12</b>
5.1	Manufacturer “A” vs Manufacturers “B” and “C” .....	12
5.2	Distributor “A” .....	13
5.3	Distributor “B” .....	15
<b>6</b>	<b>Value Analyses .....</b>	<b>16</b>
<b>7</b>	<b>Conclusions .....</b>	<b>18</b>



## What is IDEA?

IDEA, Industry Data Exchange Association, helps the electrical industry's trading partners communicate with a common language of eBusiness and transmit electronic business documents at a low cost. Since they no longer serve as an industry association, they go simply by "IDEA" these days—a fitting name for a company dedicated to innovation in eCommerce.

To facilitate eBusiness in the electrical channel, IDEA offers a suite of services for electronic trading partners:

### *Industry Data Warehouse (IDW):*

Manufacturers and distributors can both use the same information so transactions between them will match; business flows without errors and margins stay intact.

### *Data Audit Certification (DAC):*

Ensures manufacturer product data submitted to IDW is complete, correct and conforms to industry standards.

### *Industry Standards:*

IDEA is the official standards-creating body for the electrical industry. Their standards are used for the transmission of electronic transaction documents and other business communications.

### *Industry Data Exchange (IDX):*

Low Cost, reliable VAN Services. IDX connects channel trading partners and facilitates sending and receiving electronic business documents. Using the Internet as the communications backbone keeps VAN charges low for IDX users.

## 1 Executive Summary

### Network Benefits

Perhaps it is not very well understood by the majority of industry trading partners or it may be taken for granted. Nevertheless, it is remarkably evident that the greatest value of IDEA is in the creation of network benefits to its customers and members of the National Association of Electrical Distributors (NAED) and National Electrical Manufacturers Association (NEMA).

IDEA fosters new electronic trading partner relationships by facilitating low cost highly reliable connections to other industry trading partners, and creating liquidity for transactions to flow between trading partners. IDEA accomplishes this with Industry Data Warehouse (IDW), Industry Data Exchange (IDX) and eBusiness data and transaction Standards developed through IDEA. In short, IDEA maintains the structure for efficient data exchange and messaging as well as a low cost highly reliable medium for eBusiness transactions.

Network benefits accrue to the customers because each time one new trading partner is added to IDX network, the benefits are multiplied through all others with which they exchange business documents electronically.

### Measurable Economic Benefits

From manufacturer and distributor interviews, it can be concluded that business benefits from using IDEA services are derived in three major areas:

1. **Transaction Productivity** from efficient flow of orders, invoices and SPA claims for both distributors and manufacturers. Productivity gains come from correct, synchronized data and use of electronic data interchange (EDI).
2. **Distributor Margin** enhancement from synchronized, up to date cost and pricing data.
3. **Low cost, highly reliable medium** for transmission of eBusiness documents for both distributors and manufacturers.

### Business Benefits:

	Transaction Productivity	Distributor Margin Enhancement	Low Cost Reliable EDI Medium
IDW	✓	✓	
DAC	✓	✓	
Standards Development	✓		
IDX	✓	✓	✓

### **eBusiness is Business!**

eBusiness can mean two things. First, if a company is set up and deals solely online it is said to be an eBusiness. For established companies eBusiness means transforming internal business processes using Internet technologies.

eBusiness improves performance, creates value and strengthens relationships with customers, suppliers, business partners, shareholders and employees.

eBusiness encompasses all forms of on-line electronic trading; taking in the defined concept of business-to-business based (B2B) electronic trading and process integration, as well as the internal use of IP and related technologies for process integration inside organizations.

The common theme driving the benefits derived from all three services is about increasing the speed and accuracy of business. Individual company staff, systems and facilities can process more revenue producing transactions per day versus that which can be produced manually. This makes the channel more efficient, more profitable and more competitive, as transactions flow faster and resources to resolve errors can be reduced. As a result, your company staff will spend more time producing revenue as opposed to addressing order management errors.

*The combined impact in these three areas can generate benefits of 0.5% to 2.0% of sales to the bottom line for distributors, depending on their current state of transaction automation and the accuracy of their product and pricing data.*

*Manufacturers can expect savings of .25% of sales or more. This could be much greater for manufacturers, which do not currently receive EDI or web-based orders and/or do not automate Invoicing and SPA claims processing.*

### **The following describes the benefits in more detail:**

#### **1. Productivity from efficient flow of orders, invoices and SPA claims**

##### **a. Efficient, error free and timely flow of *orders***

Trading partners that synchronize their product data with IDW can ensure that line items on distributor orders to manufacturers will match, reducing labor and staff levels required by both manufacturers and distributors to resolve unrecognized product ordering codes, expected prices and allowable order quantities. This has the effect of reducing purchasing staff for distributors and customer service personnel for manufacturers.

##### **b. Efficient, error free and timely flow of *invoices***

Similar to "a" above, synchronizing product data ensures that line items on a manufacturer to distributor invoice will be recognized by the distributor's business system. This allows an automatic three way matching of invoices to orders and receiving documents to automatically pay invoices matching within a percentage difference on the invoice total, all without requiring human intervention. This has the effect of reducing accounts payable personnel for distributors and accounts receivable personnel and invoicing costs for manufacturers. Distributors that automate in this fashion can reduce accounts payable personnel up to 75%, depending on the size of the total organization. Automation requires proper use of the business system and correct, synchronized product and price data.

##### **c. Automation requires proper use of the business system and synchronized data.**

##### **d. Efficient, error free and timely flow of *SPA claims***

## **IDX/IDW Value Bundle**

### ***Synchronize your data with IDW for free.***

The volume per document type through IDX was audited for a 12-month period from Oct 2003 through Oct 2004.

**EDI Document 832**, which is used to synchronize mostly IDW character volume, was just over half the character volume through IDX (36 billion characters vs 66 billion total all documents).

For a distributor or manufacturer that sends or receives data through IDX to or from IDW, this means that you pay for only about half the kilocharacters sent or received compared to other VANS.

***In essence, you can synchronize your data for free.***

If manufacturers use the EDI 845 document "price notification", distributors can load these directly into their business systems. Once loaded correctly, this ensures that more EDI 844 document "claims" will be correct. If manufacturers use EDI 849 document "credits", the claim to credit process can be whittled down to days, possibly even overnight when claims are correct and business systems are linked through IDX. This has the effect of reducing distributor SPA claims personnel and manufacturer claims processing personnel.

## 2. Distributor Gross Profit Margin Enhancement

In order for a distributor to price customers correctly and generate expected and adequate margins for specific product SKUs, cost and resale prices must match manufacturer data. If data from third party sources is not up to date, costs and resale prices may not be adequate for the distributor to price correctly relative to the invoiced cost. For example, if a distributor buys an item invoiced from the manufacturer at \$1.00, but had an out of date price of \$0.97 in their business system, and used markup based pricing of 25% for a customer, they would invoice the customer at \$1.2125 per unit instead of \$1.25, losing 2.5 points of gross margin in the process without realizing it. Synchronizing data means you will earn the margins that you expect.

## 3. Low Cost Highly Reliable eBusiness Document Exchange

IDX can save anywhere from 30% to 90% on Value Added Network (VAN) charges due to its low cost, Internet based structure. In addition, IDEA does not charge for IDW character volume sent or received to or from IDW.

The rate structure varies based on monthly kilocharacter (1,000 characters) volume. The rate structure of three to seven cents per thousand characters transmitted is significantly lower than the 12 to 54 cents that which most electrical trading partners were paying prior to converting to IDX. Additionally, IDW manufacturer and distributor customers can synchronize product data free of communications charges. Generally, EDI document 832, which is used to transmit product data, generates over half the traffic volume through IDX.

Adding to the savings potential, IDX does not charge for extras such as mailbox fees and interconnect fees, which connect to other networks external to the primary VAN. These "extra fees" can increase bills by 15 to 50 percent depending on the quantity of characters sent and received monthly.

**IDX's reliability and service are unmatched in the market.** Since its inception in April 2002 IDX has experienced 100% reliability. IDX's ability to communicate with VANS and other similarly situated exchanges allows IDX to route and deliver business documents to virtually any trading partner worldwide.



### **What is Product Data Synchronization All About?**

Think of synchronized swimming. Each performer makes the same moves with the same instructions (data). If the swimmers don't get the same instructions, they can't "synchronize", or do the same thing at the same time. Errors will increase, and they will get poor scores.

IDW receives data loads directly from the manufacturer source, which uses that same data for transactions with the distributor: for receiving orders, sending invoices and processing SPA claims.

This causes transaction data sent by a trading partner to match what the other expects so eBusiness transactions flow without requiring human intervention to resolve unmatched items, increasing the speed and accuracy of eBusiness.

If you want to reduce transaction errors to increase productivity, start with correct, synchronized product and pricing data, which is free of charge to IDX customers.

### **Caveats to the Value Analysis**

It is quite difficult to split out benefits of using clean, certified product data supplied by manufacturers through IDW from the benefits of using EDI documents to increase business speed, accuracy and productivity.

Rather, one does not work without the other! If you fuel a high performance racecar with contaminated gasoline, you will still experience poor engine performance despite the superior engine. Similarly, if you use EDI or similar electronic documents such as inbound EDI 810 invoice as a distributor, and have not synchronized your product database with a particular manufacturer, you could actually create more work than previously experienced, because your business system will catch all line items, which do not match without exception.

## **2 The Case for One Industry Product Database**

One of the cornerstones of eBusiness is the requirement for a common product language and database. The story of the "Tower of Babel" illustrates how God caused different people to speak different languages so they could not communicate well enough to build that ill-advised tower to heaven. The distribution channel needs to reverse the Tower of Babel by facilitating a single business product language through the use of a common product database and standardized electronic data interchange (EDI) transaction formats.

Unfortunately, using more than one source of data in the industry perpetuates the Tower of Babel by making trading partners vulnerable to using different product codes, different costs, and possibly inadequate suggested resale prices. Conversely, if trading partners "draw from the same well", Industry Data Warehouse, this vulnerability diminishes greatly.

To reach maximum effectiveness, data must be regularly supplied by the manufacturer source, with no third party interventions or interpretations. There must be only one provider of source data. The source provider must update the product database each time any product record changes in any way, or when products are added or delisted. Equally as important, each manufacturer must provide the same data that is used in the market place. Manufacturer staff be it sales and marketing and product managers must be internally synchronized before distributing business data to their trading partners through IDW. Finally, distributors must "synchronize" with the source of the data at least as frequently as any changes are made in IDW database to eliminate the chance for errors due to out of date or missing information. Synchronizing entails (1) changing any data in the distributor product database to match corresponding products from the manufacturer source, (2) adding any new items and (3) marking obsolete items while pointing these obsolete item records to the new replacement item records in order to efficiently track of product sales history.

### **Data Synchronization May be Poorly Understood**

While many industry-trading partners speak of synchronized data, they may not be aware of the true meaning or the impact on the productivity and profitability in a business.

- Synchronization requires at least two trading partners, each of which maintains a product database in their respective business systems
- Synchronization means that the business data that resides in each business system is identical. This means identical product codes, costs, units of measure, standard carton quantities, product families or groups, and suggested resale prices.
- Using the SAME data for product and price information ensures a near 100% match rate for line items on orders from distributors when received by manufacturers, on invoices from manufacturers so they will match with distributor orders and for SPA claims so they will match on product codes authorized and SPA claim calculations.
- It is best to synchronize each time the source database changes, including when records are added or products are delisted. Hence, in times of frequent price fluctuations, it behooves distributors to synchronize frequently to be able to change prices to customers in line with their new costs.

### **3 Benefits of Synchronized Data, Perils of Unsynchronized Data**

#### **Benefits of Synchronized Data:**

- Same data is used by trading partners for transactions
- Distributor margin stays intact as expected
- Productivity gains from eliminating human intervention when order, invoice or SPA claim data does not match between trading partners

#### **Perils of Unsynchronized Data:**

##### *Wrong Cost*

- Margin Losses if cost used for pricing
- Productivity Losses from invoices not matching and labor to correct errors

##### *Unmatched UPC*

- Loss of productivity from manual intervention to determine what was actually ordered
- Loss of customer service and slowing lead times for line items not recognized by the supplier

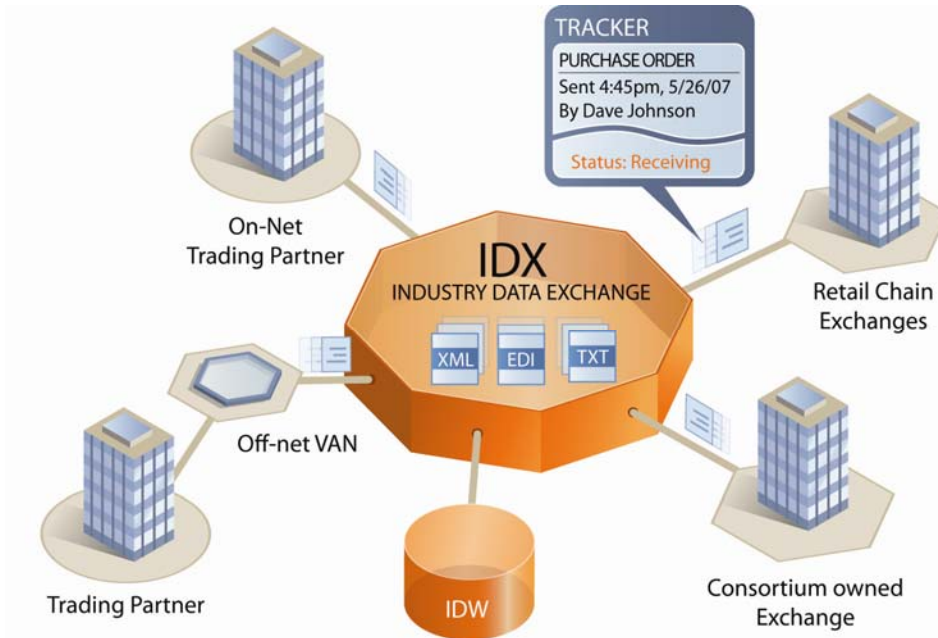
##### *Wrong Cost for SPA Claim*

If SPA was for a cost of \$.70 and the normal cost is \$1.00, the distributor should claim \$.30 per unit. If \$.97 is loaded, the distributor only claims \$.27 and loses \$.03 per unit




- If the supplier issues a claim for \$.27, the distributor loses money
- If the supplier issues a claim for \$.30, the distributor must reconcile the claim to balance the manufacturer account in their business system ledger



**Illustration:** IDW features a process that supports error-free data. Manufacturers input data from any file type, the data is verified and checked until it meets standards, and then the standardized data is delivered to authorized trading partners in the file format they prefer. One source of data ensures transaction data matches between trading partners and expected gross profit percentage is realized.



**Illustration:** IDX allows trading partners to send and receive EDI, EDIFACT, XML, Flat File, binary, or graphic documents via the internet, 24x7x365. Best of all, IDX is highly secure, allowing only authorized trading partners to view the documents you send. Suppliers can send product and pricing data to Industry Data Warehouse (IDW) for free via IDX to ensure transactional data is untouched and error free.

Transaction Error Type	Root causes	Impact on Manufacturer	Impact on Distributor
Orders with unmatched Items, lines rejected by manufacturer	1 Wrong or nonexistent UPC numbers or catalog numbers	Manufacturer must contact distributor to resolve	 Distributor ordering personnel must resolve on phone with manufacturer
	2 Wrong prices		
	3 Wrong or missing standard carton quantities cause order quantities not in correct multiples.		
Invoices to distributors with unmatched items, quantities, prices	Same 3 as above	Manufacturer will attempt to resolve and possibly bill back	 Distributor rejects and deducts for items with perceived errors if not in their favor
SPA items which are claimed incorrectly according to manufacturer	1 Product claimed is assumed to be authorized by manufacturer but is not	Manufacturer will issue credit based on their own independent calculations, will bill back differences if distributor deducted SPAs from current invoices.	 If distributor deducted already, they will have to deal with a bill back. If not, they will have to adjust their claim to balance their ledger accounts.
	2 Reference price (i.e. normal distributor cost) from third party database used in claim calculation is incorrect		
	3 Wrong product group used for looking up multiplier to apply		
	4 Products, Multipliers or net prices are manually entered and keyed in incorrectly		
	5 Distributor math or business system logic is incorrect		

**Figure 1:** Transaction errors cause losses in productivity from extra labor required to correct errors. Synchronizing data can eliminate many of these errors, when combined with the efficient use of EDI documents among trading partners.

#### 4 Case Methodology and Results

Five distributors of varying sizes from \$90 million to over \$1 billion in annual revenues were interviewed. Three manufacturers, all over \$1 billion in annual revenues were also interviewed.

The following questions were posed in order to determine the impact of EDI and product data quality on productivity, while also determining the error rate measurement practices.

1. What can go wrong as a result of unsynchronized, poor product and pricing data and how does that affect your business processes?
2. What percentage of line items don't match and must be resolved at the point of
  - a. Order
  - b. Invoicing
  - c. SPA claims
3. Which types of personnel handle discrepancies with line items at each step in the complete business process (order, invoice, claim)
  - a. What was your staff headcount by function prior to automating processes with EDI versus today?
  - b. How much has your business grown over this period of time?
4. What were you paying for VAN services previous to switching to IDX?

## Extraordinary Productivity

One of the larger distributors interviewed reported these incredibly low line item error rates with their largest supplier:

- A mere 0.26% of line items didn't match on invoices. A similarly sized manufacturer (not DAC certified as yet) reported 7% of line items not matching on their stock orders from distributors.
- A low 0.37% of line items didn't match or were claimed incorrectly on SPA claims.

This distributor uses IDW for their product and pricing data. They also utilize 845 SPA price notifications, claim using 844 requests for credit and receive credit via manufacturer 849s over the weekend. Claims are processed on Friday night, and credit received Monday morning, improving cash flow vs the common practice of waiting for up to a few months for credit. Because of this speedy practice, the distributor ceased automatic deduction of SPA claims on current invoices, allowing the manufacturer to issue credit over the weekend and apply it to their account.

The manufacturer has decided to limit direct feeds of product data to IDW to ensure participating distributors will be using the same product and pricing information and realize the opportunity to achieve similarly low line item error rates.

In contrast, other large distributors trading with the same manufacturer, but using third party data for their product file and may not be using EDI 845s (SPA price files from manufacturers) experienced SPA line item error rates from 5 to 30%.

The distributor with the low error rates reported that over 90% of stock orders and 85% of SPA claims are processed electronically.

Because of this they were able to reduce staff headcount for these functions by 73%, worth over \$2.8 million to their bottom line annually.

For manufacturers, we asked for line item error rates for some major distributor chains on orders, invoices and SPA claims.

## Results from Requests for Error Data

It is evident that most organizations fail to look at the entire end-to-end (E2E) business process and generate metrics that diagnose efficiencies and problems for each transaction point in the entire order to payment, or quote to cash cycle as some call it.

Rather, even the largest companies seem to focus on individual steps that have, for some reason, taken priority in their organization, either because they deemed it necessary to delve into an area with high headcount, or they could actually measure these things more easily.

Two out of the three manufacturers did a creditable job of tracking line items rejected on orders from distributors in total and for key trading partners. Two did a good job of tracking SPA claim lines rejected. No one did a very good job of tracking invoices short paid because of discrepancies in pricing, quantities received or wrong items received. That was particularly interesting. Only one manufacturer could produce measurements on how many remittances yielded less cash than expected yet, remittances are the only way that cash comes into the business from customers!

**Clean, correct, up to date product and pricing data effects each step in the three major transaction processes in this industry:** orders, invoices and SPA claims. These are interdependent in the sense that errors "upstream" create multiple errors "downstream". For example, if a distributor loaded a \$1.00 item at an erroneous \$0.97, and the invoice arrives at \$1.00 from the manufacturer, an efficient process set up between accounts payable and pricing or purchasing personnel would alert the latter to change the cost in the product file and avoid pricing errors to customers as well as avoid future necessity to resolve future invoices for that item as well. But this adjustment rarely happens, as departments usually don't work cross functionally that well.

Three distributors were interviewed that were using third party product information where this scenario can happen, potentially damaging margins and causing extra work for accounts payable staff. In contrast, one of larger distributors which used IDW data was able to achieve a 73% reduction in the combined headcount in SPA pricing, claims and accounts payable personnel by automating all three of the major steps in the business process, while growing 40% over the same period. In addition, this distributor was able to achieve a surprisingly low .26% line item error rate on orders rejected by their largest manufacturer supplier, and .37% line item error rates on SPA claims; the latter was experienced despite a price change from the supplier during the period of measurement, first quarter 2005. (See sidebar on previous page).

Entity	Annual	Manf. Carried			Does 850	Send 844 claims, receive		Receive 845	Receive 810 with 3 way match	Product and Price Data Source	Order line item error rates for mfr "A"	SPA line item Error Rates mfr "A"	SPA line item Error Rates mfr "B"	Invoice line item Error Rates
		1st	2nd	3rd		849	Credit							
Dist. A	\$ 500 mill	A	B	C	X	X	A only	X	IDW	0.26%	0.37%	8.29%	NA	
Dist. B	\$ 300_	A			X				3P	1.24%	NA	NA	NA	
Dist. C	200+	B			X	X	X	X	3P	NA	NA	3.5%	NA	
Dist. D	1 bill +	A			X	X	X	X	IDW	0.60%	2.10%	NA	NA	
<b>Distributors</b>										<b>Total line item error rates</b>				
Database	Volume	A	B	C	D	Can do 844 and 845	Can do 845	Can do 810s	DAC Certified	Inbound 850 orders	SPA error rates	Invoice line item Error Rate		
Manf. A	1 bill +	X	X		X	X	X	X	IDW DAC	1.9%	3.50%	NA		
Manf. B	1 bill +	X		X		X	X	X	IDW DAC	2.2%	7.20%	2.30%		
Manf. C	1 bill +	X				X	X	X	IDW	7.0%	NA	NA		
<b>Key</b>					850 Order	3P = 3rd party data service provider								
					810 Invoice									
					845 SPA price notification									
					844 SPA Claim									
					849 SPA Credit									
					3 way match	Automatic matching of order, invoice and receiving document to automatically pay invoices matching within a maximum percent difference								

**Figure 2:** Our objective was to determine the data available rather than to attempt to get distributors and manufacturers to measure something they normally could not. What we found was that the best did not measure at all pertinent transaction points in the business process, but in fact had varying capabilities to measure errors for different transactions, as this chart illustrates. Manufacturer A, in orange, could supply the best statistics by account and in total, but only for orders and SPAs. None had good capabilities to measure invoices rejected or "paid short" by distributors.



### Does DAC Certified Data make a difference for manufacturers?

On Incoming 850 orders from distributors:

Of the three manufacturers interviewed (all over a billion dollars in electrical channel revenues), the two manufacturers which were DAC certified data had incoming order line item error rates of around 2%, while the third, which was not DAC certified, had a 7% distributor stock incoming order line item error rate.

### Does use of the EDI 845 SPA price notifications by manufacturers and distributors make a difference?

Manufacturer "A" reports 9% line item error rates for distributors that do not use 845s and 1.9% for the few large distributors, which do, for an average of 3.5%. Some distributor SPA line item error rates are as high as 28% for this manufacturer.

Manufacturer "B" does not utilize 845s at all. Their overall distributor overall distributor electronic claim line item error rate is 7.2%

## Commentary

The most exciting revelations come from Distributor A, which can execute all three key electronic transactions, (order, invoice, SPA claim and credit), synchronizes with IDW data, and also receives EDI 845 SPA price notifications. The EDI 845 ensures SPA prices are IN SYNC with manufacturer prices issued so distributor claims will match manufacturer calculations more often. The results from this level of diligence are evident: all error rates are less than .4% of line items, the best that we have seen by far. Distributor "A" also trades with manufacturer "B", but their SPA line item error rate is over 8% with this manufacturer, compared to 0.37% with manufacturer "A". The observed difference is in use of EDI 845 price notifications with manufacturer "A", but not with "B". This is not conclusive, but one could make a strong case that if both use the same data for calculating claims, the chance for matching calculations increases.

## 5 Cases

### 5.1 Manufacturer "A" vs Manufacturers "B" and "C"

- All three manufacturers are over \$1 billion in sales through the channel.
- The majority of distributor orders for all three are stock orders
- Manufacturer "A" is currently the only manufacturer of the three that can send 845 SPA price notifications to distributors so they may automatically load these into their systems for customer pricing.
- Only manufacturer "B" could generate statistics on invoices paid short by distributors.

Line item error rates

Manufacturer	Can do		Data	Inbound 850 SPA error rates	
	844 and 849	Can do 845		orders	rates
Manufacturer A	X	X	IDW DAC	1.9%	3.50%
Manufacturer B	X		IDW DAC	2.2%	7.20%
Manufacturer C	X		IDW, but not DAC	7.0%	NA

- Manufacturers A and B have DAC certified product data in IDW. Manufacturer C does not. Manufacturer C is working on DAC certification presently.
- Manufacturer A and B have inbound 850 stock line item error rates of about 2%, while "C" experiences 7% and is not DAC certified.
- Manufacturer A experiences an overall line item error rate on electronic (EDI 844) SPA claims 3.5%. However, this is skewed downward, as some very large distributor customers experience 1.8% errors in line items claimed using EDI 845 SPA price notifications, leaving the balance of distributors at greater than 9%. This would lead us to believe use of 845s for SPA price

### Mass Reduction

Distributor "A" reduced headcount in SPA price administration, AP Claims and Accounts Payable by 73%, while growing their business more than 40% over the period in question. This was primarily due to eBusiness process automation and synchronizing product data.

That saved over \$2.8 million dollars in associated labor costs, representing about one half of one percent of sales (extra profit as a percent of sales)

They also slashed their EDI VAN charges by over 75% by converting to IDX, reducing charges from over \$30,000 per month to less than \$10,000 per month. After conversion, it was observed that sixty percent of characters transmitted were for downloaded IDW data, which is free of charge to IDX customers.

notifications combined with clean product data for correct items and reference prices can contribute mightily to reducing SPA claim errors.

- Manufacturer "B", which does not use EDI 845 SPA price notifications, experiences an overall error rate of 7.2% of line items claimed.
- Manufacturer "C" could not supply data on SPA line item claims errors.

### 5.2 Distributor "A"

Distributor A is a 100+ branch distributor of electrical products with over \$500 million in annual sales.

- Data Source: IDW/IDW
- EDI 850 Purchase Orders: yes
- EDI 810 Invoices: yes
- EDI 845 SPA price notifications: yes (with supplier "A")
- EDI 844 claims: yes: 78% claimed this way
- 849 SPA credits: yes: 70% claimed this way
- Greater than 90% of stock orders sent via EDI
- Greater than 85% of SPA credits claimed via EDI
- 2 people handle 100% of SPA processing tasks for the entire company. This includes price loading, claiming and reconciling, for a \$500 million plus business!
- Over 8,000 SPAs active
- 85% of invoices are received via EDI 810 invoices
- EDI Service: IDX
- The ratio of electronic invoices to orders through IDX is 7.0 times the number of electronic orders. The ratio for all distributor-manufacturer transactions through IDX is .6 invoices for every 1 order. This indicates that Distributor "A" makes heavy use of electronic invoices for each manufacturer with which they use 850 orders. The distributor verified this.

#### Line Item Error rates with Manufacturer "A"

- SPA line item error rates: 0.37%
- Order line item error rates: 0.26%

#### Line Item Error Rates with Manufacturer "B"

- SPA line item error rates 8.29%

### Partners in Productivity

It was unanimous: If Distributor "A" would receive EDI 845 SPA price notifications, EDI 844 claims and receive EDI 849 credits, their largest manufacturer would agree to process claims overnight.

Since adopting EDI 845s, line item error rates on claims dropped from over 8% to a mere .37% of line items claimed by the distributor.

The distributor agreed to stop debiting SPAs on current invoices and wait for the credit from the manufacturer. Actually, they processed claims over the weekend and received credit on Monday.

This eliminated a great deal of accounting nightmares and labor for both, while keeping cash flow intact for the distributor.

Supported by an accurately synchronized product database, The EDI 845 appeared to be instrumental in reducing SPA claim discrepancies, which gave the distributor confidence to trust the process and stick with it.

### Resource Productivity Gains

- Over the last 10 years, this distributor implemented conversion to IDX for their EDI traffic and to IDW for most of their product data.
- 85% of SPAs are claimed electronically, 90%+ of orders are sent to manufacturers electronically (EDI).
- They could not generate statistics on invoices paid short (deducts made) due to wrong products, unrecognized products, wrong prices or wrong quantities shipped due to product data file errors.
- This distributor makes heavy use of EDI 845 price notifications in order to directly load authorized SPA items, costs and pricing data into their business system. Similar to the rationale supporting a common product database for standard product data, reference costs, and suggested resale pricing, synchronizing SPA data with manufacturers tremendously increases the match rate on SPA claims calculations. Distributor claims match manufacturer credits and accounts reconcile more easily. The distributor also receives a 3-day response on claims from their largest manufacturer and that could be processed overnight except that the distributor prefers to claim once a week on Fridays.
- This distributor reduced headcount in pricing, claims and accounts payable by 73%, resulting in savings of over \$2.8 million annually. This was directly attributable to a combination of automating with EDI, and correct product and pricing data.

### IDX Savings

- VAN charges prior to IDX conversion: \$35,000 average per month.
- VAN charges after conversion: less than \$10,000 per month
- Annual Savings of \$25,000 per month = \$300,000 per year
- This is approximately .05% of sales

### Comments

- This distributor did not use EDI 845 price notifications to load SPA pricing automatically with Manufacturer "B". The error rates with manufacturer "A" were .37% as opposed to 8.45% with Manufacturer "B". This could indicate that proper use of EDI 845s truly synchronizes SPA price data between manufacturer and distributor and could eliminate a large portion of claim errors while reducing headcount required to manually load SPA pricing for each customer affected by the SPA.
- This distributor has the highest ratio of EDI 810 invoices received to orders sent of any distributor observed through IDX servers. The distributor claims that almost all suppliers receiving EDI 850 orders is also sending 810 invoices, which are automatically processed using 3 way matching of invoices to orders and receiving documents by the line item. This has allowed the distributor to manage by exception, of which there are many, fewer than the average distributor, rather than manually reviewing all invoices as most distributors do. The headcount

### Back Room Productivity Opportunity

Distributor "B", at \$200-250 million in revenues, could reduce back room headcount by more than half and save \$595,000 annually by using cleaner product and pricing data, plus automating invoices, SPA price loading and SPA claims.

reduction of 73% was largely due to the move to clean synchronized data and accounts payable process automation.

### 5.3 Distributor "B"

Distributor B is a 50+ branch electrical distributor with \$200-250 million in sales.

- Data Source: Third Party (not IDW or IDW)
- EDI 850 Orders: Yes
- EDI 810 invoices: No
- EDI 845 SPA price notifications: None received from any manufacturers
- EDI 844 claims: No
- EDI 849 SPA credits: No
- EDI VAN: IDX

### Line Item Error rates with Manufacturer "A"

- *SPA line item error rates*: SPAs are claimed manually, so they are not easily measured, and manufacturer "A" does not measure line item error rates on manual claims.
- *Order line item error rates*: 1.24% (Five times rate of Distributor A with Manufacturer A)
- We estimate the cost to resolve a line item on an order at \$2.71 per line. This distributor had almost 1,000 line item errors per year. If reduced to the error rate of Distributor "A" of .26%, they could reduce line item errors on orders by 900 approximate errors, saving \$2500 for orders with this manufacturer. This manufacturer represented 17% of sales. If line item error rates could be reduced similarly for all manufacturers, savings could almost \$15,000 annually.

### Productivity

- SPA contracts are loaded at headquarters, but branches are responsible for claiming SPA credits
- 18 accounts payable personnel, 4 Headquarters SPA pricing personnel, 10 equivalent full time personnel in branches claiming SPAs
- Total comparable headcount in function: 32 (Distributor A has 30 for nearly triple the rate of business)
- If distributor B could scale headcount to a slightly higher proportion to sales as distributor "A" by synchronizing data, automating invoice payment, and automating SPA loading and claims, they could theoretically reduce staffing in these functions to 15 people or less. At \$35,000 fully loaded cost per person, a 17-headcount reduction could save \$595,000, which represents over one quarter of one percent of sales.



<b>Distributor Model</b>								
Annual Revenues		\$ 100,000,000						
Percent Profit on Sales Before Tax		2.5%						
Profit Before Tax		\$ 2,500,000						
<b>Distributor Margin Enhancement</b>								
		Average assumed cost inadequacy	Cost Basis (1.0 less margin loss	Current Average GP %	GP % using wrong cost or sell price	Average Margin Loss	Total Margin Enhancement	
<b>Higher Gross Profit from marking up using correct costs or using up to date suggested resale prices</b>	Impact on Gross Margin from out of date cost for markup based pricing or out of date suggested resale prices	-1.5%	98.5%	20.0%	18.8%	1.2%	\$ 1,218,274	
<b>Transaction Productivity</b>								
		Your error rates	Less Benchmark Error Rate	= Error Reduction	X Line Items on EDI documents	X Cost per Line Item Resolved	= Annual Cost Reduction	Headcount Reduction
<b>Order Flow</b>	Eliminate labor costs to identify UPC codes or catalog numbers not recognized by manufacturers	3%	0.26%	2.7%	210,000	\$ 3.50	\$ 20,139	0.6
		Your error rates	Less Benchmark Error Rate	= Error Reduction	X Number of Invoices	X Cost per Invoice Resolved	= Annual Cost Reduction	
<b>Invoice Flow</b>	Eliminate labor costs to reconcile line items which do not match invoice prices or quantities	20%	5%	15%	50,000	\$ 15.00	\$ 112,500	3.2
		Your error rates	Less Benchmark Error Rate	= Error Reduction	X Number of Items claimed	X Cost per line item on claims resolved		
<b>SPA Claims Flow</b>	Eliminate labor to reconcile claim totals which don't match credits issued, ensure claiming of all credit for line items sold as authorized.	20%	0.36%	19.64%	70,000	3.5	\$ 245,000	7.0
							<b>Headcount Reduction</b>	10.8
<b>EDI Transmission Costs</b>								
	KC Traffic	Prior Effective Rate	Prior Cost	IDX2 Rate (Avg)	IDX2 Billable Volume*	IDX2 Cost	IDX2 Savings	
<b>Lower rates and fewer extra charges for EDI traffic with trading partners</b>	208,333	\$ 0.34	\$ 70,833	\$ 0.07	\$ 156,250	\$ 10,938	\$ 59,896	
<b>Summary</b>								
<b>Total Dollar Margin and Productivity Benefits</b>						\$ 1,655,809		
<b>Pct of Sales</b>						1.7%		
<b>Pct Increase in Estimated Profits</b>						66.2%		

**Notes:** IDX billable volume for this example assumes 25% IDW traffic, for which IDEA does not charge. We have not considered receiving costs in this exercise, which are much harder to estimate. Distributors are generally NOT automated in this function and/or have no benchmark data for before and after scenarios.

## Most Valuable IDEA Contributions

### 1. Enable a larger and more capable network of trading partners

IDEA influences more industry businesses to do business electronically and use a broader range of EDI documents. Each time a new trading partner comes on board, or uses one more document type, the benefits can ripple outward to all their eBusiness capable trading partners.

### 2. Enhance Productivity and Profitability

Trading partners can add up to 2 points of profit to the bottom line by influencing greater productivity through increased EDI usage, providing the ability to synchronize certified product and price data, and providing a low cost VAN for eBusiness document exchange.

### 3. Synchronize product data and price data at no cost.

There are no charges for sending and receiving data to or from IDW. If you use IDW, you should also be using IDX because half your character volume could be IDW traffic. Half the rate on half the billable volume could mean one quarter the monthly bill.

## 7 Conclusions

### 1. IDEA's greatest value is in enabling a larger and more capable network of industry trading partners.

Each time one new trading partner is added to the industry, or begins using an additional EDI document, the benefits are multiplied through all others with which they may trade electronically.

We have observed this closely. Manufacturers and distributors that develop the capability to utilize a particular EDI document with one trading partner quickly extend its usage with other trading partners to maximize benefits.

IDEA's work helps develop new electronic trading partners, connect them to other trading partners, and creates liquidity for transactions to flow between trading partners with IDW, IDX and their maintenance and development of industry eBusiness transaction standards.

Industry benefits increase exponentially each time a new trading partner comes on board or starts using an additional transaction document like EDI 810 invoices, EDI 855 advance shipping notifications, EDI 844 SPA claims, EDI 849 SPA credits or EDI 845 SPA price notifications in addition to EDI 850 purchase orders.

### 2. Using EDI for all transaction processes, Certified Product Data and a low cost VAN can add up to 2 points of profit to the bottom line

These savings are derived from: (1) Distributor margin enhancement due to use of proper costs for markup based pricing, and (2) Transaction productivity savings from lower error rates on orders, invoices and SPA claims. The savings are manifest in a reduction in headcount in SPA pricing maintenance, SPA claims and accounts payable functions. Headcount reductions can be up to 75%, depending on the size of the company, the prior rate of transaction errors and the prior degree of process efficiency in these functions.

For those distributors which are failing to claim a significant percentage of SPA claims using a manual claiming process, margins recouped from claiming a higher percentage of SPA claims authorized can increase profitability even greater.

Manufacturers can significantly reduce order entry tasks and associated headcount from automating receipt of orders using inbound EDI 850 orders or web-based orders from distributors. However, we are of the opinion that larger manufacturers have already reaped these savings.

**3. Correct, synchronized data from one primary source is imperative for error free EDI transactions, which reduce channel transaction costs.**

Of course, a manufacturer or distributor can't legislate that their trading partners use the same certified product data. However, the objective is to get transaction data to match so electronic documents simply flow without human intervention. Since computers are more precise than humans at catching errors, pairs of trading partners that fail to use the same product and pricing database allow errors to persist, negating a large portion of the benefits expected from transacting electronically.

**4. All industry trading partners should agree to use one primary source of product and pricing data for their business transactions.**

The objective of maintaining one common industry product database is to cause more transactions to match between distributors and manufacturers on product and price data and the calculations using that product data. This reduces errors and speeds transactions through the system.

Using more than one primary source of product and price data increases the probability of errors exponentially, which adds cost to the channel of distribution for all trading partners.

Proper data synchronization implies that whenever a change in the source data occurs (from the manufacturer), all trading partner databases which use that data as their source should immediately pick up any change in data fields for existing items, add new items and identify delisted items so they can be pointed to the new replacement items to properly track sales history. This becomes a nearly impossible task to accomplish with more than one source database.

**5. If you're going to use IDW, it only makes sense to use IDX for your VAN.**

Rates for kilobit transmission are generally less than half those of competitors. Product data transmission for downloading or uploading from IDW can be over half a manufacturer's or a distributor's total traffic. (Actual observed traffic for IDW vs total traffic was 55% IDW).

So, a substantial IDW user could be billed for about half the traffic vs that billed by a competitor's VAN service. Half the rate on half the billable volume yields a monthly bill, which can be one quarter of the bill from another VAN service.

**6. Distributors can increase accounts payable productivity and reduce headcount in this function dramatically with proper handling of incoming EDI 810 invoices.**

Distributors that can automate the three-way matching of invoices to orders and receiving documents, invoices can be processed without human intervention. Unfortunately, not all distributor business systems are capable of handling all the process variations and organizational alignments found in the marketplace. Distributor "A", which generated sterling results in this function, developed their own system to accomplish this. However, we know of distributor business systems, which also do this and recommend that distributors thoroughly check out these capabilities. We recommend that distributors ask their business system providers to supply names of other distributors which have successfully automated accounts payable and perform the required due diligence to verify performance. Including the cost of modifications, if necessary.

**7. Upstream EDI 845 Price notifications from manufacturers appear to dramatically reduce downstream SPA claim errors.**

The principle at work here is identical to obtaining the right standard product and price data from IDW. It is all about getting it right the first time. If a distributor loads SPA product and price data that comes directly from the manufacturer, the distributor has a better chance of matching the manufacturer's data when they make an SPA claim. The distributors of Manufacturer "A" which used EDI 845 price notifications averaged 2% line item claim errors, while those that did not

averaged 9% errors, some as poor as 28%. Distributor "A", which used IDW data, and engineered their claims process with the highest level of diligence observed, reduced SPA claim errors to .37% of line items claimed.

Again, not all distributor or manufacturer business systems perform SPA functions equally well. Yet, the benefits are substantial for both the manufacturer and distributor.

**8. Regarding automation of invoice handling, receiving and SPA processes, business systems have high potential for improving functionality and ease of application.**

Business systems need to focus more on manufacturer and distributor functions, which increase margins and reduce channel costs by improving transaction productivity. Not all appear to be equally applied, understood or easy to implement by customers.

We urge all channel trading partners to become fully aware of where you can add profit to the bottom line. We also urge all trading partners to apply error tracking metrics at each point in the quote to cash cycle: specifically at order, invoice, receiving, remitting and SPA claim points in the process. Look at this as a total process with sub-processes. It starts with quality data to feed the system. However, begin viewing the sub-processes of the quote to cash cycle as interdependent. Measure and diagnose your upstream errors and you can reduce downstream errors. You need the cooperation of your business system provider or IT departments to help in setting up reports that apply the proper metrics.

We also urge you to encourage your business system providers and/or IT departments to make the necessary changes to more easily automate order, invoice, receiving and SPA processes. In addition, for distributors, encourage business system providers to make it easier to import IDW product and price data into the business system product master.

**This study and paper was completed for IDEA by:**

**Neil Gillespie**, a principal of Channel Marketing Group. Neil held management positions with GE and Eaton Cutler Hammer from 1978 through 1995 until launching his channel strategy practice. Neil has 27 years experience in the electrical channel and developed a growth strategy for IDEA's IDX EDI Value Added Network.

**Allen Ray**, Principal of Allen Ray Associates, Kennedale, TX. Allen held sales and marketing management positions with Trade Service Corporation, Trade Power and Prelude systems. Allen has extensive experience in product data services, distribution business systems and the impact of these on channel profitability. Allen has 30 years experience in the electrical and other distribution channels. [allen@allenray.com](mailto:allen@allenray.com) or 817-704-0068.

*IDEA is a joint NEMA and NAED Enterprise.*

Visit [www.idea-esolutions.com](http://www.idea-esolutions.com) for more information.